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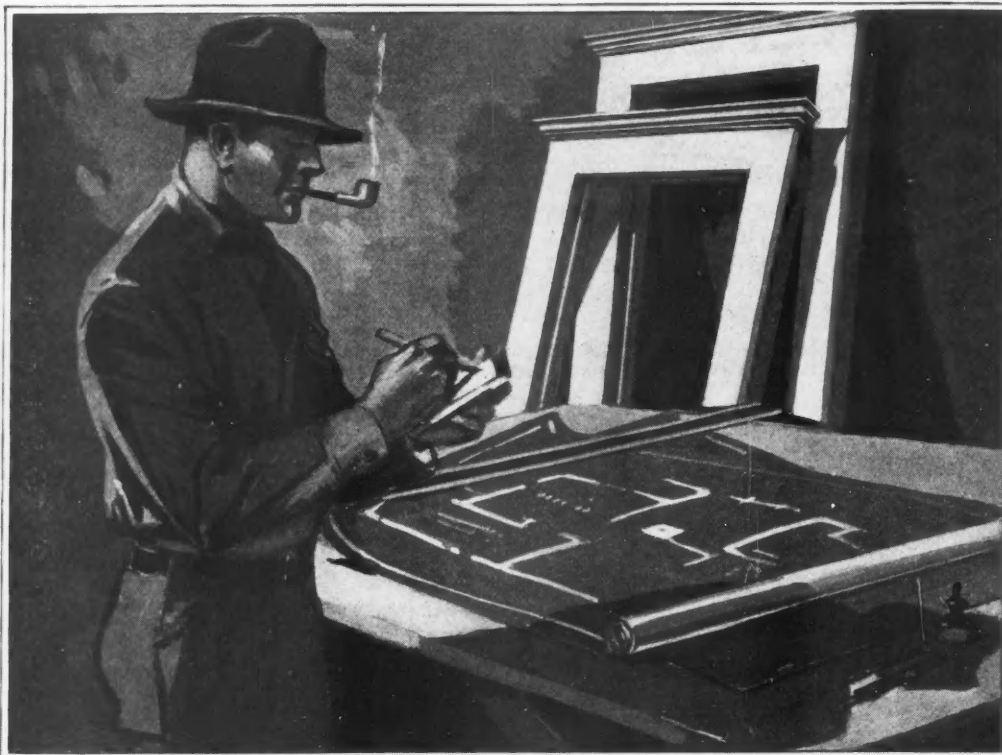
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AN INVITATION TO YOU

The AMERICAN BUILDER cordially invites and urges you to enjoy the privileges and benefits of its Correspondence Department. Any phase of any building question may be profitably and instructively discussed in this department. If your problem is a knotty, technical one submit it to the Correspondence Department and secure the benefits of the opinions of other experienced builders. It's a "give" as well as a "take" department and you are asked to relate your achievements and tell how you have conquered difficulties as well as to ask for information and advice. Rough drawings are desired, for they make clear involved points. We will gladly work over the rough drawings to meet publication requirements. The Correspondence Department is your department. Use it freely and frequently.



Cut Costs with Andersen Frames

WHY take chances on delayed deliveries of window frames. It's expensive. Guaranteed immediate delivery is a direct saving to everyone concerned.

Any dealer in Andersen Frames can supply immediately 121 different sizes of frames, simply by interchanging heights and widths of his stock of 11 standard frames. Window frames need not be ordered weeks in advance. Expensive delays on the job are no longer necessary.

Windows run smoothly in Andersen Standard Frames because the frames are accurately made. The use of White Pine in all exposed portions of Andersen Frames insures longer life and an accuracy that will not change with time or weather.

Seven units make a complete Andersen Window Frame. They are shipped in two compact bundles, each weighing less than 20 pounds. These small bundles are easily handled, permit larger truckloads, and require little storage space. The seven units of an Andersen Window Frame, complete with pockets and pulleys in place, can be nailed up in 10 minutes. The little time required to assemble and handle Andersen White Pine Window Frames save time, labor and money on any building.

Further Economies

We have prepared a book telling in detail how building costs are cut through the use of Andersen Standard White Pine Frames. Write for your copy today.

Andersen Lumber Company
Department A-9 South Stillwater, Minn.



Andersen FRAMES

Short Talks by the Editor

In High Favor

HOMES with high living rooms are popular again. This type of construction is not just a passing frill, but seems to be getting a firm footing. Of course it is in more general practice on the western coast, but several examples of it may be found in mid-western and eastern residences.

The builder supplies this demand in various kinds of design, each of which have points that recommend it. While the cozy snugness of the 9-foot ceiling is missing there is gained the appearance of roominess as well as the practical benefits of better ventilation, cooler air in warm seasons and pleasing architectural effects.

There is no probability of 14-foot ceilings becoming "the usual thing," but it would not be far from surprising to see them more frequently than we have in the past.

Such construction is an interesting point of proof of the constant shifting and continuous spirit of improvement which saturates the building industry. While not guilty of the bad practice of changing its methods as frequently as a silly flapper changes her mind, the building industry has none of that stubborn-unprogressiveness that halts many industries. Unlike Samantha, the building fraternity is not "sot" in its ways. It welcomes the new just as we all welcome the morning of a new day.

It has the healthy mind that rejects the passing and retains the pleasing, that discards the impractical and delights in every improvement.

High ceilings are in high favor. Just as is everything in our business that belongs in the "whatsoever things are good" classification.



A Good Clock

*"The Time of Day I do not tell
As some do by the clock,
Nor by the distant chiming bell
Set on some steeple rock;
But by the progress that I see
In what I have to do,
Its either Done o'clock to me
Or only Half-Past Thru."*

TIME is a treacherous yard-stick. The man who slaves and grinds fourteen hours a day is not always twice the man as he who works intelligently for seven hours. The country banker who worries a whole day deciding on the merits of a \$10,000 loan cannot be scaled with the successful city brother who weighs the case and gives an answer on a \$100,000 loan in fifteen minutes.

It's not the time put on a job that makes it a suc-

cess. It's the progress made. One bricklayer working eight hours a day and laying 25 per cent more brick than a fellow worker does in ten hours, ranks as more valuable than the slower man, granting, of course, that both do equally good work. But none deny that time is important. Not all—but important. For time is the stuff that accomplishments are made of. But, in itself there is little virtue in time. It's the use of it that counts.

Up to reasonable limits the more time devoted to a task the more results. But its the results not the time that count in the final summing up. Life's question is not "how much time did you spend on that job?" but is, instead, "is it Done o'clock or only Half-Past Thru?"



Crack the Whip

IT seems to one outsider that a big possibility for the building fraternity is in closer-knit co-operation. His criticism is that while nearly every other trade body has an association or society the building fraternity, in its broad scope, is a collection of separately acting individuals, lacking a common organization to accomplish common reforms and correct common abuses.

Without too serious consideration of the specific question which the criticism brings up, it is well to remember this general fact—trade bodies, no matter how well oiled, bump and rattle more than the members realize. It isn't all so smooth and good as it looks. It reminds us of the games of childhood days. All the youngsters would join hands in a happy circle, but soon someone would break the chain and the game spilled some of the players over. Or else we would line up for "crack the whip," every child holding hard onto someone else but when the line started in motion some of the players spilled and sprawled all over the ground.

There are good reasons for associations. No question of that. Yet they are not a cure-all for every evil. The sort of building fraternity which can be most practical may be the local association of hardware man, real estate man, dealer, builder and architect, whose common purpose is more and better building.



Good to Talk About

AN optimist is a man who can think a happy thought as often as a pessimist can think a discouraging one.

If we will talk about present good times as often as we did about past bad ones, present prosperity will grow to greater size.

Just keep in mind and in the conversation that 1922 is a banner building year.

"He Who Owns His Home Is Owned by His Home"

SOLUTION OF MANY OF OUR MORAL AND FINANCIAL
PROBLEMS MAY BE FOUND IN GREATER HOME OWNING

By John H. Puelicher

First Vice-President American Bankers' Association in a Speech Before the Colorado Bankers' Assn., at Glenwood Springs, June 22, 1922

WHY has life in America in many ways become far less stable and far less secure? Because there is a great stretching out of the vast mass of people, seeking a fulfillment of a real democracy of living conditions. Men desire something that will stabilize their lives. To many people there is nothing

able to increase one's power or influence is capital. The rude bow and arrow of the Indian was capital, a workman's tools are capital, a man who owns his home possesses capital, a man who has a saving account has capital.

Our "Best Folks"

The most stable population of America has always been made up of the small home or land owner.

Today a man who owns his home or his farm is, in a measure, owned by his home or his farm. There are so many elements of respectability that come to him who finds permanent shelter for his loved ones. He probably worked hard to possess it, and when he has it he tries to make it attractive and hold on to it. It is a force of law, since a home owner desires protection by law. He acquires respect for the property of others. He wants good sound government and desires to become an advocate of law and order. Ownership makes him vigilant. I think it was Gladstone who said, "Property always has one eye open."

But a man can seldom be a home owner or a farm owner or the owner of any of the stabilizers of life until he has been or is the owner of a savings account.

Do you know that out of every 1,000 people in Switzerland 554 are savings depositors? There are in Denmark 442, in Belgium 387, in France 346, in England 302 and in Italy 200 out of every 1,000, and yet in the United States we have but 99 savings depositors out of every 1,000 inhabitants. Almost 500 per cent more in Switzerland!

You know, too, that tenancy instead of ownership is growing among our farmers. In 1880 the farms which were operated by tenants constituted 25.6 per cent of the total number of farms in this country. By 1920 38 per cent, or practically four out of every ten farms, were operated in this way.

A Nation of Owners

We cannot become stabilized unless we become a nation of owners. We cannot become a nation of owners until we are a nation of savers. How are we to become savers? In the first place, we must know how to work. We must know how to save. We must know how to take care of our savings. We must know how to send those savings back into circulation. We must have a goal and a confidence that that goal can be reached because we understand the workings of economic law which governs our living and working and trading.

W. G. Sibley said: "All the wild ideas of unbalanced agitators the world over, in their ignorant and pitiable quest for happiness thru revolution, con-



John H. Puelicher

ahead but the daily grind, and they are willing to try any new measures or any new life in the belief that it will change their present circumstances.

They have experimented in Russia. They have experimented in North Dakota and have not found a solution.

You believe that with continued improvement the present system offers the best opportunity for all to gain that desired contentment and prosperity. So do I. True it is in need of constant reform.

Many who are the holders of capital in America today do not know that they are. They do not know that capital is the product of past labor used in further production—or, in other words, that anything avail-

fiscation of property and crime, cannot overthrow the eternal truth that the one route to happiness thru poverty or government is over the broad and open highway of service. And service always means industry, thrift, respect for authority and recognition of the rights of others."

No man can render his community full service unless he first has a feeling of permanent interest in the community. The renter cannot have that feeling as highly developed as the owner. To the latter matters of taxation, improvements, government are of vital concern. He takes a greater interest and part in every community activity.

All Honor to Builders

Every agent connected with the building industry, whether he be an exclusive and high-priced city architect or a simple pounder of nails, is engaged in a work which is not surpassed in practical benefits to his community.

The lumber dealer is doing something of the same useful work in making his community a better place to live in as is the minister or social worker. All are concerned with encouraging and bettering home life.

The nation needs homes. The building interests are providing them. No work could be more inspiring or helpful. The builder, carpenter, dealer or contractor may well hold his head high and be proud of his job—the job of making more home owners, which is the job of making more and better citizens.



A Cure for Customers Who Talk Hard Times

IF you have any pessimistic customers or friends, just submit to them the following facts, and then take the order:

The United States is the richest country in the world.

The bank deposits in the United States exceed by billions the combined bank deposits of the whole world outside of this country.

We have more actual cash than any other nation.

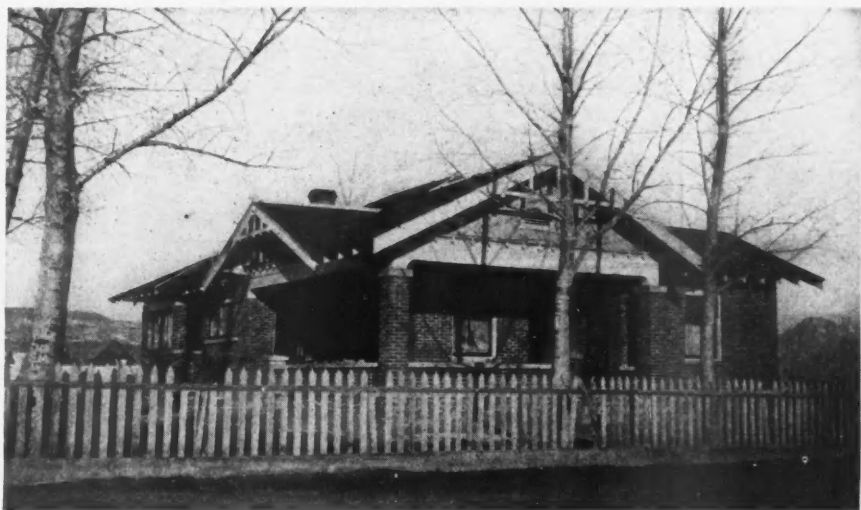
Our national wealth at the time of the Civil War was about \$7,000,000,000; at present it is \$225,000,000,000.

In a single year we produce by manufacture and agriculture more than the entire national wealth of France.

England's wealth is only \$80,000,000,000 as against our \$225,000,000,000.

Of all the wheat of the world we produce 22 per cent.

- Of all the oats of the world, 35 per cent.
- Of all the cotton, 60 per cent.
- Of all the corn, 80 per cent.
- Of all the cattle, 27 per cent.
- Of all the hogs, 40 per cent.
- Of all the world's dairy products, 25 per cent.
- One-half of the world's pig iron is taken from the earth in the U. S. A.
- Fifty per cent of the world's copper.
- And 60 per cent of the world's petroleum.
- Besides this we produce 25 per cent of the total production of woollens of the earth.
- Twenty-five per cent of the linens.



A Home Even Tho It May Be Modest Is an Unequaled Force in Creating Good Citizenship.

- Twenty-five per cent of the cotton cloth.
- Forty-five per cent of the paper.
- Twenty-five per cent of the glass.
- Thirty-six per cent of the shoes.
- And 50 per cent of the steel products.
- And we do this, having but 5 per cent or one-twentieth of the world's population.



Dangers of Removing Forms Too Soon

THERE IS NO possibility of stating with precision the time when forms may safely be removed from any piece of construction. This varies entirely with weather conditions and the mass of concrete. Whenever the structure is one which need support no weight but its own, such as a building wall of medium dimensions, all above ground, forms can sometimes be removed in three or four days. There is no advantage, however, in removing forms too early because the forms afford desirable protection to the concrete in preventing it from drying out too rapidly and also prevent a too rapid radiation of the chemical heat generated by the set of the cement. Forms for heavy arches, for floors supported above ground and roofs, must all be left in place from ten days to two, three or four weeks.

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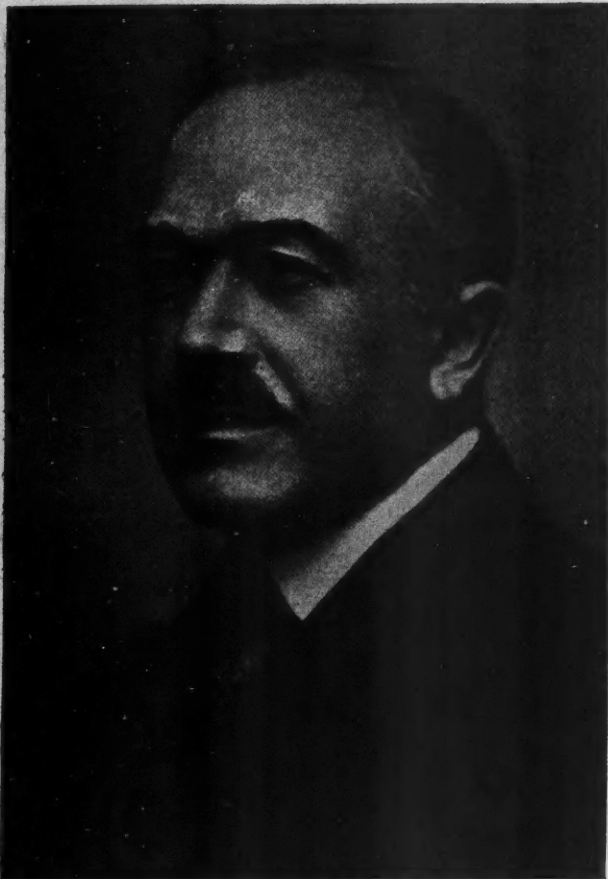
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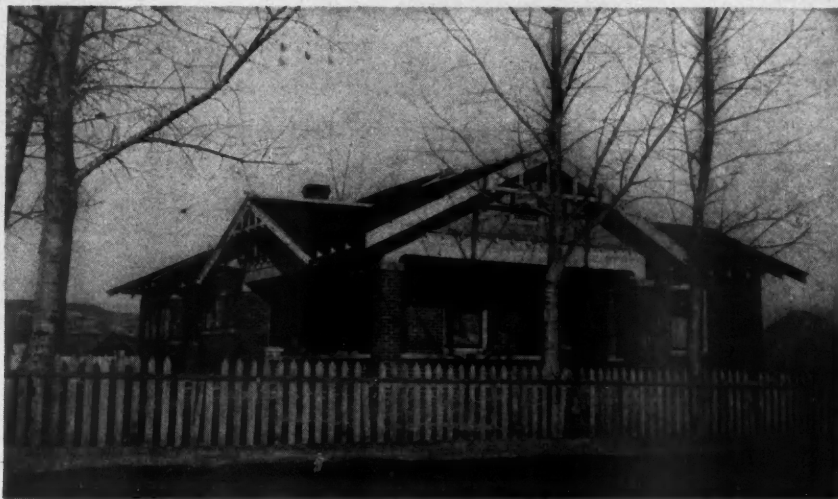
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And 60 per cent of the world's petroleum.

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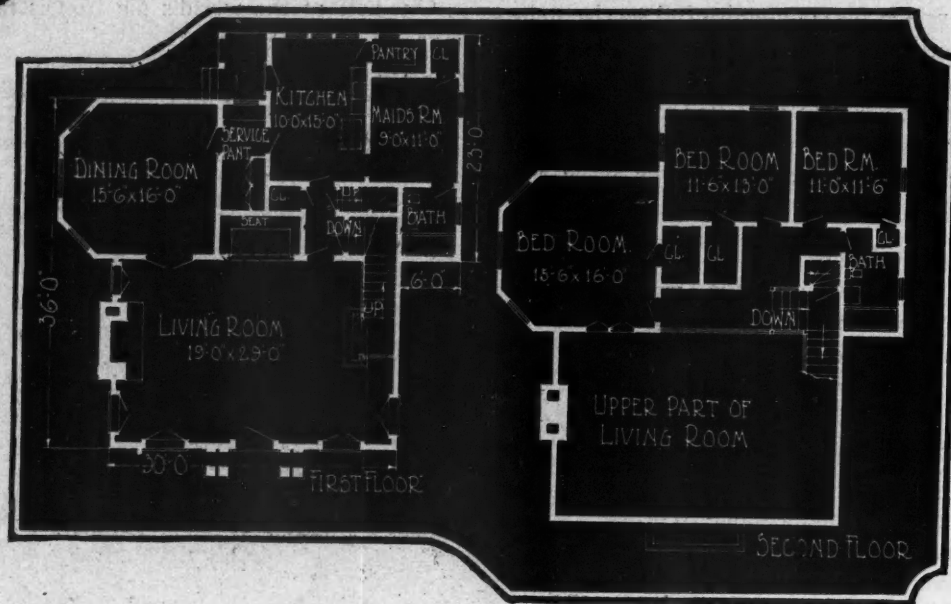


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BLUE RIBBON HOMES

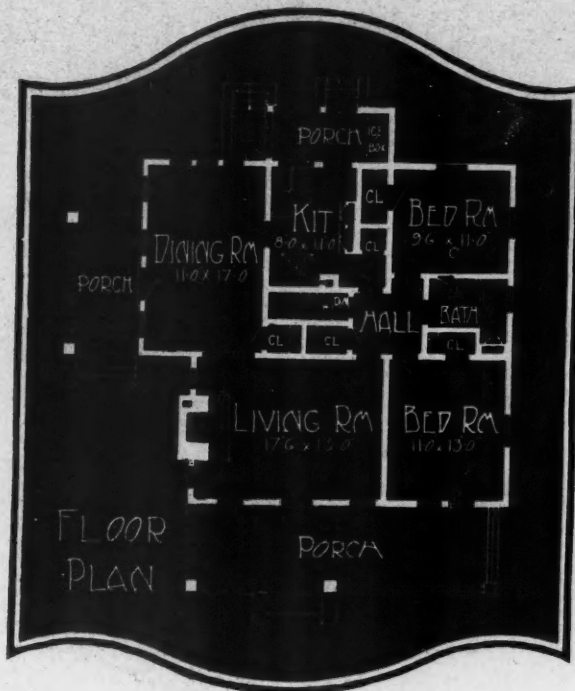
PRACTICAL
&
ARTISTIC



THE HIGH LIVING ROOM. One of the marked trends in real modern building is the home with story and one-half or two-story living room. It may appear a fad, but is a practical and commendable plan, in reality. In the design shown here the whole front of the home is devoted to the big living room. A balcony and windows in one bedroom look down on it. This type of living room means better ventilation and light and greater adaptability to social enjoyments. The rear of the house is planned like many others. Isn't this a delightful home to behold, and would you not be proud to live in this roomy, inviting atmosphere?

BLUE RIBBON HOMES

PRACTICAL
&
ARTISTIC



A DEAR LITTLE HOUSE. We can imagine some woman calling this design "just a dear little place." And she would mean affectionately and not financially, for it is not a dear place in a money sense. Built of stucco with tile roof, it is built to last long and serve well. The ever-popular one-floor plan has been carried out. There are two good-sized bedrooms, a spacious living room and excellent dining and kitchen rooms. The porch is inviting and it is pleasing to note the attractive manner in which the home grounds are kept. This plan will appeal to the average sized family with the averaged-sized building budget.

Waste and Ugliness Target of Zoning Laws

SEPARATE DISTRICTS FOR HOMES, FACTORIES, SHOPS
MAKE HEALTHIER, CLEANER CITIES, SAY CHAMPIONS



A View of a Residential Street in Winnetka, Ill., Typical of Towns That Have Zoning Regulations.

THERE was a Chinese prince who after enjoying the tasty flavor of roast young pig, commanded the cook to appear before him.

"From whence came this toothsome meat?" asked the royal ruler.

"Your majesty," said the chef with a bow, "a young pig was caught in a burning shed and roasted brown. It was that meat with which you were served."

"'Tis well," said the prince. "Twice each week a building containing a pig shall be burned and I will eat thereof."

The folly and waste of the Oriental ruler is said, by the champions of a zoning law for our cities, to be no greater than that which we have tolerated for years.

"That prince seemed to think that the only way to do a thing is the way it has been done, regardless of the waste and discomfort it may cause," said an owner. "We are continuing our methods of hit and miss building to the injury of the community and the annoyance of the general public and with no more good reason than 'it always has been done that way.'"

Clean, Comfortable Cities

Zoning legislation is aimed to make our cities more orderly, better planned, cleaner and healthier. Zoning is simply regulation that in the future buildings of cer-

tain types shall be built only in prescribed areas. It forbids the encroachment on residence property with factories and garages. It aims that each city shall have its business section, its residential section and its manufacturing section and that none of these localities shall be used for buildings of a kind not in keeping with the general character of the locality.

One of the most urgent reasons why zoning is advocated by many is the waste and wreckage occasioned by a lack of such restrictions. Every year buildings of usefulness are torn down because of the onward march of business and its demands on what was once residential district. Homes are made less valuable because a public garage has been built next door. Owners are forced to sell at a fraction of the actual value because the property has been lessened in value.

No Future Fears

With zoning laws this waste would be stopped, it is said. Property owners could build secure that no large building would take their sunshine and fresh air, no garage would locate next door, no factory would drive them to a new location. And it is claimed that such regulations would benefit manufacturers, garage owners and others who are now compelled to build on expensive land, but who, under zoning, would secure

sites at material savings.

About 170 cities in the United States now have some sort of zoning restrictions. The movement is not confined to the large metropolises, but many medium and small sized cities are actively aligned with the zoning movement. The experience and aims of Wilmette, Ill., are interesting because the city is typical of many smaller municipalities that have zoning legislation.

As Harry M. Beardsley points out in the *Daily News*, Wilmette is expanding towards a 40,000 population. As it grows there will be an increasing number of stores, shops and factories. Why not arrange for them with a plan that will best serve everybody?

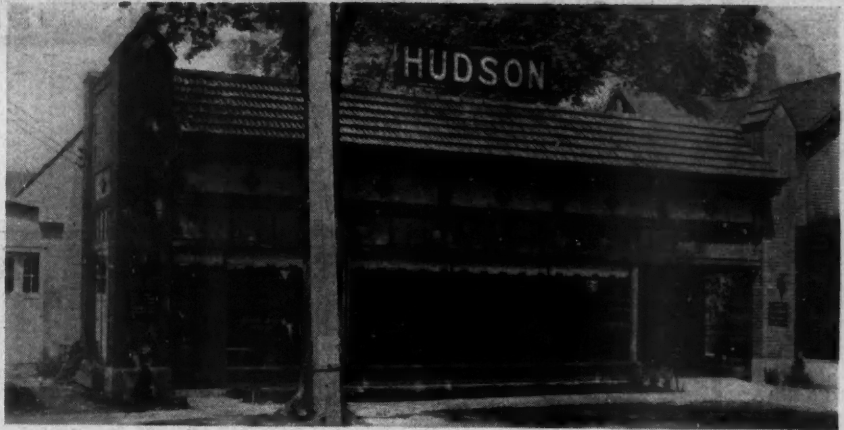
Wilmette is now a village of about 8,000 people, a community of substantial homes, churches, schools, beautiful trees, well-kept lawns, shrubs, flowers, parks and playgrounds. Three areas located near transportation terminals have been zoned as retail districts. Industrial districts are confined to stretches along the steam railways and the balance of Wilmette's 2.8 square miles is given over to residential locations.

At first thought it might seem that only large cities with their varied activities would be interested in zoning. Actually zoning is more practical for the smaller community that is destined to grow than for the large city already built up. In the latter cases occupied and valuable property must be torn down, costly court proceedings must be instituted and private loss and inconvenience must result. In smaller cities much of this can be avoided by planning for the future.

The best results cannot be expected by a make-over process. It is better to look ahead and plan ahead than to allow conditions to become bad before applying the remedy.

A survey made by the U. S. Government in June showed twenty-five states had passed enabling statutes allowing cities to make zoning regulations and that 170 cities then had zoning laws. Other cities are being added to the number quite frequently.

Persons interested in zoning facts and progress may secure further information by asking for pamphlets from the Division of Housing and Building, Department of Commerce, Washington, D. C.



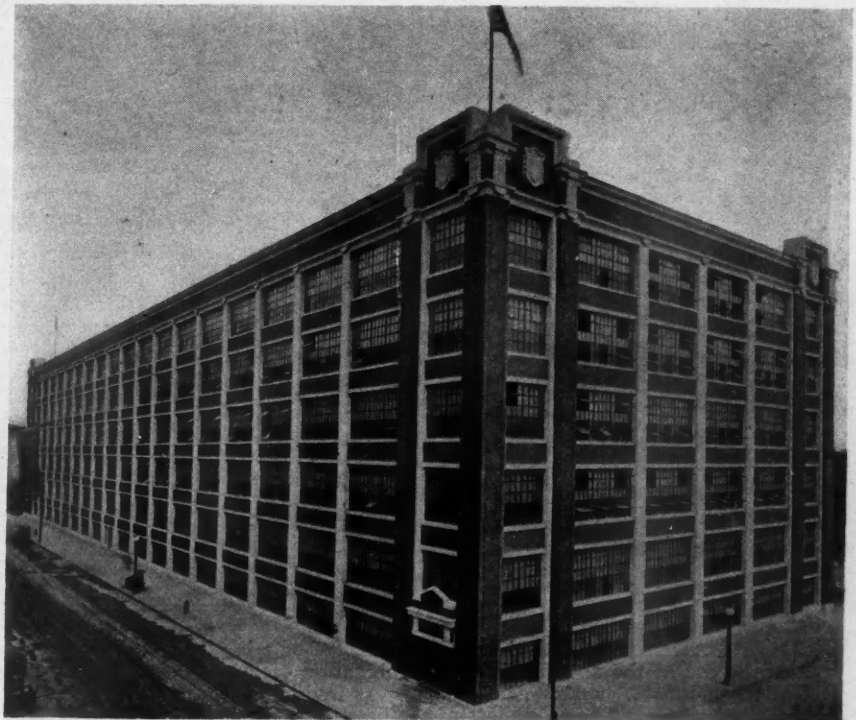
No Public Garages Permitted Adjacent to Homes When Zoning Laws Are Enforced.

Hardwoods Have Hard Sledding in Italy

THE opportunity for the sale of American hardwoods in Italy appears to be decidedly limited. Red gum for furniture making and oak for hardwood flooring, especially the former, were imported in considerable quantities before the war, but while they are favorably known, the present demand is limited by the high prices and the unfavorable rate of exchange. It cannot be said that other American hardwoods have ever been introduced into Italy, and the present conditions are decidedly unfavorable for making any such attempt, according to a report of Commercial Attache H. G. MacLean, Rome.



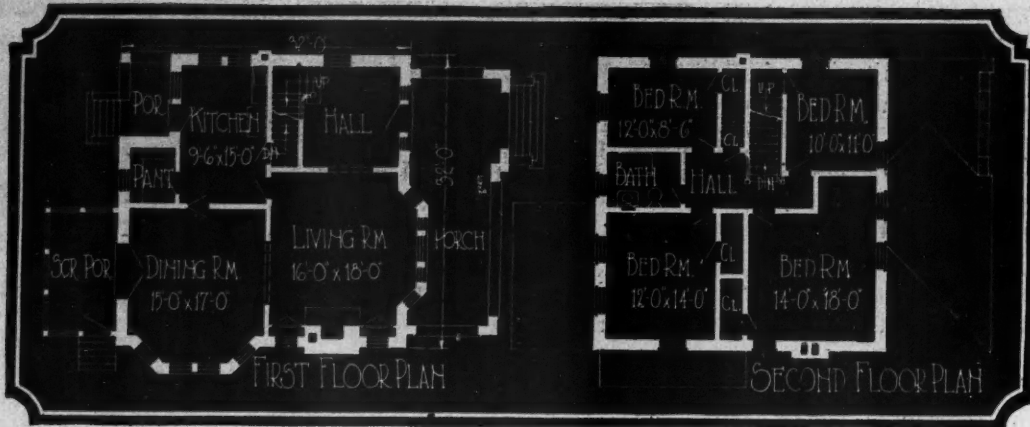
PUT your problem up to practical builders in our correspondence department.



Factories in a Special Zoned Area Save Ground Cost and Make a City Cleaner and Healthier.

BLUE RIBBON HOMES

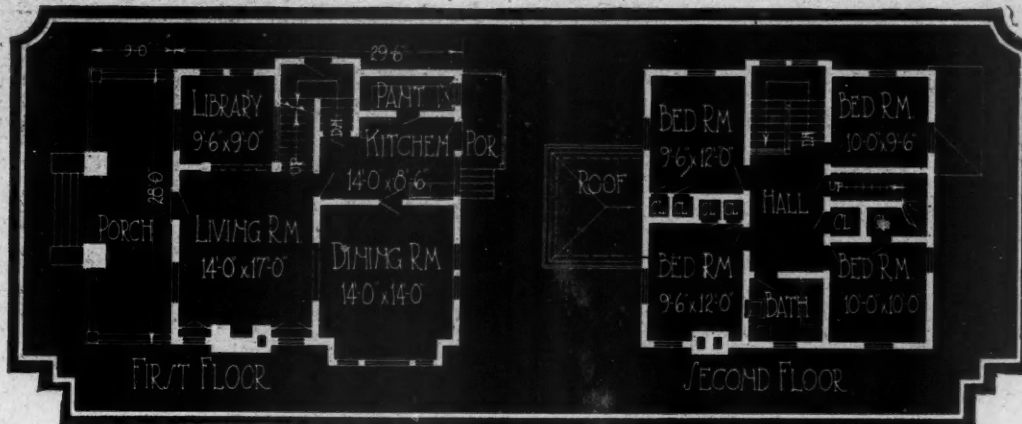
PRACTICAL
&
ARTISTIC



BRICK MAKES A HOME BEAUTIFUL. Long life and exceptional appearance are given this practical design by the use of the always pleasing combination of brick and tile. Zinc spouting also adds permanence to this particularly desirable home. And it is just as inviting within as without. Four upstairs bedrooms make it a home for a good-sized family. The roominess of the first floor rooms is most desirable. There is sure to be appreciation for the bay window and for the dormer windows. The closest analysis will place this suggestion in the class of homes beautiful.

BLUE RIBBON HOMES

PRACTICAL & ARTISTIC



SUBSTANTIAL AND ROOMY. Aren't those qualities every home builder will welcome? They are abundantly provided in this plan. The house has a stalwart, rugged appearance and there is room for the big family, too. There are four upstairs bedrooms and no cramping at all in the bigness of the day rooms. The house is a welcome combination of frame and stucco construction—good to look at and, better still, to live in. The library is just the feature many owners will want. And of course the pleasing porch and fireplace add home-likeness.



What a Relief This Arrangement Is from That Overstuffed, Jammed-In Appearance Some Living Rooms Have! It Invites and Is Genuinely Comfortable, but Has None of That Crowded Atmosphere Which Will Mar Any Room. A Careful and Not Too Numerous Choice of Dignified Furniture, Draperies and Neat Rugs Make a Living Room Live Up to Its Name and Be Really Livable.

A Brick and Shingle House That is Pleasing

PRACTICAL SUGGESTION FOR REINFORCED HOME-LIKE HOME THAT MAY BE ECONOMICALLY BUILT ANYWHERE

By R. C. Hunter

HERE we have a house that from the exterior is quiet and dignified.

A rough texture brick in various shades of red, purple and brown, with a raked joint of natural shade of the cement and with the joints rather narrow is used. This gives a good appearing wall and is used for the first story.

The second story and roof are covered with a gray weathered shingle and the woodwork is painted a light brown. The window sash are run white. Houses that have the trim "cut in" with strong contrasting colors are not so pleasing as where the trim matches or nearly matches the body colors. This "cutting in," one used to find almost universal, is now considered out of taste. "Flashy" combinations of colors are no longer used for the better class of houses.

The plans of this house show that the architects have worked out the arrangements with a view to economy of space and with consideration for the housewife and her duties.

On the first floor the usual entrance hall has been eliminated and entrance is directly into the living room. This gives a large living room and also makes the route from the service portion of the house to the front door as short as possible so that many steps are saved in answering calls to the front door.

The stairs are in the rear of the house where they serve the main rooms, the kitchen and the cellar in a most convenient way.

The study as well as the living room opens into the

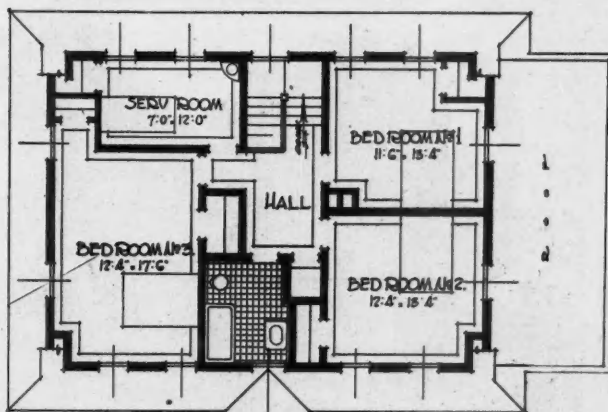


A Neat Substantial Home Built of Shingle and Brick. R. C. Hunter & Bro., Architects.

living porch. This porch is completely enclosed and heated.

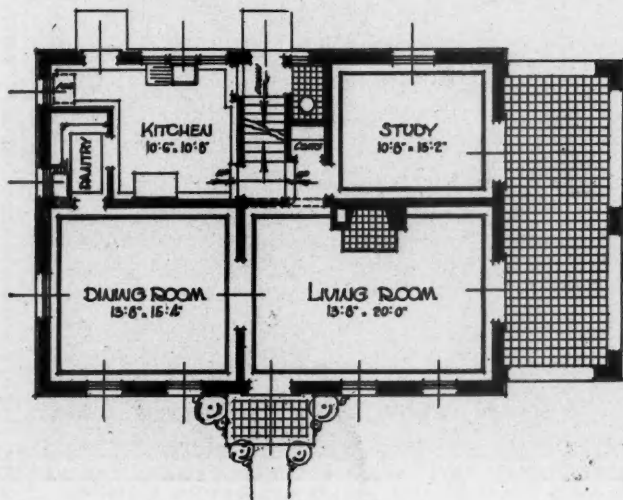
On the second floor are found three main bedrooms and a servant's room, a bath and plenty of closets.

Each bedroom has cross-ventilation and the numer-

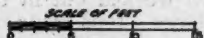


SECOND FLOOR PLAN

Convenient Second Floor Arrangement of Brick and Shingle Home.



FIRST FLOOR PLAN



ous windows insure plenty of light.

In the cellar is the laundry, the heater and coal storage spaces, and such.

This house is well placed on the lot and it sits close to the ground, as houses should.

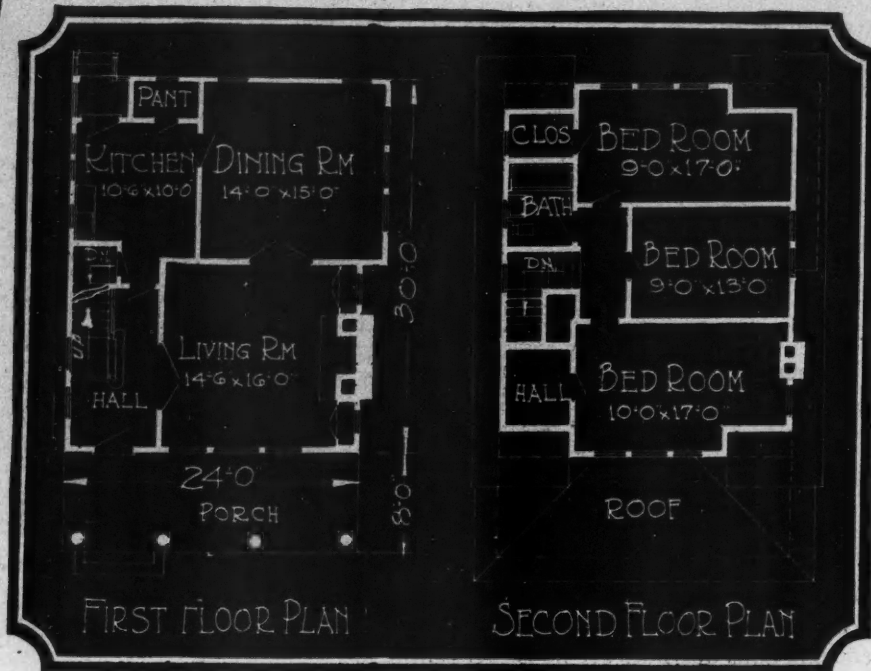


Review Russian Lumber Industry

LUMBER operations in the forests of north and west Russia are reviving thru the participation of foreign capital, and it is estimated that the exports for the 1922 season will exceed 200,000,000 feet of sawn lumber. Prior to the war the lumber exports of Russia amounted to between 2,000,000,000 and 3,000,000,000 feet yearly, which dwindled practically to nothing following the bolshevist revolution.

BLUE RIBBON HOMES

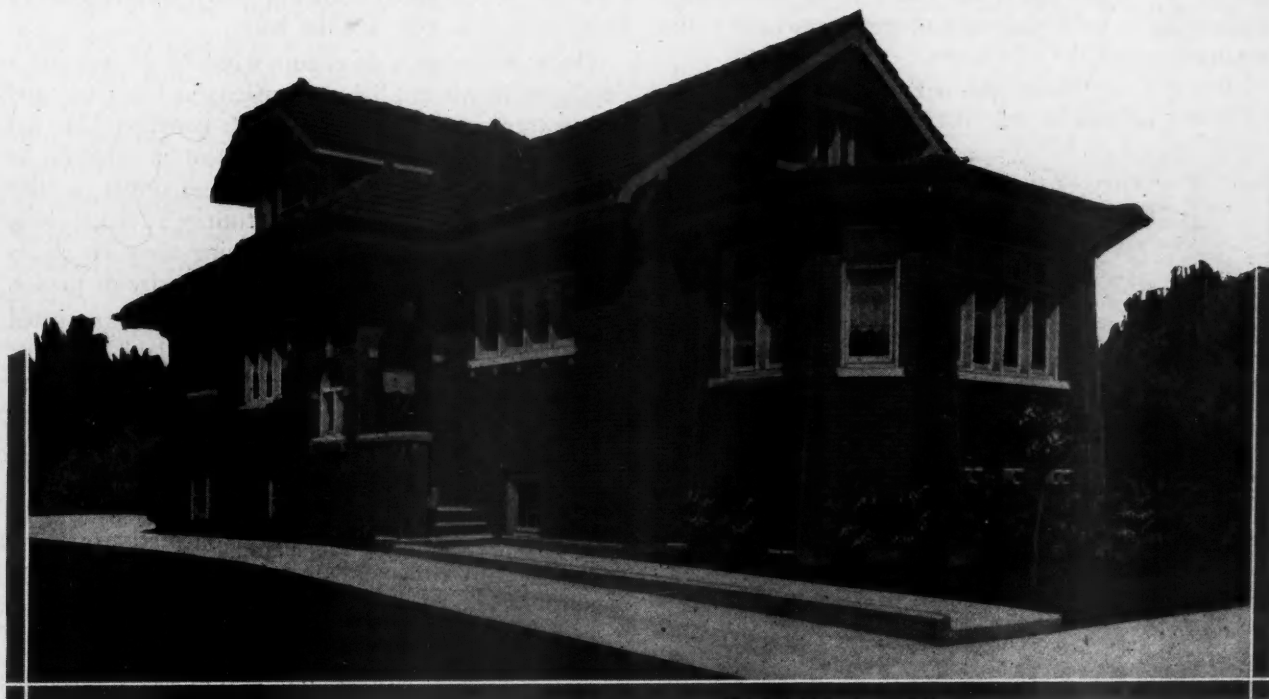
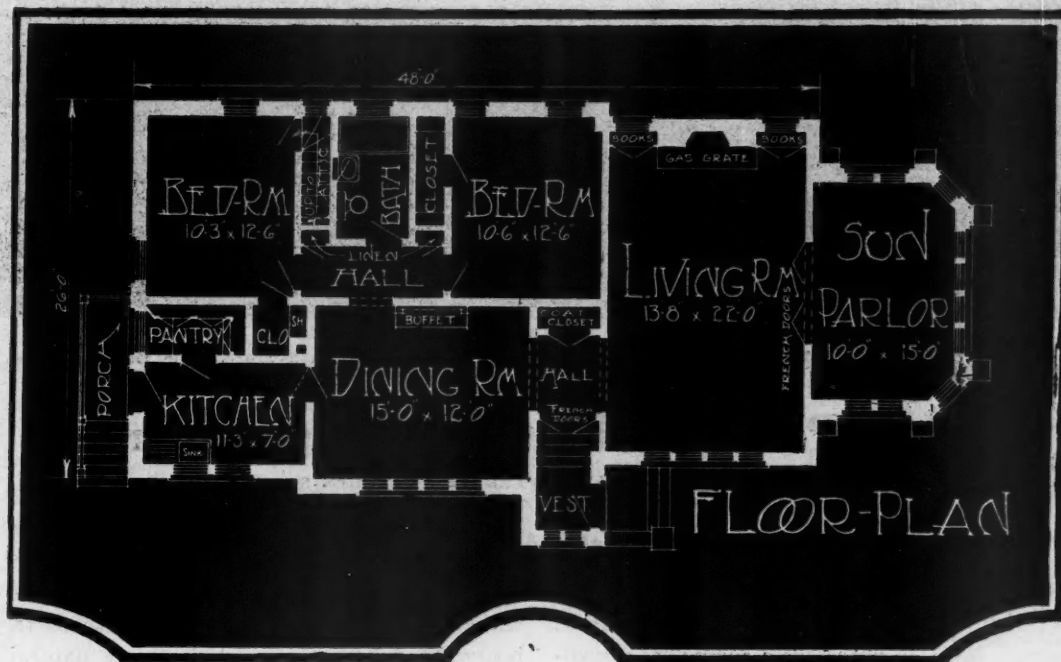
PRACTICAL & ARTISTIC



A HOME THAT INVITES. The front porch seems to express the thought "you are welcome," its spacious expanse being decidedly inviting. And that homelike atmosphere has been well worked out in the interior plan. The living room of 14 feet 6 inches by 16 feet is of good size without being overly large. It is made more cheerful by a fireplace. The dining room and kitchen are well lighted and there is good light and ventilation in the pantry. The three sleeping rooms are all above stairs and well located with relation to the bathroom.

WINNING BLUE RIBBON HOMES

PRactical & ARTISTIC



A BEAUTIFUL BRICK HOME. Many splendid features are built into this home, including a well-lighted and pleasingly formed sun parlor, side entrance, built-in bookcases and buffet, a pleasing provision of French doors and linen closet indoors, as well as enduring exterior materials. Such a home complies with the most exacting fire laws, being of brick and cut stone with tile roof. It is a type of home that is in popular favor with city builders because all the rooms are on one floor. Investing in such a home is good economy because of unusual durability and freedom from excessive up-keep costs.



Four Flat Building in Los Angeles. Artistically Designed of Dark Red Brick of Rough Texture. The Building Faces the Long Side of the Lot. E. B. Rust, Architect.

A Well Planned Flat Building of Brick

UNUSUAL EXTERIOR AND INTERIOR FEATURES STAMP
QUALITY AND CONVENIENCE ON THIS GOOD DESIGN

By Charles Alma Byers

THE flat building illustrated here not only is of rather distinctive architectural style, as seen from the street, but also possesses a somewhat unusually planned interior. It is especially practical and attractive as a design for the building that is to be located on a corner lot, which offers either satisfactory possibilities or decided advantages for facing the entrance toward the side street.

"Turn About Face!"

The lot utilized in this instance is 55 feet wide by



Entrance Porch with Pleasing Broad Arch and Balcony.

approximately 140 feet long. Originally the street to which it presents its lesser dimension was regarded as being the one that offered the more natural frontage for the improvements, but the subsequent conversion of the one along the side into a sort of boulevard reversed the order. The building was therefore planned to have its entrance face the latter.

The building has a maximum width of 83 feet and a depth, exclusive of slight extensions at the front and rear entrances, of only 40 feet. It contains four flat apartments—two on each floor. And in addition to this main structure, a garage for each flat is also provided, these garages, constituting a single long building to the right, likewise having their entrances faced toward the street that runs lengthwise of the lot.

The outside walls of this flat building are constructed of dark red brick of rough texture, laid in white mortar. White keystones of molded cement are used over the first-story windows, and the wood trimming is also principally in white, which, however, is supplemented by black paint for the window sash and by mahoganyized front doors. The roof, which, with its odd little dormers and its peak ornamentations, stimulates a sort of French chateau effect, is covered with composition shingles, of dark sage-green color.

Intriguing Entrance

The front entrance is designed with a small entrance porch possessed of massive brick pillars which form a broad arched doorway on the front and an open window effect at either side. This porch is floored with white cement, and its top is finished so as to provide a small second-story balcony, enclosed by an attractive

wood railing. Recessed off the rear of this entrance porch there is a sort of open vestibule, also floored with cement, from which opens a separate front door to each of the four apartments.

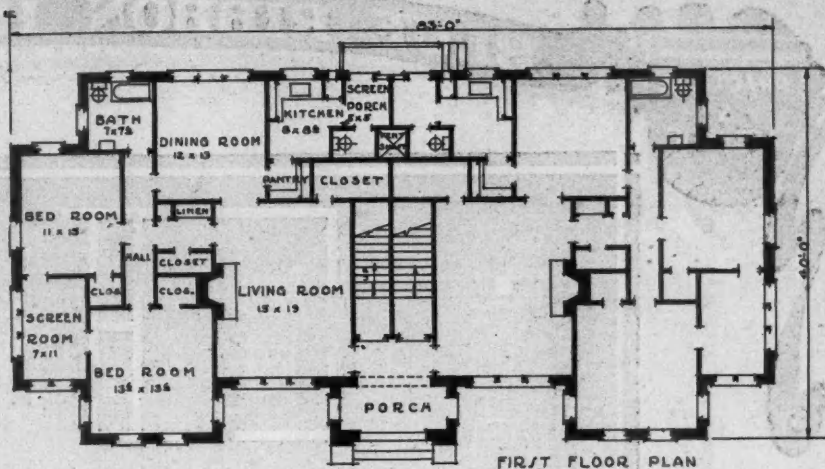
Referring to the accompanying floor plans, it will be seen that each flat or apartment contains living room, dining room, bathroom, kitchen, the usual rear-entry porch, two bedrooms, and a little screened sleeping porch, besides numerous closets and built-in features. Aside from certain minor variations occasioned by the stairways to the second floor, the interior planning of the four flats is uniform. The front doors of the ones on the first floor open from the entrance vestibule directly to the living rooms, while those giving access to the upstairs apartments naturally open to private stairway halls, ultimately to provide entry to the living rooms by way of special little landing. The arrangement in this respect gives to each of the first-floor units an extra closet, located off one corner of the living room, and to one of the second-floor flats an additional little room, which is utilized as a den. French doors lead from this den into the little front balcony.

Built-In Features

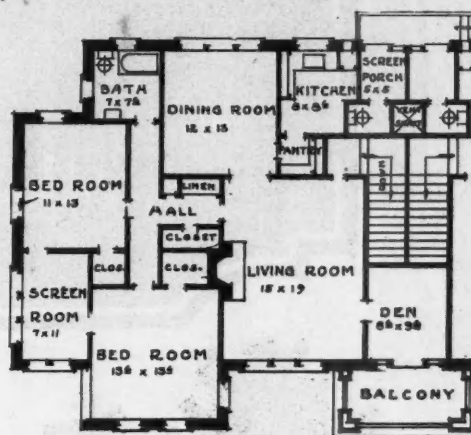
In the way of closets and built-in features, each flat possesses a closet for each bedroom, a linen cabinet and a closet for wraps in the hall leading off from the living room, a draft cooler-closet, excellent cupboards and drawer cabinets, and the other customary conveniences in the kitchen, and, further, a little pass-pantry with the usual equipment of cupboard room and serving shelf—besides, of course, the living-room closets of the lower flats already mentioned. The living room in all instances also possesses a good fireplace, with a mantel of brick and wood and a tile hearth.

The interior finish is neat and attractive but comparatively inexpensive. In the living rooms and dining rooms it consists of pine in old ivory, with a small amount of mahogany trim; in the bedrooms and sleeping porches it is of pine in old ivory alone, and in the bathrooms and kitchens it is comprised of white enamel. Hardwood floors and paper-finished walls prevail thru-out, except in the bathrooms and kitchen, and in these the walls are finished with a smooth, hard surface and enameled like the woodwork, while the floors of the bathrooms are of tile and of pine in the kitchens. The stairways to the second-floor flats, as well as the one den, are finished to correspond with the style prevailing in the living rooms.

It perhaps should be called to attention that the screened sleeping porches or rooms are provided with glass windows, making them into quite the usual



Each Apartment in the Building Shown on Opposite Page Has Five Rooms and Bath.



A Unit of the Second Floor Plan. Other Apartments on This Floor Are Exact Duplicates of This Unit.

closed room—with the exception that their two outside walls are given over almost entirely to windows and that they are somewhat limited as to dimensions. Naturally they would make very satisfactory sun rooms, if such use of them should be preferred.

No Basement

This flat building has no basement or cellar, but it is equipped with built-in gas radiators for heating and with all other modern conveniences. It is located in Los Angeles, Calif., and was designed by E. B. Rust, architect, of that city.



An Investment in Good Health

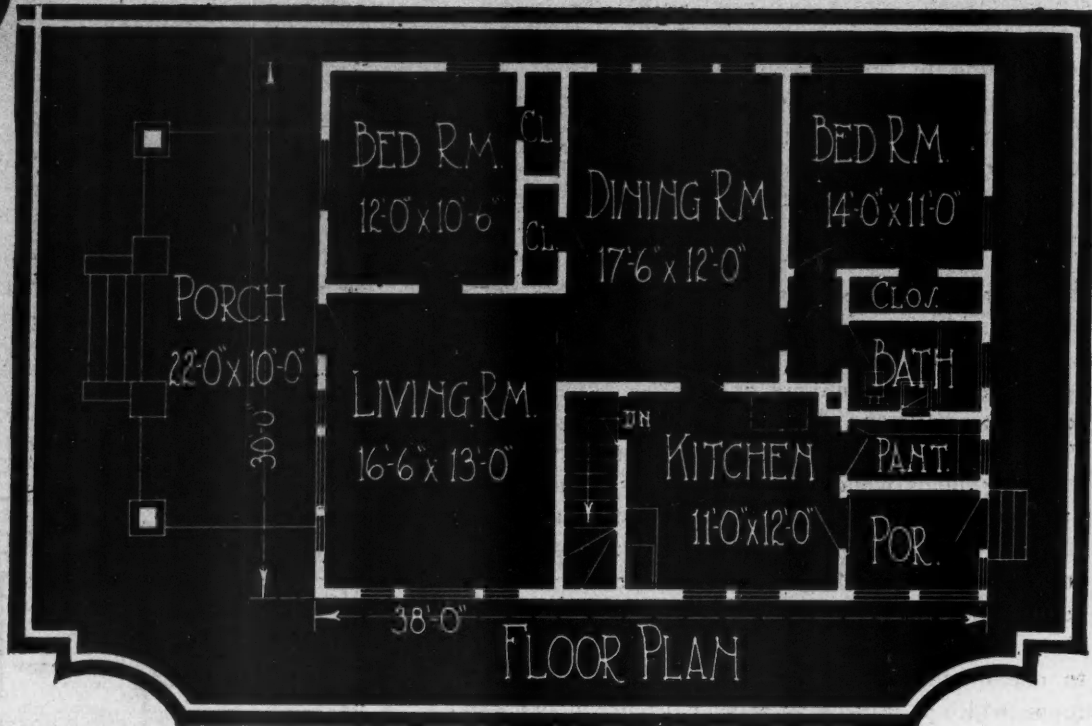
THE modern bathroom with its sanitation and due consideration for convenience may occupy small space in the home, but it assumes large proportions in the planning of that home. Stinting the bathroom is a costly form of saving. Making it as luxurious and complete as possible is not extravagance, it's simply good sense.



THE better you build the better your standing as a builder. And the better your reputation the better business is bound to be.

BLUE RIBBON HOMES

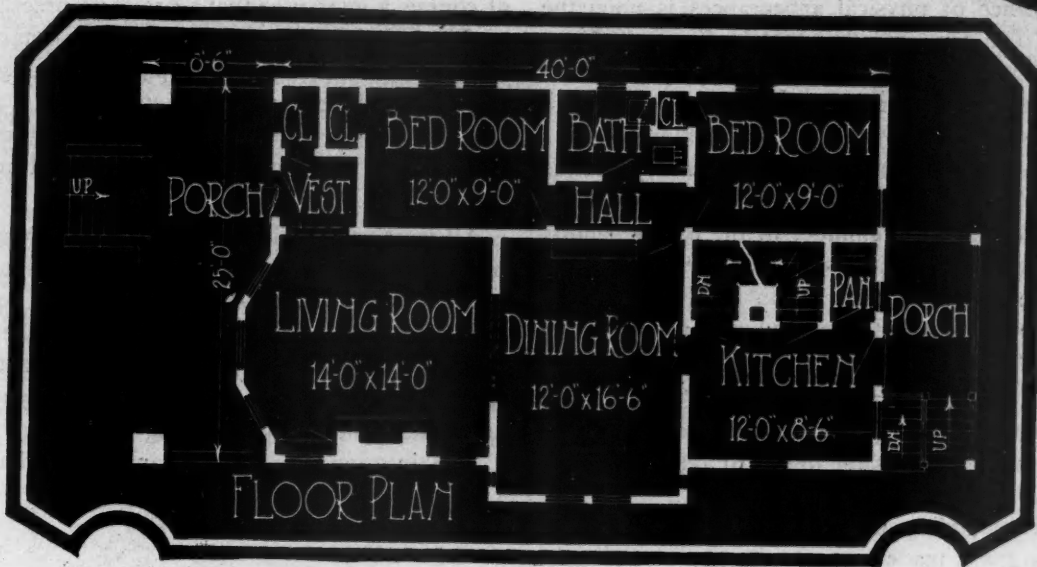
PRACTICAL
&
ARTISTIC



COMPACT WITHOUT CRAMPING. Quite an important thing in a home, too. This design gives one-floor room arrangement, but the rooms are not in the hand-box class. The living room is 16½ feet by 13, and the dining room is 17 by 12 feet, which dimensions are liberally large. This design will appeal to those who wish to build with moderate cost but who do not wish to sacrifice convenience. The expansive porch with its brick pillars topped with concrete posts add a touch of refinement. The local builder's figures will prove the house can be built at attractive costs.

BLUE RIBBON HOMES

PRACTICAL
&
ARTISTIC



ALTOGETHER HOME-LIKE. This suggestion will appeal to those with conservative tastes, who prefer the practical to the fanciful. It conforms to a well recognized style and gives full home conveniences. The bungalow type permits pleasing room arrangements. There is a good-sized living and dining room and the two bedrooms are large enough. The kitchen and pantry are handily planned. The big porch will register favorably with everyone. Those homes built on a general square plan are economical to build and they permit judicious use of the floor space.

Bank Building of Time-Defying Construction

USE OF SUBSTANTIAL, LASTING MATERIALS A SILENT ADVERTISEMENT FOR THE STABILITY AND PERMANENCE OF THE INSTITUTION

CLOTHES do not make the man and buildings do not make the business, but the important influence of physical appearances is none the less vital. The same reaction that leads a woman to trade at a big, beautiful, well-stocked department store prompts a man to prefer a bank which is housed in a substantial structure.

The Waterbury National Bank, Waterbury, Conn., in its new building sought to erect a structure that would be a continuous reminder of the bank's solidity and permanence. It decided on time-defying construction because of the value it has in itself and because it would be a silent but powerful advertisement for the strength, solidity and longevity of the institution.

No May I Dread

Another factor that prompted the board to select durable construction was the desire to avoid the costly interruption of business which moving or rebuilding necessitates. The building was made big enough and built well enough to serve the need of today and the requirements of the future.

With the motives to build well and to build to allow for future growth of business the natural result is a building of ample space and of a high type of construction, both in design and the quality of the materials used.

The outer walls of the Waterbury bank are of brick with a heavy facing of limestone. Both the brick and limestone are set in straight lime mortar mixed in the proportion of one part of lime to three parts of sand. Limestone is recognized as having the quality of durability and combines this desired element nicely with beauty.

Not New, But Good

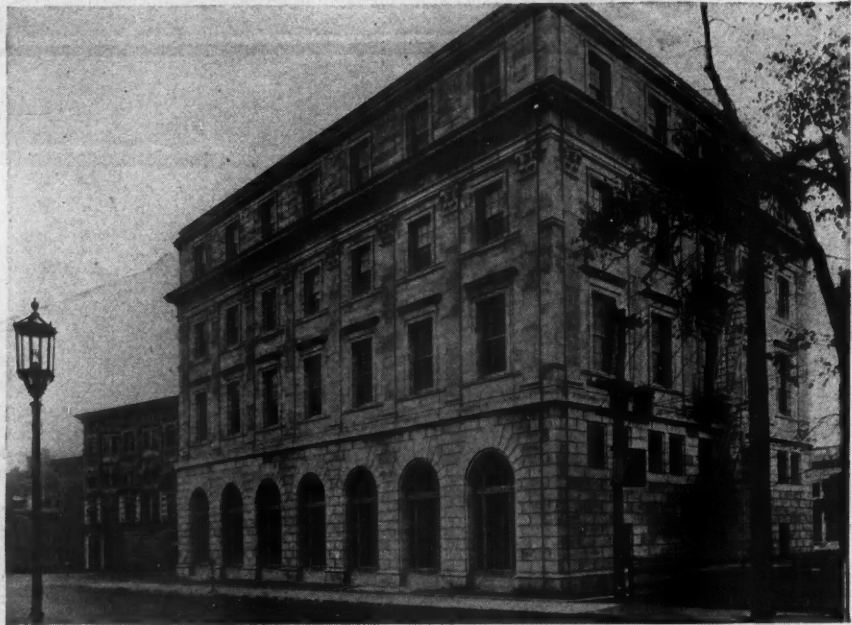
The practice of using limestone and lime mortar together is an ancient one. Many buildings which have stood for centuries have been built in this manner. One marked advantage of this combination is that the mortar early changes into a material identical with the stone itself, so far as chemical composition is concerned, so that both mortar and stone have the same coefficient of expansion and practically the same durability as well as harmonious appearance.

Such a structure is less apt to be seriously affected by temperature changes and has increased life because it is built of major materials of long endurance and lesser materials of the same quality, and which act as one under changing conditions.

In such construction both stone and mortar are practically insoluble and impervious to moisture. This is, of course, a guarantee that there is no practical danger of the stone breaking away from the mortar beds due to the different rates of expansion or contraction caused by temperature variations. This is an advantage not always realized when dissimilar materials are used but one of the gains of limestone and lime mortar construction.

All interior partitions in the Waterbury bank building are built of hollow tile, laid in lime-cement mortar, mixed in the proportions of one part of cement, one part of lime and six parts sand. All of the plaster in this building is of the well established straight lime plastering method, applied in three coats, a type which is economical and known for long service.

The interior is a fit companion of the exterior.



Lime and Limestone Were Extensively Used to Build Beautiful Waterbury, Conn., Banking House.

Beauty and durability are served within as well as without in this structure. A generous investment in marble of fine texture and finish is of course of decorative value as well as good economy because of its long life. The marble is set in lime mortar as well as the outer walls of limestone.

Wherever concrete was used in this structure there was an admixture of hydrated lime. This combination is calculated to make the mixture more workable and to make it watertight. Greater workability permits a smoother and denser concrete which adds durability to the building. The hydrated lime was 10 per cent by weight of the portland cement used.

The architect for this pleasing permanent bank home was Cass Gilbert.

OUR FRONT COVER HOME

OFTENTIME the difference between the ordinary and the exceptional, the span between inferiority and quality is but a short step. And nowhere is that short step more profitably taken than in building a home. Just why many level-headed folks will expend thousands of dollars on a home and then save a few hundred dollars on materials is a question that permits of no satisfactory answer.

The September front cover home is an excellent illustration of the wisdom of the builder who took the short step that elevates the home from the common class to the select circle of exceptionally well-built residences. No attempt has been made to secure the ornate, there is an absence of freak ideas in design and fads have been wholly discarded yet this home stands forth as one of decided quality.

High Quality Materials

This wholesome result has been secured by the proper selection of material. The owner has adopted the motto of quality and in doing so has built, perhaps, better than he knew. Surely there is the stamp of good judgment and excellence on this design.

What a difference good materials do make! A master tailor could not fashion the clothes from cheese cloth that he can make from broadcloth; tin will never make as good an automobile as steel and paper shoes cannot class with those made of first quality calf-skin. So shoddy building material will never do honor to the architect's finest plan nor answer the quest for a home that in service and attractiveness can satisfy.

This is a quality home because it has been well built of quality materials. To study any feature of it is to admire it. For instance, the roof is of asbestos shingles. Such shingles are being used on every type of good building from humble cottages to castles, in public buildings such as railroad and government structures and in such elaborate enterprises as hotels, homes on large estates, etc. It is a type of roofing endorsed by exacting builders everywhere.

Permanent and Attractive

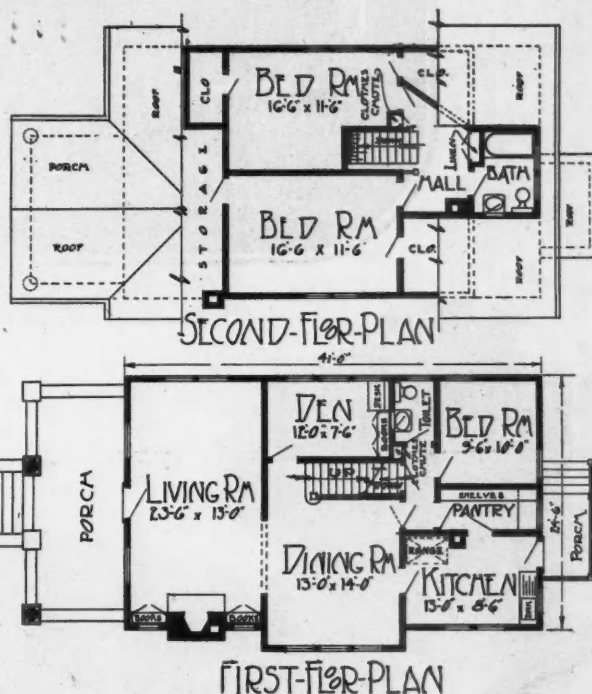
These shingles are noted for permanency, fire-resistant qualities and beauty. They make a good home better because that home will last longer, resist the ravages of fire and possess a pleasing quality that less durable material lacks. It's a roofing that is stable, economical and gives relief from the constant expense and annoyance of upkeep, and no roof could be more attractive.

The ideals of permanence and fire-safe construction have been followed thruout the building. Concrete, brick and asbestos are noted for long life and fire resistance. Their use in this highly desirable

front cover home have accomplished the aim of the owner for a home that would withstand the attack of time and stubbornly meet fire destruction.

Excellent Floor Plan

Within, as well as without, this plan commends itself. Who could fail to appreciate the inviting roominess of a living room that measures 23 feet 6 inches by 13 feet and that boasts a cozy fireplace and an abundance of light? If cozy comfort is sought the den answers that desire. There is the often-



Floor Plans of Front Cover Home. The Rooms Are of Good Size and Arranged in an Attractive Manner.

needed down stairs bedroom besides two large well-lighted sleeping rooms and bath above stairs. By way of added refinements, there is a good sized storage space and a most handy linen closet on the second floor. And Mrs. Owner will find the arrangement and size of dining room and kitchen will suit her "to a T."

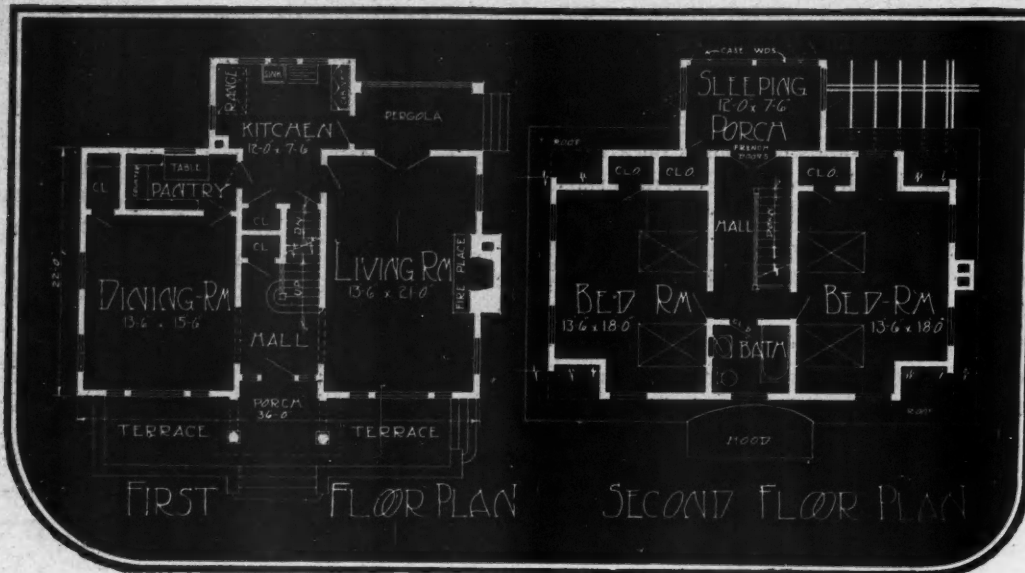
Yet this home, with its quality of durability and beauty and its ample roominess is within the budget of the family who wishes to build at reasonable cost. It is a good home, a particularly good home that may be had without excessive cost.

A considerable investment such as is necessary to build a home should be considered over a term of years. In that light permanent materials and quality construction are always best.

Our September suggestion affords a practical and satisfying answer to the longing for a good home that will, thru the years, be desirable to live in and economical to own.

BLUE RIBBON HOMES

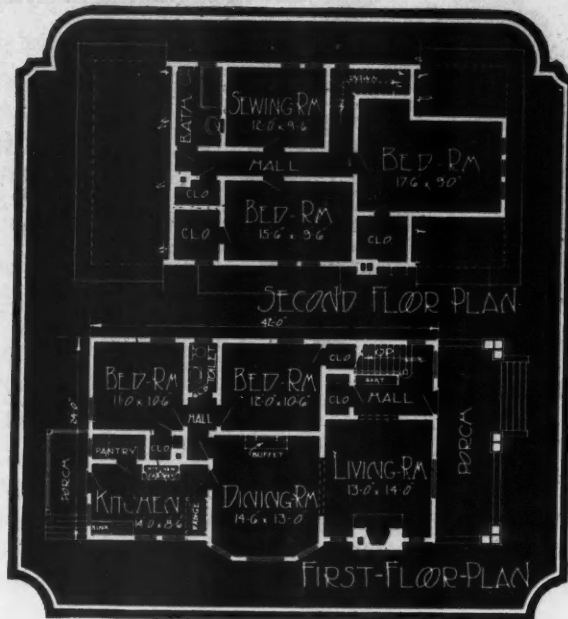
PRACTICAL & ARTISTIC



"IT BELONGS ON THE STREET OF QUALITY HOMES. This design is in eminent good taste. The lines are substantial and graceful, too. It is a home that is not only bright to look at but bright to dwell in, the window openings affording an abundance of sunshine and brightness. Any lack of a number of rooms is wholly compensated by the size of the rooms provided. Among the distinguishing features are the entrance porch, the terrace, a pergola and sleeping porch and a cosy fireplace. To all practical purposes the sleeping porch may be regarded as a third bedroom as it is of good size and has a convenient closet.

BLUE RIBBON HOMES

PRACTICAL
&
ARTISTIC



WELL SUITED FOR LARGER FAMILIES. With its four bedrooms and a sewing room that can be pressed into service as a sleeping room should necessity arise, this home suggestion fully meets the needs of the sizeable family. It is a rather elaborate enlargement of the popular bungalow type. Note the pleasing pillars and arches of the porch and the bay window treatment in the dining room. The long sweep of the roof lines and dormer window treatment of the front bedroom are very pleasing. The convenience of a sewing room will win favor. While there are eight rooms in this home all of them are of fair size.

The Bungalowette



**All the Conveniences of Home
In Limited Space and Within
The Limits of A Small Budget**

"A home's a home for a' that."

THAT unsettled question of whether happiness dwells in mansions or cottages will always be an individual matter. But a general opinion is that happiness need not be shut out because the

home is modest and that very often there is greater likelihood of ideal home life in the sane quiet of the little dwelling than in the gay swirl of the social mansion.

Anyway, it is a pronounced trend in modern building to prefer the compact, small home. There are many sound reasons for that preference. The small home costs less to build, costs less to maintain, may



"A Home's a Home for A' That" Modestly Priced This Design Will Wholly Please the Builder of a Small Residence.

be more easily managed and it affords a coziness not to be found "in marble halls."

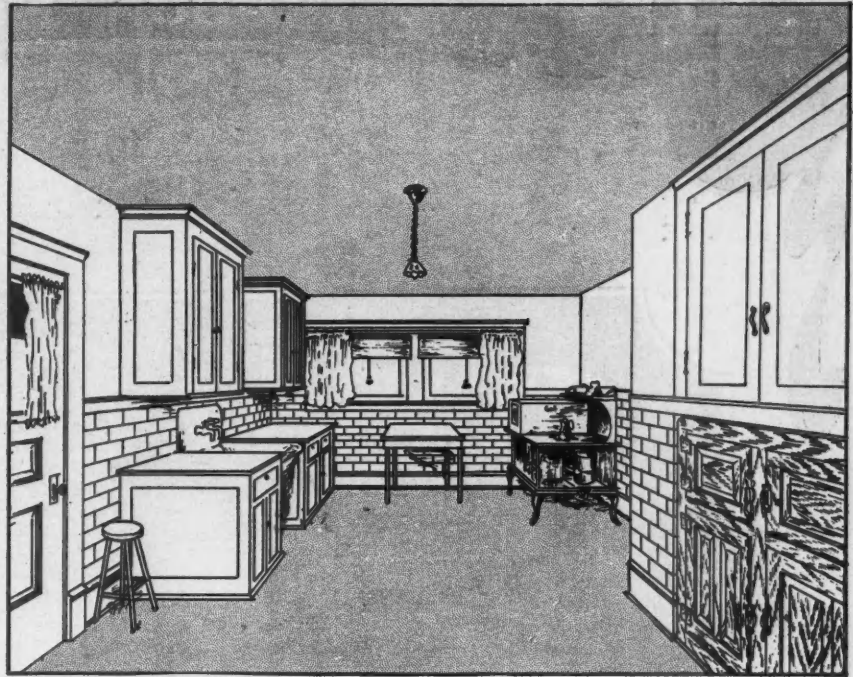
The Desirable Bungalowette

The bungalowette is now accepted practice in building and so popular is the type that it may now be regarded developed to its highest perfection. Excellent use of the space afforded provides a home that for efficiency and convenience takes no second place when compared with the more costly and more spacious residences.

In this design is there any serious lack? The porch is both pleasing and usable. The living room is big, well lighted and satisfyingly provided with desk, bookcase and closet. Meals are served in the living room. A combined library and dining table makes such a plan feasible. China is kept in the china case at one side of the fireplace and convenient to the kitchen. Sleeping facilities, of course, are afforded by an in-a-door bed. Now what more should a home give its occupants? And yet all this has been attained within the limits of a ground area that is 18 by 20 feet 6 inches.

Kitchen

The kitchen arrangements are worthy of special study. There are two really large built-in cases at either side of the sink, while the opposite side of the room takes care of the refrigerator and range. Such



View of the Kitchen of the Bungalowette Illustrated on Opposite Page. Built-In Conveniences Save Room and Make Home Tasks Easier.

an arrangement is a time and step saver and when it is found in so well-lighted a "woman's workshop" the admiration we feel is materially increased. The toilet opens off the kitchen.

The general appearance of the home is good and it is enhanced by the care of the lawn. Potted plants, neat shrubbery and stretches of well-kept lawn make a frame in which the pleasing picture is all the more appealing.

Homes for All

This message of "all the comforts of home within the reach of modest purses" is a message which the building fraternity is taking to a home-hungry population all up and down the land and in preaching this gospel of small homes a great deal is being done to bridge the gap of lack of homes.

The bungalowette is new but not untried.

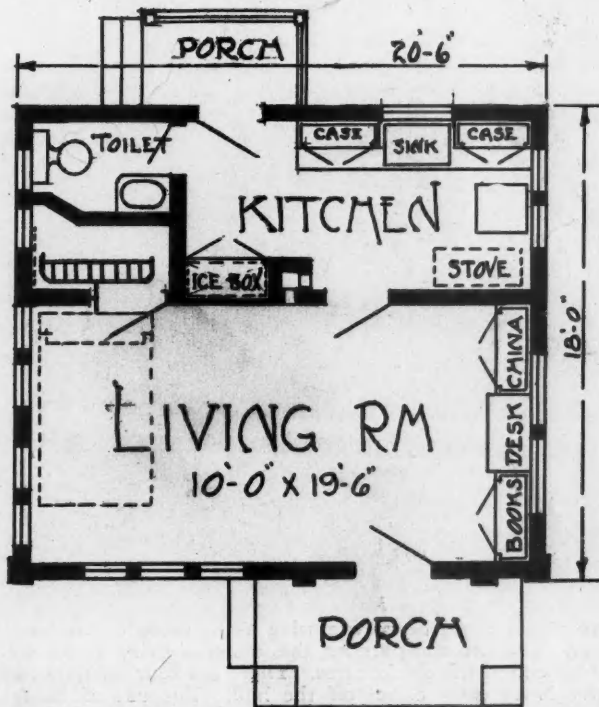
It may be built anywhere and will give complete satisfaction.

Local builders will give exact estimates and in every case the reasonable price at which this design may be followed will be an encouraging factor to interested parties to realize their long cherished dream for a home of their own.

A home that meets every need and is far from prohibitive in cost is the hope of many would-be owners. The realization of that hope has been made possible, in many cases, by building a bungalowette.

Such homes present endless possibilities in little refinements such as the imitation tile work shown in the kitchen as pictured here.

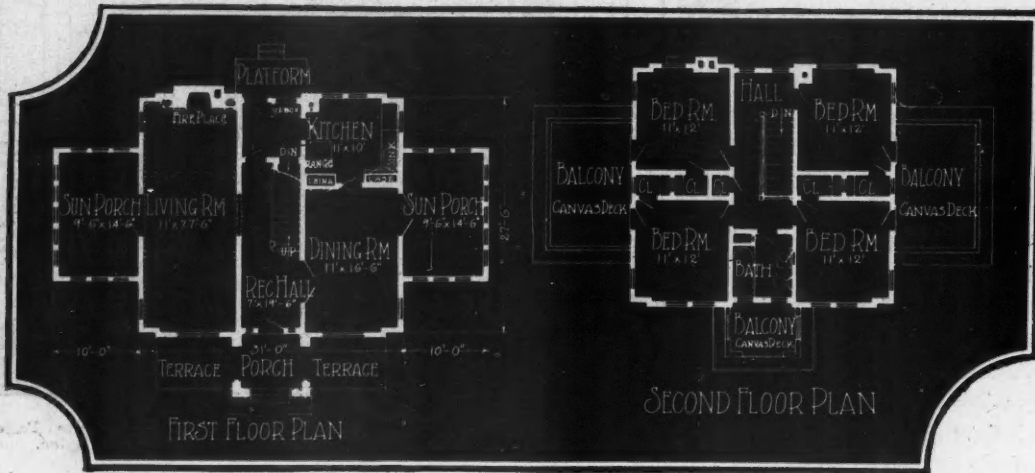
The home instinct is universal. The bungalowette makes home owning possible for almost anyone.



Floor Plan of Bungalowette Pictured on Opposite Page. The Available Space Has Been Used to Good Advantage.

BLUE RIBBON HOMES

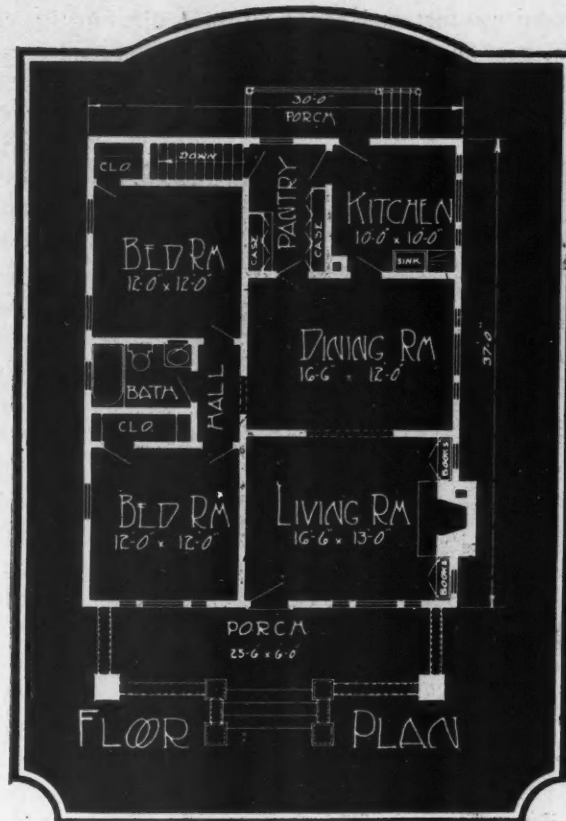
PRACTICAL & ARTISTIC



A HOME ANYONE WOULD BE PROUD TO OWN. No street could be so exclusive as to exclude this home. It is big, beautiful and planned in exceptionally good taste. The two sun porches, the immense living room, well designed entrance porch and the terrace are a few of the numerous commendable features. There are four upstairs bedrooms, each 11 feet by 12 feet, with good sized closets, and there is an extra closet off the hall. The use of durable and beautiful material does credit to the simple, sturdy and yet most attractive lines of this quality home. The two sun porches have all the snug protection of two rooms and in warmer weather the upper decks may be used as balconies.

BLUE RIBBON HOMES

PRACTICAL
ARTISTIC



A SMALL HOME WITH IMPOSING ROOF LINES. The expansive lines and artistic treatment of the roof of this design are sure to attract attention and arouse admiration. A little ingenuity and slight extra expense result in elevating this home out of the ordinary and commonplace into the exceptional and distinctive class. And any reliable builder can duplicate the features that make this an unusually admirable plan. All the rooms are on one floor and all are of comfortable size. The living room is large and light and has a fireplace and built-in bookcases.

Better Illumination for Bedroom and Bath

CORRECT LIGHTING OF LESS USED ROOMS POSSIBLE THRU SPECIAL FIXTURES RIGHTLY PLACED

By A. W. Powell and H. A. Smith

In 5 Parts, Part 4.

IN the lighting of the bedroom comfort and convenience must be especially kept in mind. If a central ceiling fixture is used, it should be depended upon for general lighting of moderate inten-

on the wall. Small portable lamps are sometimes used on the dresser or dressing table, and proper outlets should be placed in the baseboard to provide for these. A small fixture suspended from the ceiling is very often used above the center of the dressing table. This furnishes the proper illumination for dressing the hair.

An outlet should also be provided near the bed for a small portable lamp. If the room is large, additional wall brackets may be used with silk shades, harmonizing with the decoration of the room.

The harmony of equipment in the boudoir is very important. In the example illustrated here, the austere type of architecture is an excellent setting for the formality of the parchment used on the semi-indirect and wall luminaries.

Where the closet is in such a position that it does not receive light from the room itself, a simple type of receptacle should be provided close to the ceiling with a low wattage, diffusing bulb lamp. A door switch for such a position

is a convenience and an economy.

Wired Furniture Favored

Wired furniture is an added convenience for the



Artistically and Adequately Lighted Bedroom.

sity, except in very small rooms. A tinted inverted bowl with possibly an appropriate hand-painted design is a desirable unit for this purpose; or a silk shade may be used on this unit harmonizing with the draperies or wall coverings.

The general arrangement of lighting outlets in the bedroom will depend upon the placement of the furniture. In most cases it is desirable to provide a low intensity of general illumination from a central luminaire, preferably of the semi-indirect type, from 40 to 75 watts are desirable in this unit. It should be controlled by a wall switch near the entrance doorway to avoid stumbling about the dark in search of the key socket.

Wall Brackets Desirable

Wall brackets can be used to good advantage in the bedroom, especially when placed about six feet above the floor on either side of the dresser. These may also be used on either side of the dressing table, altho they should be placed lower



Wicker Floor Lamp and Basket Luminaires Popular for an Inviting Sun Parlor.



Milady's Toilet Demands a Well Lighted Wired Dressing Table.

bedroom as well as the dining room. The dresser can be wired for portable lamps, the dressing table for the use of the electric curling iron and vibrator; the bed for the use of the heating pad. In addition, the turn of an inconspicuous miniature switch illuminates a lamp beneath the bed, throwing just sufficient light upon the floor to see without disturbing the slumber of anyone else in the room.

The Bathroom

The problem in the bathroom is to provide a suitable arrangement of lamps for the mirror. The solution of this problem is simple despite the many devices which have been designed. In order to see an object it must be illuminated whether it is viewed directly or its image is viewed in the mirror. Two-light brackets, one on each side of the mirror at a height of about five feet, answer this purpose very well. This lighting will eliminate shadows during such operations as shaving, and one being on each side of the mirror, the face is well illuminated.

Care should be taken in locating the lighting outlets in the bathroom in order that shadows of the occupant of the room will not be cast on the window. There should be convenience outlets for the electric heater, hair dryer, hot water mug, vibrator or other appliances.

Lighting the Porch

In order that the home may invite one's friends and repel intruders, the



Parchment, Silk and Glass Are Media for Directing and Diffusing the Light. Here They Are Applied in Neat Dresser Luminaires.

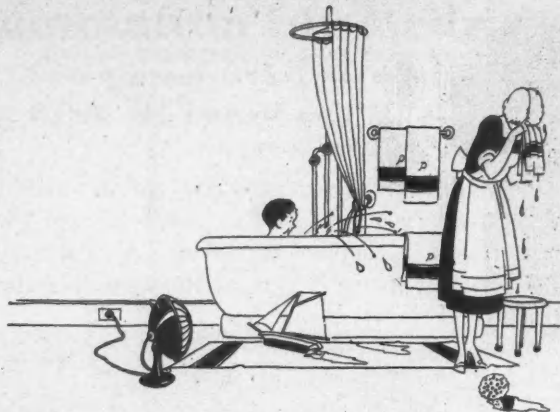
porch should be well illuminated. A porch often serves merely as an entrance, but may act as an outdoor living room. Of course in these two radically different lighting will be employed. In the first type, only a small amount of illumination is required for safety and to enable one to see the name plate, doorbell or button. A 10-watt Mazda lamp will burn for a long period at a very low cost and serves excellently on the porch in a weatherproof type enclosed globe, lantern fixture, or luminous house number. An outlet is also necessary at the rear porch or service entrance. In the large porch or sunroom, much novelty can be introduced. Indirect luminaries of metal or actual wickerwork lined with cretonne or tinted glassware are suitable in introducing a touch of color harmony.



Luminaires for the Sun Porch May Be Elaborate and Should Blend with the Color Scheme.

Artificial or natural flowers or vines can be effectively applied as exemplified oftentimes. Convenience outlets on the porch attaching portable lamps or other devices should be of the weatherproof type and located in such positions that they will not collect moisture.

In many homes we find that due thought and attention has been given to the lighting of the principally used rooms, such as the living room and dining room, but that other important rooms have been slighted or are made less usable and attractive by misplaced or wrong type fixtures. Now while



Good Light and Convenience Outlets Are Bathroom Needs.

architects and builders gave very much consideration to how or where they were installed. During the past few years, however, this question has come in for a great deal of study and definite principles have been established.

The general principle of an abundance of light takes first thought, perhaps, but it is hardly more important than having the light properly positioned. And this principle is just as important in the bedroom, bath room and porch as it is in the major rooms of the house.



Dainty Decorative Luminaires Suitable for the Boudoir Are Numberless. One Should Be Chosen Which Blends with the Color Treatment of the Room.

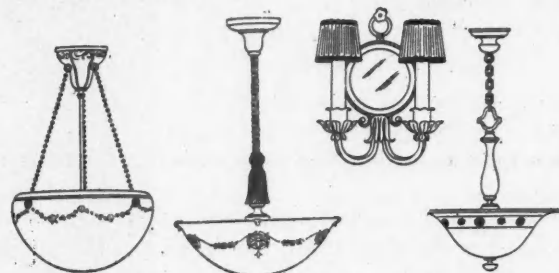
no one seeks to over-rate the importance of the right lighting on the porch or in the less used rooms, still care to rightly light these less used places will be justified by the increased enjoyment which proper illumination will give these rooms of lesser importance.

Reading is almost a lost art in the hot period. People seek the out of doors and do not care to sit inside four walls and attempt to read a book or the magazines. But in homes where the porch is properly lighted one may spend a breeze-swept evening comfortably under a reading lamp while enjoying the porch.

"Old Order Changes"

The matter of bathroom lighting has shown a pronounced change in the past few years. Older houses quite generally have only one source of illumination and that is in the ceiling. Either direct or indirect lighting fixtures in that position do not give the localized lighting desired at the mirror. And of course older bathrooms wholly ignored the importance of convenience outlets in that room.

While there may be some justification for older residences being improperly wired and lighted, there is little excuse for the builder of today who slights these very important matters. The whole question of right illumination is one of recent development. We had the electric light many years before engineers,



Other Suggestions for Boudoir Luminaires. Shades Should Match the Color Scheme.

Editor's Note—This article is one of a series on correct lighting of the home. Each article deals with separate units and is complete so far as the rooms spoken of is concerned, but for a full understanding of proper illumination for the entire home the series should be studied.



Boosts His Business by Unique Publicity Stunt

J. EDWARD DOWNS, of the Downs Lumber Co., 470 Harrison avenue, Boston, knows how to get his business favorably talked about. He demonstrated this when 12,000 of the nation's leading educators held their annual convention in Boston. A number of handsome pagodas or booths at railroad stations, hotels and convention headquarters attracted much attention. Each was prominently marked with a card stating that the booth had been constructed with American lumber by Boston public school boys of the sixth, seventh and eighth grades, and that the lumber had been donated by the Downs Lumber Co. in honor of the visiting teachers. The booths were used as postoffices, information centers and for similar purposes. They are very handsome and artistic and so constructed that it is a simple matter to take them down, store them in convenient form and reassemble them when required later for a similar purpose.



NO home is complete without complete provision for electrical conveniences and that, first of all, calls for complete wiring.

The Man Who Likes a Tree

I like a man who likes a tree,
And want no better company,
For such a man I always find
Is just the very sort and kind
Who's not content unless it be
He too can grow much like a tree.

I like a man who likes a tree
No further introduction he
Will ever need to win my heart;
To me he is the counterpart
Of usefulness and comfort, too,
And does the good few others do.

I like a man who likes a tree,
He's so much more of a man to me;
For when he sees its blessings there,
In some way, too, he wants to share
Whatever gifts his own may be
In helping others, like a tree.

For trees you know are friends indeed,
They satisfy such human need;
In summer shade, in winter fire,
With fruit and lumber meet all desire,
And if a friend to man you'd be,
You must befriend him like a tree.

—Charles A. Heath in *Nuggets*.



Stalwart Men and Stalwart Trees Have Qualities That All Admire.



WHEN ill see your doctor, when in difficulty tell the lawyer, if you need money ask the banker and when you build follow the same course and get professional advice—ask your architect and builder.

Well Known Agency Has New Building of Its Own

IN occupying their new building devoted entirely to advertising and merchandising, Brooke, Smith & French, Inc., well known Detroit advertising agency, have established themselves in one of the most completely equipped agency plants of this country.



New Home of Brooke, Smith & French, Inc., Detroit Advertising Agency.

Ten years ago even the foremost advertising agencies occupied a few rooms in an office building. Now some of the larger agencies have especially designed or remodeled buildings they occupy exclusively.

This new building occupied by Brooke, Smith & French, Inc., containing more than 6,000 square feet of floor area is of striking appearance and centrally located. In addition to the executive offices, adequate facilities are provided for the specialized departments of Research, Copywriting, Media, Mechanical Production, Checking, Shipping and Auditing.



Building Big in Canada

ANY opinion that the United States is alone in the enjoyment of a great building revival is contradicted by reports from other countries, most of whom are having active seasons.

This is especially true in Canada. Figures collected by the Canadian press show that in fourteen western cities from the head of the lakes to Vancouver, building permits issued during the first six months of the present year exceed \$14,500,000, which is more than \$3,000,000 in excess of the corresponding period of 1921. Winnipeg and Vancouver each have gone over the \$4,000,000 mark; Port Arthur, Saskatoon, Edmonton, and Calgary are close to, or in excess of \$1,000,000 each. Almost every point reports a healthy increase. Residential building accounts for a large share of the total.

· METAL CONSTRUCTION ·



A Beautiful Home with Beautiful, Lasting Copper Shingles Is the Home of Otto Myers, New Rochelle, N. Y.

With Copper Shingles First Cost Is the Last

EASY TO LAY FOR NEW ROOFS OR FOR RE-ROOFING—OBTAINABLE IN VARIED COLORS

By Thomas D. Brophy

ANY manufacturer who develops a building material towards the elimination of maintenance cost is directly serving and helping the prospective home owner.

Of all essential parts of the house, the problem of the roof has always been a perplexing one to solve in a manner that would combine beauty with economy, and both of these with permanency and lifelong freedom from maintenance cost.

A solution, however, seems now at hand in the form of copper shingles, which have been mechanically perfected and tested and which have also been conservatively priced, when their permanence is considered.

The initial cost is but little more than for wooden shingles.

Convenient to Lay

The copper shingle, in a convenient unit size, is a distinctly new and welcome addition to building materials. The roof of sheet copper has been the standard of service and permanency for centuries, and thruout the country there are many instances of durability which can be noted, such as—the roof of Trinity Church, for example, laid in 1847, and which has not

called for five dollars worth of repairs in all the intervening years.

Sheet copper, however, because of the cost to lay it, has never until today figured prominently as a roofing material for residences.

But now the extensive experimentation of one leading manufacturer has produced a shingle of sheet copper, with a thick butt as in the wood shingle, and of lightness permitting inexpensive roof framing. The labor item, too, is reduced to a very reasonable level.

One of the most conspicuous advantages of the new copper shingles is found in their adaptability for putting new roofs on old buildings. Not only is it unnecessary to make any changes in the framing of the roof, but copper shingles may be laid over old wood shingles, producing a permanent and beautiful roof with a minimum of labor cost.

Ideal for Re-Roofing

When an old roof has reached the point where replacement is necessary, where even expensive repairs will no longer keep it in condition, home-owners begin to appreciate the advantages of a roof of absolute

permanency and complete freedom from maintenance costs, a roof which cannot deteriorate even under centuries of time—and the copper shingle now offers such harassed owners the opportunity to escape forever from the annual repair bill and the otherwise inevitable replacement cost by re-roofing with impervious copper.

Copper, as a metal, needs no argument. It is like sterling silver, and its salvage value is 60 per cent of the initial cost of the roof. It is permanent, non-corrosive and unaffected by temperature or weather. Properly grounded, it is its own lightning protection, and it minimizes fire hazards at all times. As a result of the inherent qualities of the metal of which it is made, the copper roof shows its greatest economy in absolute and life-long freedom from maintenance cost. On buildings in many parts of the world are copper roofs which have stood the test of centuries, without repairs or protection.

Distinctively Beautiful

And in addition to these fundamental virtues as a roofing material, copper has its own unique beauty—its range of highly artistic colors, which can be selected or blended to harmonize with any color scheme, or add a rich note of color where color is otherwise absent. The natural color which copper assumes immediately upon contact with the elements, is well known—a soft, variegated green. Added to these are: Autumn reds, russet browns, olive, emerald and blue green, peacock blue and several other beautiful colors, which, being a part of the actual metal, never change or fade. They possess, moreover, a soft velvety texture, entirely unlike the hard gloss of some materials.

With this combination of economical and artistic advantages inherent in the roof of copper shingles, it occurs frequently that the prospective builder will go over his plans and specifications, and will decide that a cheap, temporary roof must eventually prove expensive in repairs and replacement, and that his best course is to figure on a roof which will be both permanent and beautiful, its first cost its last, and its appearance a continuous source of joy—the roof of copper shingles.



Busy in Argentina, too

ACCORDING to figures obtained from the public works department of the municipality of Buenos Aires, the building activity for the first four months of the present year has been greater than in any similar period since before the war. From January 1 to April 30, 1922, a total of 6,359 building permits were taken out, as compared with 4,048 permits issued during the first four months of 1921.

EDITOR'S NOTE: *The American Builder keeps pace with the latest developments in building methods and materials. Recently some striking changes have been made in metal materials. To acquaint our readers with these developments we have this department in which appear articles by authorities on metal construction. We invite contributions from those who are in a position to give our readers definite and reliable information.*



This Picture Shows Copper Shingles on the Home of Otto Myers, New Rochelle, N. Y.

Doctors Only in This Building

AN interesting example of the special building built for a special purpose is an office structure to be occupied entirely by physicians.

A syndicate of St. Louis physicians has taken an option on an entire block bounded by Grand Boulevard, St. Alphonse Street, Windsor Place and Bell Avenue, on which an eight-story office building for the exclusive use of physicians will be erected. The ground will cost \$160,000 and the building will cost \$400,000.

The structure will be something new and a model of its type, being especially constructed for the use of physicians and surgeons. The lower floor will be leased to a drug store and several medical and hospital supply houses.

Stock in the company which will erect the building will be sold only to doctors and no doctor will be allowed to buy more than 15 shares of stock.



Combination Bath Tub Helps To Save Space

GIVES ADVANTAGES OF SHOWER, FOOT AND TUB BATH
LEAVES AMPLE ROOM FOR ALL OTHER FIXTURES

SPACE saving in the bathroom is always desired. It is usually striven for and accomplished, in general, but a further means of space better used is provided in a special built-in bath tub, in use for over a year and growing in popularity.

The story of the birth of this compact bath is interesting. An architect drew the plans for it during

Generally Approved

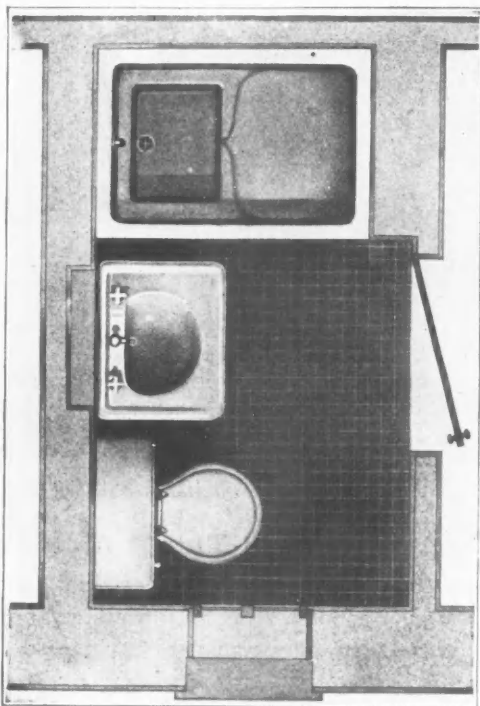
During the year the tub has been on the market it has enjoyed high favor. Home builders have shown a real preference for it and have asked architects and builders to plan on its installation. While the tub may be installed in any home, it is more desirable that it should be considered in the early plans, as it calls for being sunk in the floor and this, naturally, makes a better job possible if the house is designed with that fact in mind.

It will be noted that this tub provides for several bath conveniences and is not confined to the one use of the ordinary bath tub. It is, in fact, a combination tub that may be used as a sitz bath, a foot bath, a child's bath or as a shower.

Used as an ordinary bath it covers the body as in a longer tub and still it uses less water, which means less time in filling and less expense in heating the water, quite a factor where more costly water heating methods are used by a considerable number of persons.

When a foot bath is wanted it is only necessary to partly disrobe.

Of course it is convenient to have a bath that fits



Floor Plan View of Bath Room Showing Space-Saving Possibilities of New Type Bath Tub.

the war and was advised to hold up experimental work until the times were more normal. Later on another architect, a friend of the inventor, went to work on the same idea. The same manufacturer, who was interested in the original plans, found him busy on the idea and after some study made an arrangement to manufacture the space-saving tub.

While this company holds a license during the life of the patent to manufacture it in any material, the tub has been standardized and is marketed only as a porcelain of high quality.

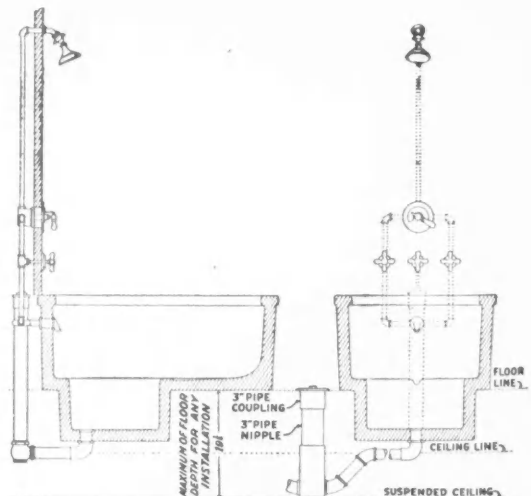


Diagram of Space-Saving Tub Showing Connection to Drain Where Such Connections Are Required by Local Ordinances.



Father
Wants
His
Daily
Shower
Bath.
This
Compact
Fixture
Fills
That
Want.

the needs of the child.

Shower Baths

The chief advantage, next to the space saving feature, is probably the shower bath. This is a form of bath that is in genuine favor. Many a modern bathroom just falls short of being strictly modern because it has no shower bath facilities. With this tub that decided advantage is assured. Having the flow from the side it is possible to take a shower bath without drenching the hair, a feature which women will appreciate. But if it is desired to make the shower a "tip to toe" affair, it is easily done by adjusting the shower and using the tub's lower level.

The space saving feature is a big one. This combination bath may easily be installed in a 4 feet by 7 feet bathroom, as it occupies much less space than the usual built-in or on-legs tub. This, of course, is a feature that appeals not only to the residence builder but to apartment house builders and apartment hotel owners.

As this tub weighs no more than the usual tub it is not necessary to especially reinforce the floor.

The materials used make the tub especially easy to clean. Semi-vitreous porcelain is a fine example of sanitary material and as used in this tub it will not stain and can be wiped clean like a china dish.

Just One Size

This tub is made in one size only, being, as it is, a space-saving idea and marketed so it will save room.

Its outside length is 4 feet 4 inches and its outside width is 3 feet.

The tub has a convenient hand rail.

In cost it compares favorably with any tub purchasable.



Lays 700,000 Brick in Two Years

IS there an American bricklayer who has ever beaten this record?

The championship in bricklaying, from the standpoint of the amount of work done by one man, is claimed by a British workman, Hotham Browne. Single-handed he has just finished laying all the bricks, 700,000 of them in the Oxford Theatre at Workington, Cumberland. The job took two years.

The magnitude of this undertaking is seen by the fact that the building is 150 feet long and 50 feet wide, and will accommodate 1,400 people. When he had laid the first 100,000 people christened the building "Browne's monument," but it is now known as "the house that Browne built."



Healthier and Happier

COMPLETE and modern plumbing fixtures conserve health and increase the enjoyment of living. Any investment that makes a man and his family happier and healthier is a gilt-edged investment.

Saving space and gaining convenience is the ideal way to plan a bathroom. It can easily be done if special space-saving equipment is used.



Used as a Seat Bath.



Used
as a
Child's
or Foot
Bath.

Trucks Take Time Risk Out of Building Tasks

PLODDING OXEN OF PHARAOH'S DAY AND MORE MODERN
HORSE REPLACED BY SWIFT LARGE CAPACITY TRUCKS

WHEN the first of the Pharaohs saw the reports of sundry specialists who had been called to probe the royal anatomy, he concluded that as an insurance prospect he was no longer rated A-1, and that in the natural process of events he was destined to check his mortal baggage at the dock of the River Styx at an early date. He was impressed with the necessity of building himself a monument, lest his glories be forgotten.

"Summon my bearded architects," he said, "and have them plan a memorial that will endure forever. Never mind how long it takes to build it—what are a hundred years? And what are the lives of a hundred



With Proper Equipment the Truck Driver Can Load as Well as Drive, Thus Making a Double Saving of Time.

thousand slaves whose toil it takes? Don't bother me with it again. Build it."

Crawled Ahead on Man Power

So work began. The world moved sluggishly in those days. Speed had not become an essential of life. What one generation failed to finish another generation took up. Artisans spent a lifetime on a single piece of construction, and, dying, passed down their tools to their children. The world moved on man power. The straining muscles of a thousand slaves drove the galleys of Phoenicia, of Carthage and of Rome; the broad shoulders of an army of Egyptian bondsmen bent beneath the ponderous masonry of the Pyramids.

Ox—A Symbol of Speed

The stolid ox, first to be drafted to the cause of transportation, was the symbol of the speed required by the age, and for many years he met every need. But more rapid action, more strength, greater efficiency later became the cry. Then comes the horse.

For centuries the horse was the symbol of the speed and strength essential for the world's necessities, and until the early days of the twentieth century he reigned

supreme, the dominating factor in transportation, man's invaluable friend and aid.

But today Dobbin is passing.

The genius of man has harnessed the strength of threescore horses in a compact motor, mounted it on frames of steel stronger than any combination of flesh and bone, vitalized it by electric currents—and behold the modern motor truck having the power and the strength of a thousand slaves of pyramid days.

Good-Bye, Dobbin

There are multiplying evidences that "the passing of Dobbin" is not a mere figure of speech. In the commercial field practically every installation of a motor truck means the curtailment of the number of horses used, and, in most instances, is the forerunner of the complete passing of horse equipment.

In no other field has the passing of the horse been more rapid than in the building industry. This industry lends itself particularly to motorization. Efficiency has been gained by the substitution of motor trucks for horse-drawn equipment.

Motor trucks serve the builder at every stage of construction. They help, in many instances, to raze older buildings. They haul the engineers to the sites; they haul away the earth from the excavations. They haul back the stone and steel, the brick and cement of which the foundations are built. They haul the lumber, the marble, the brass, the hardware, the ornamentation. They deliver the heating and lighting plants and fixtures, the plumbing, paints, the furniture and telephone systems. At every point of contact they speed up the process of building. Altho motor trucks have been generally used by builders only within the last ten years, every great city in America boasts of millions of dollars' worth of construction in which horses have played but a minor part.

Makes Hard Tasks Easy

A notable case in point is that of the \$4,000,000 high-level bridge spanning the Cuyahoga at Cleveland and connecting the eastern and western sections of that great city.

To this one structure alone a fleet of White trucks hauled 543,000 sacks of cement, 69,692 tons of sand, 15,653 tons of limestone, 108,900 cubic yards of mixed concrete, several thousand cubic yards of slag and many hundred tons of steel, miscellaneous building materials, tools and supplies—a miracle of carrying service which, it is freely conceded, enabled the builders to complete this monumental work many months before it could possibly have been completed without the use of these trucks, saved the city thousands of dollars and materially aided in reducing traffic congestion at a time when each passing day added to the seriousness of traffic problems.

In the transportation of building supplies under widely varying conditions dealers and producers have found that the use of a high-grade motor truck is a guarantee of dependable hauling at the lowest possible cost. With such equipment the builder has an independent transportation system, which, rightly used, is an investment yielding a high return, a perpetual insurance against the chance of impaired transportation that might mean financial loss to him.

Reasons for the increased use of motor trucks in the building industry are contained in statements made by representative concerns in the trade.

Replaces Many Horses

For instance, J. Jacob Shannon & Company, dealers in hardware and contractors' supplies of all kinds, Philadelphia, estimate on a conservative basis that a 3-3 1/2 ton White truck, used in their city and inter-city hauling, readily does the work of two and one-half double-horse teams. The T. J. Hall Company, of Cincinnati, says that its 5-ton power dumping truck, on the average six-mile haul can do the work of four teams. George S. Shulz & Sons, Hoboken, N. J., estimate that in hauling one mile their truck will do the work of two teams, hauling two miles it will do the work of three teams, and in a three-mile haul it replaces four teams.

Potter, Teare & Company, Cleveland, are manufacturers of lumber. Fred P. Potter, head of the firm, credits the company's fleet of White trucks with saving the concern from being "swamped" during the busy seasons. Mr. Potter says the increased demand for products is being met by "perpetual motion," his

characterization of a method of operating the trucks by which none of the machine's time is taken up with waiting for loads. The loads are prepared while the trucks are out on trips. Then, upon the arrival of each truck at the company's plant, its assembled load is quickly loaded by means of rollers and the truck goes away on its delivery trip.

When a building spurt struck Chester, Penna., Stacy C. Glauser & Company met the increased demand for builders' supplies with six White trucks. When rail transportation broke down the trucks carried materials from the Maryland coast, 125 miles away. "Without our truck we would have been lost," Mr. Glauser says. "Their all-around efficiency made it possible for us to get lumber to builders on time."



Bigger Loads and Better Delivery Service Help the Truck Owning Dealer to Better Serve More Customers.

Safety Code for Conveyors and Conveying Machinery

AN important step toward the solution of an accident problem has just been accomplished thru the decision of the American Engineering Standards Committee to develop a safety code for conveyors and conveying machinery.

The introduction of mechanical conveyors in many industries has eliminated a large proportion of the accidents resulting from the manual handling of materials, but it has at the same time introduced new hazards, many of which can be prevented by a more general agreement among both users and manufacturers of conveying equipment as to safe practices in the manufacture, installation and operation of such equipment.

The American Society of Mechanical Engineers and National Bureau of Casualty and Surety Underwriters have been appointed joint sponsors for this code. All interested national organizations will be asked to cooperate in the formulation of the code. This code the American Engineering Standards Committee announces, will be intended as a guide for the safe operation and maintenance of conveyors and conveying machinery coming under the following main divisions:

gravity, belt, chain, flight bucket, apron, screw and jiggling conveyors, car hauls, aerial cableways, overhead trolley and pneumatic tubes.

All shafting, pulleys, belts, link belts, chains, gears, sprockets, couplings, clutches, etc., used on and in connection with conveyors and conveying machinery will be covered in the Mechanical Power Transmission Code now in preparation.



First Pullman Car Took Year to Build

THE FIRST PULLMAN palace car was built by George M. Pullman in 1864. It cost \$18,000 and required a year in building. It was named the Pioneer. It had no carpets on the floor, was lighted by candles and heated by oil stoves. Its first use was to transport the body of Abraham Lincoln, our first martyred President.



MOST of the money lost in real estate has been lost by the people who haven't bought it and not by those who have. A U. S. bond offers little in security and money-earning possibilities that cannot be duplicated if not exceeded in the average real estate investment.

Well Designed Implement Shed Proves Profitable

RIGHT LOCATION AND EASE OF ACCESS NECESSARY TO ASSURE COMPLETE USE OF SUCH AN IMPROVEMENT

By H. B. White

Assistant Professor of Farm Buildings, University of Minnesota

THE farmer uses so many implements in carrying on his farm operations that there will be a considerable amount of time wasted if these implements are not in good working condition when required for use.

There is very rapid depreciation of the implement if allowed to stand exposed to the wind, weather and damage by animals. When implements are protected by proper shelter their efficiency is greatly increased and there is more interest and pride taken in working with well-kept implements that do the work easily and with little waste energy as compared with those that have been allowed to rust, warp and become less usable.

Location of Shed

From the standpoint of time saving it is desirable that the implements when brought from the field be left at or in the shed while the teams are on their way to the barn. As considerable time is spent in keeping implements in good shape, it is often satisfactory to have the implement shed at one side but on a route from the house to the barn. If vehicles and shop equipment are sheltered by the same building with the implements this is very important, as considerable time may be saved.

Three Popular Types

There are three methods of using implement sheds

and these require different kinds of buildings to serve the purpose to best advantage. When the implement shed is used for storage during the winter only a square building is most economical. For convenience in sheltering each implement in a stall of its own a long, narrow building is desirable. On a large farm a driveway lengthwise thru the middle makes a desirable building. This type is usually built with a gable roof.

Size Important

A building that is too small usually results in the implements being left unprotected and thus defeats the real purpose of the building. A careful study should be made of the equipment to be sheltered and allowance made for any that may be added in the future.

The following table gives approximately the space necessary for the different implements and vehicles:

| | | | |
|---------------------------------|----------|--------------------|-----------|
| Automobiles | 8x18 ft. | Corn planter | 6x 6 ft. |
| Buggy | 8x16 ft. | Disc harrow | 6x 8 ft. |
| Binder | 8x15 ft. | Drill | 5x12 ft. |
| Corn cultivator (one row) | 5x 8 ft. | Gang plow | 5x10 ft. |
| Corn Cultivator (two row) | 8x10 ft. | Hay loader | 10x10 ft. |
| | | Mower | 5x 8 ft. |
| | | Spreader | 8x16 ft. |
| | | Wagon | 8x12 ft. |

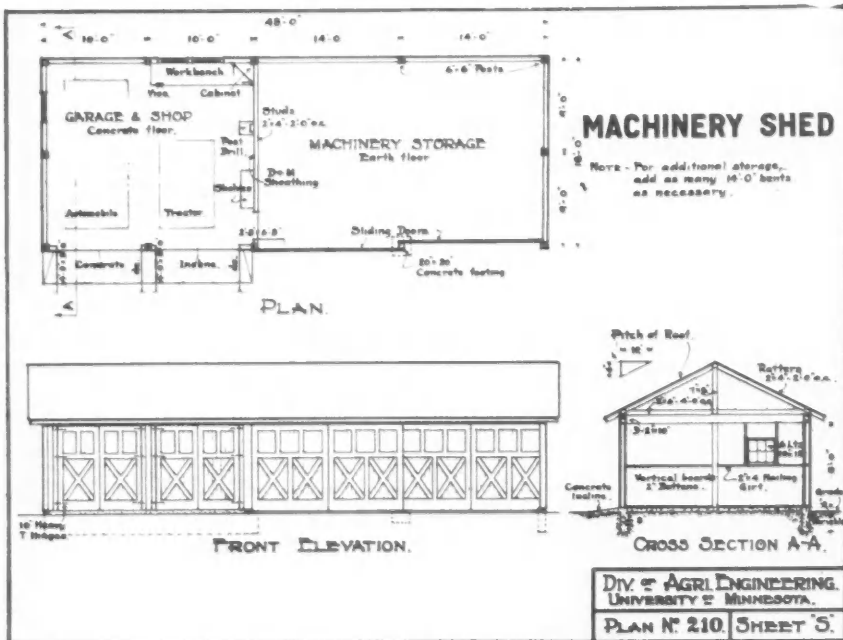
Usually the plan of arranging stalls so that one or two implements may occupy a stall and can be taken out thru a doorway or open front is most satisfactory

when cost is considered. On some large farms, doors so placed that the implement may be taken in at one side and out at the other are found to be very convenient.

On farms where there is a large number of implements and two or three autos it has been found very desirable to make a building with a driveway lengthwise, thru which the implements can be taken with a team. The implement can be backed into its stall, of which there are two rows, one at each side. The middle driveway is very convenient for sheltering a load in case of sudden storm.

The ease with which the implements may be placed under shelter and taken out for use determines whether it will be protected or left to stand outside. If doors are used

EDITOR'S NOTE: *A revival in rural building is at hand. Some work is under way. Next spring, it is generally thought, will see a healthy demand for all types of rural buildings. The AMERICAN BUILDER covers the entire building field and presents information about farm buildings which lumber dealers and builders find of practical value.*



Combined Garage and Shop with Machinery Storage Room. This Building Is 18 by 48 Feet by 8 Feet High. Ample Doors Make Getting In and Out with Machinery Easy.

DIV. OF AGRIC. ENGINEERING
UNIVERSITY OF MINNESOTA
PLAN NO. 210, SHEET 5.

they must be made to slide on substantial hangers or swing on strong, well fastened hinges.

Appearance of Building

On a small farm a shed roof with the high side to the front is pleasing. A larger building may have the front slope shorter than the rear, thus running most of the water back of the building and also giving better lines. The appearance depends largely on the shape of the building, the roof projection and the painting.

The walls may be of concrete and may taper to 6 inches at the top if so desired. It should have a base of about 12 inches. One-half inch bolts imbedded in the wall with the nut end projecting about 3 inches should be used to anchor the frame to the wall if the building is to be exposed to strong winds. The frame can be made of 4-inch by 4-inch posts with 2-inch by 4-inch mailing girts and plates. The plan shown makes clear the general method of construction of a building 18 feet wide and 48 feet long.

Permanence Pays

Altho the first cost may seem excessive, the cost for sheltering if a permanent building is erected is not very great as it is distributed over a number of years. A building of lumber and concrete will last a long time if well planned and well constructed and will eventually save all its costs.



Standardization Plans Meets with Approval

SECRETARY HOOVER, in giving the lumber industry the vision of a standardization of nomenclature, grades, and guarantees, and of the benefits to accrue from a national agency for the administration of an inspection service embracing all woods, has rendered it a service of real value.

The accomplishment of a system of standard names, standard rules for the grading and inspection of lumber, and the adoption of effective means, such as grade-marking the lumber, car cards, showing quantity and quality of the lumber, and other means for assuring the integrity of grades and quantity, and to prevent grade manipulation, would mark an epoch in the industry. If in addition, an independent, impartial agency, national in scope, undertook to supply everyone who desired it, an inspection service, at a reasonable cost, the industry would be approaching a plane of great improvement, and undoubtedly would command increased public confidence.

Especially noticeable would be the improvement in respect to the hardwood industry, where because of the great variety of woods and consequently the multiplicity of grades, clarification and standardization is greatly needed; furthermore, the internal dissensions regarding the control of inspection service has been such as to create doubt in the public mind.

Grade rules as they exist at the time Mr. Hoover

makes his suggestions are not, at least in the hardwood industry, such as to further to the most perfect use of the lumber. The best informed thought, practically and technically is unanimous in the view that the rules are of more or less haphazard growth, and are not the result of scientific study.

It is the effort of the standardization movement to make the necessary analyses of the production possibilities from the woods, likewise the necessary analyses of the consumption requirements of the products, and thereupon to scientifically formulate and define the rules in such a way as to allocate the available supply to the consuming industries in proportion to their needs and demands so that the products of the manufacturers may be utilized with the least waste and therefore at the lowest cost to the ultimate consumer.

The lack of scientific adaptation of grades to consumption needs often results in the consumers being burdened with a large amount of by-product or so-called waste material, for which he really has no use, but for which he must find one, or else the material becomes a total loss in his hands. Capable authorities estimate that the amount of such waste can, by the perfecting of the standardizations proposed, be reduced many per cent,—estimates ranging variously from 60 to 70 per cent.

Conservation of timber resources and lower prices would be gained by proper standardization and universal inspection.



How to Break Up "Warehouse Pack" in Sacks of Cement

"WAREHOUSE pack," as almost every dealer knows, is the hardness that sometimes comes to sacks of cement in storage. Conclusive tests prove that this is nothing more than the natural compactness of material subjected to pressure for an extended period. It is easily removed and has no deteriorating effect.

To remove "warehouse pack," place the sack on a table or on the floor and roll it back and forth on one of its flat sides until the "pack" is gone from that side. Next turn it over on its other side and repeat the operation. Then stand the sack on end, pressing it firmly against the floor or table, and turn it about until the lumps in that portion of the sack have disappeared. The cement will then be found to be in as good condition as ever.

Never beat, pound or drop the sack, as this results merely in driving the lumps toward the center, and never in remedying the condition.



Overheard on the Job

FOREMAN—Y'ere hopeless. I've taught you all I know, and still you don't know anything.



THE health and morality of a nation depend largely on the adequacy and abundance of its housing.

Law of Interest to the Builder

COURT DECISIONS CONCERNING BONDS WHICH GUARANTEE
KEEPING STRUCTURES IN REPAIR FOR A GIVEN TIME

By Leslie Childs

THE question of the contractors' liability upon a bond, which guarantees to maintain a given piece of work in repair, perhaps over a considerable length of time, is one that has been the cause of a number of lawsuits. Disputes of this kind have for the most part arisen under contracts for public works such as roads, bridges, or municipal buildings. For in contracts of this kind it is frequently stipulated, and made a part of the contract, that the contractor shall guarantee the work and keep it in repair during a certain period.

Consider Consequences

It follows that when a contract of this kind is entered into the contractor, for his own protection, should carefully estimate the risk he is undertaking not only in constructing the work, but in maintaining it for the period agreed upon thereafter. This is true, for while he, the contractor, may make a fair profit upon the actual construction work, if he does not protect himself, by insurance or otherwise, on his after liability for maintenance, he may, in the event of the destruction of the work, suffer a great loss.

This point should be carefully guarded by the contractor when contracts of this kind are entered into for, generally speaking, he will be held to a strict liability upon his bond. And further, he should not depend upon implied exceptions being read into such a bond, in the event of the destruction of the structure, for the courts are not inclined to permit any exceptions that do not appear in the bond. The danger to the contractor in situations of this kind is illustrated in a number of cases, among them Meriwether vs. Lowndes County, 89, Ala. 362. The facts, briefly stated, out of which the action grew were as follows:

Agreed to Keep Bridge in Repair

The contractor, it seems, had constructed a bridge, and his bond stipulated that he should "keep the bridge in good repair, and that it should remain safe for five years."

Thereafter, before the expiration of the five years, the bridge was destroyed by an extraordinary flood, and the contractor was called upon to replace the bridge. He declined to do this and the matter culminated in the instant suit upon his bond. The case reached the higher court on appeal and in reviewing the record it was, in part, said:

"The main defense urged to the suit is that the bond imposed no duty on the obligor to rebuild the bridge, but only to keep it in repair so long as it stood, and that the structure was destroyed from no defect in the work, but by an extraordinary and unprecedented flood, which was an act of God, not covered by the covenants of the bond. This defense was clearly not good. There is a long line of cases, both in England and this country, which settle the proposition that an unconditional express covenant to repair or keep in repair is equivalent to a covenant to rebuild, 'and binds the covenantor to make good any injury which human power can remedy, even if caused by storm, flood, fire, inevitable accident, or the act of a stranger'; and that, while an act of God will excuse the non-performance of a duty created by law, it will not excuse a duty created by contract. * * *

"The courts have no authority to relieve contracting parties from the hardships often occasioned by such contracts, as it is within the power of obligors to provide in advance, by accepting liability for casualties of this nature from the terms of their contract, if they so elect. * * *

Write Exceptions Into Contract

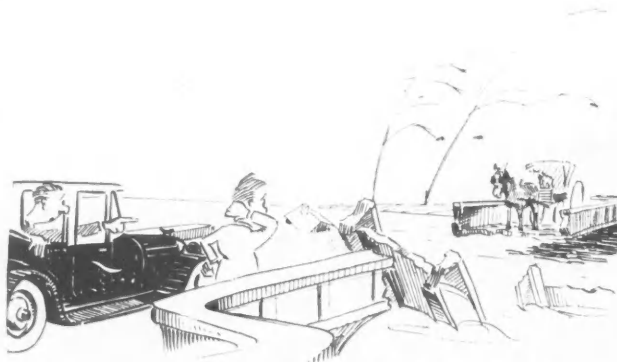
From the foregoing decision it is clear that when a contractor unconditionally agrees to keep a given structure in repair he may

be assuming a considerable risk. It follows that if he does not care to assume all risk in the matter he should see to it that exceptions are placed in his bond. And in this connection it should be noted that, as a general rule, only such exceptions as appear in the bond will be enforced in his favor; he cannot hope, as a general rule, to have any implied exceptions read into the bond. This point may be illustrated by the holding in Mitchell vs. Weston, a Mississippi case reported in 45 So. 571, which was based upon the following facts:

The contractor, it appears, built a bridge and his contract provided as follows:

"Said J. W. Mitchell, by these presents, insures and guarantees to keep said bridge in repair for a term of five years; * * * and, if said bridge shall be removed from any cause, fire excepted, within the time of five years, he shall rebuild the same without additional cost to the County of Hancock."

The bridge, it seems, was destroyed thereafter by a flood and the contractor refused to rebuild on the



"Keep in Repair" in the Bond Obligates Remedying Any Damage
Whatsoever.

ground that the flood was an act of God against which he did not insure. This case reached the Mississippi Supreme Court on appeal and in deciding against the contractor it was, among other things, said:

"It is obvious that the obligor's attention was directed to exceptions which should be made, and that the only thing excepted against was loss by fire. Whilst making his exceptions, if he had intended to except against the act of God, he should have done so. * * *"

The court in conclusion affirmed a judgment rendered in the lower court against the contractor holding that as his contract did not except him from liability for an act of God he must stand the loss.

A General Rule

The two cases reviewed above are fairly representative of this class of decisions and illustrate in a striking manner the danger to the contractor in binding himself to keep work in repair, in the absence of a clear understanding of the risk he is running. If such a contractor does not care to assume the risk of an unconditional covenant he should see to it that proper exceptions are placed in his contract.

And above all, the contractor should bear in mind that, as a general rule, the courts will not read exceptions into his contract that do not clearly appear. If the exceptions are for fire only, as in the last case reviewed, the courts will not, generally speaking, also construe the contract as including loss by flood or other means. In other words, the contractor will be compelled to stand upon the words of his contract, so, in justice to himself, he should make sure that the desired exceptions appear in his contract in plain terms.



Model Bath Houses of Immense Size

TWO bath houses, notable for their great size and modern construction, have just been completed in Philadelphia. They are located on the municipal beach and Philadelphians say they are the most elaborate and best arranged public bath houses yet built.



One of the Two Public Bath Houses Built to Endure.

While not ornamental at all, the buildings are of attractively substantial design. They are built of gray brick with Spanish tile roof. The foundation is of concrete. The severity of straight lines so often noticed in such structures has been relieved by several small wings used as entrances and for shower baths and lavatories. Another feature worthy of mention is the large number of window openings. The two houses are identical in size and design and are located close to each other. One is used for the masculine swimmers and the other for the fair daughters of Neptune.



Interior of Philadelphia's Big Modern Public Bath House.

The combined capacity of the two bath houses is 6,000. The buildings are equipped thruout with steel lockers, usable by two persons. Special pains were taken to insure privacy in the dresser and locker rooms, the windows being high and each locker being separate from the others.

The building is of durable construction, the framework being of steel and the floors of concrete, which with the brick exterior and tile roof should insure long life for the structures.

Each one of these two bath houses is 51 by 222 feet. They are equipped with electric lights and besides the shower baths have every other convenience and appliance recognized as good practice in such building.



But More Than One Per Cent Must Take Occasional Bath

IN the larger cities of central Mexico there is an appreciable demand for American plumbing materials. Conditions in this market are fast returning to those of pre-revolutionary days, when there was an active trade in these supplies. During the past two years increased shipments of bathroom accessories have been coming from Germany, but not in sufficient quantities or of such quality as to seriously affect American trade.

Probably not more than 1 per cent of the residents of the interior cities of Mexico now have bathroom facilities, and as a rule there is to be found an adequate sewer system along only a few streets of each city. Consequently the majority of the residents must take care of their own drainage problem, which is usually done by the construction of back-yard cesspools—a feature which does not encourage the establishment of modern toilet systems.

Plumbing in connection with heating systems, of course, is not in demand in this climate.

As Mexico recovers from the present business depression and begins to enjoy a period of more tranquil political conditions the trade in modern plumbing is bound to improve. This trade, which is now enjoyed by American exporters, should easily be retained against European competitors, whose products are not of so good a quality.

Facts About Fuel Oil—"A Burning Question"

DOUBTS DISPELLED BY SUCCESSFUL USE OF CLEAN
MODERN METHOD OF HEATING ALL BUILDINGS

By Wm. T. Dean

LIVE and growing interest in the practical possibilities of oil burning heating equipment is plainly evident. Already, this cleaner and easier way to heat homes and all buildings is in wide and successful use. And the interest of prospective builders is so universal that the development must be reckoned with as a husky newcomer in the heating field.

But like every other new way to do old tasks, there is much popular misconception about the type of heating device used, the kind of fuel oil needed and the economies and results of such systems.

Crude Oil Not Suitable

One of the most frequent questions asked is: "Can crude oil be used?" Inquirers do not take into consideration that crude oil contains gasoline, kerosene, distillate and gas oil.

Crude oil never comes to market as such, but is purchased by the refiner, who removes the light oils by evaporation, selling the residue "fuel oil" for what it will bring, as a by-product.

A fuel oil burner will achieve permanent commercial success if it burns the heavy by-products commonly sold as fuel oil, for this fuel compares favorably with the cost of heating with coal.

How About Freezing?

Another common question asked relates to the freezing of fuel oil in cold weather. The salesman for an oil burner confined to light oils tells prospective purchasers that fuel oil solidifies in winter, clogs pipes and burners and causes frequent interruption to heat supply. The facts are that standard fuel oil is fluid at zero Fahrenheit, and out of hundreds of household installations with outdoor storage tanks which have burned standard fuel oil for several winters, not a single interruption due to solidifying of oil or clogging of pipes has occurred.

The reason is simple. The insurance and city regulations require that outdoor storage tanks be buried with their tops at least 2½ feet below ground, and the frost line, or 32 degrees Fahrenheit seldom goes lower than 6 to 8 inches. In addition

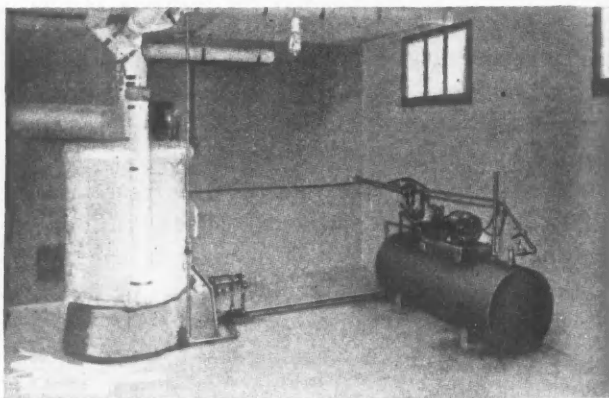
oil is one of the best heat insulators and if the upper surface of a tank of oil thickened, the lower portion where the suction line ends would still be liquid, and as the level of oil receded it would be towards a higher temperature zone.

In severely cold weather fuel oil deliveries in 1,000 and 1,500-gallon tank trucks are regularly made in a radius of 25 miles without the slightest unloading difficulties by sending the oil out warm from the dealer's tanks, which are readily heated by steam coils.

Economy

Price is always a cardinal question about heating systems. An authority on this question says:

How does the price of fuel oil vary thruout the season? Far less than coal. The price is based on crude oil prices



Fuel Oil Plants May Be Hooked Up with Any Type of Furnace.

as well as supply and demand, and for the past year has shown a maximum variation of 1c per gallon delivered, whereas kerosene and distillate have varied 5c per gallon.

Compared with other fuel the economy of fuel oil is so pronounced that the comparison is wholly one-sided.

How about the supply of fuel oil? The latest reports show over 962,000,000 gallons in storage awaiting market and the amount in storage is increasing each month.

In a large hospital the superintendent attributes a good part of their success with certain diseases most prevalent in winter to the even temperature automatically maintained regardless of outside weather conditions since the installing of oil burners.

Freedom from coal dirt, ashes and the labor incident to operating a plant that must be fed is an outstanding gain of a fuel oil heating plant. This opinion of a user is typical.

A suburban home owner writes: "Since I have installed your oil burner I have had no dirt, coal dust or ashes. It has given, especially during the very cold spell, all the heat necessary. The cost of oil I find has been about 20 per cent less than coal." A city home owner says: "It has at all times furnished us with adequate heat without objectionable noise and at a fuel cost that has not exceeded hard coal. The elimination of



Expense, Nuisance and Dirt of Coal Handling Saved if Fuel Oil Is Used—And There's No Worrying About Fuel Shortages.



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Johnson's Perfectone Under-coat is a perfect foundation—it is elastic, durable, non-porous, has great covering power, works freely under the brush and dries hard in from 18 to 24 hours.

Johnson's Perfectone Under-coat will not run, sag, lap, chip, check, crack nor peel. It has wonderful smoothness and opacity—and will not absorb the Enamel.

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Johnson's Perfectone Enamel is very elastic—it will not fade—chip—check—crack nor peel. The stock shades of Johnson's Perfectone Under-coat and Enamel are White, Ivory and French Gray.

Won't you try Johnson's Perfectone Under-coat and Enamel at our expense, so you can see for yourself what beautiful effects may be procured? Use the attached coupon.

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I am willing to try Johnson's Perfectone Under-Coat and Enamel. Please send me a pint of each Free and Postpaid.

The best dealer to carry your line of enamel is _____

MY NAME _____

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CITY AND STATE _____

janitor's services, coal dust, ashes and dirt is of course clear gain." The owner of a large country house writes: "We are very pleased indeed with the burner. It is wonderfully quick to heat the house, unlike coal. It is clean. Perhaps adds a little to gas and electric bills, but saves on coal."

Pertinent Points

A survey of the present fuel situation and consideration of the advantages of this newer way to heat homes, stores and larger buildings brings to mind these facts:

Coal is scarce and expensive due to the big labor element entering into its production and distribution.

Fuel oil is cheap and plentiful (a) because it is a by-product produced in excess of the demand; (b) because the labor element scarcely touches its production or distribution.

Coal is dirty, unsanitary, and its smoke produces fogs and carries disease.

Fuel oil is clean, smokeless, ashless, odorless and gives even heat automatically regardless of outside temperature.

Coal must be fired frequently and furnaces must be cleaned, grates shaken and ashes removed often in order to obtain any semblance of good heating.

The supply of fuel oil is unlimited—there is more known to exist than the total reserve of coal.

This is the age of liquid fuel, foundries, steel plants, ceramic plants, steam power plants, railroads, steamships and many other industries are using it, and once converted to oil rarely if ever return to coal.

For furnace efficiency, temperature control, labor saving, operating convenience, cleanliness and healthfulness, oil is the ideal fuel, even superior to gas.

Finally fuel oil may be stored in half the space required for coal and this space may be in tanks buried underground out of doors or below the basement floor, yielding valuable coal storage space for useful purposes.

Fuel oil burning equipment may be installed in old heating plants. In fact, the fuel oil way is not a new system of heating but a new kind of fuel which is automatically fed by special equipment adaptable to any type of heating plant.



New "Mike" of Long Life

A WELL-KNOWN company has brought out a new micrometer which offers a splendid buy for those who want an excellent tool at a low price—\$6.25 without and \$6.75 with ratchet stop. This 1-inch micrometer caliper has a black enameled, drop-forged, rigid construction frame. Decimal equivalents are marked on the thimble. As the screw is .312 inch in diameter and the contact points .270 inch there is an unusually large wearing surface which insures long life.



As Tough as Mule-Hide

THE toughest American wood is that of the Osage orange, which is not an orange at all, but belongs to the nettle family. This has been proved by series of tests made by the United States forest service, but the Indians knew it before the coming of the white man, and it was known to them as the bow tree, because they used it for making their finest bows. Some idea of its strength may be had from the report made not long ago, which shows that a block 30 inches long and 2 inches in cross-section when bent breaks under a stress of 13,600 pounds, its nearest rival being a variety of hickory called monkey-nut, which, when bent by the impact of a 100-pound hammer, stands a stress of 10,520 pounds.



Beautiful Modern Home at Glencoe, Ill. Heated with Fuel Oil.

Fair Square Lease For Construction Equipment

AN equipment lease that constructors are willing to sign as either lessee or lessor has just been issued by the Associated General Contractors of America. Its object is to establish on a basis of common equity those obligations and responsibilities properly involved in renting construction machines, and to provide a simplified rental agreement which will insure absolutely fairness to both parties.

The form adopted is the result of investigations and criticism of members of the A. G. C. extending over a period of two years.

Both construction and equipment leasing companies have frequently been subjected to expense and annoyance on account of misunderstandings which arise when equipment is rented by verbal or letter agreement or by an unsuitable form of lease, and it is to overcome such difficulties as these, as well as to eliminate drastic and unreasonable provisions, that the new standard form has been adopted. Misunderstandings frequently arise from the fact that equipment is sometimes rented on short notice when the need arises, and when the main consideration is to get the machine into operation. In such instances, a telephone call, a letter or almost any kind of a lease, may serve to close a transaction, and when the unexpected happens both parties find that the responsibilities are not properly defined or that one or the other is saddled with an unfair obligation.

Situations of this nature can usually be avoided where the construction company has a suitable form of lease, easily filled out and familiar to its officials and executives. When all companies are using the same form the chance of misunderstanding is even more remote, especially when arrangements for leasing must be hurriedly made by letter or wire. This means of consummating an agreement, however, can be safely used by means of the A. G. C. Equipment Rental Agreement. All that is required is an understanding that certain equipment is shipped under A. G. C. terms of lease, and each party will then know definitely his obligations.

The standard form is arranged so that all blank spaces for filling in of dates, rental rates and other stipulations are segregated on the front of a single sheet, and those provisions of general application and requiring no filling in for ordinary conditions are segregated on the back.

Copies may be obtained from the Associated General Contractors of America, 1038 Munsey Building, Washington, D. C., or thru the secretaries of associated organizations, at 10 cents each or \$5 per hundred.



SEND the Editor a photo of that new building you are so proud of.

Quick jobs mean quick profits

Re-roof with Johns-Manville Asbestos Shingles

The profit comes when the job is done and the job is done quickly when you lay Johns-Manville Asbestos Shingles right over the old shingles.

You waste no time in tearing off old shingles—which means cleaning up and carting off. Start nailing on as soon as you get the scaffold up.

Johns-Manville Asbestos Shingles nail on rapidly. Every shingle is straight and true and slips easily into place. Nails and nailholes come with the shingles. A lather's hatchet does all the work, even to fitting edgings.

You're through in short order and ready for the next job. And next jobs are easy for every finished roof is a salesman for you.

Johns-Manville Asbestos Shingles are distinctive, beautiful, permanent and firesafe—one roof often sets a whole community asking questions.

There is a good profit per job with more jobs per season in Johns-Manville Asbestos Shingle Re-roofing. Let us tell you how it's done. Write our nearest branch today.

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English Brick Homes Unique and Durable

ABSENCE OF BASEMENT AND FIREPLACE IN EACH ROOM
FEATURES OF COTTAGE BUILT IN AFTER-WAR BOOM

By Wm. Carver, Architect

BRICK and stone are the prevailing materials used in home construction in England today. The tremendous number of new homes required after the armistice taxed to capacity the production of these materials and many brick substitutes were proposed and some tried in order to help out the temporary scarcity. A tour of England reveals the fact, however, that English traditional construction has been adhered to for the vast majority of the thousands of houses which have been erected by the local authorities and by private owners under the stimulus of a generous bounty from the government.

This same cause also operated to produce a real boom in home building. In fact, the impression gained by a hasty trip thru England is that there has not in recent times in that country been anything to compare with the dwelling house boom which England has just passed thru. In village after village, which in normal times could boast only an occasional new house added, were observed one or more rows of attractive new homes, the brickwork contrasting pleasantly with the sturdy, picturesque old work, some of which has been handed down from far off centuries.

Build to Last

Good design and permanence are the keynote of British dwelling house construction. A house is not built to last just a few years but is expected to give

service for centuries, and the efforts of those interested in promoting non-permanent types of construction have met short shrift in England. "They can't make us live in temporary houses," said a countryman when visiting a building show in London where certain types of sub-standard construction were much in evidence. The Englishman has many object lessons all around him to impress upon him the great benefit of permanence of construction and cannot easily be led away from the accepted standards.

EDITOR'S NOTE.—*This is the first of a series of two articles by Wm. Carver on brick construction in typical homes in England.*

In one village visited—Burton Bradstock, Dorset, a little fishing village on the south coast off the regular beaten track of

tourists, but one of the most beautiful and picturesque villages in England, there had been no new houses built for about a hundred years until the post-Armistice boom and these houses were not required because of the decay of any of the ancient dwellings, which are all occupied and probably will be for centuries more.

British practice has about solved the problem of using all good building materials to the best advantage to obtain the most permanent results. Little wood is used on exteriors and (apart from such features as barge boards, rafter ends, etc.), where so used is generally in the form of timbers of fairly large section, filled in between the timbers with brick or stone. Sometimes the brick or stone forms the finish and sometimes it is finished with stucco. Stud partitions

are seldom used also, most partitions being 4-inch brick partitions which are considered good practice for two or three-story buildings of usual occupancy, where the stories do not exceed about fifteen feet in height. Such partitions form both bearing and non-bearing walls.

No House Fires Since 1919

One result of these principles of permanent construction applied universally is that the fire losses thru-out England are comparatively light. For instance, in the small manufacturing town and watering place of Bridport, Dorset, with six thousand inhabitants, there has been no fire since 1919, at which time a tarring shed burned down; unless two or three straw stack fires and a couple of automobiles burned in a garage are counted.

This comparative immunity from fire is reflected in the fire insurance



Popular Type of English Brick Cottage. Extensive Demand for Homes Keep Empire Isle Builders Busy.

Better Business for Builders

"The biggest thing in construction in years"—that's what many say of the Ideal All-Rolok Wall idea!

Most people want and admire brick homes. In the past the extra cost has forced them to be satisfied with frame.

Now you can offer them the beauty and permanence of brick—at no greater cost.

Why This Means Profit

People expect brick to cost more. You can ask and get better prices for your Ideal Wall homes. And still buyers will wonder how you can sell them so cheaply.

That builds reputation for you—reputation that will keep you busy when others think business is dead.

How Ideal Wall Saves

All the advantages of solid masonry, at a saving of 1/3 in cost. This reduction is realized by the saving of 1/3 in brick, 1/2 the mortar, 1/4 the labor, and the saving in furring and lathing.

Any standard brick may be used. No special shapes required. The brick are laid on edge into walls 8, 12 or 16 inches thick. Ideal walls may be laid in any bond or pattern.

These Books Get Jobs



The Ideal Wall is thoroughly described in "Brick, How to Build and Estimate"—a 72-page manual of real information for contractors and builders. It contains 30 tables, 9 full page detail drawings and other information of great assistance in estimating costs quickly and accurately. Only 25 cents postpaid.

A wide variety of brick house designs is shown in our interesting book—"Brick for the Average Man's Home." Here you will find all kinds of homes illustrated and described, with much helpful information which will help you interest prospective home owners—thus helping you to land jobs. The nominal price of \$1.00 is to cover printing and distribution costs only.

And you can get from us complete working drawings and specifications for any house shown in this book. These working drawings are complete, with many full size details of great value to you.

\$1.25 brings both books. Address The Common Brick Industry of America, 2131 Cleveland Discount Building, Cleveland, O.

"I Have Tried it Out!"

FRANK C. KITSON - MECHANICAL ENGINEER - SAN FRANCISCO - CALIFORNIA

HOBART BUILDING
Telephone Sumner 9188

Oct 8th 1921.

The Common Brick Industry of America,
Cleveland, Ohio.

Gentlemen:-

The idea of the IDEAL wall is the finest thing that has come to lovers of brick construction in years. Now we can have our long wished for brickwork at the cost of frame construction.

I have tried it out thoroughly merely to satisfy myself and now that the trial is over, I am more of an enthusiast.

Have you some standard details that you recommend? I am particularly interested detail showing where the floor joists rest on walls for small two story dwellings.

Yours very truly,
Frank C. Kitson

FCK/CR



**Buyers Want Brick Homes—
If You Can Meet Their Price**

**This Trade-Mark
Stands for—**

- Quality—**
An honest product, honestly advertised.
- Responsibility—**
A reputation for honorable, prompt and efficient business dealings.
- Service—**
A material of proven integrity with a record of ages of service.

The Common Brick Industry of America
2131 CLEVELAND DISCOUNT BUILDING
Cleveland, Ohio

The Ideal Brick Hollow Wall is made of standard brick obtainable everywhere



Ideal Brick Hollow Wall

"Brick Homes at the Cost of Frame"



The Foundation for a Brick Home in England. Most of Them Are Built Without Basements.

rates, a house which the underwriters classify as "normal" construction, that is, with brick or stone walls and a tile or slate roof, taking the rate which applies thruout England of about $7\frac{1}{2}$ cents per \$100.

The typical English small house is built without a basement and inasmuch as the winters are mild, frosty ground is not a matter to be contended with. Footings are therefore located at just sufficient depth to go below the top soil where the ground is firm, and also at such a depth that the finished grade will cover up the footing projections.

Rooms Individually Heated

The absence of a basement and consequently of a central heating system, exercises a profound influence



Typical Fireplace Usually Found in Every Room of English Cottage.

upon the plan. Inasmuch as each room must be heated separately with a separate fireplace, there is no opportunity for the opening up of the downstairs rooms by the elimination of hallways and the use of cased openings, as in the typical American house. Every room in an English house is built so that it can be closed off to prevent the escape of heat.

Altho the ordinary English fireplace is not as efficient as it might be, it is more so than its ordinary counterpart on this side of the water. Within the last ten or a dozen years, however, grates have been marketed which have a very high order of efficiency, consum-

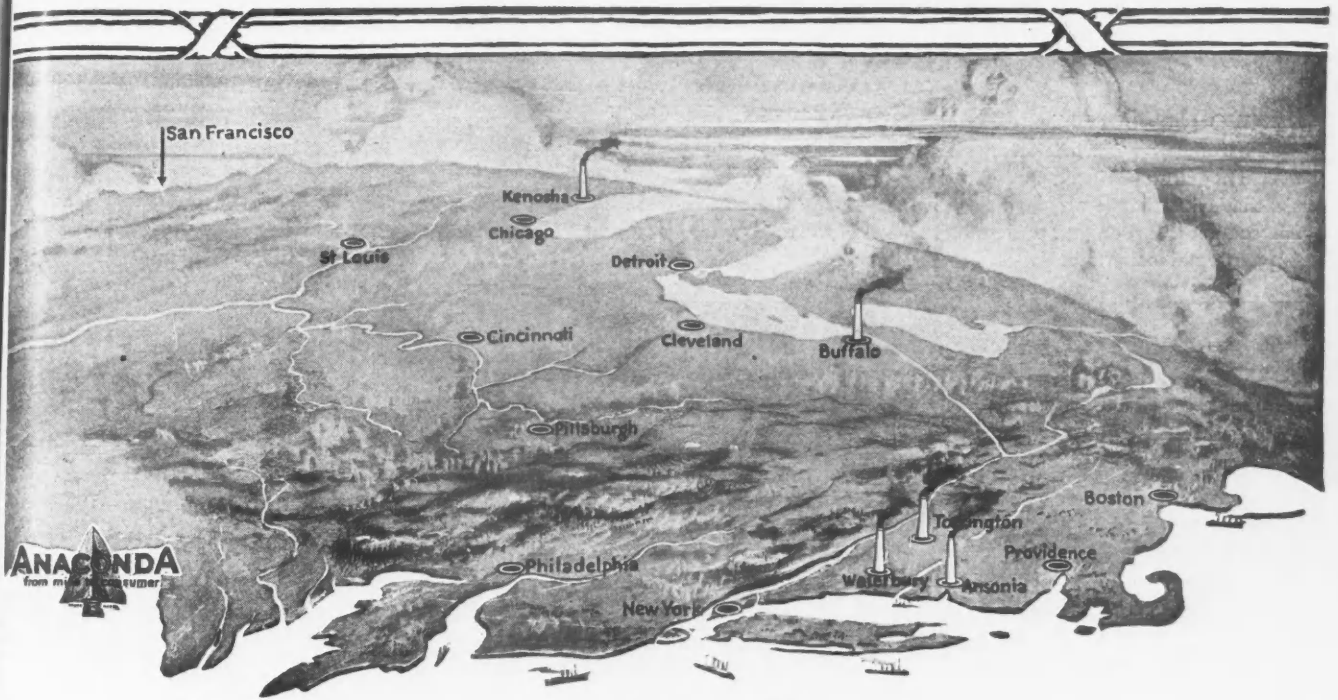
ing not only all the smoke but practically all the ash and radiating a surprisingly large amount of heat. The typical British fireplace burns coal, and the lower cost fireplace is constructed by forming a brick opening into which is placed a complete cast iron grate with the cheeks, back, damper, etc., fastened together in one piece. In the lowest cost fireplace of all, the mantel is also of cast iron and is also in one piece with the grate, the whole affair being simply set into the rough brick opening. More ornamental fireplaces and those which burn wood are constructed of brick, stone and tile or a combination of each of these and with larger openings.



Restoration Demands Stir Belgium Building

THE number of private houses in Belgium totally destroyed or badly damaged during the war was about 78,000, and the number of public buildings about 1,100, according to the Ministry of Industry. Of the private houses, about 60,000 have been restored, either thru the intervention of the office of the devastated regions or thru private initiative, etc. Up to the present time 812 public buildings have been restored, either permanently or temporarily. In addition to this work, the office of devastated regions has done considerable clearing of ruins, rebuilding roads, streets, etc., and has put into condition nearly 22,500 acres of land. Public works to be carried out during 1922 include 71 town halls, 109 churches, 142 schools, and 96 other public buildings, and will involve an expenditure of 125,512,400 francs.

Late advices from Belgium indicate a strong demand for southern yellow pine, with stocks nearly exhausted. The market for American hardwoods altho less promising is considered satisfactory. The Lumber Division, Department of Commerce, will be glad to place concerns listed on the Exporters' Index in touch with Belgian agents who have expressed a desire to handle American lumber.



Prompt Deliveries

As the world's largest manufacturer of copper and brass, The American Brass Company has located its five mills and eleven district offices so as to provide unequalled distribution facilities.

To the plumber, this capacity for prompt deliveries of brass pipe means actual business advantages. It removes the necessity for stocking heavily without delaying your service to customers.

Brass pipe, which bears the brand "Anaconda," the registered trademark of The American Brass Company, carries with it a reputation for superiority backed by more than a century of manufacturing experience. Anaconda Brass Pipe will create good-will for plumbers who install it.

Your customers will ask for brass pipe this year because of the national advertising and sales promotion work of The American Brass Company. In supplying this demand it will be *easier* for you to sell Anaconda Brass Pipe than a product not backed by the strength and reputation of this company.

Order Anaconda Semi-annealed, Seamless Brass Pipe, standard pipe sizes (I. P. S.).

Anaconda Brass Pipe is guaranteed against splitting.

THE AMERICAN BRASS COMPANY
GENERAL OFFICES, WATERBURY, CONN.

MILLS AND FACTORIES

Ansonia, Conn. Torrington, Conn. Waterbury, Conn. Buffalo, N.Y. Kenosha, Wis.

OFFICES AND AGENCIES

New York Philadelphia Boston Providence Pittsburgh
Cleveland Cincinnati Detroit Chicago St. Louis San Francisco

ANACONDA

BRASS PIPE

Favorable Increase in Church and Bank Buildings

RENEWED ACTIVITY IN THESE TYPES OF BUILDINGS
INDICATE CONFIDENCE IN PRESENT CONDITIONS

TWO types of building come close to being a dependable barometer by which business conditions may be judged. They are new banks and churches. It's practically a safe rule that when banks are investing in new homes and church construction is large that business has settled down to a steady-going, normal condition.

twelve-story bank and office building of safe construction.

The Los Angeles branch of the Bank of Italy is California's largest bank with a surplus and undivided profits of \$15,000,000. It is regarded as a leader, whose movements may be wisely followed. There has existed a need for a new building for this bank for some time. But during the days of high prices and unstable conditions no building enterprise was deemed the safe course. Now that the bank is making a sizable investment in a new plant it can be concluded that it is the judgment of its directors that it's a safe and desirable time in which to invest in building—that prices have reached a dependable level and that the adjustment process is about completed.

Notably Large

The First Methodist Episcopal Church now building in the western city is the largest church structure in the city. It, too, is being built of safe construction, as is indicated by the steel frame.

These two examples of costly bank and church building may be found in counterpart in nearly every city. Chicago is building the largest church structure in the world. It will be occupied by the First Methodist Episcopal Church and by the publishing and other executive offices of the society. The plans call for a twenty-story structure which will be crowned by a church spire, the tallest church steeple under the sun. The ground has been broken, the caissons

sunk and the steel frame-work started. This church building calls for an investment of \$3,000,000.

Like many other big church and bank expansions, it was held



Banks Build When Their Directors Consider Conditions Favorable. California's Biggest Bank Regards Present Suitable Time for Building.

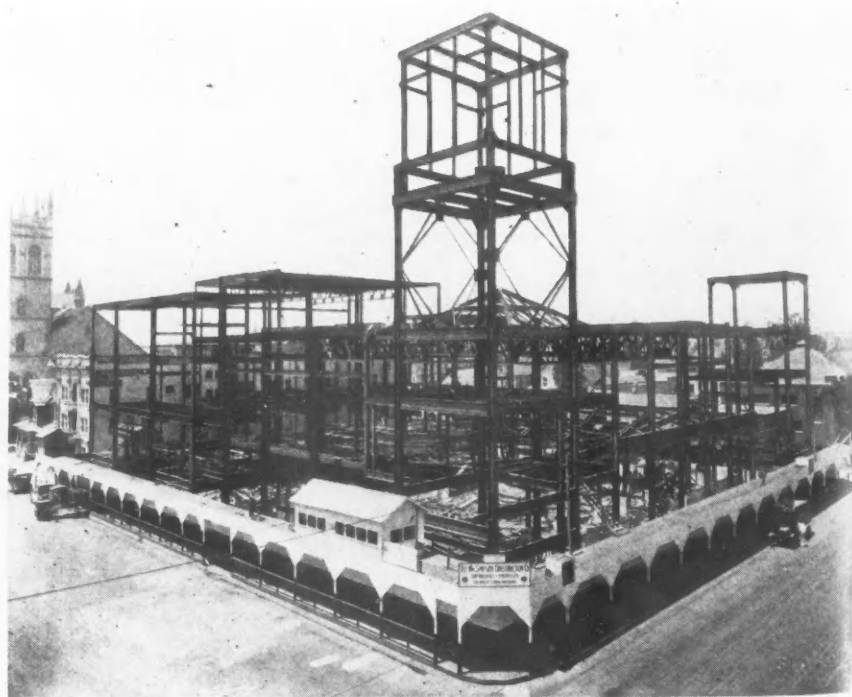
And "there's a reason." Banks have first hand knowledge of general economic conditions, inside information on prices and are committed to safe investments. They put on the brakes when other businesses are booming. But when conditions are safe and sound they expand. Churches, too, are usually wary and take no forward steps without good advice, in which the banker generally has a prominent voice.

Actions Speak Louder Than Words

Any opinion which a banker may give on business conditions cannot speak as plainly as the attitude of the bank in spending its own money. Do you suppose that banks, if their information convinced them that prices are due for a tumble, would go ahead with a building costing hundreds of thousands and on which declining prices might mean savings of several thousands?

The present activity in new bank homes is much greater than in any year since 1914. That means that the banks have confidence in current prices and regard the general situation as healthy and the time ripe for building expansion.

Los Angeles is typical of the excellent showing being made in most cities in the realm of bank and church building. The largest bank enterprise now under way in the coast city is that of the Bank of Italy. This is to be a modern



Steel Framework of New and Largest Los Angeles Church. Church Building Is Increasing.

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Roofings That Will Help Fall Business

A LOT of buildings in your town will need new roofs before winter sets in. You can come pretty near telling by their looks which ones they are.

Why not go after this business—now! Why not write a letter to the owners of these buildings, and use the reputation of Barrett Everlastic Roofing to help land the contract!

From coast to coast Barrett Everlastic Roofings are known for rugged staunchness—rock bottom economy—and honest value. People have confidence in them because they're made by the Barrett Company—for more than sixty years America's leading manufacturer of roofing materials.

That's why you'll find it easier to get business when you specify Everlastic Roofing in your bids.

And whatever your customers' requirements they will be satisfied by one of the six styles of Everlastic Roofing described at the right.

The Barrett Company

| | | | | | | | |
|------------|-----------|------------------------------|------------|-----------------|----------------|-------------|--------------|
| New York | Chicago | Philadelphia | Boston | St. Louis | Cleveland | Cincinnati | |
| Providence | Detroit | New Orleans | Birmingham | Kansas City | Dallas | Minneapolis | |
| Syracuse | Peoria | Atlanta | Duluth | Bangor | Salt Lake City | Washington | |
| Jobstov | Lebanon | Youngstown | Milwaukee | Toledo | Columbus | Richmond | Latrobe |
| Bethle | Elizabeth | Buffalo | Baltimore | Omaha | Houston | Denver | Jacksonville |
| San Fran | isco | THE BARRETT COMPANY, Limited | | | | | |
| Montre | Toronto | Winnipeg | Vancouver | St. John, N. B. | Halifax, N. S. | | |

Your Choice of Six Styles

Everlastic Octagonal-Strip Shingles. The latest development in the strip shingle. Beautiful red or green mineral surface. Made in an unique form that offers a variety of designs in laying.

Everlastic Multi-Shingle. Made in four shingles in one, of high grade waterproofing material with a red or green mineral surface. When laid they look exactly like individual shingles. Fire-resisting.

Everlastic Single Shingles. Same mineral-surfaced material and red or green art-finish as Multi-Shingles, but in single form; size, 8 x 12 3/4 inches.

Everlastic Giant Shingles. Identical in shape with Everlastic Single Shingles but heavier and thicker. They are "giants" for strength and durability.

Everlastic Mineral-Surfaced Roofing. The most beautiful and enduring roll roofing made. Surfaced with everlasting mineral in art shades of red or green. Combines real protection against fire with beauty. Requires no painting.

Everlastic "Rubber" Roofing. This is one of our most popular roofings. It is tough, pliable, elastic, durable and very low in price. It is easy to lay; no skilled labor required. Nails and cement included in each roll.

up until the builders and their advisors were convinced that normal times were at hand.

Several small bank structures have been erected in Chicago during the past months.

In New York there is a notable revival of bank and church building.

Loans Now For New Buildings

Further evidence of the change of heart of the banks towards building is seen in their greater willingness to loan money for new homes and business buildings. During the days of inflated costs they usually refused to loan money or made impossible conditions when financing for new structures was asked.

Now they are encouraging building and advancing funds for it.



Architectural Achievement in Modern Theater

ITALIAN in design, the three-story fire-safe building known as the Woodlawn Commercial Building and Auditorium is one of the largest and most striking building projects of the current season in Chicago and because of its size and elaborate treatment a worthy addition to the nation's larger and better buildings.

An expenditure in excess of \$700,000 is to be made for the building alone. The land value and furnishings will bring the investment to a total of \$1,200,000.

The building is located at Cottage Grove Avenue and Sixty-second Street in one of the most densely populated and active sections of Chicago and within a block of the leading retail district of Chicago's noted South Side.

The building is to be used for an auditorium or continuously as a theater and will be occupied by ten shops located along the first floor. These shops will have uniform fronts and the same type of lighting thruout. They will represent the last work in designing for exclusive shops to be occupied by modistes and others who cater to the whims and wants of the human family for wearing apparel.

Big and Beautiful

Accommodations for 5,000 people will be found in the auditorium which takes rank with the largest public halls in the world. The auditorium is elliptical in shape and its greatest dimensions are 100 feet by 160 feet. A feature of the theater or auditorium will be the wide promenades which will be made beautiful by costly draperies and paintings.

The formation of the auditorium is that of a great order of engaged Corinthian columns and a great cove above divided

by broad vertical ribs into panels. Each panel will contain a rich mural painting copied after the favored early French period.

Translucent lighting effects calculated to eclipse all previous attainments in this art will afford color blendings of rare beauty.

Several supplemental rooms will open off the lobby and be an operating part of the large auditorium. These rooms will house the executive offices, provide spacious retiring and smoking rooms, refectory parlors and provision is made for a mezzanine promenade and foyers of generous width.

The lobby will alone represent a generous building appropriation. There will be no stinting of marble, ornamentation, draperies and rich lighting effects to make the lobby a suitable introduction to the handsome auditorium. The lobby is 40 feet by 100 feet and the walls will be completely of marble as well as the columns and balusters of the stairs leading to the mezzanine floor and balcony.

Thanks to Italy

In the main Italian architecture has been drawn upon for the exterior design. Any deviations from this recognized type are too slight to challenge the attention. The exterior is of pressed brick and terra cotta.

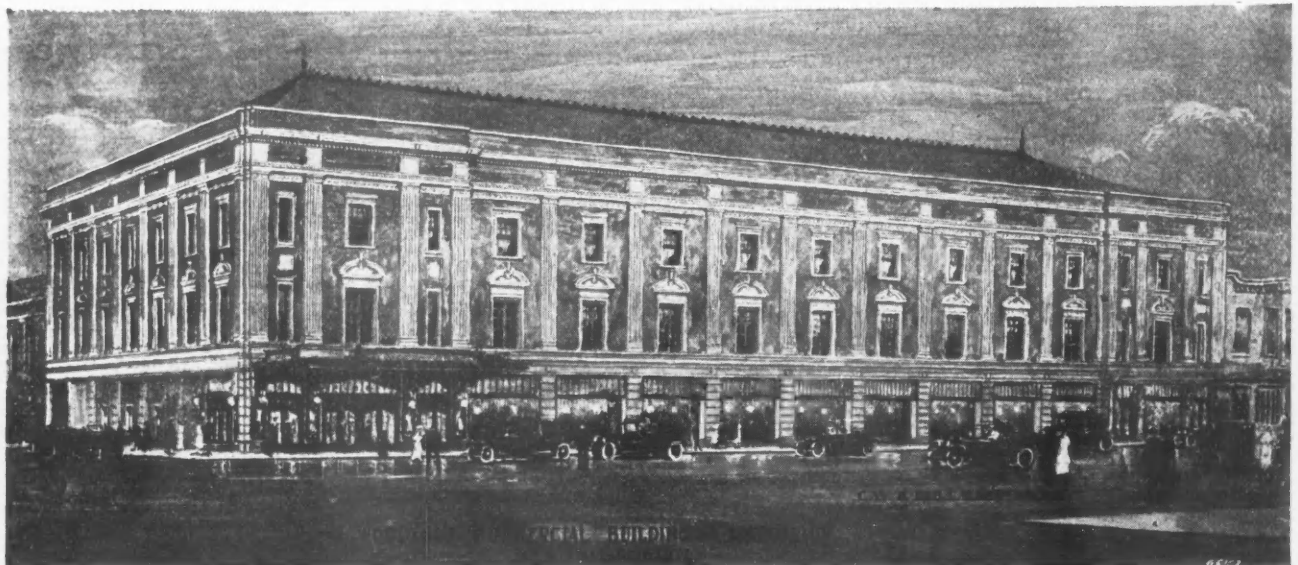
It might require long search to find better examples of fine architecture and quality construction than is afforded by the better type of theater building, which has for several years and is again enjoying the well-known experience called "a boom." This, of course, is a phase of the popularity of the movies. Activity in the field of legitimate theater expansion is considerably less marked than among the "shrine of the silent art." The prosperity of this business has made it common to demand quality and beauty and then ask the price afterwards. Architect and builder find it easy to give their arts the highest expression when there is no tightening of the purse strings. So we see some of our most spacious and commendable examples of good building in the many theaters building in cities large and small.

Banks Approve Projects

There is a noticeable disposition upon the part of banks and investment companies to advance funds for buildings of this kind. Apparently the financiers are convinced that a large, well built, well located theater structure is a sound investment for funds.

Because of the amount of material used, the skill demanded and the possibility for artistic achievements construction of theaters looms large on the building horizon.

Such construction usually runs into big money.

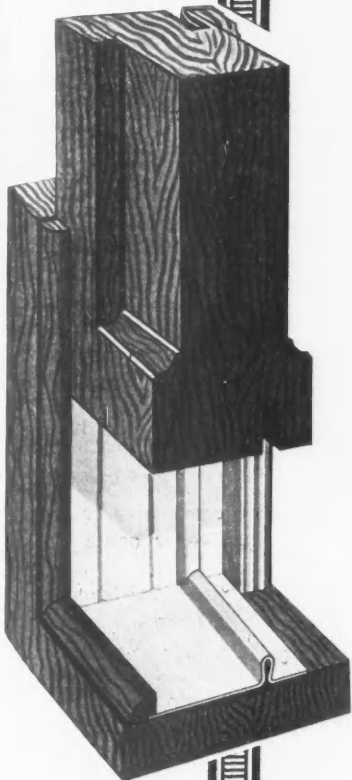


The Woodlawn Commercial Association Building, Chicago. Cost \$700,000 Exclusive of Land and Furnishings. The Auditorium Seats 5,000 People. There Are Ten Ground Floor Shops.

SHOGREN
METAL WEATHER
STRIPS
The Live Wire Line

The Live Wire Line

Metal Weatherstrips of Unusual Merit



Our method of construction is new, an improvement over old styles because it is scientifically correct.

Working together, our experienced men and our mechanics have perfected the SHOGREN METAL WEATHERSTRIP. We found a new shape for the rib that keeps the contact edge perfect regardless of how much the sash may warp or shrink.

The height and shape of the rib strip is improved.

Brass thresholds—brass casement troughs—all have been carefully and exhaustively studied until **the correct** style was found.

Now—this is what the SHOGREN will do for you:

It makes a smooth running casement of ill-fitting, drafty windows. It deadens street noises—keeps your windows from sticking—doors from slamming.

Eliminates rattle—soot—dust—wind—rain—snow and

Reduces your coal bill $\frac{1}{3}$!

With these advantages—added to the ease and real economy of equipping your home—you cannot afford to be without **Shogren Metal Weatherstrips** another winter.

Carpenters -- Dealers

Our product is new—but our experience is old. The new \$8,000,000 Field Museum of Natural History was weatherstripped under the personal supervision of Mr. Shogren.

We are offering to you a fast selling and steadily increasing new LIVE WIRE LINE of quality built, moderately priced

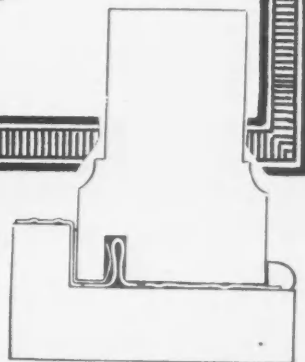
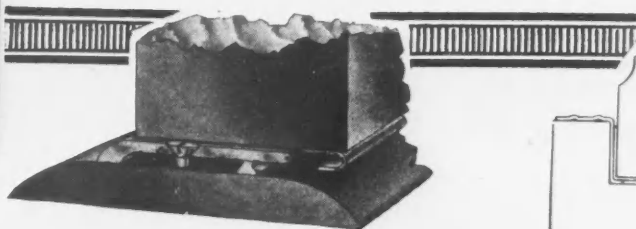
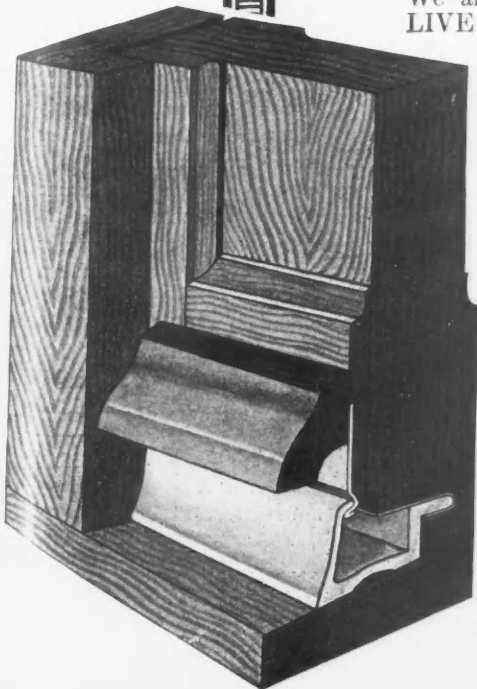
SHOGREN METAL WEATHERSTRIPS in new, unworked territory.

Eventually some one will represent us in your locality.

Will it be you? If it will, write to us today for full particulars without obligation.

Shogren & Rasmussen Co.

1926 S. Fifty Second Ave.
CHICAGO



CORRESPONDENCE

Questions answered—ideas exchanged

Our Readers Are Requested and Urged to Make Free Use of These Columns for the Discussion of all Questions of Interest to Architects and Builders

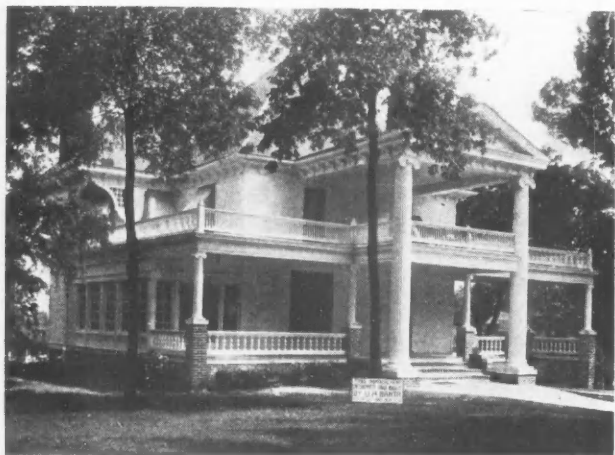
Make Old House New

To the Editor: Centerville, Iowa.
 I am sending photos of a remodeling project that I have just finished. One was taken just before we started and the other upon finishing.



The "Old House" Before It Was Made New by Remodeling.

The interior of the house was changed thruout making it a most modern and up-to-date residence of the Southern Colonial type.



As the Home Looks After the Re-Building Process.

This is a good example of how people can make their old house into a new one.

V. A. BANTA,

General Contractor and Architect.



Texas Mountain Cedar Posts Claimed Durable and Economical

To the Editor: New Braunfels, Texas.
 We notice your article relative to "Information on Decaying

Posts" for foundation purposes (June issue, page 111). We presume you are referring to the use of pine posts, which wood will not withstand decay unless a preservative is used. Here in Texas, and a few firms in the North, we use Texas Mountain cedar house blocks for foundation purposes, usually set in about 6 inches of concrete in order to get a firmer foundation, but not set in concrete to protect the wood. Texas Mountain cedar contains a natural cedar oil which thoroly impregnates the wood and protects same against decay and insects. We have affidavits proving the superior lasting quality of Texas Mountain cedar, house blocks and fence posts having been in ground for fifty years, which were taken up and were still in good serviceable condition.

We are enclosing a schedule showing compartive costs of concrete foundation and Texas Mountain cedar nouse block foundation.

Comparative cost of foundation for a five-room bungalow, using Texas Mountain cedar house blocks or concrete piers:

A five-room bungalow will require an average of 50 piers, 5 feet in length.

Cost of concrete, using 1-2-4 mixture for fifty 5-foot piers, 8 inches in diameter, will require approximately 9 cubic yards of concrete, basing cost of labor and materials at \$12 per cubic yard, these piers will cost \$108, as follows:

| | |
|---|----------|
| Material for 9 cubic yards of concrete: | |
| 8 yards of rock, \$2.50 per yd., delivered to job..... | \$20.00 |
| 4 yards of sand, \$3.00 per yd., delivered to job..... | 12.00 |
| 40 sacks cement, \$1.00 per sack, delivered to job..... | 40.00 |
| Labor for building forms, mixing concrete, digging holes, etc., pouring concrete, tearing down forms, etc.. | 36.00 |
| | <hr/> |
| | \$108.00 |

(This does not include cost of lumber for forms.)

In some localities concrete will cost more than \$12.00 per cubic yard on account of higher cost of materials.

Cost of Texas Mountain cedar house blocks, for same bungalow, will require 250 lineal feet of 8-inch blocking.

Cost of 5-ft. 8-in. blocking delivered on a 20c freight rate is 12c per lin. ft., adding 33 1/3% profit or for cost of handling, gives you a cost of 16c to consumer.

| | |
|--|---------|
| 250 lin. ft. 5-ft. by 8-in. Texas Mountain cedar house blocks at 16c..... | \$40.00 |
| Labor for digging 50 holes, sawing ends off blocks and setting blocks, estimated at..... | 18.00 |
| | <hr/> |
| | \$58.00 |

Cost of concrete foundation.....\$108.00

Cost of Texas Mountain cedar foundation..... 58.00

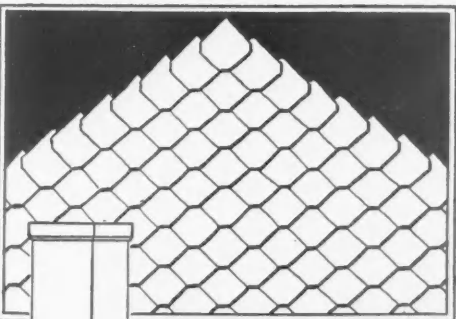
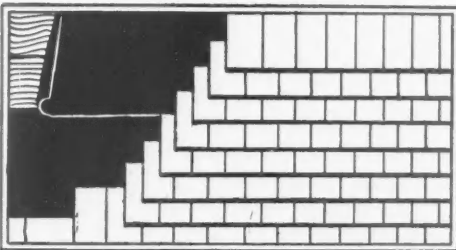
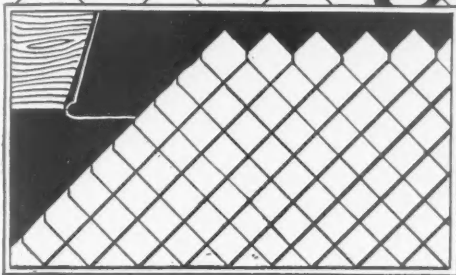
Or a saving of.....\$ 50.00

Brick piers will cost approximately same as concrete and are not as substantial.

This shows a saving of approximately \$50.00 on a five-room bungalow.

PFEUFFER CEDAR CO., INC.

Build a fireproof Shingle house that lasts Forever



and you will have something distinctive to sell.

Property-owners have in the last dozen years had permanent, fireproof, money-saving construction brought constantly to their attention. They are receptive today to the better type of building materials.

Ambler Asbestos Shingles, in permanent Newport Gray, Blue-black, Indian Red, Moss Green and other colors, and in shapes for American, French and Honeycomb styles of laying; and Ambler Asbestos Building Lumber and Linabestos Wallboard give you just what you need for a better-than-ordinary home.

ASBESTOS SHINGLE, SLATE & SHEATHING COMPANY

Dept. A

AMBLER, PENNA.

Branch Offices: Atlanta, Baltimore, Boston, Buffalo, Chicago, Cincinnati, Cleveland, Detroit, Minneapolis, New York, Philadelphia, Pittsburgh, Washington, Wilkes-Barre, Montreal, Canada; Toronto, Canada

Southwestern Distributor: R. V. Aycock Co., Kansas City, St. Louis, Tulsa, Houston

Western Distributor: J. A. Drummond, San Francisco, Los Angeles, Fresno

Other distributors throughout the country

Ambler Asbestos Building Lumber

For siding, partitions, fire-floors, and wherever strength and fire-resistance are essential.

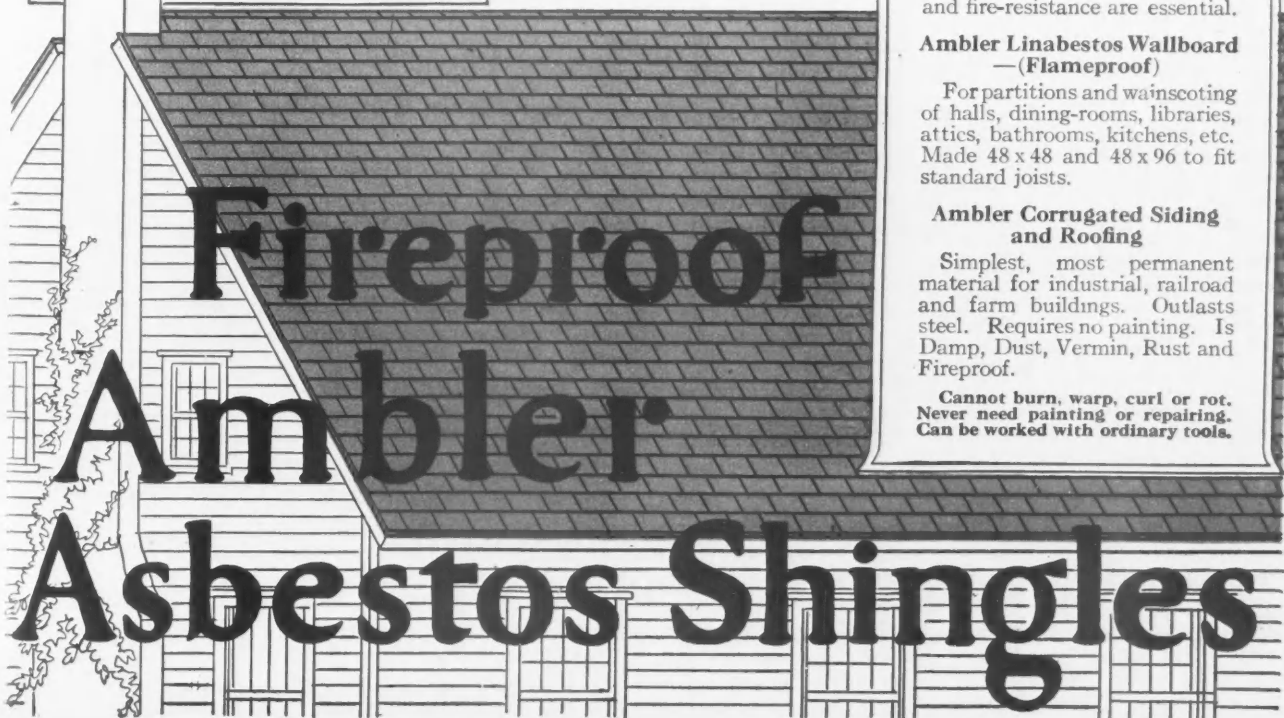
Ambler Linabestos Wallboard — (Flameproof)

For partitions and wainscoting of halls, dining-rooms, libraries, attics, bathrooms, kitchens, etc. Made 48 x 48 and 48 x 96 to fit standard joists.

Ambler Corrugated Siding and Roofing

Simplest, most permanent material for industrial, railroad and farm buildings. Outlasts steel. Requires no painting. Is Damp, Dust, Vermin, Rust and Fireproof.

Cannot burn, warp, curl or rot. Never need painting or repairing. Can be worked with ordinary tools.

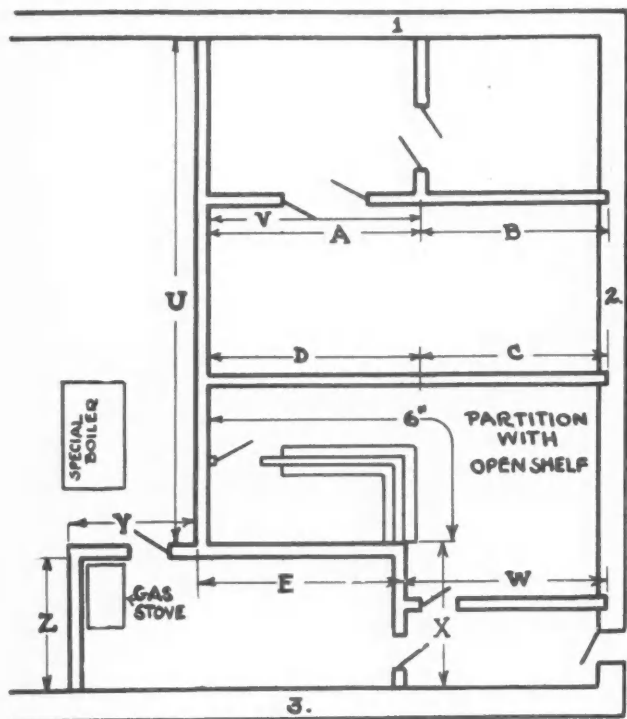


What Caused Peculiar Rotting of Some of the Wood Girders?

To the Editor: Groversville, N. Y.
I enclose a sketch of part of a church basement supper room with kitchen adjoining.

As an old subscriber to the AMERICAN BUILDER I wish to call on your correspondence division for an answer to my query.

In the sketch I have tried to make plain the construction of the stone wall with hollow tile partition walls and wood girders and floor timbers.



1-2-3 = 2'-0" STONE WALL
A-B-C-D-E = 10" X 12" SPRUCE TIMBER
U-V-W-X-Y-Z = 12" HOLLOW TILE WALLS

All the Timbers Except A Were Destroyed by Rot. Did Steel Ceiling Cause It?

A steel ceiling covers the rooms and is carried over the girders, B. C. D. E., being nailed directly to the timbers without furring strips.

The church is of brick, built in 1912. This spring a settlement was noticed in the floor above and an investigation showed the timbers B. C. D. E. which span the basement to be entirely gone. Nothing but a shell left. While timber "A" which rests on tile wall "V" was found to be perfectly sound. The question is why the steel ceiling caused B. C. D. E. and not "A" to rot? And, did the steel cause the trouble?

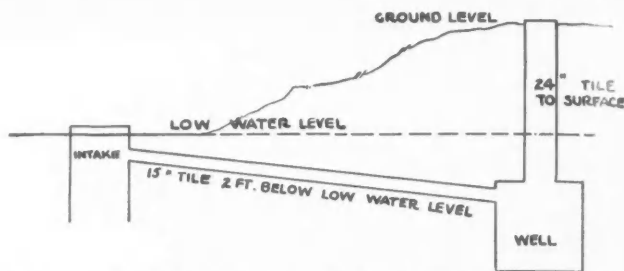
Thanks for your kindness, I am awaiting a reply with interest.

ERWIN J. DYE.



What's Your Estimate?

To the Editor: Greenville, Mich.
We have a job to figure on that is out of our line somewhat. Can you help us with an estimate? We have a well to dig to supply water for a fire pump in a factory, the well to be about 8 by 8 feet square and 8 feet deep and cemented. Will have to go about 20 feet deep in the ground and curb all the way down. The ground is sand and close to river, so we will have to pump the water out as soon as we reach water level in river. Then we have to put 15-inch tile from well to intake box in river. About 130 feet to dig about 16 feet deep and about 60 feet thru rushes and grass in edge of river or overflow ground from milldam.



What Would You Bid for Digging Well as Located in This Sketch?

We will have to build concrete intake box, 6-foot sides, three sided, with screen on down river side. We will have to curb ditch all the way, and will have to pay 45 cents per hour for labor.

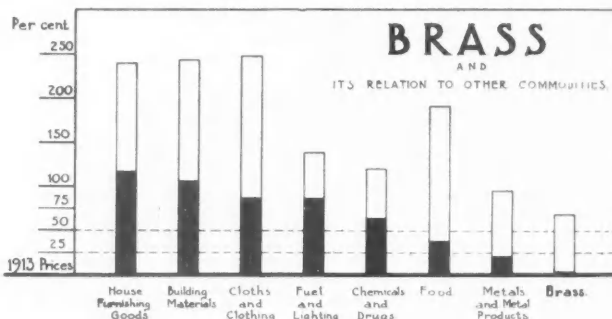
SWARTZ & ROBINSON, Contractors.



Calls Attention to Brass Prices

To the Editor: New York, N. Y.
It will probably be very interesting to your readers to notice the commendable record made by brass prices. A close study of the situation shows that in advances and declines it has been one of the least criticizable materials.

Compared with building materials, as a whole, and with other commodities in common use, brass is now at a price which is wholly satisfactory. It is also true that it never did take the high advances which not only some but many materials registered during the hectic days of the war.



Prices of Brass Are Low as Compared with Many Articles.

We feel that its durability and price are now especially good reasons for the use of brass, where practical, in the building field.

COPPER, BRASS AND RESEARCH ASSN.



Finds New Way to Fit Baseboards

To the Editor: Brewster, Kan.
I have hit on a most satisfactory way to fit round edge baseboards and find it to be O. K., so will give it to the readers of the AMERICAN BUILDER. Cope the board that fits against first board clear out to a point and leave it about 1/16 to 1/8 inch thick, then mark first board on top which will be a 45-degree angle and cut it down the thickness of the coping on other board. This makes a mitered effect with no edge of the coping showing.

RALPH M. OSBORN.



Study the Fly First Then Put Up Screens

To the Editor: Kewanee, Ill.
In answer to David F. Fee, of San Antonio, Texas, on how to hang screen doors and all screens. What do we put screens up for? To keep out the fly and other small insects. Then make it hard for the fly to get in and easy to get him out. Now, my plan is to put the wire or smooth side inside and make a recess on the outside. The fly will light on the wire and will never back out and you will not disturb him, while, when he gets into the house, you can brush him out without killing him. My advice would be to study the fly and find out how to deal with him.

ALFRED CURTIS CADY.



Easy way for you to make more money

You want to sell more material to more people. You'd like to double your sales of Cornell-Wood-Board or anything else you handle. One way to sell Cornell-Wood-Board to more people is to tell them a lot of ways to use it.

Here's a little booklet, sixteen pages, describing 165 different things that can be made of Cornell-Wood-Board; telling exactly how to do it in a way that can be done by a man at home, or his wife, or a smart boy.

Here are just a few of the 165—

*Waste Baskets, Clothes Hampers
Bird Houses, Games, Screens, Table Mats*

We'll furnish you with as many of these booklets as you wish, and we will print your name on them so your trade will know where to come to buy the original Cornell-Wood-Board.

These booklets, together with a sample of Cornell, are enclosed in an envelope ready for mailing.

Just cut off the coupon and send it to us, telling how many of the booklets you want and how you want them imprinted.



for walls, ceilings, partitions
and 165 other uses

CORNELL WOOD PRODUCTS CO.
STATE-LAKE BUILDING, CHICAGO

Please send me _____ booklets "165 uses for Cornell." I will mail them to a good list of families. Imprint them as follows:

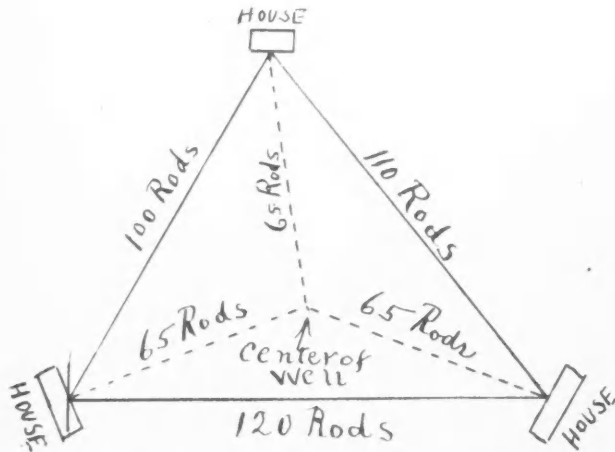
Name _____

Address _____

City _____

Finds 65 Feet Distance to Well

To the Editor: St. Louis, Mo.
I noticed the inquiry of L. D. Dawley, Long Beach, Calif., on the following problem:



Solution of Mr. Dawley's Well Problem to Locate a Well Equally Distant from Three Houses.

A triangular field, one side 120 rods long, one side 110 rods long and another side 100 rods long, was owned by three men. Each built a house corner and decided to dig a well in the middle of lot that would be equal distance from each house, and wanted to find the distance from house to center of well. I find out that the distance from each house to center of well is 65 rods.

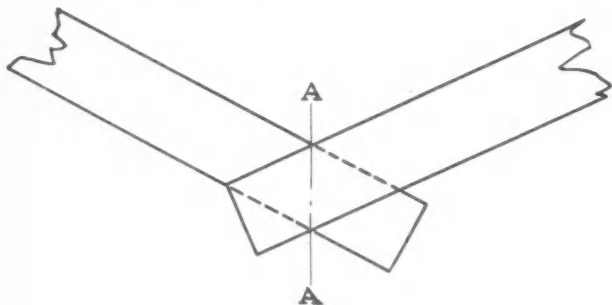
EDW. A. FIORI,
Sanitary Engineer.

EDITOR'S NOTE: Mr. Dawley's problem on locating a well equidistant from three farm houses has stirred up more than usual interest. Numerous excellent solutions have been received from several correspondents. E. H. Green, Sperling, Manitoba, does not think a correct answer is obtainable by arithmetic or algebra but uses geometrical analysis, trigonometry and logarithms to arrive at results. A. T. Rogers, Washington, D. C., concludes that 64.528 rods is the correct solution. While there are minor differences in the answers, the correspondents are all to be complimented on the thoroughness and interest with which they have attacked the problem.



Answer to the Crawford Problem

To the Editor: Lenora, Kan.
I desire to answer Mr. Crawford's problem on page 124 of the August number of the AMERICAN BUILDER. He wants to know where to make cuts in a roof where there is a change in the pitch of the slope.



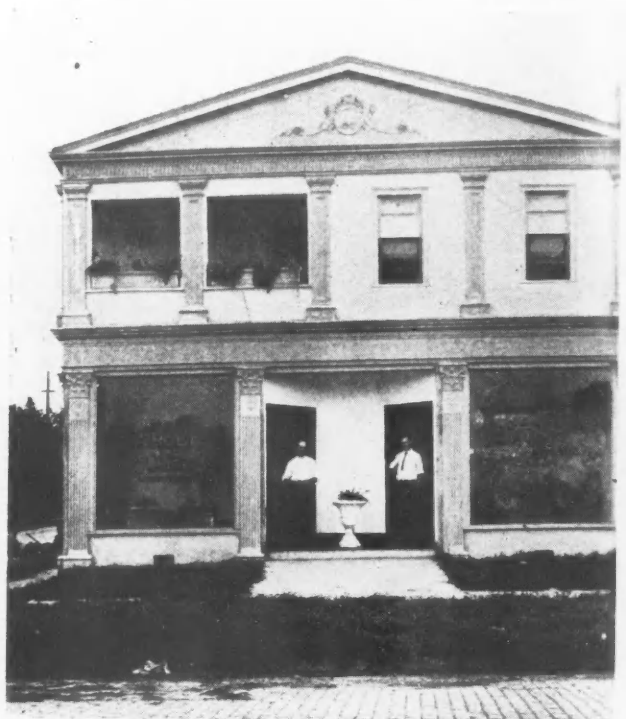
Mr. Becker's Answer to Mr. Crawford's Problem Concerning Roof Cuts Is to Make Layout of Timbers and Get Angles.

As this drawing shows I simply make a layout of the timbers to be cut and the intersection of the two gives the angle.

J. C. BECKER,
Building Material Dealer.

This Shop is a Sample of the Owner's Work

To the Editor: Huntington, W. Va.
A stucco contractor in West Virginia uses this combination dwelling and storeroom to give his business some practical



This Building Shows the Work the Owner Does.

advertising, for on the upper porch and thruout the show-rooms on the first floor specimens of concrete flower vases, boxes and garden furniture are seen and over the exterior of the building are decorative reliefs in keeping with the design of the structure. The entire building is in reality a sample of just what the contractor can do and is a worthy sample of the beauty and lasting qualities of his work.

This building is owned by A. Holt, Fifteenth Street and Eighth Avenue, Huntington, W. Va.

A. P. CHILD.



Here Are Two Brain Teasers

To the Editor: Washington, D. C.
I enclose two problems which will probably be of interest to your readers.

(1) A cow is tied to the corner of a square barn, measuring 20 feet on each side, a 60-foot rope being used. Find the area of ground the cow can graze over.

(2) A cow is tied to the outside of a circular water tank, 30 feet in diameter by a rope exactly equal to the circumference of the same. Find the area of ground over which the cow can graze.

A. T. ROGERS.



Will Concrete Over Shingles Be Water-Tight and Durable?

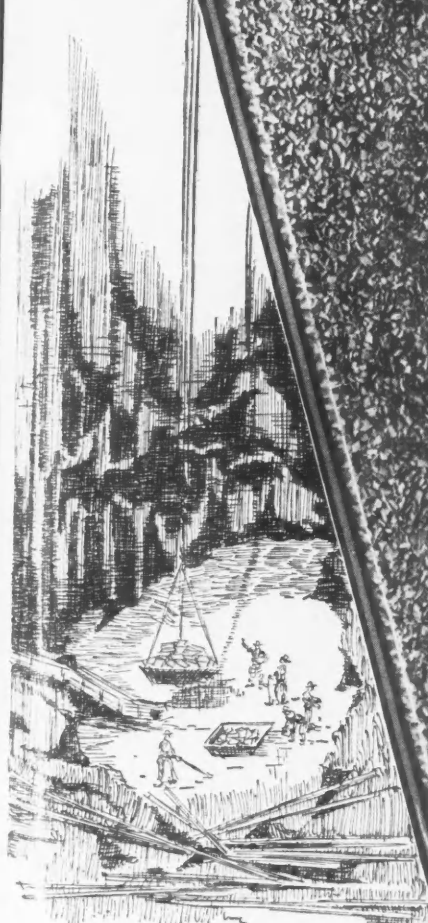
To the Editor: Amityville, L. I.
I read in the Correspondence Department a letter from L. T. Kinney about a roundhouse. I would like to ask Mr. Kinney how he puts his concrete roof on over old wood shingles. Also how he puts it on other roofs with nothing but the rafters to support it.

How much cheaper is it than other roof constructions; also can you guarantee the roof to be water-tight and how many years will it stay so?

C. H. LUDLORN.

The New FLEX-A-TILE

**Super-Giant
Shingle
Weathered Brown**



Slate for the "Weathered Brown" shingle comes in its natural color from the Richardson quarries at Flex-a-Tile, Georgia.

Now you can meet with Flex-a-Tile the demand that has long existed for a shingle that combines the superior water-proofing qualities of asphalt with a color that not only is distinctive, but cannot be obtained from any other manufacturer.

Richardson's own quarries at Flex-a-Tile, Georgia, satisfy this need with a fine grade of natural brown slate.

The Flex-a-Tile Weathered Brown shingle is being produced in a new super-giant size (10x14), because this size means economy in application.

Only in Flex-a-Tile House Tops is such a wide range of colors now obtainable—for this exclusive brown is an addition to a line that includes green, red and blue-black as well. Multi-color combinations of striking beauty can be obtained by the mixing of these various tones in the same roofs.

Ask the nearest dealer or roofer to show you samples.

Address Dept. R

The RICHARDSON COMPANY

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(Chicago) Illinois

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(Cincinnati) Ohio

New Orleans,
Louisiana

RICHARDSON
Product

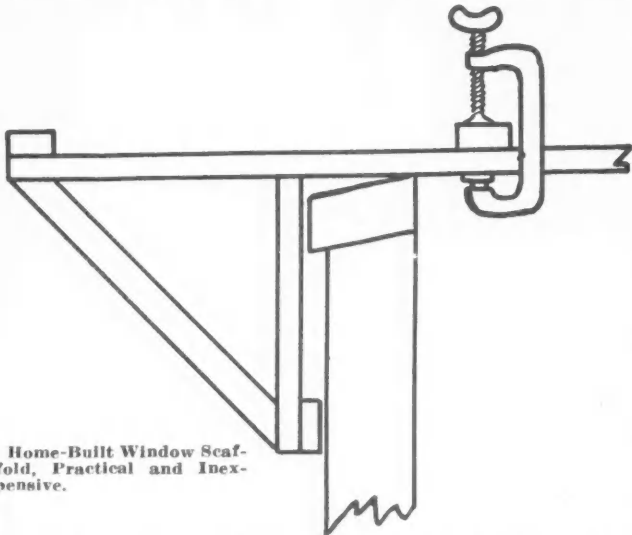
WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN BUILDER

Practical Inexpensive Scaffolding

To the Editor:

Minnedosa, Man., Canada.

Have just received July copy and notice a question from John U. Weihman, Ottawa, Ill., about a safe window scaffold. Am showing sketch of one I used on a five-story hotel and found safe and easy to fix and take down. It consists of two



Home-Built Window Scaffold, Practical and Inexpensive.

wooden brackets made of good straight grained 2 by 4s, with a block at foot to take care of the overhang of the sill, and a block at outside end to keep planks from sliding off. A bar of 2 by 4 long enough to reach across window opening inside and two 6-inch clamps. To operate just put out brackets and place bar across inside ends and clamp tight. They will not slip.

CHAS. THOMPSON,

✦ Carpenter and Builder.

Built Home in Slack Times—Used Built-in Idea Extensively

To the Editor:

Batavia, Iowa.

I built my home in 1920. It is true I built in a high market, but it was while carpenter service was not in much demand and you know how hard it is for carpenters to get anything done for themselves in ordinary times.

The main building is 28 by 34 with 10 by 34 porch. The basement is under the entire building, porch included. We also have our own sewerage and water systems.

The floors of the two front rooms are bordered. There are colonnades, bookcases and writing desk in the living room and china closets in the dining room colonnade.

Both baths have built-in cabinets, one with panel doors and the other with mirror doors.

The kitchen cabinet is built in around the sink under a window. The dumbwaiter and ironing board make complete furnishings for this room.

The back porch roof extends over the grade door as a weather protection. The porch is screened in sections, these are replaced in winter by storm door, windows and some boarded sections to protect the northwest kitchen door.

I have been a subscriber to the AMERICAN BUILDER for a number of years. Have such a lot of old numbers, expect I'll soon have to do as one brother said in your magazine recently—"build an addition on my shop." ROSS VEACH.

✦

"So Near Yet So Far" on Solving Carpet Problem

To the Editor:

Buffalo, Wyo.

I received the architectural details and the buyers' guide that you sent me, and want to thank you very much for them, especially the architectural details.

I have been watching the answers to Mr. Smith's carpet

puzzle that came out in the March issue of the AMERICAN BUILDER and have become quite interested in them. I do not claim to know anything about trigonometry and but little about algebra, but I have a certificate from the Scranton School of Pennsylvania giving me 100 per cent in arithmetic when I took a course in architecture that took me thru common arithmetic and thru geometry and mensuration and the formulas. I could not work the carpet deal to suit me. As the old saying goes, I could get so near but yet so far.

I was not long in making up my mind that you could not make all of the corners of the carpet touch the walls of the room and have all the corner angles of the carpet true right angles. The answers of Mr. Vermass, Mr. Bohannon, Mrs. Hanson and Mr. Hume are all pretty much the same. There is a slight difference in some of them, but not very much, and as near as I can figure it out I think they are about right.

There is a large room where I live, 30 by 40, and I have a long fish line and I staked off a room 12 by 18 in the big room with the line and small nails, and squared up all the angles with 6, 8 and 10 rule (and they say that will square the devil), and the longest piece of carpet I could get into the room was 18 feet, 11½ inches, which is about the same as the answers that the other men gave that I have mentioned, but I could not make all four corners of the carpet touch the walls of the room. Two corners was the best that I could do, and I don't think anybody else can make all four corners touch and have them all true right angles.

Thanking you again for the architectural details, I remain
H. P. HOWE.

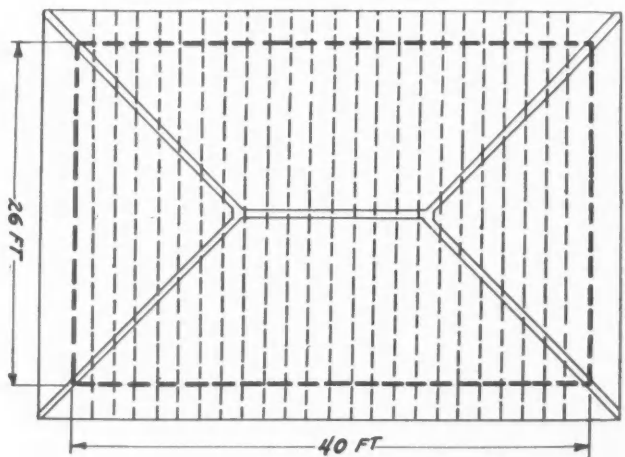
✦

He's Puzzled Over Rafter Lengths

To the Editor:

Mildred, Pa.

I am building a home here 40 by 26 feet. Kindly tell me the exact length of hip rafter, also common rafter. I would also like to know the difference in length of jack rafters, allowing for a 1½-inch ridge pole. Will you also tell from what point



Length of Hip and Common Rafters and Varying Length of Jack Rafters Puzzle Builder of This Size Home.

of the timber you determine the length? Is it from the extreme end or from the line of the plate? The ceiling beams project 10 inches over plate and are spaced 18 inches centers. We want to put 2 by 6 rafters on every other one or 3-foot center. The stud is 4 inches above the ceiling joist. Now, I would like to have rafter notch in on plate and rest on joist.

✦

F. G. KAMINSKY.

Greenhouse Heating

THE usual practice in installing greenhouse heating is to use long pipe coils with steam coils for fumigating placed above them.

LEHIGH CEMENT

What Lehigh Service Means to You

Your work as a builder is judged not alone by actual workmanship but also by the materials you use.

Here is a definite way in which Lehigh advertising can help you, because architects, engineers, and—most important—owners know Lehigh Cement and know that it is a dependable product. The presence of Lehigh sacks on a job you are doing for them strengthens their respect for your judgment and ability.

Lehigh Cement and Lehigh service are available to you through Lehigh dealers the country over.

LEHIGH PORTLAND CEMENT COMPANY

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New Castle, Pa.

Omaha, Neb.

Pittsburgh, Pa.

Mason City, Iowa

Richmond, Va.

SERVICE

Mirror-Like Beauty of Well Varnished Floors

PROPER METHODS OF VARNISHING AND RE-VARNISHING VARIOUS KINDS OF FLOORS INTERESTINGLY TOLD WITH COMPLETE DETAILS

By G. B. Heckel

GOOD GRAIN is varied and unique. To keep it so means protection. Penetration, not protection, is the law of oil or wax. With this penetration goes dirt. The wood is clogged—the clear natural beauty of the wood grain is gone.

The dictates of health and good taste are for the varnished floor. The distinctive home has distinctive floors. The floor properly varnished requires little care or attention and the cost is not more than the depreciation in the value of a carpet. The saved labor is saved capital, while the added health cannot be measured in mere dollars.

Also this—the mirror-like elegance of the varnished floor cannot be secured by other processes.

Any ordinary floor is adapted to a varnish finish. It need not be hardwood or parquetry. If it is, so much the better. The varnish way converts a soft wood floor into a very passable substitute for hardwood. The treatment is simple and inexpensive.

Preparation of Surface

Given a common floor, under ordinary conditions, scrub thoroughly with warm water to which household ammonia has been added, about one part ammonia to every eight parts water. Grease spots and stains may require special scrubbing with a stronger solution of ammonia water. Where this fails, washing with alcohol or benzine should be tried. Paint spots may be removed by washing with turpentine and sandpapering. Soap or powders should never be used. They are hard to remove completely and their presence is harmful to the varnish which follows. Waxed or oiled floors do not require such cleaning, but the wax (if ordinary soft wax) or oil must be thoroughly removed by washing with alcohol or benzine. Failure to remove all of this means failure of the job. A durable varnish finish is not possible where wax and oil remain.

For floors that are badly discolored, the next step is to bleach them. This is done by applying a solution of oxalic acid crystals and hot water—as many crystals as the water will dissolve. This solution is applied with a scrubbing brush and is left on the surface for about twenty-four hours, then washed off thoroughly with clear, hot water. In bad cases, repeated applications of the bleach are necessary and the final coat only should be washed off with hot water. The next process is to drive all nail-heads below the surface of the wood and to fill all nail-head holes, cracks and crevices with a good crack or crevice filler. If the wood is to be stained, the crack filler may be colored the desired shade by

working into it some of the stain. After the crack filler is dry, the wood should be sandpapered or otherwise made perfectly smooth and clean to receive the finish.

The floor is now ready to receive the finish. If it is of an open grained wood, such as oak, ash, chestnut, etc., it will be necessary to fill it with a paste wood filler which will seal up the pores of the wood and present a perfect smooth surface for the application of the varnish. Paste wood fillers come in the natural and colored effects. If other than the natural finish is desired on open grained woods, it can best be obtained by applying a coat of wood paste filler of the desired color, then following with varnish.

Paste fillers are applied with a brush and they present a flat appearance to the eye, are wiped off with excelsior or waste, rubbing across the grain and working as much of the filler into the wood as possible. Paste wood fillers should usually be allowed about twenty-four hours to dry, after which they should be well sandpapered with fine sandpaper and dusted off. A five-pound can of paste wood filler usually costs considerably less than one dollar and is sufficient to cover about 225 square feet.

Staining

On close grained woods (pine, poplar, cherry, maple, etc.), the natural finish is obtained by applying two or three coats of floor varnish direct to the bare wood. Stained effects are secured by using an oil stain. Allow twenty-four hours for the stain to dry.

Varnishing

The work is now ready for varnishing. At least two coats are required for a satisfactory job—three coats are better. Varnish should be applied smoothly and evenly, in thin coats and a flat varnish brush. From forty-eight to seventy-two hours should be allowed for each coat of varnish to dry, sandpapering lightly between coats. Never apply a succeeding coat of varnish until the preceding coat is perfectly firm and dry to touch.

High grade floor varnish dries with a tough, high gloss finish. However, where a dull finish is desired, this can be procured by rubbing with powdered pumice-stone and oil.

A good floor varnish will cover between four and five hundred square feet of surface per gallon.

Proper Conditions

A good temperature for varnishing is 70 degrees. The room should be well ventilated and kept at an even temperature. Draughts, dampness, ill ventilation are some of the causes of a job's going wrong. See that the conditions are right.

The floor may be so rough that mere staining and varnishing

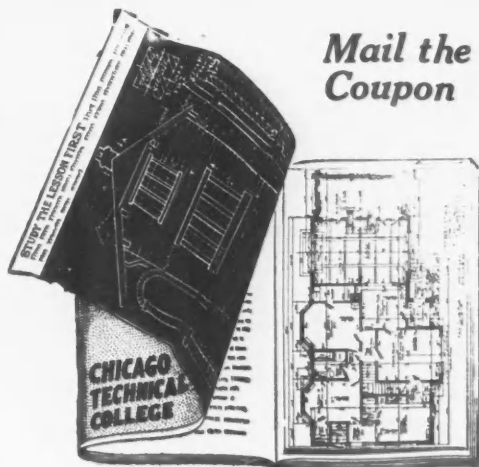


Floors Serve a Useful Purpose. They Should Have a Protective and Attractive Finish.

Send To-day — for Free Trial Lesson in Plan Reading

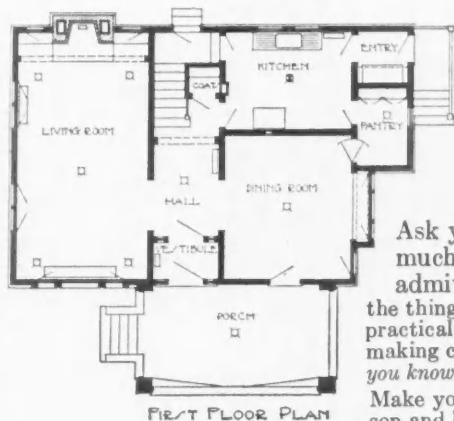
If you are ambitious to place yourself where you will earn more because you will be worth more, get this free lesson. It will show you how by studying in your spare time under the direction of the Chicago "Tech" experts, you can learn to handle big building jobs.

The man who knows how to work best with his head is the man who gets the big pay or makes the most out of his business. Don't be a "half-way" man — **be an expert.** Find out about the Chicago "Tech" way of training. No money to send for this lesson and full information. Just the coupon. Mail it today.



Mail the Coupon

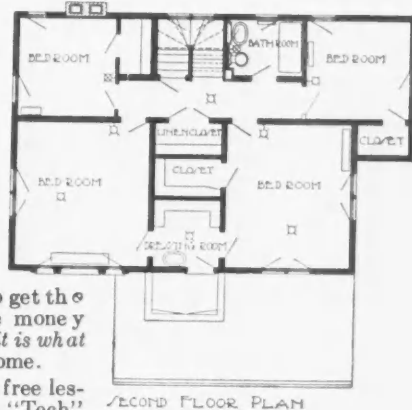
Can You Plan and Figure Costs—



Make Estimates and Direct Building Construction?

Ask yourself this question — "How much do I know? If you have to admit to yourself that you can't do the things which pay best, now is your time to get the practical training which will put you in the money making class. Hard work alone won't do it—it is what you know that determines the size of your income.

Make your start now. At least send for the free lesson and let us tell you all about the Chicago "Tech" way of training men in their spare time.



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Chicago "Tech" Courses are planned for practical men who want to become better informed on subjects which apply to their daily work. No time is given to "fancy" studies or useless theories.

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Without obligation upon me please send Free Trial Lesson and information on the course I have marked X below.

- Plan Reading and Estimating
- Architectural Drafting

Name

Address

Post Office State

Occupation

will not suffice. An old floor of this class must be painted before varnishing.

A good floor paint or ground color should be selected for the purpose, and two coats of such paint should be applied before varnishing. After cleaning the floor as before directed, the first or priming coat is to be applied according to directions on the can. After this coat is thoroughly dry, cracks, holes and rough spots are to be filled with putty, colored with the paint itself, as directed for staining. The second coat is applied after the priming coat is dry, which should be in about forty-eight hours. In all painting a fairly large round bristle brush should be used and the paint should be well brushed out, first with the grain, then across the grain, and finally smoothed out by brushing with the grain. This advice applies especially to the priming coat, which must be well worked into the surface.

After the second coat is dry and hard, one or two coats of floor varnish should be applied as directed for a stained floor.

In some cases it is not thought necessary to paint and varnish the entire floor, only the border being so treated, while the part covered with the carpet is left untreated. This method gives as good an effect to the eye, but leaves much to be desired from a sanitary point of view.

It should always be remembered that a varnished floor can be easily cleaned by wiping, while a bare wood floor can be rendered "surgically clean" only by the use of disinfectants. However, a finished border that can be wiped is preferable to a carpeted border that cannot be swept thoroughly clean.

Finishing New Floors

The treatment of a new floor follows along the same general line as already given. It involves sandpapering perfectly smooth, filling crevices with a crevice filler, coloring to match the wood, filling the pores of the wood with a paste wood filler, if the wood be open grained, or stained to secure the desired effects if the wood be close grained, and finally the application of the varnish.

Refinishing Old Floors

In refinishing a varnished floor, much depends upon the condition of the old finish. If it is still intact, it should be washed thoroughly with clear lukewarm water and allowed to dry, then sandpapered perfectly smooth, dusted off and one coat of floor varnish applied.

If the old finish is badly worn, it must be removed, as a transparent varnish will not hide any defects under it.

A good paint and varnish remover is recommended for this purpose. Such removers are usually applied with a brush and after a short time the old finish softens up so that scraping with a putty knife will readily remove it.

After using such removers, it is usually necessary to wash the wood surface with alcohol or benzine. Then when dry, sandpaper with fine sandpaper and the surface is ready for refinishing.

Proper Treatment and Care of Floors

Floors are best kept in good condition by sweeping with a hair broom, or a broom covered with a soft cloth. They should be wiped every week with clear cold water and the surface should immediately be wiped dry.

Re-varnishing is advised about once a year to keep the floors in good condition. When a surface is subject to extreme hard usage more frequent renewals may be desirable. This will keep the varnish from wearing thru, which would necessitate the removal of the old finish.

Remember that, with varnish, a coat in time saves time, money and discomfort.

Don't use cheap liquid fillers or shellac under floor varnish.

Don't expect satisfaction from cheap varnishes or stains.

Accept nothing but regular floor varnishes made for the purpose by reputable manufacturers.

Varnish your floors and save doctors' and druggists' bills. Varnish is cheaper than medicine and far pleasanter to "take."



Isn't it a Fact?

THE highest cost is sometimes caused by the lowest price.



Are You Getting Yours?

THE great National Bank of Commerce says that money is more plentiful and cheaper. The same statement has a forward look and says that good business is going to get increasingly better.



Just for the Girls

WHEN the plumbing interests of Manhattan Island announced that for a change, or for some reason, their annual outing this summer would be a stag affair the women did not like it. So they got together and arranged a woman's outing. The men call their affair a "Manhattan" and the woman might name their party a "Womanhattan."



That's Hard

DOCTORS say that Londoners live fewer years because they have nothing but a hard water supply. Sounds like a good argument for the soft water folks.



Seems Feasible

ISSUES of plumbing papers are now filled with accounts of picnics. It seems that the plumbers in every town get together and take a day off for jollification and to get better acquainted. Might not be a bad thought for the builders to get closer together and nearer to nature by annual picnics.



Getting the Money

OAKLAND plumbers have thru their local association put thru an arrangement whereby they are assured of their pay within ten days after a job is completed. Looks like something worth while doing has been accomplished.



Sounds Favorable

SEVEN HUNDRED new locomotives are being placed in service in Russia.



Follow Thru

SOME of the best merchandising successes have been built up not alone by quality goods at fair prices but by service and one of the best developments of service is the practice of keeping track of things after they are sold. A store that sells electric washing machines is indorsed by every user of its machines because it calls up the new owner several times and offers to give her any needed help on her machine. This keeps the product in tip-top shape and makes that lasting satisfaction that always builds business.



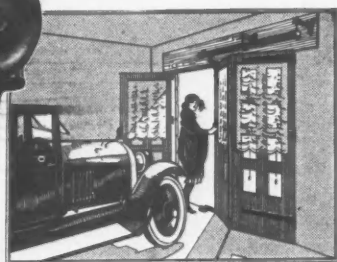
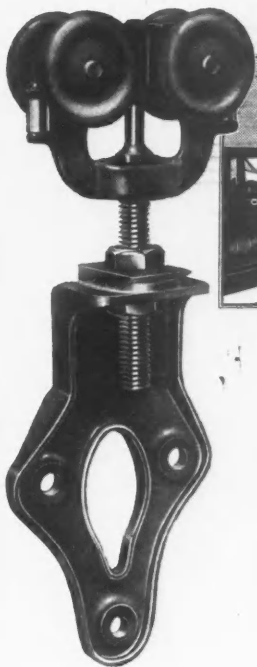
What, Again?

COTTON consumption has so nearly reached the pre-war stage that once more we hear talk about a crop shortage. Might as well be cotton, tho, as peaches or wheat. Some crop always has to be short—in the mind.

DEMAND

ALLITH-PROUTY

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and
FIREDOOR
HARDWARE
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HARDWARE
SPECIALTIES**



THE constantly increasing demand for Allith-Prouty products clearly indicates the implicit confidence dealers and builders, everywhere, have in this fast selling line.

They know that, for more than twenty years, Allith-Prouty has set the standard of excellence in sliding door hardware.

1080 Trolley-swivel sets for sliding-folding garage doors are specified by contractors and builders, because of their economy of installation, ease of operation and durability of service.

Write for Catalog 91.

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"Satisfaction in Hardware"



Useful Facts About Steel Basement Windows

EASY WAY TO INSTALL THEM WITH ANY TYPE OF FOUNDATION. LONG SERVICE ASSURED

By S. M. Fechheimer

STEEL basement windows are becoming the popular way to daylight basements. Home owners are demanding them because of the greatly increased lighting they give for the same size of window opening, because they won't warp, stick or get out of order; because they won't shrink and form crevices for rain and drafts to enter; because of their sturdy, permanent construction in keeping with the foundation itself; and last, because they are so economical in cost.

No Trick to Install

Contractors are finding them very easy to install—in fact, so simple that it seems needless to go into any detail regarding this. The windows are built into the basement wall as the construction proceeds, and that is about all there is to it. In fact, contractors who have had any experience with the steel windows say that it is easier to install them than the old-style frame. The steel frame and sash are furnished complete, but it must be remembered that the hinge pins are removable, so



Steel Sash Windows Are Installed as the Wall Is Laid.

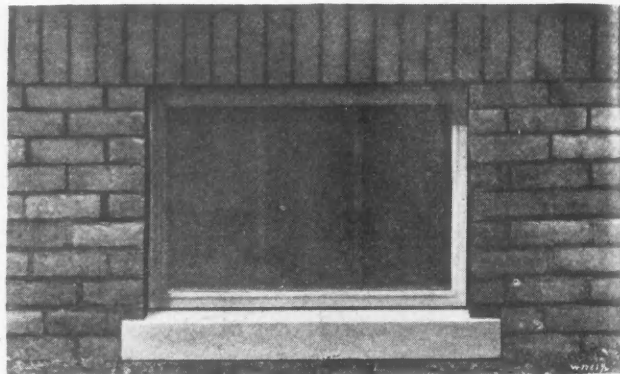
that the sash can be taken out at any time, such, for instance, as when the sash is sent out for glazing.

Weathertight

One of the popular types of steel basement windows has an outstanding leg around the frame, of sufficient size to be embedded in the surrounding construction and thus give an absolutely weathertight joint. Another type has a channel section which merely butts against the surrounding construction.

There is one very important point to be watched carefully in installing steel windows; that is to allow sufficient clearance for the free swinging of the sash after the completion of the construction. The difficulty occurs principally at the jambs. All the manufacturers' literature calls attention to this clearance very strongly, yet occasionally there comes up a case where the workman will grout up his masonry at the jamb right tight against the edge of the ventilator, so that it is very difficult to open the window at all without scraping the jambs. Manufacturer's details show a clearance of $\frac{3}{8}$ inch around all sides of the opening sash and if this be kept in mind there can be no possibility of any difficulty about the operating of the window.

The detail at the sill is the same, no matter what material is used, whether stone, pre-cast concrete, brick or floated cement mortar. The only point to look out for here is to see to it that the steel leg is *not* embedded into the sill. As shown in the photos, this leg overhangs a portion of the sill so that rain coming down the face of the sash will be cast off over the sill. If



Steel Sash Window in Typical Brick Wall.

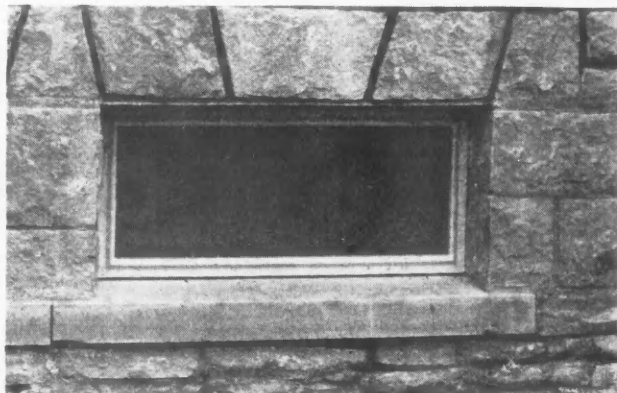
the leg were embedded in a slot in the sill it would lead the water into the slot and in case of freezing would force the mortar out of the slot. Installation and details at jamb and head vary with the construction material used, altho the principle is identical in all cases. It might be said at this point that the steel window is equally well suited for any type of foundation, whether solid brick or masonry, monolithic concrete, concrete block, hollow tile, brick veneer, stucco or wood frame.

For Solid Brick

In the case of solid brickwork the outstanding leg is built into the masonry at the jamb as the wall proceeds. At the head the leg is embedded between the two angle irons, forming the lintel, or in the case of masonry lintel between the brick courses. Where the channel outside section is used in the steel frame, the channel butts against the jamb and head and is fastened to the masonry at the jambs by means of anchor clips. The joint between steel and brick must be well pointed to insure weathertightness.

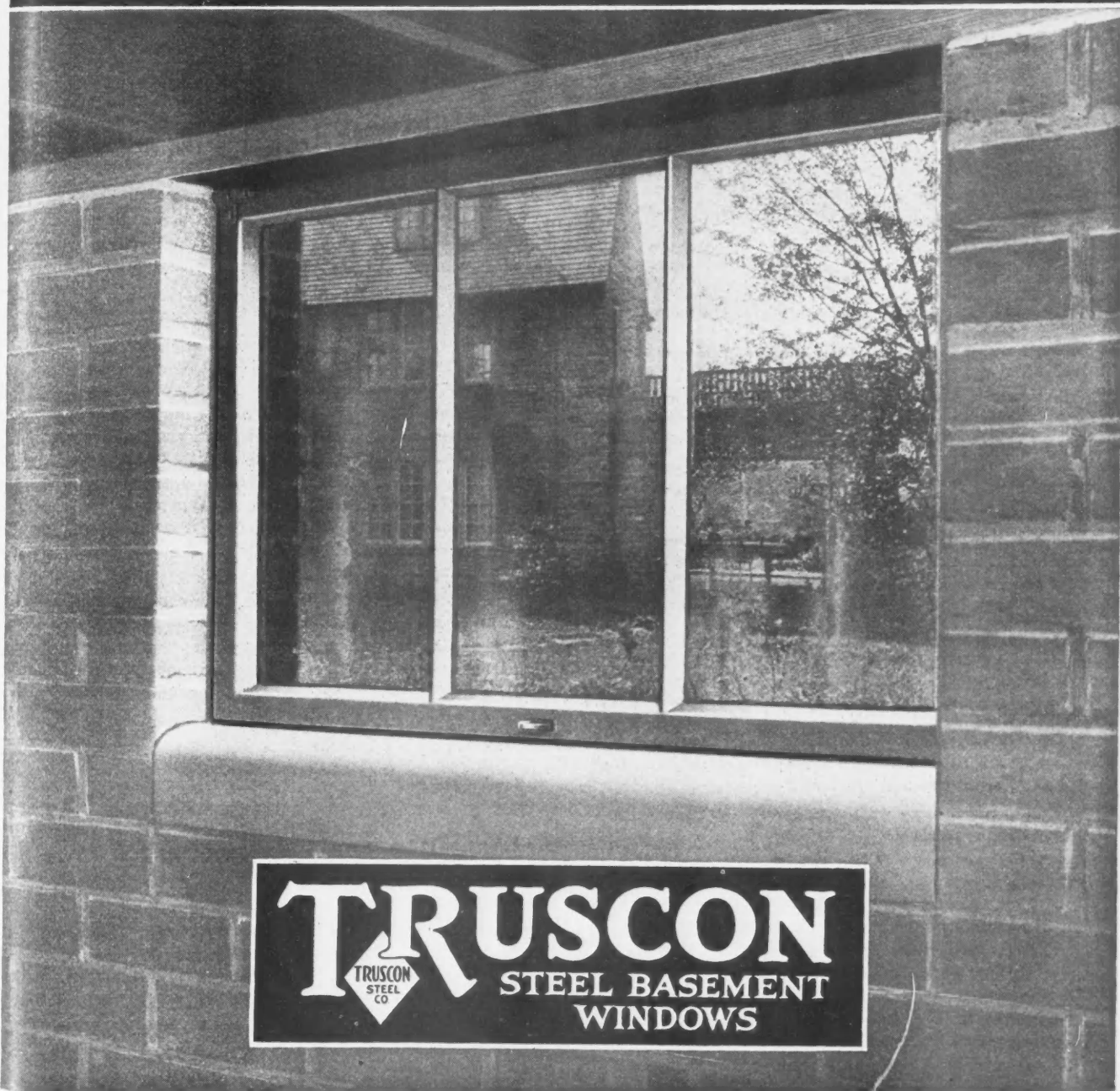
In a poured concrete wall, the best method is to install the steel window after the forms have been removed. To accomplish this the form for the window opening has a beveled strip tacked on each jamb so as to form a slot when the form is removed. The window frame is then readily set into the slot and grouted in solid. Of course, the frame can also be built in during the pouring of the concrete, in which case it is set into the wood forms. Some contractors may prefer this latter method.

Concrete blocks are made in a variety of forms. A quite common variety has rabbets formed at the ends of the block and the steel window fits into these rabbets. The window is



Concrete Block Walls Permit Usual Steel Sash Construction.

Modern Basements Need Daylight



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THEY are built right! That is why Truscon Steel Basement Windows are the most popular with home owners and builders. Continuous double weathering on all sides without any weak spots is an exclusive feature. Truscon Windows can be firmly anchored in the foundation and they won't stick, leak or need

repairs. When making comparisons don't forget that Truscon Basement Windows give 50% to 80% more daylight and are fully equipped with heavy steel hinges and strong automatic locks. If your dealer can't tell you about them send us his name and we will give you complete information.

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installed at the same time as the wall is built and is grouted into the rabbet afterwards. Another variety of concrete block is made in two pieces, front and back, in which case the leg of the window is set into the vertical joint between the two parts. Quite often special blocks are cast for jambs of windows,



Neat, Lasting Steel Sash Window Admits Maximum Light.

in which case it is a simple matter to cast them with a small rabbet at the ends in which the window will fit. Where the window has a channel jamb section, the channel butts up against the block and is anchored with anchor clips. Care must be used to see that the joints are well grouted to insure weathertightness.

Where hollow tile is used for the wall, the frame is butted against the tile at the jambs and the subsequent stucco and plaster gives a weathertight job.



Electrical Engineers to Meet And Talk Shop

THE engineers in the iron and steel industry will meet in convention September 11 to 15, 1922, at Public Hall, Cleveland, at which time there will be discussed subjects dealing particularly with steel mill problems.

The papers have been written to give the engineers as much practical data as possible.

Some of those who will discuss the subjects are Dr. C. P. Steinmetz, Messrs. B. G. Lamme, Wilfred Sykes, A. G. Whitting, F. C. Watson, D. M. Petty, L. W. Heller, R. B. Gerhardt, D. B. Rushmore, J. B. Crane, E. R. Fish, P. M. Rush, R. E. Butler, F. Hodson, Prof. Edgar Kidwell, F. W. Cramer, A. R. Leavitt, E. T. Moore, R. H. Bauer, F. A. Wiley, L. F. Galbraith, R. S. Shoemaker.

A tentative list of the subjects to be presented follows:

"Improvement in Efficiency of Electric Power Supply."

"A review of Steel Mill Electrification."

"Boiler Practices of 1922."

"Education" and "Safety."

"The Gas Engine as a Prime Mover for Power Generation."

"Steam Turbines."

"Judging Combustion from Gas Analysis."

"Electrification of the International Nickel Company's Works for Monel Metal."

"Some Consideration in the Electrification of the Steel Plant Railroad Yard."

"Power in the Iron and Steel Industry."

"Control—Motor—Lighting and Crane Standardization."

"Electric Furnaces."

"Electric Developments in 1922."

"Investigation of Insulators for Steel Mill Service."

Besides the technical sessions, there will be an unusually attractive exhibition of apparatus of particular interest to the steel mill engineers.

Sound Advice on Heating Problem

BEFORE you decide upon the kind of heat for your home, it will pay you to investigate the various methods of heating—their cost and what you may expect in service from the system you install.

A system that provides you with an abundance of heat without economy is a waste not only of heat, but of dollars. One thing you may be sure of whatever you install—the item of expense for heating is continuous.

Because some friend or neighbor recommends a heating system, do not consider it final judgment as to your needs. Homes differ in their heat requirements due to size, shape, location, climate, habits of the family and particularly how well the house is built and insulated. All these things must be considered in selecting your heating system.

The two reasons why some heating plants give constant trouble are: First, failure to install the system properly according to the manufacturer's instructions; second, failure on the part of some owners to run the plant properly after installation is made.

Someone has said that selecting a heating plant for a home is like selecting a watch. "The inside is much more important than the outside."

If your home is located where rapid changes of temperature occur in a few hours, you should provide a heating system that will respond quickly to your demands. Vapor and vacuum systems, steam and warm air furnaces meet such requirements equally well. Hot water requires a somewhat longer time to heat than other systems, but it cools less rapidly than others. This is its advantage.

Suppose your house is situated where it is subjected to broad sweeps of cold wind—"exposed to the weather on all sides." Radiator heating will undoubtedly give you satisfactory results. You can distribute radiator heat and control it in all parts of your home independent of outside conditions and also independent of the peculiarities of your home plan.

Care and willingness to buy a plant big enough and good enough to care for your needs is wisdom and economy in this important phase of building.



Exposition Feature of Fire Prevention Week

ONE of the biggest features of National Fire Prevention Week will be National Fire Prevention Exposition to be held beginning October 2 in New York. This exposition is endorsed by the National Association of Insurance Agents, the National Board of Fire Underwriters and other associations interested in educating the public to the common hazards and their elimination and in fire-retarding and fire-fighting devices and fire resistive materials.

The great possibilities of the exposition, both as an educational feature and as a means of obtaining national fire prevention publicity is realized.

There will be displays of modern fire apparatus, of fire extinguishers of all kinds, of safety devices, fire-safe building materials and other appliances of interest to factory superintendents, managers and executives; business men; fire department officials; municipal authorities, and the public generally.

Plans are also being laid to have outdoor demonstrations, fire drills by children, tests of fire apparatus, contests between modern and old fire engines and other specular features.

Different days will be set aside for special events, such as Children's Day, Governors' Day, Industrial Day, etc.

At the exposition will also be started a movement to form a National Junior Fire Brigade of boys who will aid in every way they can in suppressing and preventing fires.

30,000 Contractors, Architects and Home Owners have asked for this pamphlet during the last 60 days.



Get this FREE

pamphlet—full of practical information on the most popular home improvement—Fenestra Steel Basement Windows.

Detroit Steel Products Company
2273 E. Grand Blvd. Detroit, Mich.

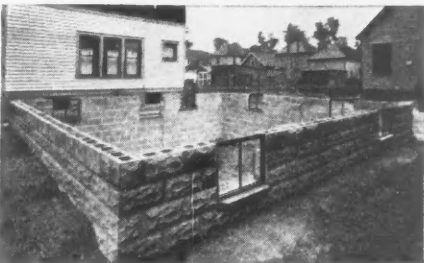
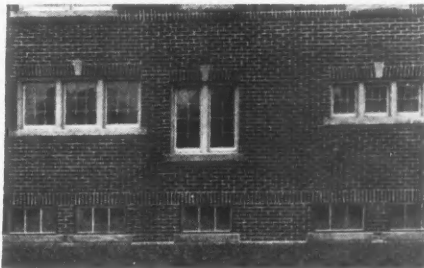
Gentleman:

Kindly send me a copy of "The Hows and Whys of Fenestra Steel Basement Windows". This incurs no obligation on my part.

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Address..... City.....

For All Types of Basement Construction



Do you know how much easier it is to install a Fenestra Steel Basement Window than an ordinary wood basement window?

Send for a copy of the pamphlet illustrated above, and learn how you can save time, labor, and money on each installation.

Find out how you can use these new steel windows in any type of basement construction—brick, concrete block, brick veneer, poured concrete, tile, or field stone.

See for yourself the advantages of using a window that comes complete—sash fitted and hung, hardware in place, and the priming coat of paint, applied at the factory.

Home owners have been waiting for a steel window. The durability, strength, and trimness of steel is recognized. And when you can install a steel window for no greater cost than an ordinary wood window, there is no question about the choice between the two.

Thousands of these windows have been installed. They are now a standard basement window installation. You will want to use them in the next house you build.

Don't wait until one of your customers asks you to put in Fenestra Steel Basement Windows. Get this pamphlet today and be familiar with the simple methods of installation. This places you under no obligation, whatsoever.

Detroit Steel Products Company
2273 East Grand Boulevard Detroit

"The Largest Manufacturers of Steel Sash in the World"



OUT ON THE JOB



What Builders Are Finding Good

EDITOR'S NOTE: *The AMERICAN BUILDER does not accept payment in any form for what appears in our reading pages. In order to avoid any appearance of doing so, we omit the name of the maker or seller of any article we describe. This information is, however, kept on file and will be mailed to anyone interested; address AMERICAN BUILDER Information Exchange, 1827 Prairie Ave., Chicago.*

Removal of Reinforced Concrete With "Paving Breakers"

RECENTLY it was found necessary to remove the side walls and top of a large venturi vault and a section of the west wall of the Filter Building of the Cleveland, Ohio, Filtration Plant.

The wall was 24 inches thick of concrete reinforced with $\frac{1}{2}$ -inch to $\frac{3}{4}$ -inch rods spaced on 8-inch centers. This made a very solid formation which was difficult to remove. Three days' time was required to completely demolish this wall.

At the start doing this work by hand method was contemplated. However, Mr. Chas. H. McAllister, general manager of the Lake Erie Construction Co., to whom this contract was assigned, tried out a "paving breaker." The "paving breaker"

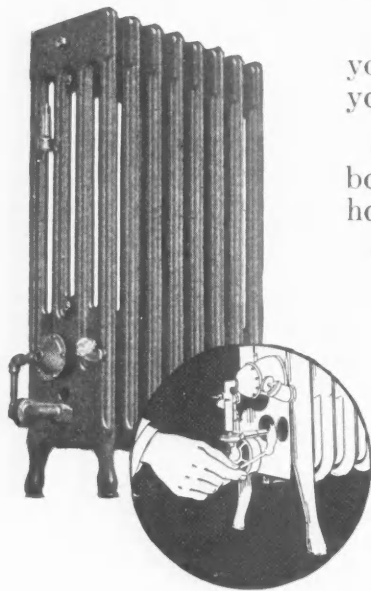


Paving Breakers Successfully Used to Demolish Heavy Vault Walls.

is an automatic compressed air operated pick and chiselling machine. It is similar to a non-rotating hand-hammer rock drill. It is light, extremely simple and operated by one man when working downward. In this particular case, however, it was found advantageous to use two men to each machine. Until lately "paving breakers" have been principally used by street railway, telephone, electric, power and gas companies for tearing up pavement of all kinds, for the laying and repairing of street railway tracks and the laying of electric cable ducts, gas mains, etc.

It required three days' time to completely demolish the west wall by the use of two "paving breakers." The "paving breakers" not only broke up the concrete in pieces large enough to be handled by one man, but with the aid of a cutting chisel they also cut off the steel reinforcing side rods. These cutting

Better Houses for Less Money



When the prospective builder says "costs too high," you can cut them by skimping on the construction, or—you can install GASTREAM Heating.

At one stroke you cut off basement excavation, chimney, boiler and piping. And the owner, besides getting a better house, gets greater heating comfort.

GASTREAM Radiators burn gas and generate *steam* heat. They are safe, odorless, convenient and cannot be damaged by freezing. Fuel comes in a pipe, is paid for as used, and requires no storage.

Let us tell you what other builders are doing with GASTREAM.

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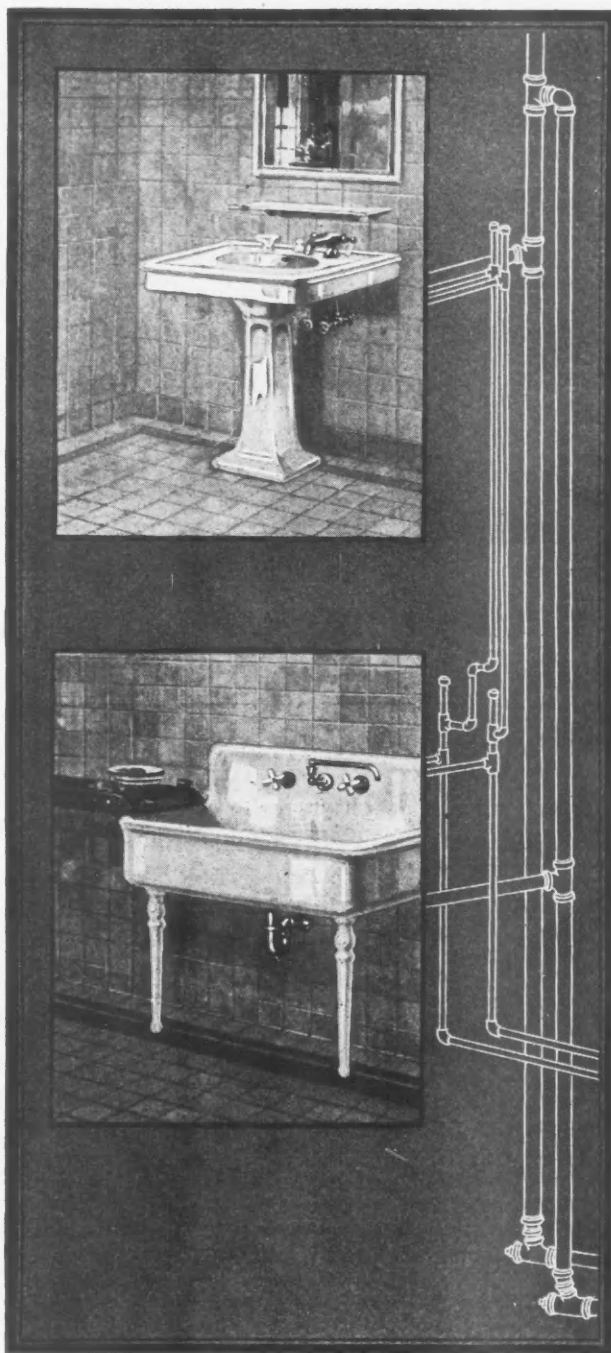
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*Crane Beauty in the Open—
Crane Efficiency in All
Hidden Equipment*



The architect or builder who specifies Crane equipment throughout in the sanitation, heating, refrigeration and drainage systems, is assured of the utmost in comfort and convenience and of dependability in every detail.

“Accuracy of design in the hidden piping between walls and floors insures not only continuous service, but eliminates the expense of replacements that inferior or less dependable materials might entail. The entire facilities of Crane service are available to aid in the selection of reliable equipment for any building you may have under consideration.”



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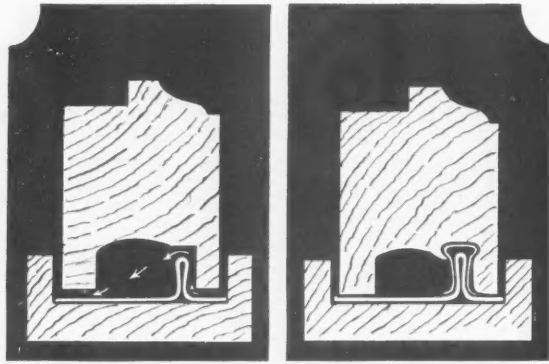
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Ordinary single-member strip.
Sash grooved for cord.

The exclusive Higgin Insert
Strip completes the job.

Are you recommending the right weather strips?

The only weather strips made with a self-holding spring-flange *Insert* are Higgin All-Metal Weather Strips.

No window without this *Insert* can be as draft-tight as a Higgin-equipped window. The illustration shows why.

The spring flanges of the *Insert* lightly grip the sides of the raised rib and close the space around the sash at every point. There is no air leakage where the sash is cut out for the cord, nor seepage around the rib when the sash shrinks. The metal-to-metal contact insures a perfect fit and closure; also an easy-sliding sash under all conditions.

A Higgin Installation means added comfort and greater fuel saving.

Builders! If we do not have a representative in your territory, there is open to you a splendid opportunity for a good business with handsome profits. Write for our proposition and free booklet describing in detail Higgin All-Metal Equipment for every type of window and door.

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See our catalog in SWEET'S

chisels were similar to those used for asphalt except that the edge was concave so that it would not slip off the bar.

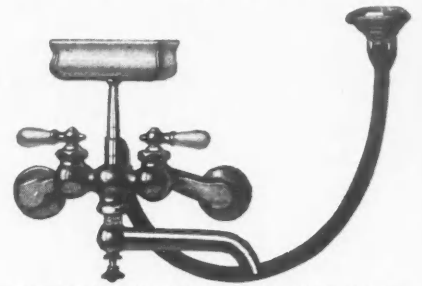
The roof of the venturi vault which was of the same dimensions and construction as the side was removed in three and one-half days. This work would have taken many more men a much longer time to do if hand methods were used, and would, of course, have been much more expensive.



A "Wonderful" Faucet

BUILDERS are interested in a new faucet which is being extensively used. It provides a combination faucet for the flow of hot and cold water from one discharge and also a soap dish. The china dish which holds the soap is self-draining and large enough to hold a big bar of soap.

A hose and a spray may be attached to the faucet and used for rinsing dishes, washing vegetables and other household purposes. It has all the advantages of the usual combination faucet, which seems to be



Combination Faucet and Soap Dish of Practical Usefulness in the Home.

an accepted improvement, plus the soap dish and the general excellence of the appearance and construction.

The faucet is marketed at a very reasonable price.



Rotary Pump Attachment for 5-Ton "Caterpillar" Tractor

ONE manufacturing company is offering a unique and very practical accessory in a rotary pump which can be readily attached to the standard 5-ton "Caterpillar" tractor. The pump is of special design, compact in size, and is attached to the rear of the tractor in exactly the same position as the power pulley attachment. It is driven direct thru the countershaft from the motor and is capable of delivering 220 gallons of water per minute under working pressure of 100 pounds per square inch. At normal speed of 1,000 revolutions per minute it throws a 1 1/8-inch stream 100 feet in the air and requires but 26 horsepower, which is only approximately two-thirds of the normal motor capacity of the 5-ton "Caterpillar." There is accordingly a large reserve for overloading, should the pump be called upon for extra heavy duty.



Tractor with Rotary Pump Saves Many Useful Purposes.

Plenty of Reserve

This reserve capacity enables the use of a long hose both for intake and discharge. Where an ordinary length of hose is employed a very broad area can be quickly drenched with a

BUILDING TRADES NEED TRAINED MEN!



Thousands of Good Positions at Good Salaries

THE business tide has turned! And the building trades are leading the way back to prosperity!

Building contracts made to July 1 of this year are the largest in number and in value ever awarded in any six months in this country's history. Government experts estimate that more than four billion dollars will be spent for construction this year.

And this is only the beginning of a building campaign that must last for years. There is a shortage of more than a million homes, and half a million more are needed each year to provide for normal growth.

"It will take us 12 years, working 25 per cent above normal," says John Ihlder, Manager of the Civic Development Department of the United States Chamber of Commerce, "to provide as adequately for our population as before the war."

Thousands of schools, churches, hospitals, banks, office buildings, warehouses, grain elevators and public buildings are needed and must be built. Millions of dollars will be spent in the building of roads and bridges.

Trained men needed

Today the most vital need of this great building program is men—trained men—men who can step right in and do the skilled work that building construction requires. Those needed most are draftsmen, architects, foremen, contractors, structural engineers, concrete engineers, surveyors, mechanical engineers, civil engineers, electricians.

Right now there is a shortage of men in these skilled trades and professions. E. J. Brunner, Editor of the American Contractor, says: "The construction industry is reaching out with a fine-tooth comb for all available skilled mechanics of the building trades."

If this situation exists *now*, think what it will be six months, a year, two years hence, when other industrial activities are up to capacity and men cannot be drawn from other fields.

Do you realize what this means to *you*? It means that if you are now employed on construction work, you can, through special

training, qualify for advancement to more important and more responsible work at a greatly increased salary, or prepare to establish yourself in your own business.

It means that if you are now in other work, but would like to get into building construction, you can start immediately. The best plan is to take up the study of that branch of building which interests you most. Devote your spare time to it. In a surprisingly short while you will have learned to do some one definite kind of work that most men cannot do at all. And in almost every community you will find builders or contractors or architects who will be glad to pay you well for doing that special work for them.

There is a simple, easy, fascinating way by which you can prepare for a good position, at good salary. You can do it right at home, in spare time, no matter where you live, through the International Correspondence Schools.

There is no question—no doubt about this. For thirty years the I. C. S. has been training men for advancement in the building trades and in more than three hundred other business and technical subjects.

A recent investigation of 13,298 students enrolled in I. C. S. Building Trades Courses showed that

- 1291 had become Architects
- 246 had become Designers
- 494 had become Chief Draftsmen
- 2827 had become Draftsmen
- 1845 had become Contractors
- 211 had become Assistant Foremen
- 4030 had become Foremen
- 2354 had become Superintendents

IN every instance these students reported salaries or independent incomes far greater than when they took up their studies. Many have shown increases of 300% to 500%. Some have incomes as high as \$25,000 per year.

The Equitable Building, New York, was erected under the direction of I. C. S. Student H. S. Gardner, then Superintendent of Construction for the Thompson-Starrett Company.

The Classical High School, Lynn, Mass., was built by I. C. S. Student George H. Stowe.

The Kansas State Memorial Building, Topeka, was designed and erected by I. C. S. Student C. H. Chandler, then State Architect of Kansas.

The Pacific Building, San Francisco, largest re-

inforced concrete building in the world, was built under the direction of I. C. S. Student Erik Holman.

George A. Griebel, who was a stone-mason by trade, decided to win success in construction work and took an I. C. S. Course. Today he is a member of the Griebel Company, Cleveland, earning \$12,000 a year. In one year his firm erected buildings worth \$6,000,000.

These men won success under conditions less favorable than those that surround you today. Now there is a need for skilled men more urgent than the building trades have ever known.

Your chance has come

You *can* have the position you want in the work you like best, an income that will give you and your family the home, the comforts, the luxuries you would like them to have. No matter what your age, your occupation, or your means, you can do it!

All we ask is the chance to prove it. That's fair, isn't it? Then mark the work you would like best in the coupon below and mail it today. There is no obligation and not a penny of cost. It takes but a moment, but it is the most important thing you can do today. Do it now!

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Without cost or obligation, please tell me how I can qualify for the position or in the subject before which I have marked an X in the list below:

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| <input type="checkbox"/> Building Foreman | <input type="checkbox"/> Airplane Engines |
| <input type="checkbox"/> Concrete Builder | <input type="checkbox"/> Plumber and Steam Fitter |
| <input type="checkbox"/> Contractor and Builder | <input type="checkbox"/> Plumbing Inspector |
| <input type="checkbox"/> Structural Draftsman | <input type="checkbox"/> Foreman Plumber |
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| <input type="checkbox"/> Mechanical Draftsman | <input type="checkbox"/> Metallurgy |
| <input type="checkbox"/> Machine Shop Practice | <input type="checkbox"/> Mining Engineer |
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| <input type="checkbox"/> Personnel Organization | <input type="checkbox"/> Advertising |
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| <input type="checkbox"/> Business Law | <input type="checkbox"/> Foreign Trade |
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| <input type="checkbox"/> Accountancy | <input type="checkbox"/> Stenography and Typing |
| (including C.P.A.) | <input type="checkbox"/> Teacher |
| <input type="checkbox"/> Nicholson Cost Accounting | <input type="checkbox"/> Civil Service |
| <input type="checkbox"/> Bookkeeping | <input type="checkbox"/> Railway Mail Clerk |
| <input type="checkbox"/> Business English | <input type="checkbox"/> Common School Subjects |
| <input type="checkbox"/> Private Secretary | <input type="checkbox"/> High School Subjects |
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| | <input type="checkbox"/> Cartooning |

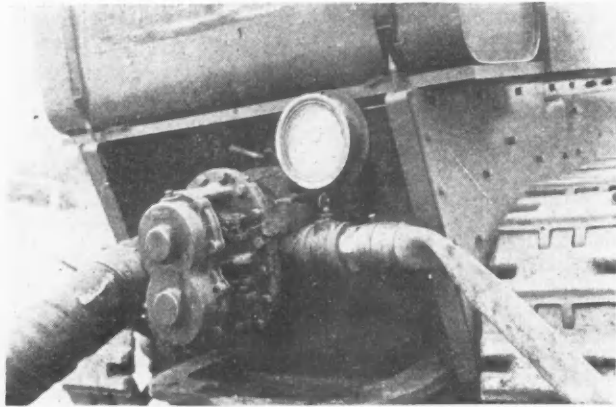
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City..... State.....

Occupation.....

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very heavy stream. One special field of usefulness is in patrol work in the timber districts. The "Caterpillar," of course, has the power and the capacity to travel over all sorts of ground, is able to penetrate to points inaccessible for other machines or vehicles, and is able to travel at an active speed.



How Rotary Pump Is Attached to a Five Ton Tractor.

Where a stream or other water supply is available the "Caterpillar" with pump attachment can render vitally important service in forestry work.

Another interesting use for this pump is in municipal fire service. Many cities and towns employ "Caterpillar" tractors for road building and maintenance in the summer and for snow removal in the winter. By means of the pump attachment the "Caterpillar" is always ready for emergency use in case of fire. A hose reel cart can be quickly transported from the central station to the fire, the intake hose placed in any convenient well, cistern, tank or stream, and a flow of water is instantly available equal to that of any of the usual

type fire engines. For pumping out cellars in flooded condition, as an auxiliary for irrigation work, for use by contractors in pumping out excavations, trenches or cofferdams, this pump is convenient and practical not only for its capacity, but because it can be quickly placed at any desired point.

Rotary Gear Wheel Style

In general design this pump is of the rotary gear wheel type, with all the working parts mounted in a heavy cast iron case which preserves perfect alignment. The two main shafts are geared together at the outer ends and carried in anti-friction ball bearings. The gears are of special alloy steel, machine cut, ground and heat treated. The stuffing boxes are quickly accessible and easily repacked. A positive jaw clutch connects and disconnects the power to the pump in the same manner as the power pulley would be controlled. The efficiency of the pump is increased by the fact the pump gears are driven thru the closely fitted spur gears at the extreme rear. These latter gears are enclosed in a tight case and run in a bath of oil. The entire driving load of the pump is taken by the spur gear so that in this way none of the metal to metal contact comes in the pump blades. In addition to the ample lubrication for the drive gears, compression grease cups are provided for the main ball bearings. While this pump is built extra strong for heavy duty service it is light in weight, weighing only 225 pounds.

This new rotary pump has been developed thru the co-operation of the maker's engineers working with another company and has been tested and proved dependable under many different field conditions.

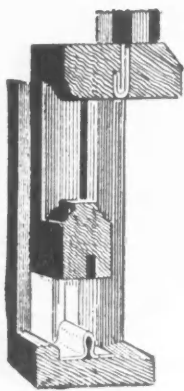


On the Finest Jobs

WALLBOARD is in such popular favor in Texas that it is stated it is being used extensively on the finest residence jobs. Builders in that section have developed methods of applying it that are said to be especially satisfactory.

A Big Opportunity

Awaits the Weatherstrip Contractor-Agent this Fall and Winter



The coal strike has caused a great shortage of fuel and as winter draws near the coal situation will become more acute. Owners of buildings and homes will be interested in any equipment that will conserve coal and heat.

The Wide Awake Man Will Reap a Harvest

All indications point to a big year for the Weatherstrip contractor-agent. So here is the opportunity for the man who wants to clean up big. Energy not capital is the asset of the weatherstrip agent. Very little capital is required.

Allmetal is the Architect's and Contractor's Choice

Allmetal has been on the market for so many years that it is very well and most favorably known to the trade. It is guaranteed to give satisfaction and long life.

Our Agents Earn \$5000 and Up Per Year

Many of our men are enjoying big incomes now and all will earn more money this year for there will be a great demand for weatherstrip.

Send for Our Co-operative Selling Plan

We furnish everything to set you up in business—advertising literature, sales letters, estimate blanks, etc. Allmetal is easy to sell and easy to install. You become a producer at once. Fill in and mail the coupon at once. We will send you our plan.

Allmetal Weatherstrip Company
124 West Kinzie Street, CHICAGO

Allmetal Weatherstrip Company
124 West Kinzie Street
Chicago

Send details of your contractor-agents plan.

Name

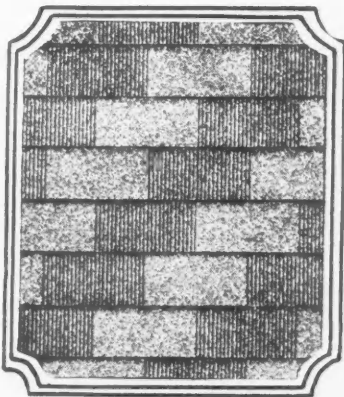
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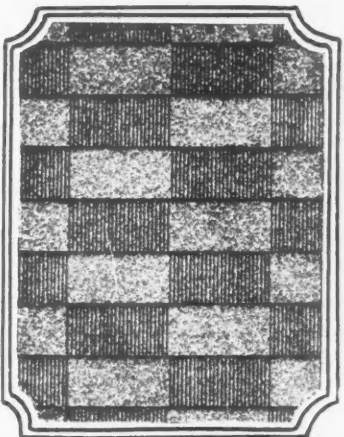


"Not a Kick in a Million Feet"

Attractively Protected
by
MULE-HIDE
COR-DU-ROY
Panel Strip Shingles
Patent Applied For



DIAGONAL EFFECT



CHECKERED EFFECT

The Unusual! That's Mule-Hide Cor-Du-Roy Panel Strip Shingles!

The Beauty of the two-tone effect of alternated Cor-Du-Roy and smooth panels—the non-fading surfacing—and the Mule-Hide quality mean a roof of permanent beauty and lasting service. The solid block construction, peculiar to Panel Strip, eliminates all danger of warping, curling or blowing up in a strong wind.

A most artistic effect can be created by laying Panel Strip to produce a checkered effect. The diagonal shadow pattern is another attractive way of laying the Panel Strip to give the appearance of tile. From an artistic and practical standpoint, the Cor-Du-Roy Panel Strip is a fast winning favorite with home owners everywhere.

Mule-Hide Cor-Du-Roy Panel Strip is 10" x 32". There are 112 strips to the square which weighs 230 lbs. This will give a double thickness over the entire roof with 4" to the weather. The Super Mule-Hide Cor-Du-Roy Panel Strip is 12 1/4" x 32". There are 112 strips to the square which weighs 285 lbs. The super strip assures three thicknesses over the entire roof with 4" to the weather.

In addition to the Red and Green Surfacing we have a Blue-Black Surfacing which is in great demand

THE LEHON CO.
44th-45th on Oakley CHICAGO, ILL.

THE LEHON COMPANY

Dept. A.B. 44th-45th on Oakley, CHICAGO

Send me literature and sample of Mule-Hide Cor-Du-Roy Panel Strip Shingles.

Check whether—

Dealer Contractor Architect

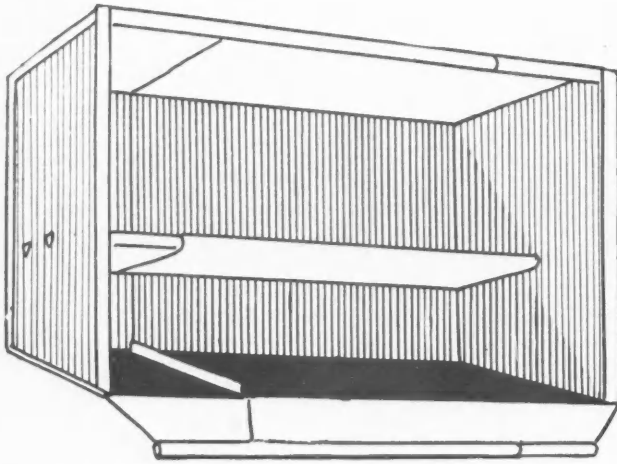
Name

Town

State

The Perfection of Window Refrigerators

EVER since the first woman set the first bottle of milk on her outside window ledge to keep it cool, ingenious minds have been working on the problem of how best to utilize this natural means of refrigeration. The adjustable metal box, fitting snugly in the window and having no door to retard access is the best developed type.



Iceless Refrigerator Fits Any Standard Window and Costs Nothing to Operate.

The perfection of this type of device is now known. The "box" is constructed of galvanized iron and has a sliding adjustment which makes it fit any window from 18 to 36 inches. There is no door or front to it. The opening and closing of the window in front of it serves this purpose. The flange at the top fits so closely to the glass of the window that dust and snow and any considerable amount of moisture are effec-

tively excluded. So efficient has this device proven that in many homes the taking of ice is considered superfluous from October to May.

It is not so long ago that fly screens were looked upon as a fad, but now no house is complete without them. It will only be a little while until the same will be true of the window refrigerator. Landlords are already adding them as a refinement of their rental property while tenants, where they are not provided are providing them for themselves as they did fly screens. The window refrigerators of the adjustable type are as readily installed by tenants as adjustable fly screens.



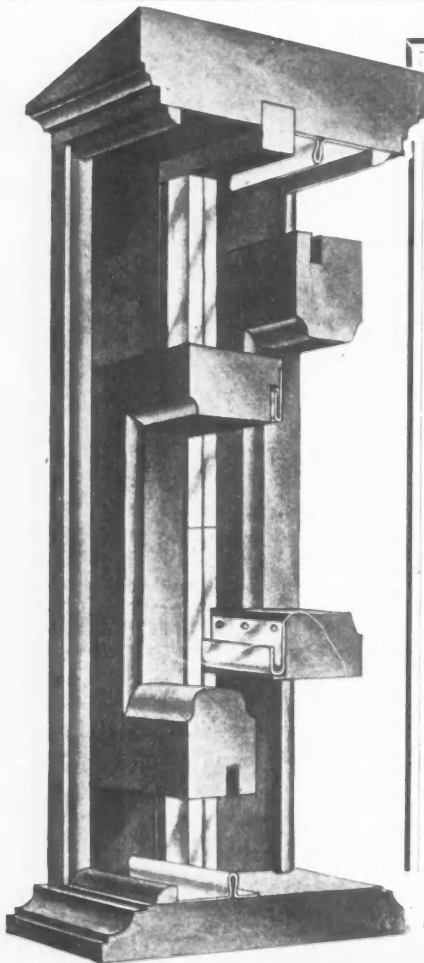
Improved Floor Scraper and Blades

THE body of an improved floor scraper slides on the floor like a plane, insuring a cut of uniform depth. The bottom of the scraper is planed and corrugated, thus avoiding any suction and making the scraper pull 50 per cent easier. A rubber cushion lies directly over the blade which takes up all vibration and prevents chattering. The handle is adjustable to suit the height of the man operating it. The blades are of a grade of steel rolled to special analysis and specially tempered. The blade combines both hardness and toughness, the essential point in scraping blades. The cutting edge is 6 inches and a half-dozen blades go with each scraper as well as a hone, wrench, burnishing steel and a form for holding the blades in when resharpener. The scraper weighs 95 pounds and is one of five sizes.



Indian Mine Leases

THE EAGLE-PICHER CO., Chicago and Cincinnati, announce they have arranged with Secretary of the Interior Fall for leases on lead and zinc mining properties in the Quapaw Indian lands in Ottawa County, Oklahoma. The properties were opened up for private operation on bids.



Your Answer To This Advertisement May Add \$5000.00 Per Year to Your Present Income

We want a man in every locality who will maintain a selling and installing Agency for

Sager Metal Weatherstrip

A Real Opportunity is afforded with the establishment of our agency, because it offers to you, not an old, much copied idea in weatherstripping but a new and different construction principle that thoroughly weatherstrips and at the same time eliminates all rattling whether the window be opened or closed.

The Sager Agency offers other exclusive features that positively create its own demand. You will not meet severe competition for SAGER has its greatest strength where other strips fail.

Here is a Golden Opportunity for a progressive man with a very small investment to cash in big on the present coal situation. Never was the demand greater.

Building Material Dealers and Contractors here is your chance. Write us and let us get together to our mutual advantage.

Sager Metal Weatherstrip Company

162 West Austin Avenue, CHICAGO



“Garfords Have Greatly Enlarged Our Field and Given Our Customers Better Service”

“For the last forty years we have had a hand in most of the big building jobs in the east,” says Mr. W. J. Buckley of Chesebro-Whitman Co., New York City.

“During our forty years experience we have learned how to handle all sorts of emergency jobs. Much equipment is transferred from job to job as needed. Large quantities of lumber and materials are often necessary.

“Shipping by freight would be too slow and uncertain. It is usually more satisfactory to send our material than to depend on getting it where the job is located. If we are delayed we are not

only behind on our contract but hold up the builder's men and cause him loss.

“By adopting motor trucks,” says Mr. Buckley, “we have **greatly enlarged our field and given our customers much better service.**”

Garford units for transporting building supplies have combined dependability with **low cost ton mile** to the profit of many engaged in the building industry. Garford Engineers will suggest the truck adapted to your haulage problems. Let us aid **you** in extending **your** field of operations and in serving **your** customers better.

The Garford Motor Truck Company, Lima, Ohio

GARFORD

RELIABLE TRANSPORTATION

WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN BUILDER

Riddle

DECORATIVE LIGHTING FITMENTS



The RIDDLE FEATURE FITMENT

Really sensational value in high-grade lighting fitments

Many contractors and builders are adding value to homes and apartments by outfitting complete with the Riddle Feature Fitment—an all-cast metal fitment in the beautiful Estofado Decoration—at even less cost than ordinary lighting fixtures.

Nine styles—ceiling fitments and wall brackets for all major rooms. Sold by the better dealers everywhere. *Mail coupon below for folder in actual colors and full details of the most sensational lighting fitment offering of the day.*

The Edward N. Riddle Company
TOLEDO, OHIO

Makers of lighting fitments since 1892

The Edward N. Riddle Co.
Dept. 392, Toledo, Ohio

Please send folder and full information about the Riddle Feature Fitment.

Name.....
Address.....
Business.....

NEWS OF THE FIELD

Changes Location

E. H. ELLIOTT, having an executive position with the Krauss Brothers Lumber Co., has been transferred from the Cincinnati to the Philadelphia office.



New Management

KRUPP, MEYERS & HOFFMAN have purchased the coal and lumber business of B. P. Lawrence & Sons, Lansdale, Pa.



New York and Export Agent

SCHEID Engineering Corporation, 90 West street, New York City has been appointed Metropolitan and Export representative for the Franklin Moore Company, Winsted, Conn., manufacturers of material handling machinery for industrial plants.



Operation Fatal

A. E. LYMAN, president of the Lyman-Hawkins Lumber Co., Akron, Ohio, recently passed to the beyond at Pasadena, Cal., following an operation for appendicitis. The deceased was seventy years old and had been in the retail lumber business for thirty-three years.



Shingles Sales Abroad

SHINGLE exports in 1921 were about 61 per cent of the quantity exported in 1920. In 1920 the number exported from the entire United States, or 34,237,000, was only seven-tenths of 1 per cent of the number of shingles produced in the State of Washington alone—4,847,000,000; 1922 sales promise to be large.



Employment Service, National Engineering Societies

THE Four National Engineering Societies, 29 West Thirty-ninth Street, New York City, maintains a free employment bureau. It is a national clearing house for engineering talent of all kinds.

The bureau is in a position to furnish civil, structural, heating and ventilating engineers; architects, superintendents and purchasing agents.



Liberal Prizes for Vitrified Clay Pipe Article

PRELIMINARY announcement of cash prizes for the best paper entitled "Use of Vitrified Clay Pipe in Plumbing Systems" is made by S. E. Dibble, head of the heating and ventilating department of the College of Industries, at Carnegie Institute of Technology. The total amount of prizes is four hundred dollars. The contest will be open to all practical plumbing and heating dealers, inspectors, etc., as well as to instructors and students in all educational institutions where drainage is taught.

Detail announcements of the rules and regulations of the competition, and the amount of each prize in the various classes, will be made soon.

The contest is a move toward increasing building operations, having in view, particularly, the reduced cost of drainage work. It is advisable that competitors for these prizes obtain copies of Mr. Dibble's printed report of recent experiments on the use of bituminous jointing compounds for vitrified clay pipe. The experiments were conducted at Carnegie Institute of Technology. Copies of the report will be sent upon request by addressing R. S. Clark, Office of the Secretary, Carnegie Institute of Technology, Pittsburgh, Pa.

The Remarkable Bonding Strength of Kellastone

Kellastone Interior Plaster is the hardest and strongest material available for this purpose. It attains 600 pounds per square inch tensile strength in thirty days. For this reason it is not necessary to apply it as heavily as ordinary lime and gypsum plasters. Can be applied to any surface, is fire-proof and immune to water damage

THE disappointment frequently experienced in ordinary stucco construction is often due to the lack of affinity between the stucco and the surface to which it is applied. The natural result is cracking, falling off and eventual complete deterioration.

Kellastone forms a perfect bond with any of the construction surfaces in common use. It sticks so tightly that its removal or separation from any surface over which it has been applied is accomplished only with extreme difficulty. After it has been permitted to thoroughly set on an ordinary brick surface, it is difficult to remove without chipping the face of the brick.

Such remarkable bonding strength is conducive of the practically indestructible character of **Kellastone**, developing the longevity of service for which it has become famous on all types of construction.

Write for informative
literature on Kellastone

NATIONAL KELLASTONE COMPANY

ROOM 515, 155 EAST SUPERIOR STREET :: CHICAGO, ILLINOIS

New York Office
342 Madison Avenue

Pacific Coast Office
Porterville, California

Waukegan, Illinois

Plants at
St. Paul, Minnesota

Porterville, California



Special Courses in Kiln Drying

THE Forest Products Laboratory of the United States Forest Service is offering at regular intervals short courses of instruction in kiln drying lumber. Those who attend one of these courses, get in two weeks, not only the essential information for drying lumber properly, but also the advantages of seeing proper methods demonstrated, besides answers to particular problems. There are no educational requirements for this course, but it is desirable that the person taking it be in a responsible position so that he can put his training into effect. A charge of \$150 per man is made to cover the cost of instruction, since no government funds are available for the purpose. Further details can be obtained by writing the Forest Products Laboratory, Madison, Wis.



Structural Steel Sales Decline

SALES of fabricated structural steel during June amounted to 66 per cent of shop capacity, as against 81 per cent in May, according to reports made to the Department of Commerce by firms representing about 75 per cent of the fabricated capacity of the United States. On the basis of percentage of sales to capacity reported by all firms, the total sales thruout the United States would amount to 119,000 tons in June, as against 146,200 tons in May and 155,340 tons in April.

Reports from ninety-six identical firms, with a capacity of 135,050 tons, show the following actual sales for the past three months:

| Month | Tonnage booked | Per cent of capacity |
|-------------|----------------|----------------------|
| April | 118,911 | 88.0 |
| May | 109,263 | 80.9 |
| June | 89,974 | 66.6 |

Comparative Value of Timber Cut from Live and Dead Trees

PREJUDICE exists in certain quarters against the use of timber cut from dead trees, and some purchase specifications insist that only timber cut from live trees will be acceptable. As a matter of fact when sound dead trees are sawed into lumber, and the weathered or charred outside is cut away, there is no method known to the Forest Products Laboratory by which the lumber can be distinguished from that cut from live trees, except that the lumber from dead trees may be partly seasoned when sawed.

All the information available at the laboratory indicates that timber cut from insect or fire-killed trees is just as good for any structural purpose as that cut from live trees of similar quality, providing the wood has not been subsequently injured by decay or further insect attack. If a tree stands on the stump too long after it is killed, the sapwood is likely to become decayed or badly infested by wood-boring insects; and in time the heartwood also will be similarly affected. The same thing is true of logs cut from live trees and not properly cared for. Until the wood becomes affected by these destructive agents, dead tree wood should be just as strong and just as durable as sound live tree wood.

In considering the subject it may be useful to remember that the heartwood of a living tree is entirely dead, and in the sapwood only a comparatively few cells are living. Most of the wood cut from trees is dead, therefore, regardless of whether the tree itself is living or not. Such being the case, purchase specifications, instead of providing that material must not be from dead trees, should state that material showing evidence of decay or insect infestation exceeding a specified limit will not be accepted.

Residence of
J. S. Van Bergen,
Ravinia, Illinois



John S. Van Bergen,
Architect,
Ravinia, Illinois

In His Own Home

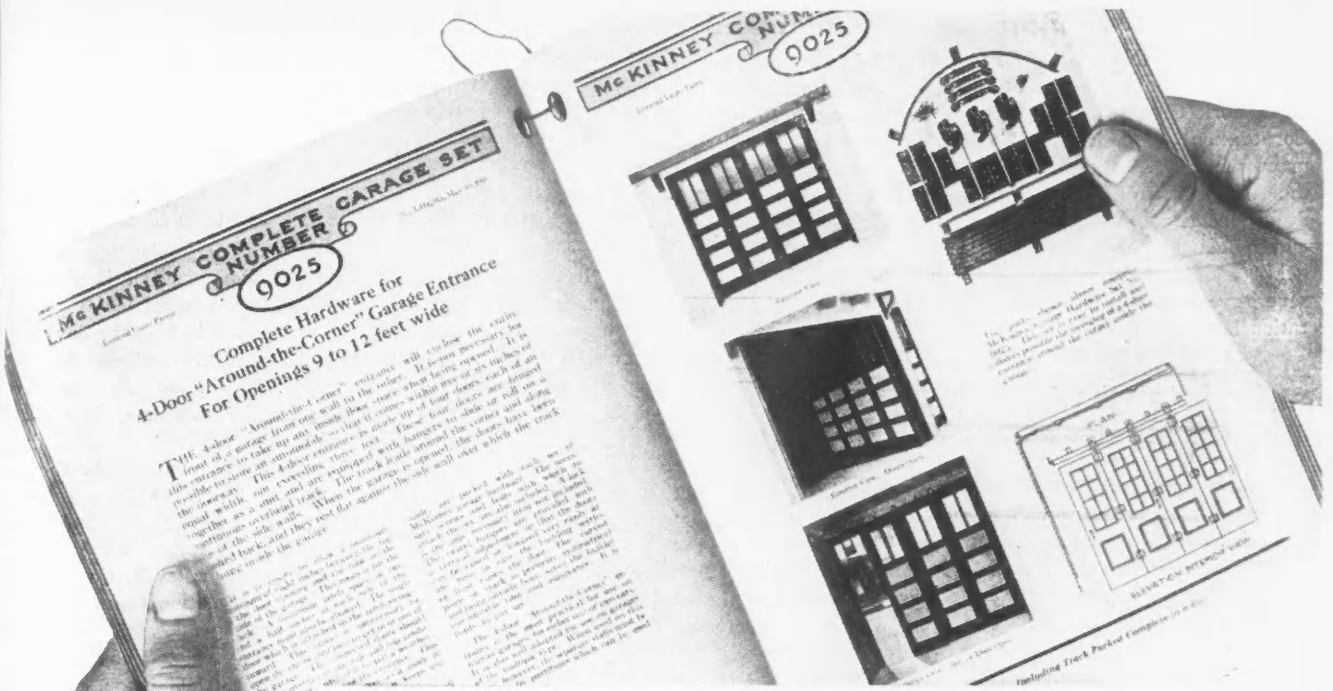
The number of architects who use E-COD FABRIC in their own homes is a most gratifying tribute to the real worth of this product. Its merits and its economy have impressed all who have investigated E-COD FABRIC. A particular feature for interior plastering is the fact that it prevents checking, cracking and

staining of plaster. New walls can be decorated immediately. E-COD FABRIC is fire retardant, sound-deadening, rust-proof and damp-proof. It saves 40% to 60% of the plaster which goes to form the key on the ordinary open-mesh lath. Full particulars will be furnished to you on application.



M. J. MacAdams Corporation
Conway Building, Chicago
101 Park Avenue, New York





This booklet will solve some vexing problems

THE planning of a garage is almost an essential part of planning a new home. The McKinney Booklet, "Complete Garage Sets," is a helpful booklet to keep before you when planning the garage.

It illustrates swinging, sliding-folding and around-the-corner doors that answer every problem of space allowance and entrance widths. It visualizes the completed entrance for your clients as no description will do.

And, best of all, it will allow you to control the purchasing of the necessary hardware for the hanging of the doors. Too often, an otherwise perfect plan goes

awry because the purchasing of the hardware has been largely a matter of guesswork. All that is necessary to insure a perfect installation of the proposed doors is to write on the specifications the number of the McKinney set that corresponds to the entrance you have planned.

The hardware is delivered to the builder boxed, ready for use. Not a piece is missing. The various parts harmonize throughout. It is good hardware—McKinney made.

The McKinney Booklet is full of valuable suggestions for the architect and builder. It will be sent free on request.

McKINNEY MANUFACTURING COMPANY, Pittsburgh
 Western Office, Wrigley Bldg., Chicago
 Export Representation

McKINNEY

Complete Garage Door Sets

McKINNEY Hinges and Butts and Hardware

Also door hangers and track, door bolts and latches, shelf brackets, window and screen hardware, cabinet hardware, steel door mats and wrought specialties.

Florandin Equipment Co. Organized

THE FLORANDIN EQUIPMENT CO. has been organized by C. H. Florandin with offices at 110 West Fortieth Street, New York City, to act as representatives of the Conveyors Corporation of America, 326 West Madison Street, Chicago, manufacturers of the American steam jet ash conveyor and the American trolley carrier. The new organization will also do a general contracting business in and around boiler rooms and industrial plants.

Mr. Florandin has had wide experience in this work, for several years being Eastern manager of the Conveyors Corporation before forming his own organization.



Seek to Check Enormous Fire Loss

LAST year's fire loss was \$485,000,000 and every year 15,000 to 20,000 people perish in fires.

Manufacturers of fire-resistive materials and of fire-fighting and retarding apparatus will have the opportunity of taking part in a Fire Prevention Exposition, October 2 to 7, at the Twenty-Second Regiment Armory, New York City. There will be shown, by exhibit and demonstration, what a vital part in the fight against fire loss is played by fire-safe materials and apparatus.

The problem of reducing the terrific strain on business caused by preventable fires is one that has long engaged the attention of these organizations. At the present rate of burning, property worth \$1,300,000 is being destroyed each day. This is a financial burden which is borne by business men, for the fire insurance companies do not bear this loss—they simply pay out \$1,300,000 each day that has been paid in to them in premiums by the public.

At the Washington conference the Chamber of Commerce of the United States was asked to undertake the responsibility of educating organized business men to the huge annual tax

caused by fires. President Barnes of the Chamber accepted this responsibility and plans are now under way for a national citizens' fire prevention campaign.

The peak of this year's effort will be reached during National Fire Prevention Week, October 2 to 7, and the First Fire Prevention Exposition will be its greatest educational feature. It is purposed to show the latest ideas in fire-safe construction and also to demonstrate to the public the proper appliances to be used in fighting and preventing fires.

A lecture hall is in the armory building and it is planned to make each day of the exposition a special day, with lectures and motion pictures in the lecture hall. One day will probably be devoted to municipal authorities and fire department officials. Motion pictures will be shown. Another day will be given over to the children, who will be shown what they can do toward helping reduce the fire loss. A third day will be for plant managers and executives, who will be shown the hazards of industrial plants and told how these can be eliminated.

A. E. MacKinnon, of 405 Lexington Avenue, New York, is chairman of the Exposition Committee; James T. Catlin, Jr., Danville, Va., chairman of the Fire Prevention Committee of the National Association of Insurance Agents, and Frank W. Lawson, American Building, Baltimore, regional chairman of the Fire Prevention Committee, with Mr. MacKinnon, compose the Exposition Committee.



Wanted—A Builder

THE WISCONSIN BUILDING MATERIAL CO. writes that the town of New Lisbon, Wis., is in need of a builder capable of figuring contracts. The absence of such a man is holding up a number of construction jobs, the writer states. The regular builder is out of town on other work, hence the lack.

CONTRACTORS AND BUILDERS — INSTALL A HARDIN-LAVIN PIPELESS FURNACE IN YOUR NEXT BUILDING

Our Pipeless Furnaces Are Superior Because —

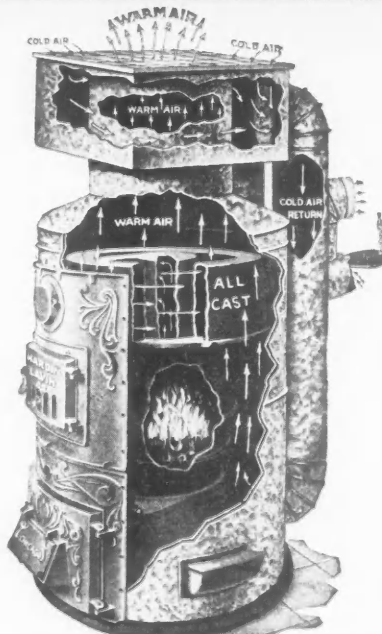
The interior and large front are all heavy cast.

Long circular fire travel saves fuel.

Improved air cleaning humidifier eliminates dust.

Reinforced dumping grates, burns hard coal, soft coal or wood economically.

Has adjustable throat to fit any basement.



Our Improved Pipeless Furnaces "Beat Them All"

Other furnaces take the cold air down inside an outer casing. Notice we take the cold air down through two large separate cold air ducts outside of casing at rear of furnace. This distinctly better method of cold air circulation prevents back draft, warped casings, dust in your home, etc.

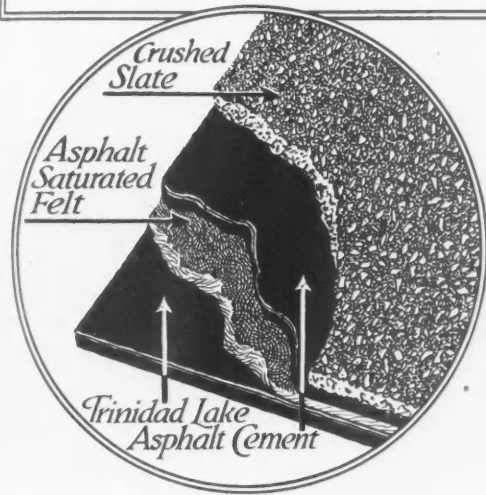
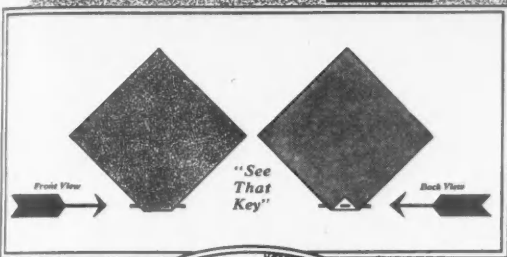
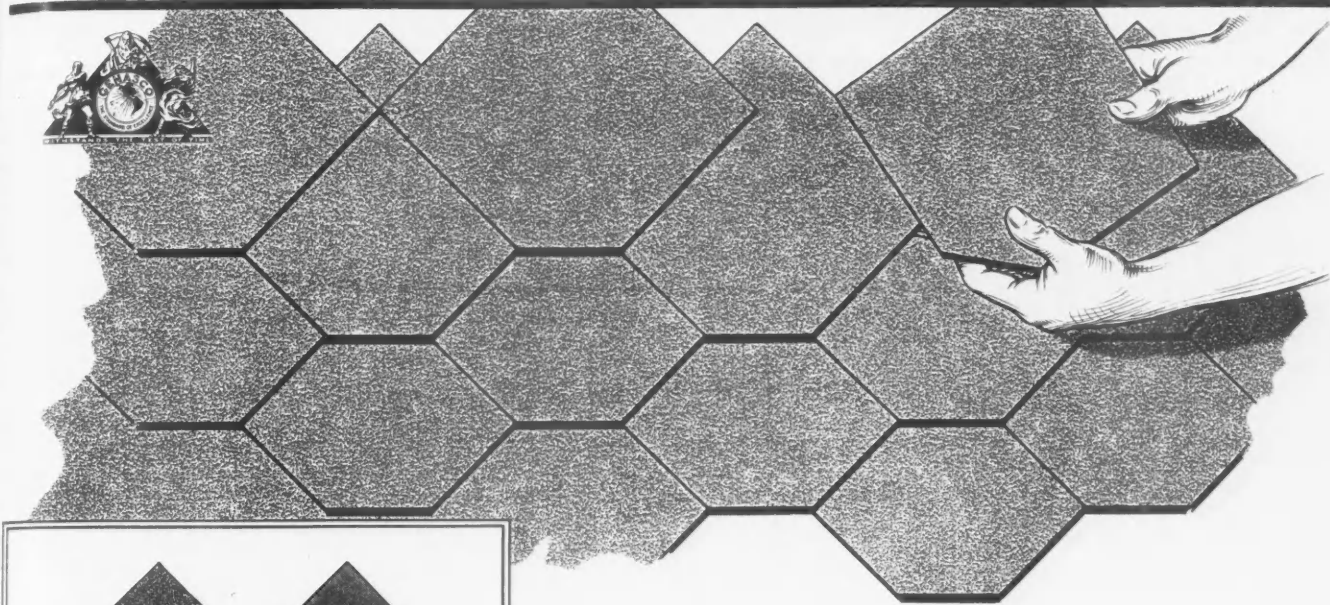
SPECIAL ATTRACTIVE PRICES TO BUILDERS

Send today for our pipe and Pipeless Furnace Catalog

\$500,000 PLANTS BEHIND OUR GUARANTEE

SEE OUR FULL PAGE ADV. ON PAGE 216

HARDIN-LAVIN CO. 50 Years at 4522-34 F Cottage Grove Ave., CHICAGO



Is the roofing you now use

*the kind of roofing
home owners now want?*

Is it long-lasting—economical—attractive—fire-resisting? Will it lay flat and snug—stay waterproof and storm-tight?

That's today's standard of a good roof. And if a roofing falls short—in any one respect—you can't afford to use it or recommend it to your clients.

The public has grown roof conscious—is looking at and appraising roofs—as never before. And every poor roofing job is bound to cost you heavily in prestige and future business.

That's why it will pay you to concentrate on roofings of the GENASCO Line. They provide you with an attractive, long-lasting, economical covering for any type of building.

GENASCO Latite Shingles—"the shingles that lock on"—solve the house-roofing problem completely. They can't curl, warp or flap in the wind. They are artistic in shape, beautiful in color, easily and quickly laid, and will last as long as the building.

Write at once for illustrated booklets describing these remarkable shingles. Also other roofings in the GENASCO Line.

GENASCO Latite Shingles are made of tough-fibred, super-saturated asphalt felt, heavily coated on both sides with Trinidad Lake Asphalt Cement—a product of the Ages. A thick surfacing of finely crushed slate—red, green and blue-black—gives them beauty and fire-resistance.

New York
Chicago
Pittsburgh

**THE BARBER ASPHALT
COMPANY**
PHILADELPHIA

St. Louis
Kansas City
San Francisco
Atlanta

Genasco

Asphaltic Roofing, Flooring, Paints and Allied Protective Products

WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN BUILDER

Housing Shortage Demands More Homes Built Right

DESPITE the increased building activity in the United States during the last six months, the housing shortage for the country as a whole is estimated as somewhat more than two and a half years' production by John Ihlder, manager of the Civic Development of the Chamber of Commerce of the United States. The situation is not the same in all American cities. In some places the shortage is estimated as nearly four years, while in others it is approximately one and a half years.

"This means," he explained, "that many thousands of American families are still living in cramped quarters, well-to-do families as well as poor people. It means that a considerable proportion of these families are becoming accustomed to this cramped living, accepting it as normal.

"I have heard of an admiral of our navy who, with his wife and two sisters, occupies three rooms and has his meals prepared on an ingenious little electric stove in the hall, of a comparatively well-to-do woman who occupies one room and bath and has her laundry washed in the bath room. When one goes from such people to the poor, he finds the overcrowding much worse with serious unsanitary conditions."

Mr. Ihlder pointed out "that while house building may not continue long at its present speed, it will continue to exceed current increase of need and so gradually reduce the shortage. Co-incidentally we may expect that building prices will come down, not steadily—just at present they are rising from the lower level of the winter—but with occasional flats and accents. This means that we may hope for dwellings produced and sold at smaller cost and so put within the means of a constantly larger proportion of the people until the day comes when the old procession is once more started from poorer houses to better houses and so make available to families of small means the old but adequate houses that are still habitable. At present and for some years in the future, so far as we can foresee, there will be little or no building of new buildings, at least in the east, for unskilled wage-earners.

"Desire for such dwellings is likely to expose us to a real danger; the attempt to cheapen construction by diminishing the space put at a family's disposal or by encouraging shoddy construction. The short cut of shoddy construction which has been, and still is to a lesser degree, one of our great menaces, promises to offer earlier relief, but at great cost. The short cut of diminished space has amply proved its fallacy in tene-

ments of New York. Its ultimate results will be higher rents for a population so crowded together that it cannot live, but will merely exist.

"From the housing point of view, the most encouraging development of the past two or three years is the extension of zoning regulation in the United States. Begun just before the war, zoning gripped our imagination and as soon as peace returned American cities began to apply it. Today some sixty cities have or are drafting zoning regulations. Because of these zoning regulations they are keeping in their residence districts the open spaces which are the fundamentals of good housing."

The Wise Draftsman Insists Upon The GENUINE Vellum Tracing Paper

"In Red Tubes"



A Proven Success of 20 Years

Vellum is Strong and Durable
and Saves $\frac{2}{3}$ the Cost of Linen.

The Sooner the Better.

Start Now. Samples Free.

Your Dealer or We The Makers

IN RED TUBES

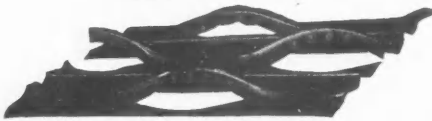
Cardinell-Vellum Mfg. Co.

Imitators Flatter Us.

MONTCLAIR, N. J.

Bostwick

"TRUSS LOOP"



BOSTWICK "Truss Loop" effects an actual saving of money for the Contractor and Builder in five distinct ways, viz.: In Time, Labor, Studding, Lath and Waste Plaster. While more expensive in first cost, Bostwick "Truss-Loop" is the cheapest in finished wall cost per square yard, and it endures.

The Bostwick Steel Lath Co., Niles, Ohio

The Complete Bostwick Line

| | |
|------------------------------|---------------------------|
| "Truss-Loop" Metal Lath | Channel Iron |
| "Diamond A" Expanded Metal | Corner Bead—Rail |
| "Niles" Expanded Metal | —Standard |
| "Lock" Expanded Metal | —Truss-Wing |
| "Truss-V-Rib" Re-enforcement | Base Bead |
| | Wall Plug |
| | Wall Ties—Y, No. 1, No. 2 |

Write for prices and full information

Bostwick

BUILDING MATERIALS

WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN BUILDER



BUILDERS!

**There's a Big Field
and Good Profits
for BRASCO Men**

In every community there is a big need for Brasco Store fronts, and we need more builders to install them. Our service department will help the builder in every way possible to land Brasco contracts. Survey the field and send us the names of prospective merchants for Brasco fronts, and we will work with you to a successful completion of the job.

Brasco

COPPER STORE FRONTS

last longer and cost less than any other front of good construction. Merchants realize the value of an inviting front and can easily be sold on Brasco when the builder gives him the details and an estimate of remodeling cost.

Don't overlook this opportunity. Write us today for our proposition to builders.

THE BRASCO MFG. CO.

5029 S. Wabash Ave.

CHICAGO, ILL.

Mail This Coupon

Gentlemen:—

Please send me your FREE booklet on Copper Store Fronts and complete details of your special offer.

Name.....

City.....

State.....



Will outlast them all

Sewage Disposal Plant

WORK is under way at Cadillac, Mich., on a \$65,000 sewage disposal plant. The city is doing the preliminary work, but the major construction is to be let on a contract. Buildings to be built are to be of octagon shape. One building will be 230 feet in diameter and others 90 feet.



Successful Conditions in Slate Industry

MANY producers report an increasing demand for roofing slate. The public realizes that the cost of a construction material, whether for the roof or any other part of a building is measured not only in the first cost, but in total cost over a period of years. On such a basis, slate has the advantage of permanence, requiring no expense of maintenance for paint, patches and repairs. A slate roof was placed on an English chapel at Bradford-on-Avon over 1,200 years ago, and has remained there thru the centuries, and is still in good condition. Here in America it is reported that one slate roof covered six buildings in succession, and was again placed on the seventh after 176 years of use.

The increasing use of blackboard slate for bulletin and score boards by newspaper offices, railroad stations, clubs, etc., together with the record amount of educational building under way, promises to make 1922 the largest year in the sales of slate for blackboard purposes.

The record-breaking revival of construction in all lines during the first six months of 1922 is rapidly being felt in the increased demand for electrical and structural slate, but both feel the revival in construction activities a few months after the contracts for the buildings have actually been awarded, as they are installed normally in the finishing stages of the work.

While several manufacturers report restriction of produc-

tion due to insufficient supply of workers, they report the demand and production for June, 1922, considerably in excess of that for 1921 and 1920.



Better Building Needed to Reduce Fire Losses

FIRE losses in the United States in 1921 were more than half a billion dollars.

Fire loss adjustments made by insurance companies in the United States and Canada during the past fourteen years amounted to \$3,410,752,600. The average yearly loss was \$243,625,200. The loss for 1920 was \$330,853,925.

Losses from fire in the United States average \$3 per capita per year. France has a per capita loss of 49 cents; Great Britain, 33 cents; German, 28 cents, and Holland, 11 cents.

During the past fourteen-year period our fire losses were 28.1 per cent of the value of new building construction. In 1920, altho an abnormal amount of building was done, the fire losses were 23.5 per cent of the value of new buildings.

Startling as these losses are, they do not tell the whole story. They represent only the actual insurance adjustments made. They do not take into account losses due to the fact that buildings are seldom insured for more than 80 per cent of their full value, nor do they include losses not covered by insurance. The insurance adjustments made probably do not exceed 70 per cent of actual fire losses, including both insured and uninsured.

The surest safeguard against loss by fire is a building so constructed it cannot burn.

If there is any building that should be made absolutely fire-safe it is the schoolhouse.

In the United States a fire occurs every day in some school.

In a properly planned and built school building fires of dangerous proportions are practically impossible.

BOMMER

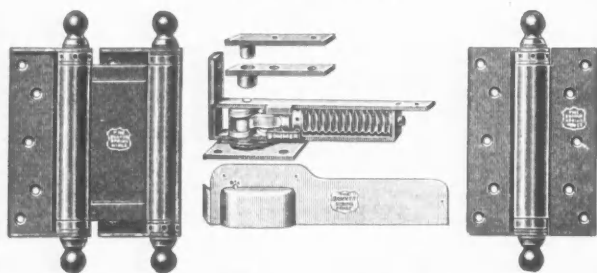
Is the "synonym" the world over for all that is best in
Spring Hinges

It arouses the sense of "Quality" in every expert on building construction



BOMMER SPRING HINGE CO., Brooklyn, N. Y.

ESTABLISHED 1876



Stained with Cabot's Creosote Stain.
B. V. White, Architect, New York

Save Half Your Painting Bill

You can actually save more than half the cost on both material and labor, and get better results in beauty of coloring, wearing qualities and wood preservation, by using

Cabot's Creosote Stains

Instead of paint, on shingles, siding and all similar outside wood-work. The colors are rich and handsome, not "painty." They wear as long as the best paint and wear better, and they are made of creosote, which penetrates the wood and thoroughly preserves it

Cabot's Quilt

A genuine house-warmer. It's a cushion of dead-air spaces and is 80 times warmer than building paper. Quilt will pay for itself in a short time in saving coal, to say nothing of making the house comfortable for all time. Also a complete sound-deadener.

You can get Cabot's Stains and Quilt all over the country. Send for samples and names of nearest agents.

SAMUEL CABOT, Inc., Mfg. Chemists
BOSTON, MASS.

342 Madison Ave., New York 24 W. Kinzie St., Chicago
Cabot's Conservo Wood Preservative, Stucco Stains, Brick Stains, Damp-Proofing

FUEL COSTS CUT

In the Face of an Imminent Coal Shortage Carpenters and Builders Profit

Average Consumption to Be Much Lower

The threatening aspect of a general coal shortage brings the announcement that—

Public Buildings—Schools—Hospitals—and Residences in all parts of this country and Canada will meet the problem of getting more heat from less coal by supplementing their otherwise sound building construction with a time proven fuel saver—the weatherstrip.

A history of the development will demonstrate the wisdom of this method of construction.

DATES FAR BACK

The memory of this generation can recall, no doubt, grandmother's early efforts to combat the nuisance of drafts with rags—papers and what-not. Her admonitions—"You'll catch your death of cold over at that window" and, "Come away from that door" were well meant but it remained to the inventor of the wood and felt door strip to give at least temporary relief. Soon these crude forerunners of the modern weatherstrip became worn and frayed, often outliving their usefulness in less than a single winter season. Frequent replacements, unsightly appearance and short lived usefulness brought into being the metal weatherstrip. Kansas was well pleased with this brain child of a native son but more general adaptation brought to light some disagreeable facts in the service to be had with this Kansas metal weatherstrip. It seems there was no allowance made for shrinking—swelling or warping of the window frame—nor could the strip be easily removed for repairing the windows—sash cord, etc.

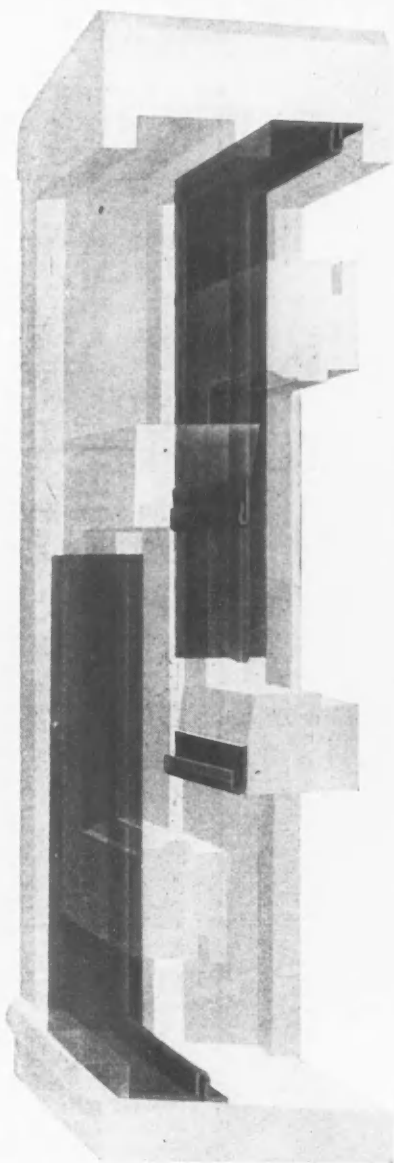
LIKE ALL GOOD STORIES

Ours has a happy conclusion in the development of the DIAMOND FLEXIBLE METAL WEATHERSTRIP so constructed that it will slide easily—allow for shrinking, warping, swelling, and at the same time allows quick removal for repairs without damage to sash, frame or strip.

Strongly constructed of pure commercial zinc it is rust-proof and durable.

It has been estimated that a saving in general of from 20 to 40% of the fuel costs will be affected by the installation of DIAMOND FLEXIBLE METAL WEATHERSTRIPS.

BETTER HEALTH IS ASSURED



The above illustration is a phantom view of a window equipped with DIAMOND FLEXIBLE METAL WEATHERSTRIP.

By eliminating drafts, soot, dirt and rain, this device performs the double service of conserving heat and preserving the general health of the building owners so equipped.

General Adoption of Diamond Flexible Metal Weatherstrip

BRINGS GOOD NEWS

Alike to Home Owner, Carpenter and Builder

The fact that the building owner who installs a complete equipment of

Diamond Flexible Metal Weatherstrip

is prepared to keep on saving from 20 to 40% of his fuel bills long after he has saved the original installation cost and the fact that that first cost is last and is low makes a leader of—



There is still some very desirable territory open for real go-getters. There are also some mighty good profits to be made in these territories. The pressing need for quick action in installing the strips makes it imperative that you get in touch with us as soon as possible.

If we have no agency in your vicinity we want you to represent us.

DIAMOND Metal Weatherstrip Co.

632 Kerr Street
COLUMBUS, OHIO

GET THE EXCLUSIVE MANUFACTURING
RIGHT FOR THIS

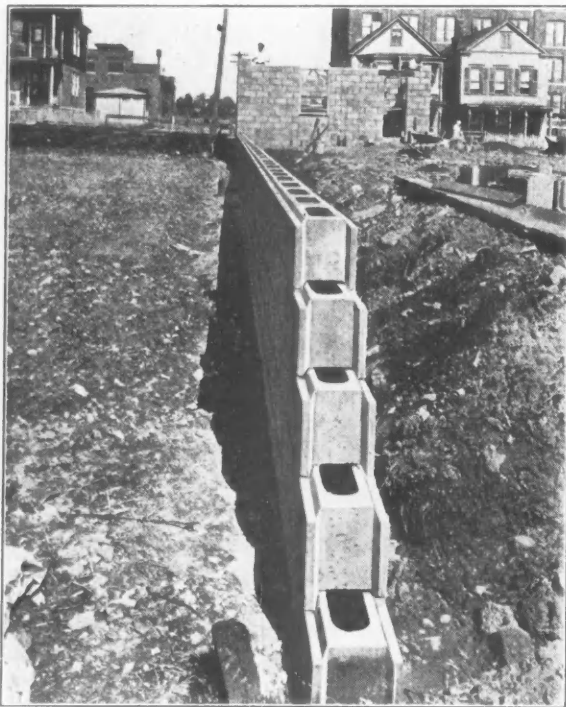
Patented Interlocking Tile

*All Acme Products protected
by U. S. and Foreign Patents*

The Acme System enables you to turn out a perfect poured tile up to any specification of strength. Its interlocking features are revolutionary because of the absolute exclusion of moisture from its joints, which represents a decided advantage over any other building material.



The New Acme All Steel Mould with one-piece Collapsible Core, equipped with Roller Bearing Casters.



Retaining wall in course of construction built of Acme Interlocking Tile showing continuation of air spaces and interlocking features.

ACME TILE is a poured tremendously strong, synthetic stone which is simple to manufacture. We have a number of territories to offer you exclusively, so you can maintain a steady output without any competition. We will supply all the necessary equipment which is trouble-proof and is a proved success. We have an interesting booklet telling about the extraordinary merits of this tiling block which will further explain the opportunity that is offered you.

Act at once. This means money for you. Call or write

ACME TILE COMPANY
125 Prospect St. PASSAIC, N. J.

New Publications in Books, Booklets and Catalogues

The Truscon Steel Co., Detroit, has issued a valuable chart showing the steel joist loading tables adapted by all manufacturers. The chart will be of interest and value to all builders.

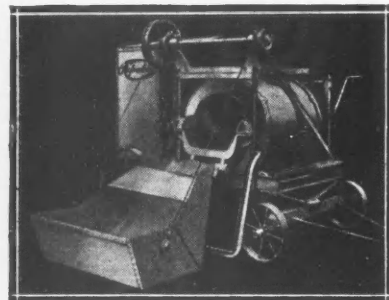
The Mitchell Faust Advertising Co., 7 South Dearborn street, Chicago, have printed a convenient handbook entitled, "48 Ideas in Advertising and Merchandising." The book is a boiled down, nut-shell presentation of important and interesting advertising truths which will well repay reading by any executive.

Concrete for Farm and Home, published by the Northwestern States Portland Cement Co., Minneapolis, Minn., is of value and information to anyone who uses cement. The book is well illustrated and goes into the various popular types of building of concrete in towns and rural sections.

Modern Ventilating Apparatus is a commendable catalog issued by the Autovent Fan & Blower Co., 730 W. Monroe St., Chicago. The catalog is issued in loose leaf form, enabling the user to keep abreast of the market in prices and new goods. Descriptions and illustrations are excellently handled and make up a valuable reference catalog.

Catalog F, issued by the Hudson Mfg. Co., Minneapolis, is a valuable directory of farm equipment, repairs and supplies. It lists almost every article used on a farm. The volume contains nearly 500 pages and is one of the most complete catalogs of the kind issued. It is well illustrated and the descriptions are helpful.

SAVE 25 TO 40% *Republic*
on High Quality Mixers



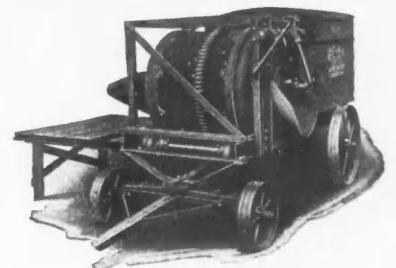
PRICES
\$195⁰⁰
AND UP

SIZES
3½, 5, 10 cu. ft.
PER BATCH

STOCK IN 35 CITIES FOR PROMPT DELIVERY

Lower prices are secured, not by lowering quality but by the large production of a few sizes. **REPUBLIC MIXERS** are strong, practical, durable, efficient and economical mixing machines, combining all of the latest improvements for speed, quality of mix and ease of operation.

Delivered Prices on request.



Republic

REPUBLIC IRON WORKS

Box 000

TECUMSEH, MICHIGAN



Carey

READY ROOFINGS

Any Carpenter or Roofer can take any Carey ready roofing in his fingers and tell by its thickness and toughness (price considered) that it is an unusually good product.

Whether it is a slate or mica surfaced roofing of heavy weight, or a light weight smooth finished roofing, it says "quality" the minute you pick it up, and the price is a pleasant surprise.

Write for a set of samples and compare them for price and weight, and satisfy yourself that Carey roofings are the best buy for you.

You can buy Carey roofings from a nearby distributor. Write for his name and for samples.

THE PHILIP CAREY COMPANY, 510-530 Wayne Ave. (Lockland), Cincinnati, Ohio



Taylor Everlasting Spring Bronze Weatherstrips

Are individually packed to accommodate various size windows. Easily installed without removing sash. No special tools required. Hammer and shears does the work. Requires no grooving or planing of sash. Effective on new or old buildings.

Our Dealer Proposition will interest you. Write for circular and samples.

TAYLOR, ALLEN & CO.
MORRIS, ILLINOIS



FOR HOMES, ARCHITECTS AND BUILDERS

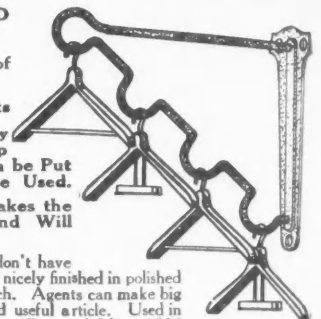
If You Want to Get Full Benefit of Your CLOSET SPACE Use the Compact Clothes Hanger Brackets

They Keep the Suits Apart. They Save Time and Space. They Keep Your Clothes in Order. They Can be Put anywhere Clothes Hangers Can be Used.

Put One on Your Closet Door—it Takes the Place of the Ordinary Hook and Will Accomodate Four Hangers.

If your hardware or housefurnishing stores don't have them, will send direct to your door, postpaid, nicely finished in polished nickel with screws to match. Price, 25c. each. Agents can make big money in their spare time selling this new and useful article. Used in every home. Write for particulars. Patented May, 1922

Compact Clothes Hanger Bracket Mfg. Co., 1205 C St., Washington, D. C.

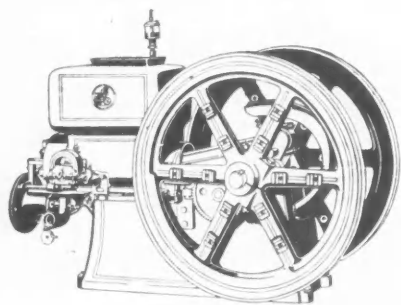



INTERLOCK CASEMENT WINDOW ADJUSTER

Instantaneously adjustable by a thumb nut placed within easy reach. The friction lock holds window in any desired position. INTERLOCK Adjusters are of the simplest construction yet they give the best and longest service.

Write us for further information.

LYONS MFG. CO.
NEW HAVEN CONN.



Let your engineer or construction boss select the engine for your mixer and other contractor equipment.

He'll specify

HERCULES

Every Time

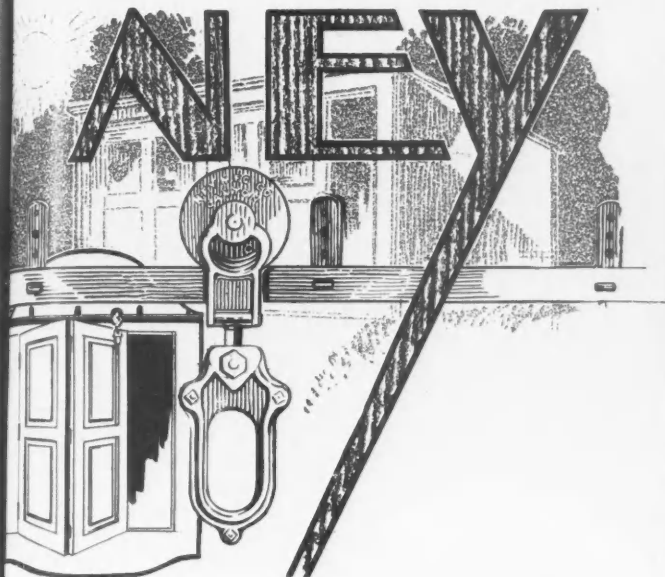
If he is familiar with its performance and the service offered by our hundreds of repair part stations.



EVANSVILLE

CORPORATION
CAPITAL \$8,000,000

INDIANA, U.S.A.



Ney's No. 40
Door Hanger
and
No. 4 Track

How long does it take to hang a door?

That depends.

If it's Ney's No. 40 Door Hanger and Ney's No. 4 Track it can't take long. You will save minutes on every door and hours on every job. As the days grow shorter and the jobs pile up in the fall, the time it takes to hang a door becomes more important to you.

Use Ney's No. 40 Door Hangers. They meet every requirement for doors of barns, garages, warehouses and all buildings with sliding doors. Patented horizontal and perpendicular adjustments make doors operate freely and smoothly around bends and curves. You can put up Ney's No. 4 Track in a jiffy. It requires no factory bending—no fuss—no waste. Quick, clean work, whether the job be regular or swinging, sliding and around-the-corner arrangement.

Write for Catalog No. 25, just off the press

Dealers—Ney's No. 40 Door Hangers reduce your stock investment to one type of hanger, speed up your turnover and net bigger profits because Ney's sell door hangers and track only—no hinges or other appliances you already have in stock are packed with them. Ney Door Hangers also sell at lower prices than garage door "sets." Sell your hinges from regular stock and eliminate doubling up your hinge stock. This is better business and will make more satisfied customers.

**Original
Genuine
HAYING
TOOLS**
Standard Everywhere

- Barn Door Hangers and Tracks
- Weldless Chain
- Merchandise Carriers
- Pulleys
- Hay Slings
- Tie-Out Chains
- Hardware Specialties
- Hay Carriers
- Hay Carrier Steel Tracks and Fixtures
- Wire Stretchers
- Steel Hoists
- Hay Knives
- Hay Forks
- Hay Rack Clamps
- Post Swing Chains

The NEY MANUFACTURING CO.
Established 1879
CANTON OHIO
Minneapolis, Minn. Council Bluffs, Iowa



**SMITH EXCAVATOR
and LOADER**

**To Make Greater Profits
Excavate at Lower Cost**

For basement excavation, sand or gravel digging, grading, stripping and miscellaneous earth handling, the 1922 Smith Excavator and Loader will help you realize more on your contracts.

This machine keeps the wagons out of the hole. It brings the material to the wagons or trucks on the surface.

Catalog 408 tells how others are making greater profits—and how you can also. Copy sent on request.

THE T. L. SMITH COMPANY

1193 32nd Street, Milwaukee, Wis.

New York Office and Warehouse: 50 Church St.

Chicago Office: Old Colony Building Western Warehouse: Oakland, Calif.

AGENTS IN PRINCIPAL CITIES



WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN BUILDER

CLEAR FLOOR SPACE—LIGHT AND VENTILATION ARE TWO ESSENTIALS IN EVERY GARAGE

Clear Floor Space in this Building was obtained by using **McKeown Bowstring Trusses**

Built of wood in either the **Lattis-Truss** or **Bowstring Truss** Types in spans from **30' to 130'**

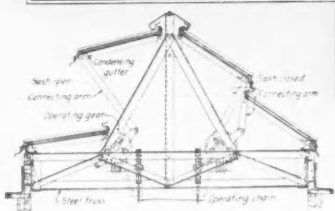
Erected by us or shipped in the **knockdown**



Light and Ventilation was obtained by using **Blaski Ventilating Skylights**

Blaski Skylight carried in stock for **6'-8'-10'-12'** curb width and any length

Erected in place or shipped **knockdown**



Interior of Garage, size 100 x 200, having 2 spans of 50'-0" McKeown Bowstring Trusses and 2 Blaski Ventilating Skylights, size 8' x 60'.

Write for Circulars and Prices

112 W. Adams Street
CHICAGO

McKEOWN BROS. COMPANY

21 East 40th Street
NEW YORK

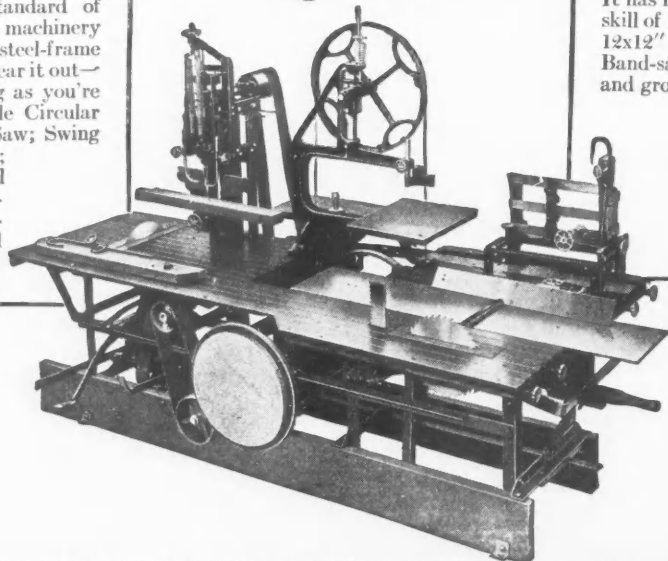
What it is—

Eight necessary woodworking machines in one. The standard of high-grade woodworking machinery value. Stout, strong angle-steel-frame construction. You can't wear it out—it will work for you as long as you're in business. **Double Table Circular Saw; Rip and Cross-cut Saw; Swing Cut-off Saw; Band Saw; Upright Hollow Chisel Mortiser and Borer; Tenoner; 12-in Joints; Reversible Spindle Shaper; and Sander—all in one.**

The Parks Ball Bearing Machine Co.
Fergus Street and C. H. & D. R. R.
CINCINNATI, OHIO

Canadian Factory:
200 Notre Dame East,
Montreal, Canada

PARKS Planing Mill Special



What it does—

Does everything in woodworking. It has no limit, except the mechanical skill of the man who runs it. Surfaces 12x12" timber. Rips 5" material. Band-saws 7" stock. Makes tongue and groove mill-flooring. Works any timber a man can handle and saves time, money, labor-hire, and hard work. That means a bigger business and more income!

Get a Parks!

Price complete

\$525.00

Guaranteed 10 years

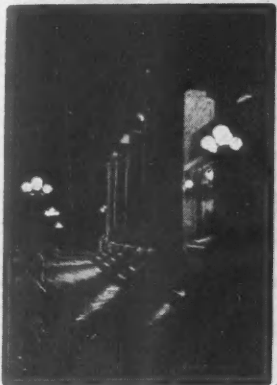
10 days' trial

Send for catalog of all Parks machines

35

WOODWORKING PARKS MACHINES

UNION METAL LAMP STANDARDS



Night View of McKinley High School
Canton, Ohio — Opposite residence
of The Late President William McKinley

*“Lead
Kindly
Light”*

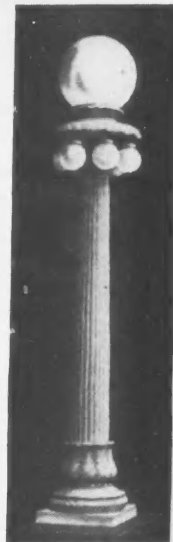
SHOWS the most complete line of Entrance Standards, Wall Brackets and Exterior Newels ever catalogued.

Union Metal Exterior Lighting Units are extensively used to illuminate and decorate entrances to churches, schools, libraries, office buildings, apartments, garages and all types of public buildings.

They are extensively used for bridge lighting, for installation around gasoline filling stations and for the lighting of private grounds, parks and estates.

Scores of designs in “Lead Kindly Light”. Write today for your copy.

The Union Metal Mfg. Co.
Canton, Ohio



Design 735
Entrance Standard

Which? A Genuine Fireside—



The Donley Damper for Fireplaces



or a smudge. The triumph or the tragedy of new home ownership often depends on the answer to that question. Our investigations show that a considerable majority of fireplaces are badly designed and improperly equipped.

You can insure against this tragic dissatisfaction in homes that you build by installing the Donley Damper in a fireplace constructed according to designs which we are glad to furnish. These designs are the work of practical fireplace builders, architects and masons. They represent safe construction.

The Donley Damper assists good construction by furnishing the metal throat of correct proportions and smooth lines that prevents smoke eddies.

Donley Dampers are of two types, the Rotary Key Control type and the Poker Control type. Either provides easy and adequate means of draft regulations, saving fuel and promoting warmth.

Send for Descriptive Folders

DONLEY DAMPERS • PACKAGE RECEIVERS • COAL CHUTES • METER BOXES • GARBAGE RECEIVERS

ASH DUMPS AND
FIREPLACE
SPECIALTIES

The DONLEY BROTHERS & Co.
BUILDING
SPECIALTIES



7400 AETNA RD
CLEVELAND

METAL COLUMNS
AND STRUCTURAL
SPECIALTIES

DONLEY DEVICES *Modernize the Home*

Are You Getting the Cream of the Business?

If you are, you are building and remodeling for men who want private utility plants installed in their homes. Are you prepared to advise your clients? Do you know what company makes the best water, light and sewage disposal systems for the home removed from public utilities?



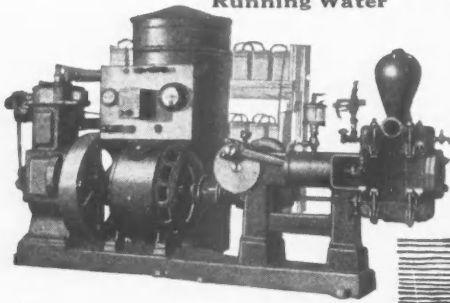
KEWANEE



Running Water

Electric Light

Sewage Disposal



There are more than 150 different sizes and models of water supply, electric light and sewage disposal systems—**REAL PRIVATE UTILITIES** that have been the standard for nearly a quarter of a century.



One of the many Kewanee Combination Electric Light and Water Supply Systems.



There are also the famous Kewanee Combination Plants that furnish both light and water for little more than the cost of the ordinary water or light plant alone. High grade Kewanee Systems are good for a lifetime of carefree service. Send for the bulletins today. They are **FREE** to Architects, Builders and Contractors.

Kewanee Private Utilities Company
424 S. Franklin St. Kewanee, Illinois



Stucco of Quality

The recognition of **ASBESTONE EVERLASTING STUCCO** as the world's standard for *Magnesite Stucco* has been achieved through appreciation of the fact that **ASBESTONE** quality and service are beyond question.

Unsurpassed in covering power, tensile strength and resiliency

Fireproof Weatherproof Durable

Prices, samples and particulars free

Consult your Building supply dealer

FRANKLYN R. MULLER & CO.

STUCCO and COMPOSITION FLOOR MANUFACTURERS
ESTABLISHED 1906

608 Madison St.

WAUKEGAN, ILL.





On the Level

WHEN you take your first squint along a Disston level you will realize that Disston levels are different. There are several things that explain this difference, but the most important are

1—Lumber

All Disston Plumb and Level lumber is air-seasoned for at least two years, and after that is given a very thorough heat treatment which results in the clearest and best stock that can be obtained. Careful tests throughout every succeeding stage in their manufacture result in levels that are absolutely true and uniform.

2—Adjustment

Disston adjustable levels have the easiest and most positive adjustment of any levels on the market. The removal of two small screws gives immediate access to all the working parts.

Loosen the flatheaded (lock) screw, true up the bubble by turning the round-headed (adjusting) screw, then tighten the lock screw—the job is done. The adjustment is solid when set and there are no springs to allow inaccuracy. Moreover, this adjustment cannot rust fast, because the screws work directly into the wood.

Write to us for more information about Disston levels or any tool in the complete Disston line.

HENRY DISSTON & SONS, Inc.
Philadelphia, U. S. A.

DISSTON

SAWS TOOLS FILES

The Winning Bid—



for the new American League Stadium in New York City was figured on the

MONROE

REG. TRADE MARK

Calculating Machine

THE White Construction Company, Inc., of New York, the successful bidder on this \$1,500,000.00 job say:

"The time and labor saved by the use of the Monroe in multiplication work alone practically pays for itself within ten days."

What the Monroe is doing for others it can do for you. It is SO SIMPLE that ANYONE can operate it.

Write for information or a Trial Demonstration.

Monroe Calculating Machine Company
Woolworth Bldg., NEW YORK



Three sizes—a size to fit every business. 20, 16 and 12 place capacities.

Without obligation (check items desired):
 Send literature descriptive of the New Model K Monroe
 Arrange for a FREE TRIAL in our own office.

My Name.....
Address.....

A. B. 8-22



Comfort Insurance

ARCHITECT, builder and building supply dealer all deal in "futures." If the homes they build *today* are constructed to give maximum comfort and satisfaction to the home owner, *tomorrow* will invariably bring them increased business from the friends of satisfied clients. Therefore, it pays all three to make sure that the homes they build give a dollar's worth of comfort for every dollar spent. Choosing the most durable and economical building materials is the first step in assuring lasting comfort.

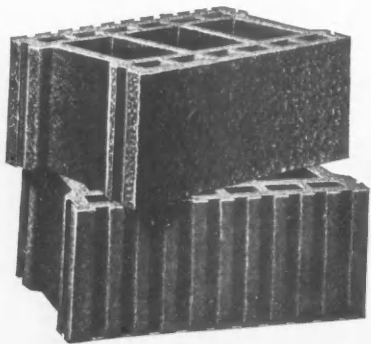
Nateco Double Shell Tile ranks high among the most economical of permanent building materials. Its hollow air spaces assure comfort in both winter and summer. Its size enables it to be quickly and economically laid. Its rich, brownish shades make it a handsome building unit. It assures future comfort and satisfaction.

Write today for our free circular "The Home Beautiful" which depicts Nateco Double Shell Tile in its natural colors.

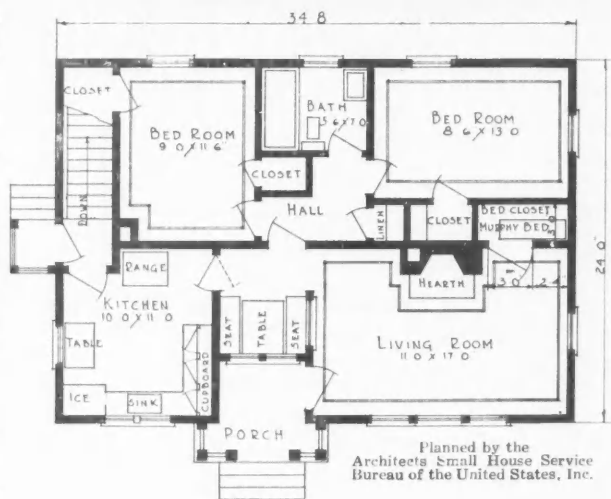
NATIONAL FIRE PROOFING COMPANY

1423 Fulton Building Pittsburgh, Pa.

**NATCO
Double
Shell
Tile**



**Tex-
Tile
Finish**

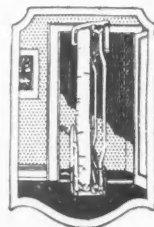


The MURPHY IN-A-DOR BED

Study the above plan. By changing the 3'-0" door to the bedroom side—the bedroom will serve as a sun parlor, den, sewing room or children's playroom as well as a sleeping room—thus increasing the size of the house by one room.

WRITE OUR SERVICE DEPARTMENT

It pivots lightly through an ordinary door. Completely concealed. Comfortable as any bed made. Equipped with Simmons Springs.



We co-operate with architects and builders.

We aim to be of unobtrusive but helpful service.

THE MURPHY DOOR BED CO.

Offices in All Principal Cities

22 West Monroe Street, Chicago
469 5th Avenue, New York
1544 Blake Street, Denver
912 Kresge Bldg., Detroit, Mich.
205 O'Connor St., Ottawa, Can.
Crocker Bldg., San Francisco

Chemical Bldg., St. Louis
Hoge Annex Bldg., Seattle, Wash.
1140-42 Hanna Bldg., Cleveland
1021-23 Grand Av., Kansas City
220 N. St. Paul St., Dallas, Tex.
204 Peach Tree Arc., Atlanta, Ga.

There is only one "In-A-Dor Bed"—THE MURPHY

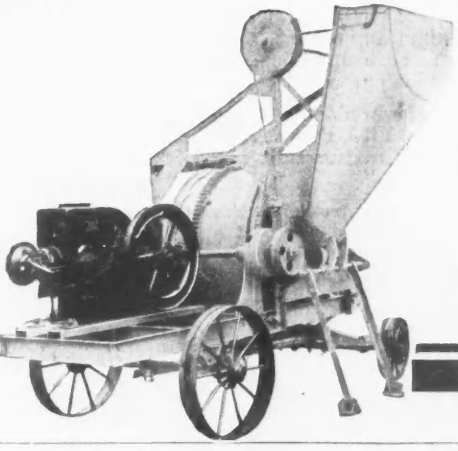
Lansing Company-

Improved Concrete Mixers, Concrete Carts, Wheelbarrows, Scrapers, etc.

The ever dependable Lansing Line is now more complete.

With the addition of such items as modern building conditions demand we have a highly specialized line of better contractors' equipment.

Our intensive activity in bettering and increasing our shipments make it now possible to get immediate delivery on all equipment.



Lansing Service that has been a joy to Lansing users in the years gone by continues to sell Lansing Equipment to the thinking contractor.

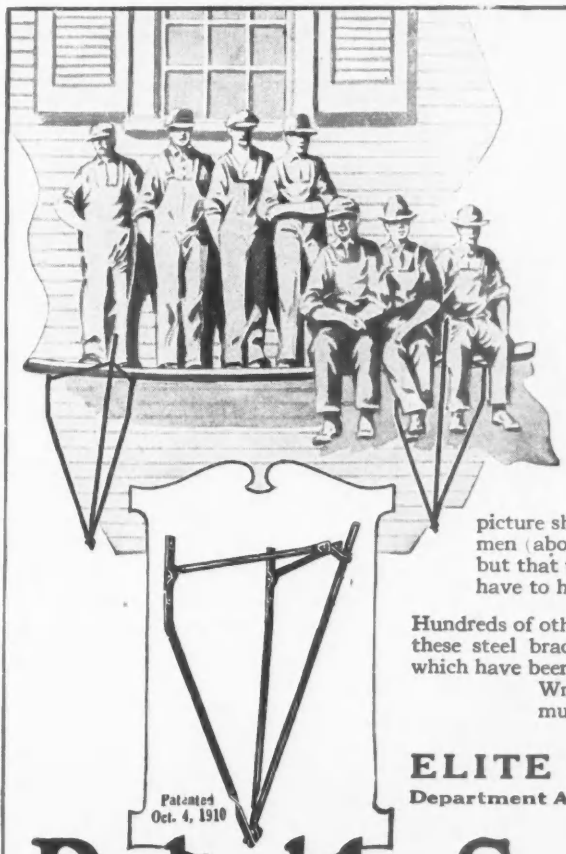


Your dealer can tell you, he is the man who knows. Ask him about Lansing Equipment.

The Lansing Company 22 N. Cedar St., LANSING, MICH.

CHICAGO STORE, 1535-1537 South State Street
KANSAS CITY STORE, 1413-1415 West 10th Street
NEW YORK STORE, 28-30 Vandam Street

PHILADELPHIA STORE, Cor N. American and Willow
MINNEAPOLIS STORE, 311 North 3rd Avenue
SAN FRANCISCO STORE, 338-348 Brannan Street
BOSTON STORE, 78 Cambridge Street



1150 Lbs. Supported by two Reliable Brackets *in use for seven years*

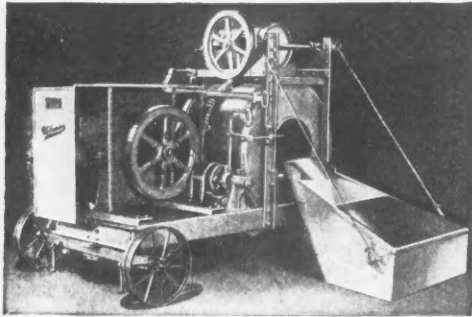
Ollermann & Yelden, contractors and builders of Yankton, South Dakota, who have been using Reliable Scaffold Brackets, wrote the following interesting letter of their experience:

"We tried out a dozen Reliable Scaffold Brackets and are convinced that there is nothing like them for convenience. They are very easy to put up, saving a great deal of time, and are thoroughly reliable. We are enclosing a picture showing two Reliable Brackets put up with 8d nails supporting 7 men (about 1150 lbs.) on a 16 foot plank. We would have put on more men but that was all that were available. When the season opens up we shall have to have another dozen brackets."

Hundreds of other builders and contractors are saving time, money, and lumber by using these steel brackets instead of wooden scaffolds. Have you any wooden scaffolds which have been in service for 7 years? Reliabilities bought 7 years ago are still in use today! Write for catalog and prices now. Figure out for yourself how much money you can save on your next job. Write today!

ELITE MANUFACTURING COMPANY
Department A-6 ASHLAND, OHIO

Reliable Scaffold Brackets



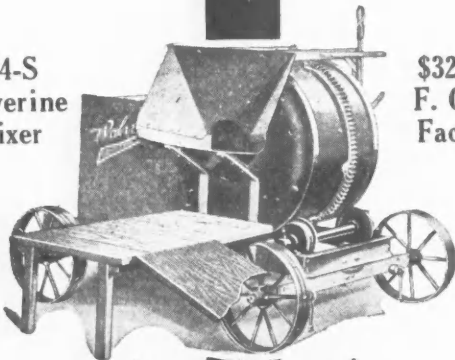
\$550.00 F. O. B. Factory

For the Knickerbocker WOLVERINE ONE-BAG SIZE MIXER, equipped with 5 h. p. engine and magneto, steel engine housing, low charging hopper and steel trucks with standard track; may be equipped with power loader, automatic pressure water tank as shown above, or batch hopper if desired, as extras.

Follow the Arrow

Follow the Arrow

104-S Wolverine Mixer



\$325.00 F. O. B. Factory

104-S Wolverine — Half-bag capacity low charging Mixer with 3 h.p. horizontal

gas line engine and magneto housed. May be equipped with batch hopper.

CUT HERE

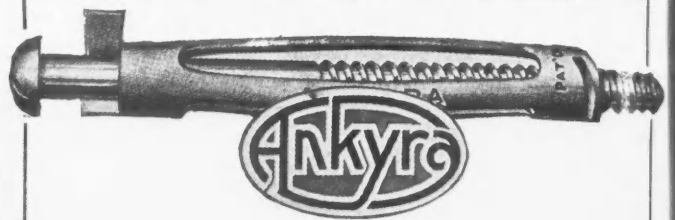
To THE KNICKERBOCKER COMPANY
525 Liberty Street, Jackson, Mich.

Please send Concrete Mixer catalog Woodworker catalog
Hoist catalog

Name _____

Street Address _____

Town _____ State _____



QUESTION No. 12*

What Is The Most Satisfactory Fastening Device For General Building Work?

A large plumbing and heating contractor in Canada writes: "Your ANKYRA Anchor Bolts are better than any of those that we have used heretofore and we find them most satisfactory for our various purposes."

A prominent power plant engineer says: "I consider the ANKYRA Bolt far superior to any other type of anchor bolt of which I have any knowledge."

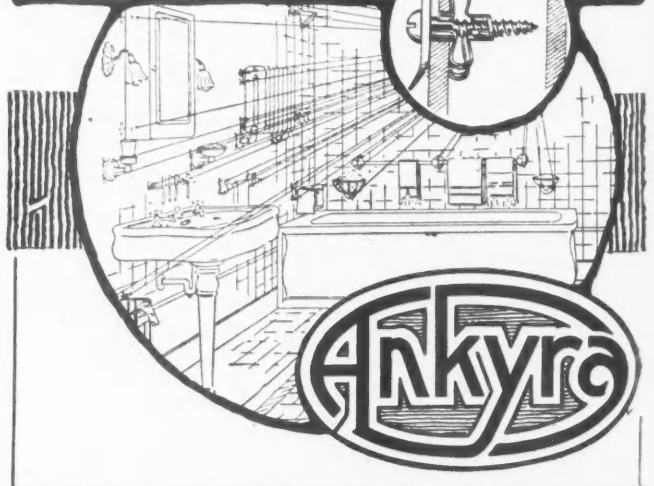
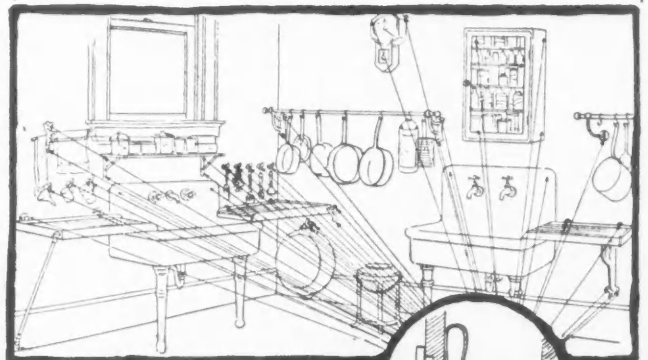
An architect of international reputation: "I believe ANKYRAS are the best anchors I have ever seen and they can be used where nothing else will really work."

In any wall, hollow or solid, thin or thick, sheet metal, stone, tile, concrete, or lath and plaster—ANKYRA holds equally well in any or all of them.

Ankyra Manufacturing Co.

151 Berkley St. Wayne Junction Philadelphia

*This and many other questions of importance to the builder who wants to save money, are answered in the ANKYRA Booklet. Write for it.





We Are Making a
Special Offer

on a Complete Outfit
of the

EQUIPMENT which completes a fireplace. We expect to interest you by Saving you Money on Quality Goods. Write NOW for pictures and prices.

Liberal Discount to Dealers

GRAND RAPIDS MARBLE & FIREPLACE CO.
GRAND RAPIDS, MICHIGAN

FarQuar Facts —and What They Mean

Carbon monoxide gas—a product of combustion—is equally as dangerous when generated by the furnace as when it comes from the automobile. Protection from poisonous gases should be a first consideration in the installation of a heating plant. When a furnace leaks at the joints or is made porous from heat, it is dangerous—unfit for use.

Positive protection against fire poisons is a distinctive feature of

THE
FARQUAR
HEATING AND VENTILATING
SYSTEM

The firebox is made of Keystone Copper Steel, electrically welded by a special process into one piece, without seams or joints, making gas leakage impossible.

Other important features are:—the large grate area, insuring slow combustion and fuel economy; the automatic control, actuated by the fire-box itself, which positively protects against over-heat and its consequent dangers and makes necessary only one firing

every twenty-four hours; the FarQuar Vent and Return System, which insures a uniform distribution of heat to all rooms, regardless of weather, and provides a constant supply of pure, fresh air, gently warmed to the proper temperature.

Why FarQuar Results Pay

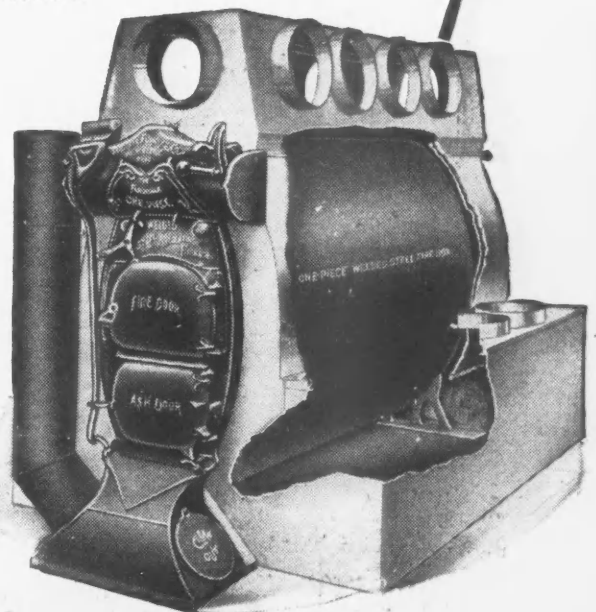
When you sell the FarQuar System your customers get healthful heat of the proper temperature, volume and velocity, at a minimum fuel cost. Although never a "price" job, it is remarkably practical and efficient, thereby making it extremely economical, accomplishing results entirely impossible with any other method of heating.

These facts—easily proven—explain why FarQuar Dealers enjoy an exclusive advantage. Write today for attractive Dealer Proposition.

The Farquhar Furnace Co.
309 FarQuar Bldg., WILMINGTON, OHIO

JERSEY CITY, N. J., July 23.—After taking some friends for a ride today, Arthur M. Welsh drove his automobile into the garage, closed the door, climbed into the tonneau and fell asleep, the engine still running. Four hours later he was found dead.

Physicians attributed his death to carbon monoxide poisoning.



Whitney Casement Windows

- are storm-proof when closed;
- permit perfect control of ventilation when open;
- don't interfere with screens;
- don't stick, rattle or slam;
- insure lasting satisfaction.

Here's a window construction that makes satisfied customers,—that does away with complaints about sticking, rattling, slamming and leaking window sash—that helps to build up your reputation for high-grade workmanship in your buildings.

Whitney Windows are in use in the new U. S. Veteran's Hospitals at Dawson Springs, Ky., Boise, Idaho, and San Francisco.

We ship complete frames, sash screens and hardware, knocked down, ready to be assembled and fitted.

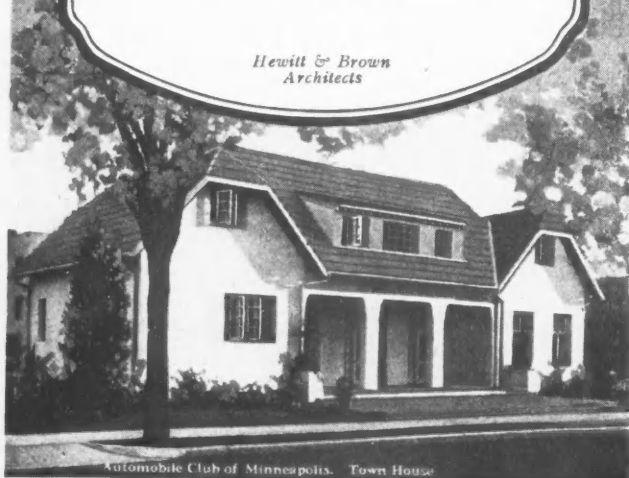
They are shown in detail in your "Biltwell" and "Universal" mill-work catalogs.

Write for full information.

Whitney Window Corporation

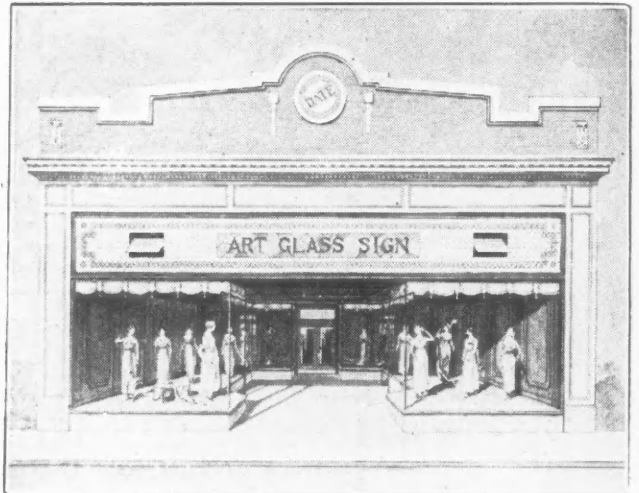
134 E. Lake St. Minneapolis, Minn.

*Hewitt & Brown
Architects*



Automobile Club of Minneapolis. Town House

INTERNATIONAL MODERN STORE FRONTS



**EASILY AND QUICKLY INSTALLED
REASONABLE COST TO THE MERCHANT
GOOD PROFIT TO THE CONTRACTOR**

Many contractors are making money installing International Store Fronts. There are plenty of opportunities right in your town. Send us a list of some of the stores that need new modern store fronts and our service department will help you land the business. We furnish everything complete, ready to install, including full size detail drawings that make the erection simple and easy.

Our organization consists of competent men of wide experience and ability, who are equipped to design and prepare plans, answer questions and furnish information regarding construction of any character. Modern machinery and complete stock of material enable us to quote interesting prices and make prompt deliveries. We can demonstrate to your satisfaction our ability to give you real service.

**STRUCTURAL STEEL
COMPLETE STORE FRONTS
COMPLETE PUBLIC GARAGES
STEEL SASH ELEVATORS
SKYLIGHTS BRIDGES
STEEL CEILING MILLWORK**

*Write for "Garage Illustrations"
showing at least 50 modern buildings designed by us*

INTERNATIONAL STEEL & IRON CO.

ADDRESS DEPT. 18

EVANSVILLE, INDIANA

Concrete Garage Floors Never Wear Out When They're Hardened with "ANTI-HYDRO"

Water, oil, the wear from chains and other severe conditions encountered in a garage have no effect on the concrete floors if they are hardened and waterproofed with "ANTI-HYDRO".

There is no reason for soft, crumbling garage floors when "ANTI-HYDRO" is so easy to use and so satisfactory and permanent in its results. Being a liquid, it mixes easily with the gauging water, hardening and waterproofing the concrete *through and through*.

"ANTI-HYDRO" has been in continuous use for 18 years—long enough to prove its worthiness. Use it on your next job.

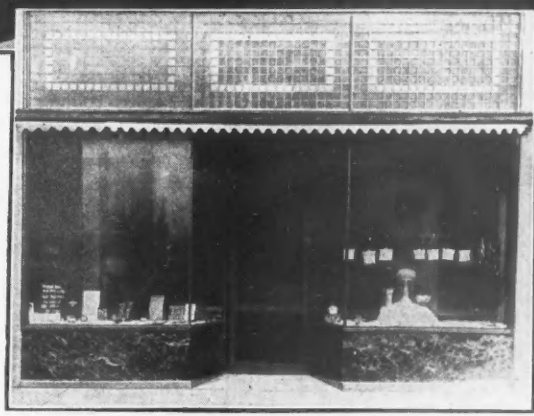
ANTI-HYDRO WATERPROOFING G. NEWARK NEW JERSEY



THE AUSTIN CO., CONTRACTORS



GARAGE, ROESSLER & HASSLACHER CHEMICAL CO.



Kawneer SOLID COPPER STORE FRONTS

Contractors —

Why overlook this profitable work? Builders everywhere are gaining prestige and profits by figuring Kawneer Store Front Work, along with the general run of their jobs. They find Kawneer Store Front work as simple as building a porch on a house.

Pin this Coupon to your Letterhead and let us send you this Valuable Book

The Kawneer Company

1526 Front Street, Niles, Mich.

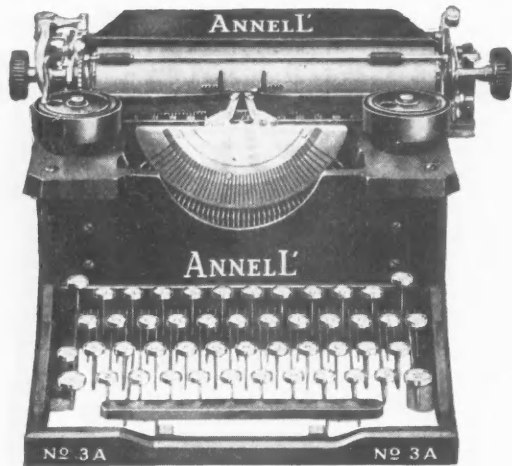
Our Full Size Details give complete information about how to handle the wood and metal work on Kawneer Store Fronts

The Kawneer Company

1726 Front St., NILES, MICH.

Please send me your Book of Designs and full particulars about Kawneer Resilient Grip Store Fronts.

Name.....
Address.....



\$4 Down Brings This
Brand-New Typewriter

Pay the balance in small monthly payments. We will ship the typewriter to you for 10 days' free trial

The Annell' is Standard in size, appearance, construction and mechanical operation, with an action so smooth and a touch so responsive as to be a source of constant pleasure to the experienced operator, and making the progress of the novice immeasurably easier. It turns out beautiful work. The type is clear, clean-cut, hard; the alignment and spacing are utterly perfect. The speed is unlimited; no operator can crowd the Annell'. Extremely simple in construction, it is trouble-proof, sturdy, and will last a business lifetime. It embodies the ideas and experience of mechanical geniuses who have been making typewriters and typewriter improvements for generations.

Every Operating Feature

The Annell' has every late-style feature and modern operating convenience—each letter completely visible as written (together with all the previous writing), Back Spacer, Tabulator, Two-Color Ribbon, Right- and Left-Hand Shift Key, Shift Lock, Margin Release, Adjustable Line Spacing, Adjustable Margin Stops, Paper Release, Automatic Line Spacer on Carriage Return, Adjustable Paper Fingers, etc., also the 42-key, 84-character Universal Keyboard. Rubber cover and all extras shipped with each machine.

Big Saving—Over a Year to Pay

We are the only company selling a Standard 42-key, 4-Row, Brand-New Typewriter direct to the user by mail at practically the wholesale price of other high-grade typewriters. Our remarkably low price and monthly payment plan enable you to buy a brand-new typewriter easily and conveniently—over a year to pay.

Fully Guaranteed

We protect you with an ironclad guarantee against any flaw in material or workmanship.

No Risk—10-Day Free Trial

We will prove its high-grade quality by sending the Annell' to you for ten days' trial. Use it on any of your work. If not satisfactory, return the machine to us. We will refund the express charges and any money you have paid, and the trial will cost you nothing. You are the only judge. Could anything be fairer?

Send for Information, or Send the Coupon

Send coupon or a postal today for full information about the greatest of all typewriter offers. Don't miss it. Act now.

ANNELL TYPEWRITER CO.
 506 No. 230 East Ohio Street CHICAGO

NOT AN ORDER—MAIL TODAY

ANNELL' TYPEWRITER CO.
 506 No. 230 East Ohio Street, Chicago.

Send me complete information about your wonderful typewriter offer. This places me under no obligation.

Announcement

to

ARCHITECTS ENGINEERS CONTRACTORS

When coming to Chicago don't fail to avail yourself of the New Service Bureau just established for your particular benefit.

Advance notice of your coming will cause us to make appointments for you at your direction.

**A PRIVATE OFFICE
 WHILE IN CHICAGO**

**The Building Material
 Exhibit**

F. R. COX, Manager

Entire 6th Floor
 15 East Van Buren Street
 CHICAGO

An *Ideal* Product Is Its Own Best Advertisement



Our Hand Block Machines

(With Tamper)

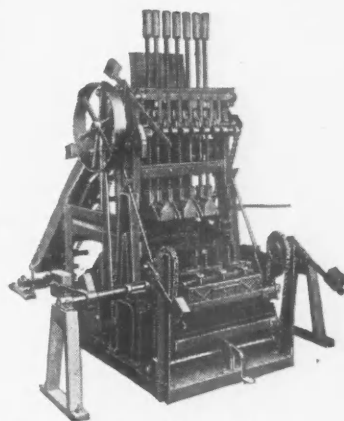
give you the kind of blocks that stimulate your business. Well-shaped, uniform and accurate. The machines are steady and speedy—just what you need to get your share of the big demand for concrete building blocks. As business thrives, install one of our famous Automatic Block Machines with Tamper, and watch things hum.

reflecting the skill and the integrity that have characterized the Ideal organization since its formation a fifth of a century ago. Each device "stands on its own bottom" and makes good through intrinsic merit.

Write for Catalog 35
TODAY

The Ideal Concrete Machinery Co.

1326 Monmouth St., CINCINNATI, O.



Our Fully-Automatic Building Tile Machines

deliver three tile on a single wooden pallet. There's no stopping or delay for off-bearing of tile. Positively the most efficient tile machine ever designed; "made good" overnight because it produced results.

BOGALUSA'S HISTORY-MAKING REFORESTATION OPERATIONS ASSURE A PERPETUAL SUPPLY TO OUR TRADE

"BOGALUSA" STENCILED ON YOUR SOUTHERN PINE IS LIKE A CERTIFICATION ON A CHECK"

BOGALUSA

Trade-mark Registered U. S. Patent Office

Can fill any order of ANY SIZE ANY TIME through your favorite retail yard, with promptness and exactness. Big Timbers for Railroad or Marine demands—or humble everyday crating, or box lumber (as well as a Complete Line of the usual yard and shed stock).

25 YEARS of CAPACITY PRODUCTION ahead of us in our own unequalled stands of THE FINEST VIRGIN TIMBER EXTANT, plus the knowledge of "BOGALUSA" products assured to you IN PERPETUITY by our far-reaching reforestation operations. You are thus protected, in the most practical way, in the complete satisfaction of your trade during the life of your business.

Superior standards of manufacturing technique, with strict grading per Factory Mutuals, A. S. T. M. and A. R. E. A., accuracy of count and a simple "good-will policy" are a few among the other factors that have made the name "BOGALUSA" indeed

"A WORD TO BUILD ON"

Dealers: Write us for full particulars as to detailed special service on special items. Our response will be personal, candid and prompt.

SALES SERVICE DEPARTMENT

GREAT SOUTHERN LUMBER COMPANY 1600 4th Avenue, BOGALUSA, LA.

"FROM A LATH TO BRIDGE TIMBERS, SPECIFY BOGALUSA TRADE-MARKED PINE AND REST EASY"

How many on your pay-roll?

ARE you paying 6 men with paint brushes to do what one man can do with a Paasche Air Brush? Some paint contractors still are, but when they learn that a Paasche Air Brush does the work with greater satisfaction, combined with much greater speed, they'll be quick to with Paasche.

Air digs deeper than hair. When the job is done you know the paint has been forced into the wood pores to stay and not just smoothed over the surface. Solve your labor problem with a Paasche Portable Painting Machine.

Write us today about it.

Paasche Air Brush Co.
1913 Diversey Parkway Chicago, Ill.

TILES & MOSAICS

Pleasing appearance, clean and wholesome, long life, combined with economic installation, are the reasons why your natural selection for wall and floor covering is tile. There is no more satisfactory floor covering.

Rich Red Quarry Tile

So long the best selection for Sun Porches, Terraces, Pergolas, Fireplaces, etc., is coming into increased popularity.

Guaranteed to be free from defect—made from shale burned to vitrification, our tile is impervious and cannot absorb stain or dirt.

Colors come in natural reds, ivory and gray.

Get This Free Book "How To Set Tile"

White Glazed Wall Tile

is found in all well appointed bathroom construction. Builders and contractors have come to know it is the one type of construction that is permanent.

We have a folder of varied new designs. Send your address and we will mail it to you.



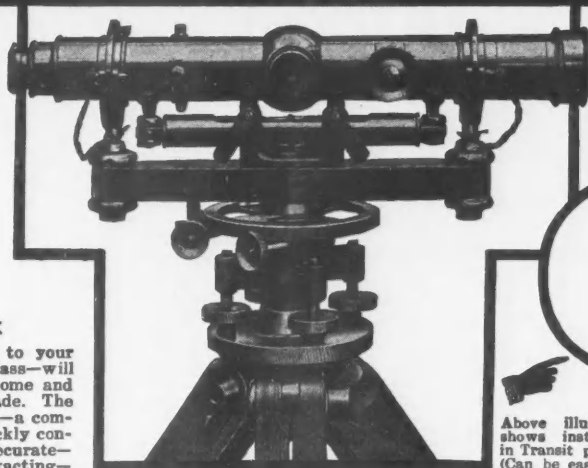
Level and Plumb With Your Own Instrument

\$5.00

BRINGS IT TO YOU

Better, Quicker Work

This instrument will add immeasurably to your efficiency and put you in the big builder class—will do more to increase your business, income and prestige than any investment you ever made. The Aloe Convertible Level is the world's best—a combination of both level and transit and quickly converted to the use of either. Absolutely accurate—satisfies the requirements of the most exacting—yet so simple that anyone can use it.



Free Trial

Order the Aloe—try it for 10 days—put it to the most rigid tests. If you are not pleased, return it at our expense and your \$5.00 will be refunded.



Above illustration shows instrument in Transit position. (Can be easily and quickly converted.)

FREE
Write for this Book



Aloe Convertible Level and Transit Combined

You Learn to Use It In An Hour

No technical knowledge necessary. No previous experience needed. With our simple and complete instruction book, included free with every level, you can immediately put the instrument to work. It is a level and transit combined—takes sights either above or below the horizontal. You can use it for leveling foundations, walls, piers, streets, walks or curbs—run straight lines for ditches or drains—boundary lines for fences or trees—surveying lots and fields—plumbing walls, shafts, trestles, posts and pillars.

Easy Monthly Payments

Just \$5.00 brings it to you—for a free trial. If perfectly satisfied, pay the balance in small monthly payments. The instrument will be sent at once and from the first day it will be working for you—paying for itself by saving you the cost of borrowing an instrument or the fees you have been paying other men for this work.

Write for Free Book

Our free book—"Be A Bigger Builder"—tells you how to increase your income—how to get the profitable jobs and become a bigger man in your community. Write for this book today.

A. S. ALOE CO., 621 Olive St., St. Louis, Mo.

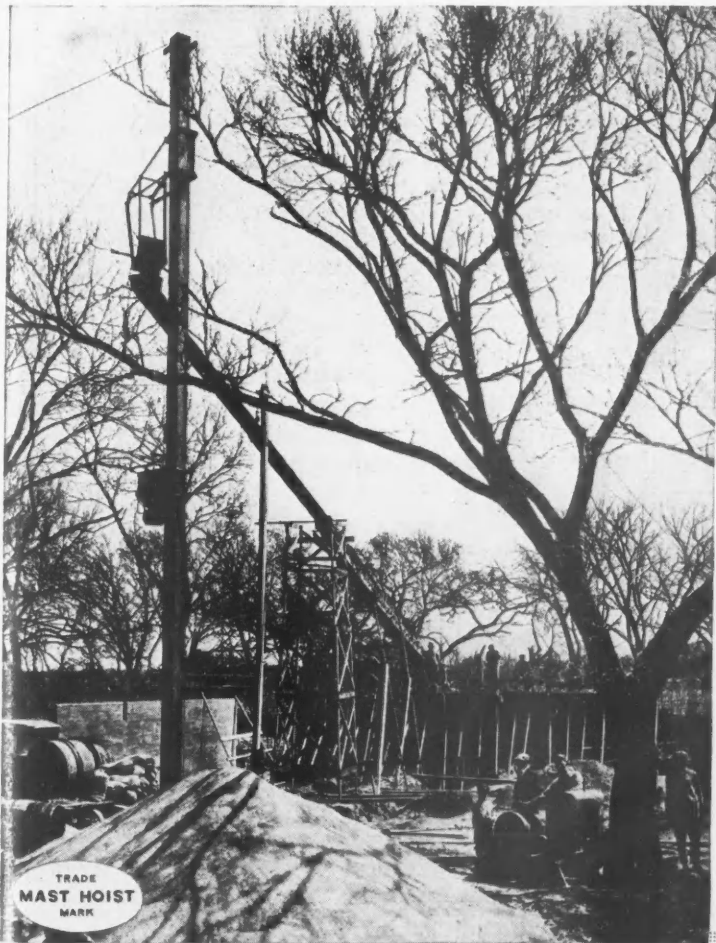
MAIL COUPON TODAY

A. S. ALOE CO., 621 Olive St., St. Louis, Mo.

Without obligation, send me your **FREE** book, "Be A Bigger Builder". Also full particulars about the Aloe Convertible Level and details of your easy payment plan.

Name.....

Address.....



TRADE
MAST HOIST
MARK

"The Slickest Piece of Equipment—We Have Ever Used"

THIS is the manner in which a contractor who had placed 800 cu. yds. of concrete in 9 working days described his INSLEY MAST HOIST plant. His experience is typical of the experiences of many other successful contractors.

If your work is such that you have occasion to handle from 40 to 100 cu. yds. of concrete per day, this simple and inexpensive concrete handling plant will make money for you.

Write for illustrated circular

INSLEY MANUFACTURING CO.
Engineers and Manufacturers
INDIANAPOLIS

Predicts 1922 Building March
 New buildings constructed in Milwaukee during 1922 will reach a total value of more than \$19,000,000, Building Inspector W. D. Harper estimated Friday in making public comparative figures for 1921 and 1922.

BIG MONTH FOR ALL CONSTRUCTION WORK
 W. Dodge Company's Review of Building Activity During Month of July.

BUILDING PERMITS SHOW BIG INCREASE
 For First Seven Months '21 Permits

July was the fourth consecutive month of unprecedented building activity, according to the F. W. Dodge company. Contracts awarded during the month in the twenty-seven northern states amounted to \$150,000,000. This was a 2 per cent increase over June and a 65 per cent increase over July, 1921. It is the largest record for any month except this year.

FALL BUSINESS

will be booming for men prepared to sell and install

Ceco

METAL WEATHERSTRIPS

"Outstrip All the Others"

Building is breaking all records. More and more are weatherstrips being included in architects original plans. And owners everywhere are coming to realize that good weatherstrips are an excellent investment. Every new structure and every old one as well needs to be weatherstripped. Have you a business of your own that offers the possibilities that this field does?

the New "SLIDE-LOCK"

Is Your Business Opportunity

—your big chance to build up a business of your own. The Slide-Lock strip for double hung windows is the most effective strip on the market. It is the feature of our complete Ceco Line. You'll find them "repeat order" strips and real money-makers. Two profits every time—one with the sale, another when you install them.

Regardless of location or your present line of work let FALL BUILDING help you. Get our agent's proposition.

100% Efficient.
 Stops leakage before it starts.
 Completely adjustable.

Low in first cost.

No expensive grooving.
 Less labor to install.

Cannot be installed wrong.
 Window slides smoothly.

Leakage of dust, dirt, air, sand, soot and rain halted and locked outside.

Send the Coupon at Once

CONCRETE ENGINEERING COMPANY
 140 So. Dearborn St., Chicago, Ill.

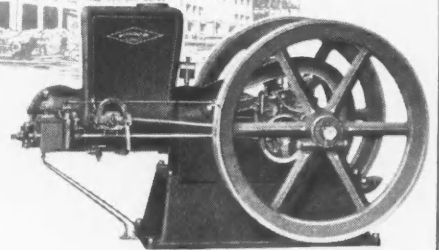
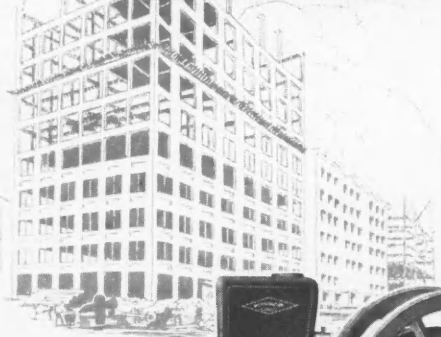
Without obligation on my part please send me information on Ceco Metal Weatherstrips and your agency proposition.

Name.....

Address.....

Town and State..... 19

WORTHINGTON



Dependable Power for Hard Work

The Contractor must have an engine that is easy to start, one that will stand up under the most severe strains and deliver a steady flow of power amidst cement, dust, dirt and in all kinds of weather. Shut downs are costly and may stand between success and failure on some important job.

Worthington engines ideally fill the Contractor's requirements. Their manufacture is based upon a thorough understanding of his needs. The design is simple—no complicated parts; there is plenty of surplus power above rating. All Worthington engines are equipped with Webster Tri-Polar Oscillating Magneto, insuring perfect ignition.

With a Worthington engine you will obtain maximum dependable power service with the least expense.

Distribution and service through our twenty-eight branch offices and hundreds of dealers in all parts of the country.

Write today for Bulletin D-4, containing new low prices and name of nearest dealer.

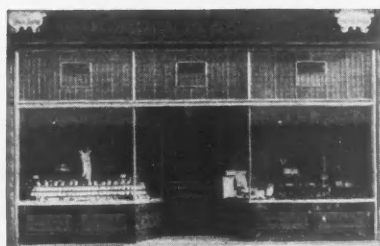
Worthington Pump and Machinery Corporation

162 Holthoff Place

Cudahy, Wis.

DAYLIGHT INCREASES

The Value of Every Store Building—



Daylight costs nothing—yet is the greatest improver of store interiors. Daylight makes merchandising easier, faster—more satisfactory. Every store building should have its interior daylighted by—

3 WAY-LUXFER PRISM TRANSOMS

the **only** satisfactory way to project daylight.



Built up of 4-inch Prism Tile of Lazalite Glass, that does not turn pink or purple, these transom panels improve both the interior and exterior of the store.

*Be sure—in order to get full daylight value—
to specify and order 3 Way-Luxfer Prisms,*

American 3 Way-Luxfer Prism Co.

Daylight Engineers

1307 S. 55th St., CICERO, ILL.

139 Spring St., NEW YORK

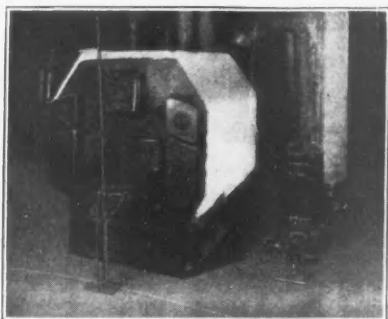
IMPORTANT CHANGE IN SELLING POLICY

The Combustion **Fuel Oil Burner**

which has heretofore been sold exclusively thru the distributor, will now be sold directly thru the **Fitter** and the **Contractor**.

Write us on your letterhead and we will send you full data and prices on our **ten sizes** of equipment for heating the home, the store, or the factory.

As Safe and Simple As Your Electric Light
Absolutely Automatic



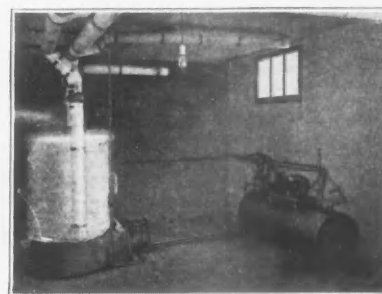
Every installation a satisfied customer.

Every installation sold under iron clad, money back guarantee.

THE COMBUSTION CO.

General Sales Office: 728 So. Michigan Ave.
Factory: 4256 North Western Ave.

CHICAGO, ILL.



OAK FLOORS

(For Everlasting Economy)



The Georgian Terrace Apartments
Atlanta, Ga. Oak Floors

Builders Are Educating The Public

An owner putting up his first building may not fully appreciate his Oak Floors the day his building is turned over. But a few years teach him their constantly increasing worth to him.

The average real estate value of Oak Floors over other floors is conservatively estimated at 25%. When the owner comes to sell or lease his building he finds that the Oak Floors you recommended mean just so many extra thousands of dollars in his pocket.

So that besides their general advantages of beauty, cleanliness and durability Oak Floors offer the owner an investment as good as a bond.

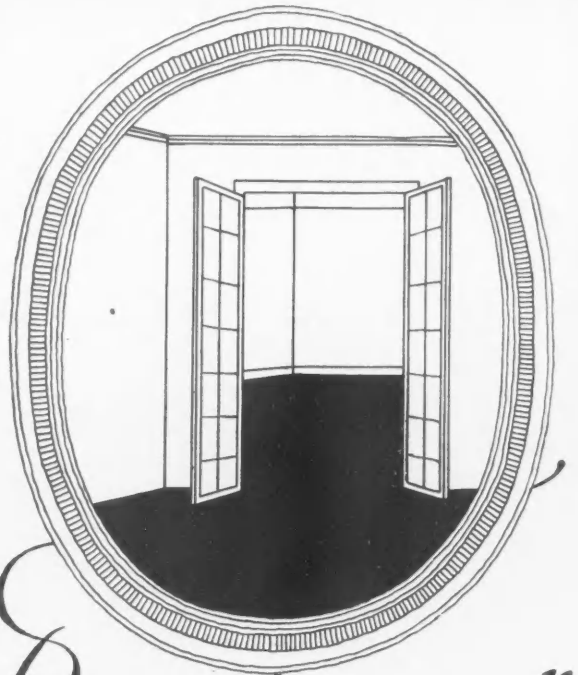
And builders, by enlightening the public to the truth about Oak Floors, are bringing about an era of better floors in all types of buildings, from cottage to coliseum.

Our three free booklets, in colors, contain much accurate and valuable information for your office files. Mailed free to builders and contractors upon request.

For general specifications, see Sweet's Architectural Catalogue and The Modern Hospital Year Book.

Oak Flooring Advertising Bureau

1038 Ashland Block, Chicago, Ill.



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NEW walls and ceilings should be decorated with a finish that will not be affected by the setting of plaster—Muralite.

For two dollars a room you can secure a soft, velvety, beautiful surface—with Muralite.

Muralite is sanitary and simple to apply. It will not rub or chip off. Redecorating is easy and inexpensive—merely wash off the old coating—apply a new one.

The beauty and economy of Muralite make it exceedingly satisfactory to the home owner or tenant. Clean, fresh looking walls are always found in the Muralited home.

It will pay you to find out more about Muralite. Write for a sample color card and full information.

M. EWING FOX COMPANY
New York Chicago

A PAIL · A BRUSH · HOT WATER · AND
MURALITE
MAKES A PERFECT WALL FINISH

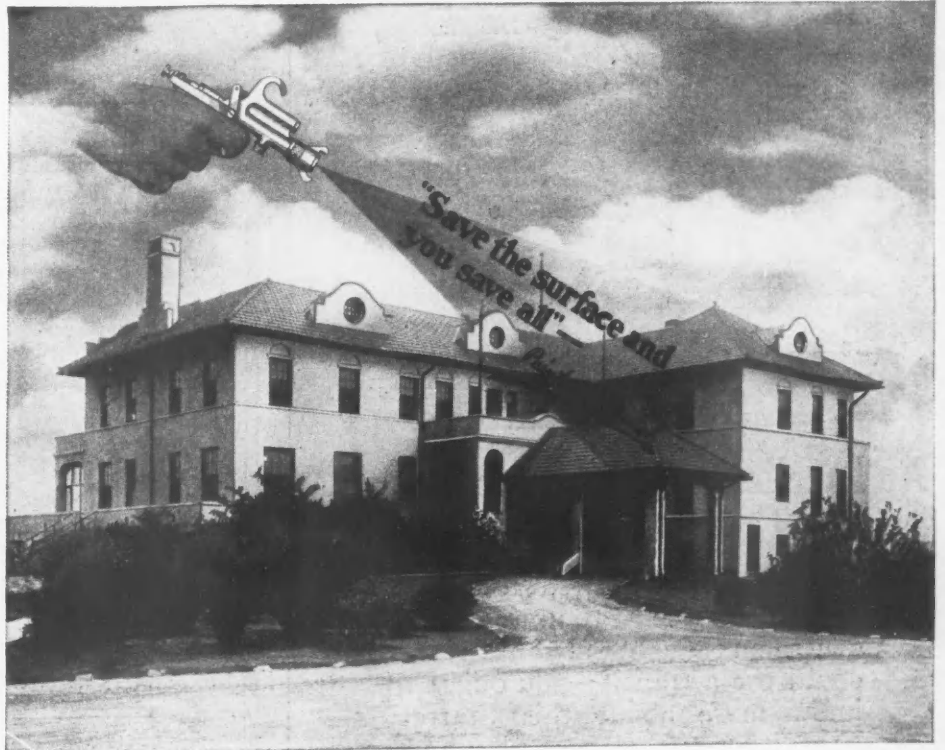
A Hand of Greater Accomplishment

is the hand operating the modern spray system of painting. Time requirements of other methods are reduced—costs are cut—results are improved.

You can apply practically any kind of paint on any kind of surface from two to five times faster with the DeVilbiss spray gun than with a hand brush. The finished job is cleaner, more thorough and uniform.

Cutting costs on painting of highest quality is your best bid for more work. The DeVilbiss system of painting makes possible taking care of an increased volume of work without increasing the labor charge.

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DeVilbiss
Spray-painting System

(Large and Small Equipment)
(for every painting requirement)

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JUST stick these plans in your vest pocket—they are the handiest size imaginable for a man to carry—and it will be easy for you on short notice to plan, recommend or install Herrick Outside Icing, the big feature that makes refrigerator satisfaction.

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Herrick Refrigerator & Cold Storage Co.
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Do it NOW!

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Herrick Refrigerator and Cold Storage Co.,
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Please send me free a set of Blue Prints, in the handy vest pocket size, showing dimensions and various openings necessary for HERRICK Outside Icing.

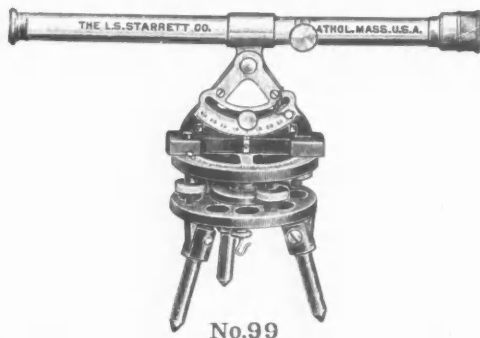
Name of Firm.....

Address.....

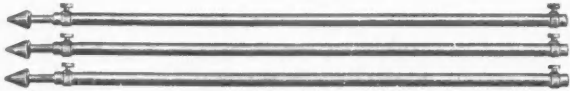
Contractor or Builder
(Scratch out one)

Name of Individual.....

City.....



No. 99



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SARGENT LOCKS AND HARDWARE



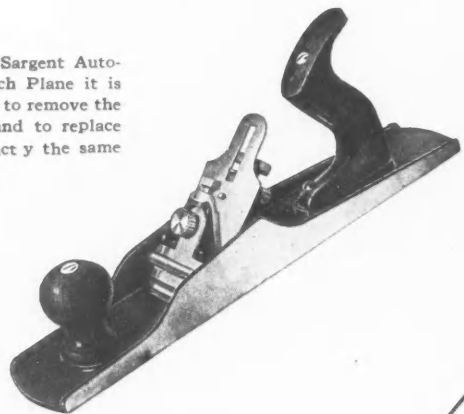
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We cannot send "Building with Assurance" broadcast. We reserve it for those who are seriously interested in home building or home improvement. The coupon will bring our beautiful free prospectus. Tells us all about the Master Book. Shows typical pages. Tells how you may own a copy of "Building with Assurance." If you sign and mail the coupon, the prospectus will be sent you at once free of charge.

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STANDARDIZED WOODWORK

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Don't Ever Get Caught Out of Work Again—
No Dull Seasons in This Business

Hundreds of homes and office buildings are being remodeled—in every case, the floor is the first consideration. Hundreds of floors right in your own neighborhood really need resurfacing. Hundreds of people can well afford to have the work done and will be glad to have you do it when shown the American Universal Method.

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Contractors and architects prefer its work because it leaves no sander waves or chatter marks. Leaves job clean—vacuum fan leaves dust and dirt in bag. Machine will pay for itself the first month.

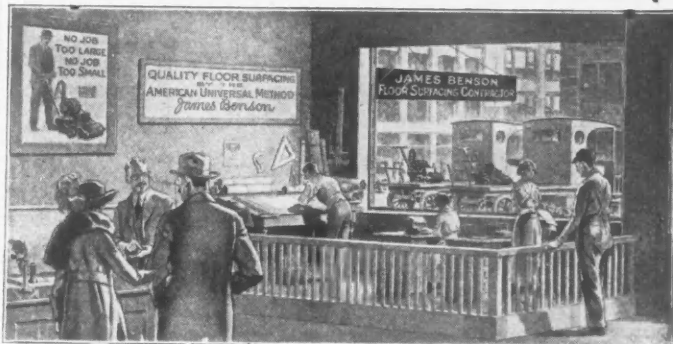
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Originators of Floor Surfacing Machines
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The American Floor Surfacing Machine Company
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Street

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Have You Got a Skylight or Ventilator Job?

If you are about to install skylights or ventilators it will pay you to look over our line.

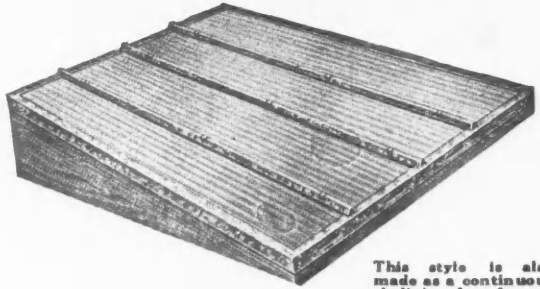
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This book with its discount sheet will prove of the greatest service to you in estimating your work. A copy will be sent you immediately upon your request.

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These side sashes are operated singly or in batteries. The sashes are pivoted and very easily operated.



This style is also made as a continuous skylight for factory buildings.



We construct skylights of this style such as is used for lighting hotel lobbies, etc.

WILLIS

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In Bowman Plumbing and Heating Supplies

Bowman Plumbing Fixtures that have long been the standard of every demand are now coming into greater popularity than ever.

The old equipment is still giving good service; therefore, where new fixtures are needed, Bowman are first to be considered.

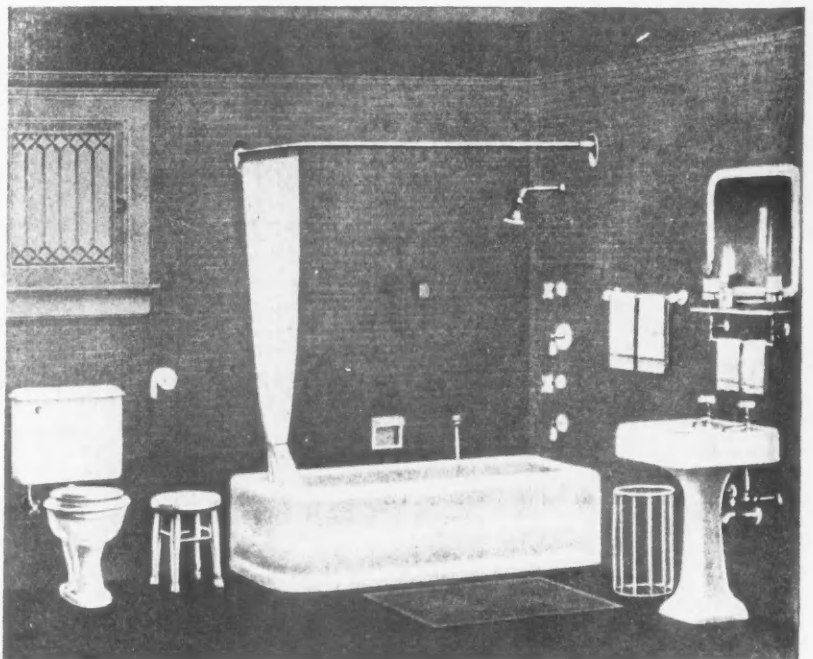
Our new Catalog "D" will point the *Way to Bigger Profits for You.*

Fill in this coupon and send it in—we'll send you the catalog.

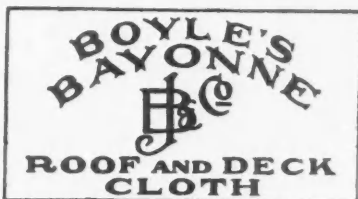
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BAYONNE HAS NO EQUAL

IT IS RELIABLY WATERPROOF AND WILL NOT CRACK OR BUCKLE OR PEEL

NO WHITE LEAD BEDDING REQUIRED YET LAYS FLAT AND STAYS FLAT

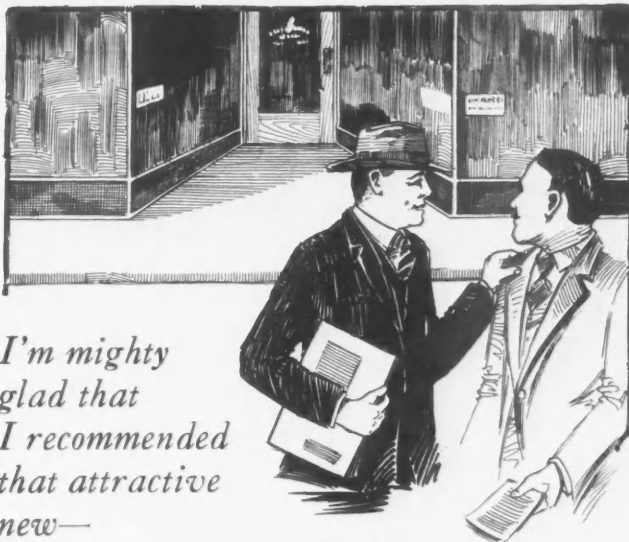
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Established 1860

112-114 Duane St. New York 70-72 Reade St.

Branch: 202-204 Market St., St. Louis



I'm mighty glad that I recommended that attractive new—

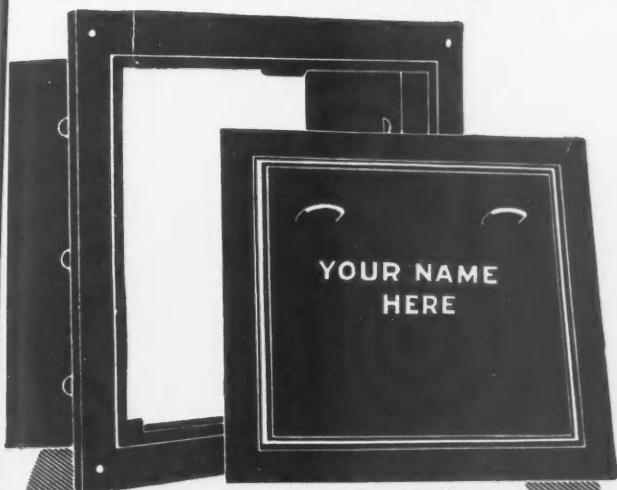
COULSON STORE FRONT CONSTRUCTION

You, too, can make your store pay bigger dividends in increased patronage. Send for the little booklet that tells how.

Send Today for Your Copy of a FREE BOOKLET

The J. W. Coulson Co.
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COLUMBUS, Dept. A, OHIO

Specific Information on How to Make Your Store More Attractive



One Leavitt Sells Others

The Leavitt Chute has about $\frac{1}{3}$ more area for shoveling in coal. The door lifts off—no glass to break. It protects the woodwork; is burglar-proof, fastening firmly from the inside. Nothing to break, rust or wear out.

Cost $\frac{1}{3}$ less—carry your name

If ordered in quantity, Leavitt specialties will be made bearing your name—a good, permanent advertisement. Write for down-to-earth prices on Leavitt SAFETY Cistern Tops; Leavitt Ash Doors; Leavitt Dump Doors for Fireplaces.

Leavitt Manufacturing Co.
366 Griggs St. - - - Urbana, Ill.

LEAVITT Coal Chutes

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THE real BIG money in the concrete business goes to the men who use *Utility Concrete Equipment*. It speeds up the work, cuts down costs and makes better products. Find out why by writing concrete equipment headquarters for complete catalog and prices.

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give our agents a steady year round income. Our products are different—designed by practical architects and builders.

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“The Victor Parting Bead is the biggest Window Improvement ever produced”



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Are you willing to pay out profits for wood form wastage—for the higher labor expense—for the costs of slower construction—which Metaform wall form equipment can save for you. You pay for Metaforms *whether you use them or not!*

Send today for the Metaform Literature



Metal Forms Corporation
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Metaform

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Where the Kimball Gets Its Power

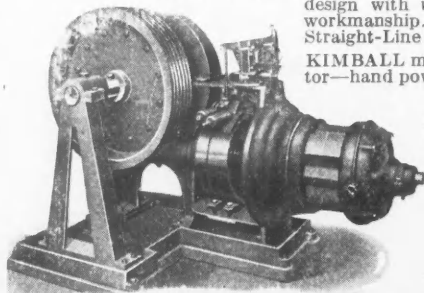


Satisfactory elevator power never fails when it is needed—it **must** be dependable, unflinching, ever ready.

Unsatisfactory elevator power slows the wheels of industry and increases the cost of elevator service.

KIMBALL elevator power is the satisfactory kind—proved satisfactory by forty years of unflinching service. It performs its tasks day in and day out for scores of years without complaint and with practically no upkeep cost.

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KIMBALL makes every type of elevator—hand power, electric attachments, light electrics, passenger and freight, etc. Your request brings complete information. You'll be especially pleased with the price. Write today.

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Council Bluffs Iowa

KIMBALL ELEVATORS

Hess White Steel



Medicine Cabinets and Lavatory Mirrors—meet the demand for better-than-wood cabinets and wood-framed mirrors, and at reasonable prices.

The highest grade of materials and workmanship go into these goods—polished plate glass mirrors, nicked brass hardware, steel or glass shelves, and the whole, inside and out, finished in beautiful baked white enamel, guaranteed to be everlasting.

Look for this mark and make sure you are getting the genuine Hess. Sold by dealers and contractors everywhere. Illustrated booklet on request.



HESS WARMING & VENTILATING CO.
Makers of Hess Welded Steel Furnaces
1220 Tacoma Building CHICAGO, ILL.

An Easy Way To Cut a Mortise

Every carpenter knows what it costs to cut a mortise the old fashioned way. It fairly "burns up" time. Ordinarily, fitting six to eight locks per day is a good job;—a dozen is a big day's work, to say nothing of the "slips" which mean costly mistakes and serious delays.

But you can overcome all this and cut your mortises easier and more accurately with—

The Champion Mortiser

An automatic, ball bearing machine which makes a perfect mortise ten times faster than ordinary hand methods. Easily makes 100 clean-cut mortises per day without the use of brace, bit, chisel, or any other tool,—and every mortise with straight sides and back. Specially adapted for door locks, sashes, sash pulleys, screen doors, folding and sliding doors, cabinet work, etc.

Quickly adjusted from round bore to 6 1/4" slot. Accurately and automatically regulated by graduated scale. Three speeds for working in different woods. Easy and simple to operate. Any workman quickly able to do perfect work. Uses 1/4", 3/8", 1/2", 5/8" and 3/4" bits, also special sizes up to 1 1/4". Fully guaranteed for one year.

Owners are Boosters

Customers enthusiastic in praise of champion mortiser. H. B. Joseph, Del. says—"Would not be without it. Saved price on one job." Another writes, "Machine giving satisfaction every day. Getting great service out of it." M. Taylor, Iowa, writes, "Second time I used machine, put in 30 locks in 6 hours. Am better satisfied every day." That's how Champion Owners feel; every one a booster. You take no risks. Satisfaction guaranteed or money refunded. Sent C. O. D. on 10 days' trial. Price complete \$35.00 including any two of above bits. Additional bits \$1.50 each. Order today. Don't wait. Our guarantee protects you.

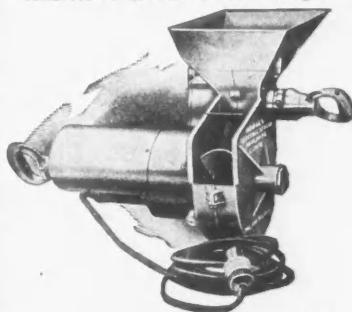
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Dept. A9, 901 Hayden Bldg. Columbus, O.

You Can Make \$6,000

and upward yearly as a stucco concrete and plaster contractor. **GET INTO BUSINESS FOR YOURSELF.** Thousands of old houses are being modernized, millions of dollars being spent on new construction. You can get your share of all this profitable work.

General contractors prefer to sublet plaster, concrete and stucco work to specialists equipped with Hodges Electrical Stucco Machine, as they know the work will be done right and in the specified time. In every community you will find stucco and concrete construction dominating; overshadowing all else. Architects will tell you that requests for stucco plans are without a parallel in their existence.



With a Hodges Stucco Machine an ordinary laborer can apply stucco and concrete three or four times as fast as a high priced expert can do it by hand—get a perfect bond, an even density and a far superior finish. Machine is electrically operated, simple in construction, nothing to get of order.

\$20 to \$50 A DAY

easily made by Stucco contractors and you can be busy every day in the year. This is a big and growing business—get into it while it is not crowded. Experience is unnecessary and only small capital required.

Here's an opportunity to get into a big paying permanent business of your own with a very small original investment. The machine really pays for itself in a very short time.

Send for our printed matter showing how it works—the money it will make for you.

The GOODRICH-MORRIS COMPANY
328 Longworth St. Cincinnati, Ohio

Miles

CONCRETE EQUIPMENT

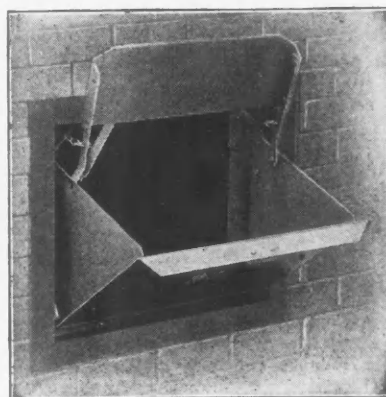
Pioneers in the Concrete Block Machine—Power Tamper—Mixer and Mold field whose name assures the best to be had.

A comparison of our prices with others in our quality class will make your ultimate choice a Miles—so ask for our catalog before buying.

MILES MANUFACTURING CO.

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Attractiveness

The clean-cut lines of the Kewanee add to the appearance of any building.

The Homes You Build Deserve the All-Steel Coal Chute

Modern construction calls for beauty and permanence in every detail. To complete your buildings, install the Kewanee "Armor Plate" Coal Chute. Made of all-steel, it is proof against injury itself, and so constructed that it protects the surrounding wall from damage and defacement.

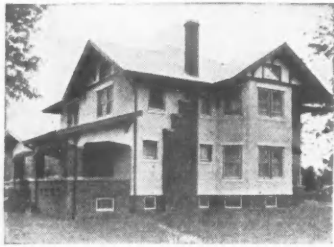
As Permanent As the Foundation

A special metal—"Copper-Steel"—unbreakable and rust-resisting—gives the Kewanee its strength and durability. Our absolute guarantee against breakage cannot be placed upon cast-iron or other inferior material. Install a Kewanee—it costs no more. No building, new or old, is complete without one. Write for full details.

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BUILDING MATERIAL DEALERS



who stand for quality and service are handling Magnestone, the scientifically compounded, thoroughly practical magnesite stucco that has proven itself to be beautiful, permanent, economical.

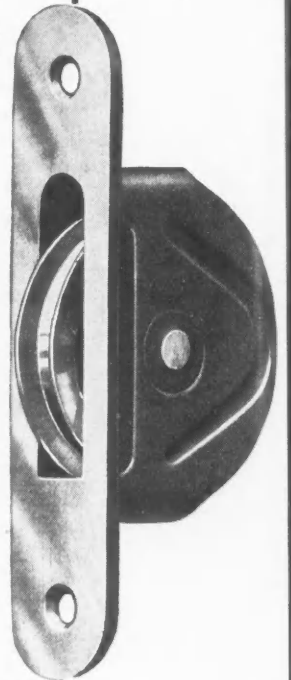
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Magnestone Agency Proposition*

MAGNESTONE
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GENERAL OFFICES: SPRINGFIELD, ILL.
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AMERICAN

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Plain, Roller or
Ball Bearings**



"Sash Pulleys" of "Pressed Metal" is the title of a book that describes the many kinds of "American" Sash Pulleys, all rust proof and fully guaranteed.

They are made of pressed metal throughout. Parts electrically welded.

Wheels take either chain or cord.

*Write for descriptive
catalog*

The American Pulley Co.
4200 Wissahickon Avenue
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**USE
FULLER & JOHNSON
EASY TO START
ENGINES**

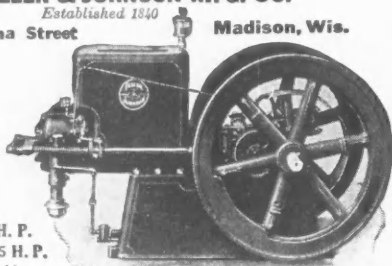
A LARGE DISTRIBUTOR of Concrete Mixers says: "We are more than pleased in every way with the performance of the FULLER & JOHNSON Model 'N' Gasoline Engine in connection with the concrete mixers we have sold. It comes as near, if not nearer filling the bill than any gasoline engine we have had to do with during our 15 years of experience."

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Leading contractors everywhere are favoring the FULLER & JOHNSON Model "N". There are reasons why.

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FULLER & JOHNSON MFG. Co.
Established 1840
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Built in sizes,
1 1/2, 3, 5, 7, 9, 12 H. P.
Other models up to 25 H. P.
Stationary or Portable.

This engine fills the contractors' requirements.

EASY TO START

Concrete Roof-Tile

Make it at \$7 a roofing square

Compare this low manufacturing cost of \$7 per roofing square with the price of asbestos, slate and clay tile. Estimate the volume of new construction and the number of re-roofing jobs in your community this year.

Investigate today the profit possibilities in making Walter Concretile. Lays easily, quickly—interlocks perfectly

**Detail of Manufacturing Cost
of One Square—150 Tile**

| | |
|----------------------------------|---------------|
| Day laborer 4 Hrs. @ 50c per Hr. | \$2.00 |
| 1/2 Bbl. Cement @ \$3 per Bbl. | 1.50 |
| 1/4 Yd. Sand @ \$2 per Yd. | .50 |
| Color, Finishing Material, etc. | 3.00 |
| Total Manufacturing Cost | \$7.00 |

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Walter Concrete Machinery Co.
417 Saks Bldg. Indianapolis, Ind.

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Does it take any decoration? Compo-Board does. It takes any of the popular coverings—wall paper, burlap, canvas, or it may be painted or kalsomined.

Does it require panels? Compo-Board does not. Compo-Board Filler is especially prepared to fill the joints and nail heads.

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Will it crack or warp? Compo-Board will not crack, crumble, shrink, warp or buckle.



Compo-Board

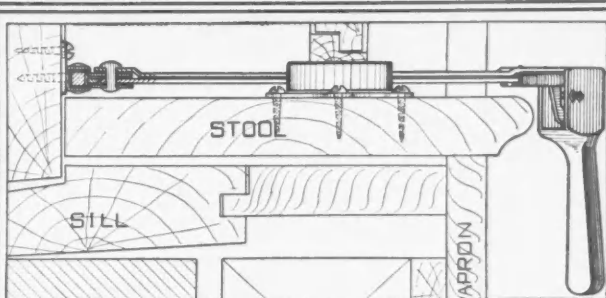
Trade-Mark

THE WOOD CORE WALL BOARD

is the only wall board that has *all* of these advantages. Write for interesting booklet, directions for using and sample.

Compo-Board Co.

5777 Lyndale Ave. No. (at 44th)
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(Section from drawing in Manual)

MONARCH Control-lock

Permits outswung casement windows to be opened and closed, or securely locked at any angle, in one continuous movement, without disturbing screens or drapes.

No Gears—No Ratchets—No Keys—No Rattle
Fully described in "Manual of Casement Hardware Detail." If a copy is not in your files a post card will bring it.

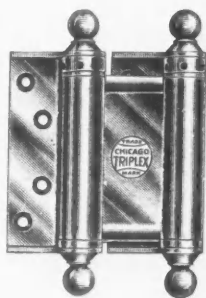
MONARCH METAL PRODUCTS CO.
Makers of Monarch Metal Weather Strips
4980 Penrose Street St. Louis, Mo.

TRADE MARK CHICAGO

SPRING HINGES

A SUGGESTION

Do you specify a spring hinge with distinctive features which will appeal to your client and assure satisfaction to all concerned?



Chicago "Triplex" Spring Butts

offer this advantage to you. The appearance, durability and finish of this article are unsurpassed, and in consideration of prices that are conservative in respect to value the up-to-date builder cannot afford to risk his reputation for goods that are unsatisfactory.

Send for Catalogue C-36. It illustrates and describes the most complete line of Spring Hinge manufactured.

Chicago Spring Butt Company

CHICAGO



NEW YORK

Why Our Dealers Prosper

the **SYSTEM** excels

Turning the faucet delivers water always direct from the well. No stored water. Simple machine. Made in many sizes, all sizes expandable if needs of farmer increase. Lighting plant from same power if desired.

they all become **EXPERTS**

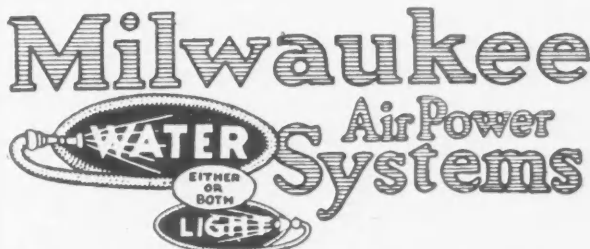
Every Milwaukee Air Power System dealer is given a correspondence course in Water and Lighting for farmers, and then given a diploma and advertised as a Water and Light Expert. Farmers seek the Experts' advice.

the **FARMER** appreciates

Farmers like the simplicity of Milwaukee Systems and the fact that they always give fresh water. They like the easy payment terms on which we carry them for dealers.

Our National **ADVERTISING**

Milwaukee Air Power Water and Light Systems are nationally advertised, nationally known. Farmers everywhere know they are good systems. Write for full particulars of our offer to dealers. Address: Milwaukee Air Power Pump Company, 886 Third Street, Milwaukee, Wis.



Two shades of Green--16-inch Roof and 24-inch Side Walls--on this home built by Franklin W. Baur, Rockford, Ill., is a good example of attractive small home building with economy.



Side Walls of Color and Character

THE soft tones of "CREO-DIPT" Stained Shingles insure a good appearance that lasts a lifetime. Compared with other material, the cost is attractive. You save painting expense—you save the cost of staining-on-the-job. The open market does not afford such quality in either shingles or stains.

The practice of using "CREO-DIPT" Stained Shingles on side walls is growing fast. Investigate at once.

If you are going to build or remodel, send 6 cents to cover postage for Portfolio of Fifty Photographs of Homes by prominent architects as well as Color Samples. Ask about "Dixie White" Side Walls for the true Colonial White effect.

CREO-DIPT COMPANY, Inc.
1028 Oliver St., North Tonawanda, N. Y.

Sales Offices in Principal Cities. Many Lumber Dealers Carry Standard Colors in Stock.

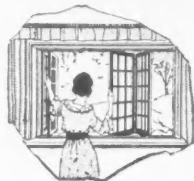
Portfolio of Homes



"CREO-DIPT"
Stained Shingles



Hoffman Casements



See Sweet's Catalog

PERFECTED folding windows, outward opening, cannot bind or stick, easy to hang, cleaned from inside, and weather tight.

SASH and frames made in your local mill or obtainable from any lumber dealer. Hardware is reasonable in cost.

Write for complete details and illustrated booklet.

ANDREW HOFFMAN MFG. CO.
904 Steger Bldg CHICAGO, ILL.



New Tape Hook

Makes

Pullman Sash Balance

The 100% Window Device With No Increase in Price

The new Tape Hook makes it possible to fasten or unfasten the tape from the sash while sash is in place. No fussing with the stop; no mars or scratches; no refinishing; no lost time.

Pullman Sash Balances are easy to install and cost less than cords and weights. They are cheaper, not alone in first cost, but also because any carpenter can fit 2 to 4 windows with Pullmans while he would ordinarily fit one with cords and weights.

Pullmans eliminate box frames too. That alone saves you real money and makes a tighter, better construction.

Pullmans are made of pressed steel, are entirely incased and constructed in 3 UNITS, K, L and M, adaptable to any kind of sash. Operate easily and quietly; last indefinitely, in fact are guaranteed for 10 years.

Free illustrated catalog, full of Modern Window Operating Information, sent on request.



Pullman Mfg. Co.

238 South Avenue
Rochester, N.Y.

"PULLMANIZE YOUR WINDOWS"



Edwards METAL SPANISH TILE Roofing

Its scores of vital, practical advantages cost no more than common roofing, yet mean tremendous economy—it needs no repairs and outlasts several ordinary roofs because of its practically indestructible metal construction.



Note the construction of patent Interlocking Device used on Edwards Metal Shingles and Spanish Tile.

It is absolutely wind, weather, storm, fire and lightning proof.

Home-Builders— Simply send us today the dimensions of your building and we will tell you by return mail exact cost of all material. Our new book on beautifying the modern American home by use of Metal Spanish Tile is yours for the asking. A postal will bring it.

The EDWARDS MANUFACTURING CO.
401-417 Eggleston Avenue CINCINNATI, OHIO

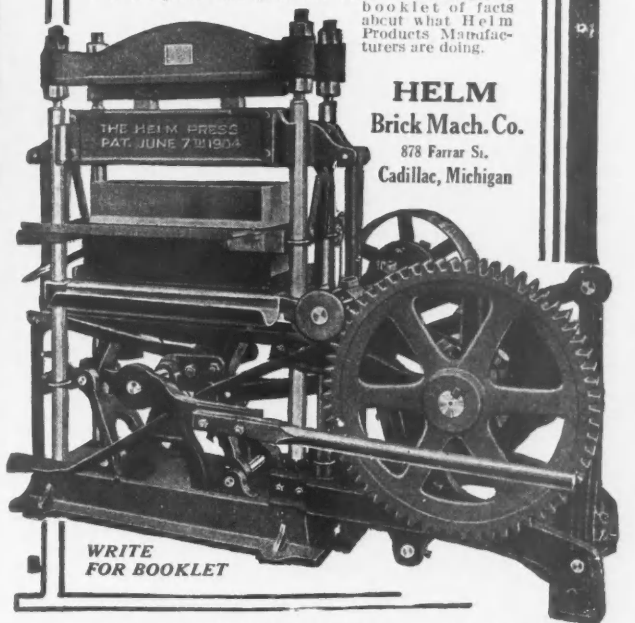
The World's Largest Makers of Metal Ceilings, Metal Shingles, Metal Roofing, Siding, Rolling Doors, Metal Lockers, etc.

HELM

Quality Brick Presses from a hand operated style to this type of 15,000 concrete brick or 1,500 block daily are making real profits for their owners everywhere.

Get the proof from us in the form of an attractive booklet of facts about what Helm Products Manufacturers are doing.

HELM
Brick Mach. Co.
878 Farrar St.
Cadillac, Michigan



WRITE FOR BOOKLET

PRODUCTS MANUFACTURERS

The Master Woodworker

FOR
Contractors and Builders

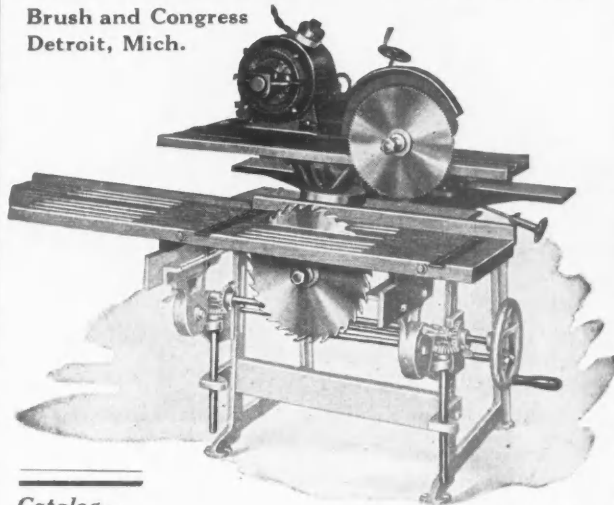
Back to Pre-War Prices

A portable universal Woodworker driven by special electric motors, developing 3½ H. P. Can be run from any lamp socket on ordinary house circuit.

Designed to be taken right on the job

THE WOODWORKER MFG. CO.

Brush and Congress
Detroit, Mich.



Catalog—
On Request

Patented Nov. 1914-1920

Cut Your Finishing Costs

IN these times of keen competition, many of the most reputable Contractors save hours of labor on every job with the **TANNEWITZ** Portable Mitering Machine.

This tool of lightning precision cuts any angle instantly to 45 degrees either way.

Operates anywhere. Does better mitering than your best workmen, and does it ten times as fast.

We ship the **TANNEWITZ** Portable anywhere to responsible parties on approval. Try out this little wonder on your next contract, and you will never be without it.

The TANNEWITZ WORKS

324 Front Avenue, N. W.,
Grand Rapids, Mich., U.S.A.

FASTEST.
Surest.
Most
Convenient
and Accu-
rate. Mater-
ial-, Power-
Time-, and
Labor-Saver
Ever
Produced



Tannewitz
Portable
Mitering Saw



A Huther Brothers Dado Head Insures the Lower Production Cost Necessary for Reduced Prices

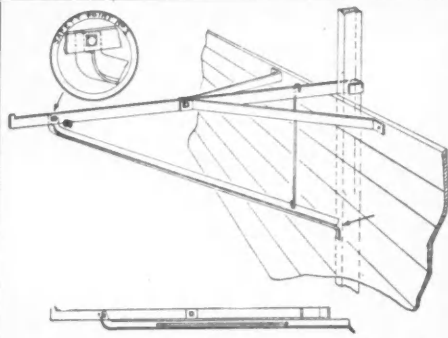
HUTHER Brothers Dado Head possesses advantages unknown to similar types of saws. There are two reasons for this: First, because we were the patentees of this type of saw. Second, because the full knowledge gained from fifty years' experience in manufacturing saws is applied to the manufacture of every one.

A Huther Dado Head will greatly simplify intricate cutting and grooving. It consists of two outside cutters and as many inside cutters as required. Cutters may be used singly or in pairs.

Huther Brothers Dado Head is sold under an ironclad guarantee. We will cheerfully send one on approval to any responsible party. If not satisfactory in every respect it may be returned at our expense.

Write for illustrated catalogue showing complete line of Huther Brothers Saws.

Huther Brothers Saw Mfg. Co.
ROCHESTER, N. Y.



THE "SAFETY FIRST" FOLDING SCAFFOLD BRACKET
PATENT APPLIED FOR.

SAFETY FIRST FOLDING SCAFFOLD BRACKET

Strength—the most desirable and essential feature possible is the idea that we built into Safety First Bracket.

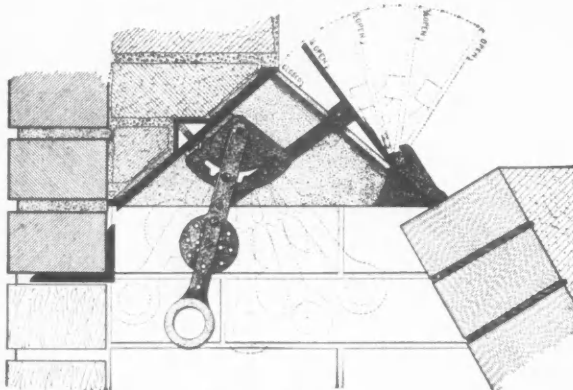
There is no strength in clumsiness so it will be found the lightest bracket on the market, 12½ pounds, and folds into a very compact space.

These features of Strength, Light Weight and Compactness make the Safety First Folding Scaffold Brackets a great favorite with the discriminating builder and contractor—consequently they are to be had at most of the best dealers.

BE SURE AND SEE THESE AT YOUR LUMBER DEALER'S—HARDWARE DEALER'S OR WRITE DIRECT TO US.

The McLaren Iron Works Company
CLEVELAND OHIO

COLONIAL Head-Throat and Damper STYLE E



Cross Section View

This improved style combines all the exclusive quality features of our other styles. It can be set in any position in the chimney throat. It takes up expansion and contraction within itself—no cracked facings. It is designed to insure maximum heat, economical fuel consumption and perfect draft control without smoking. Easily regulated without stooping by hooking a poker through the large ring in the lever arm. Colonial Head-Throat and Dampers are the result of thirty years of experience in building fireplaces.

Secure the Colonial Head from your dealer, or write to us.
Illustrated folder sent on request.

COLONIAL FIREPLACE COMPANY

Manufacturers of Complete Fireplaces, Dampers, Grates, Andirons, Screens, Fenders, Hoods, Firesets, etc.

4604 Roosevelt Road Chicago, Illinois

Eller's "PERFECT-FIT" CEILINGS Satisfy Perfectly

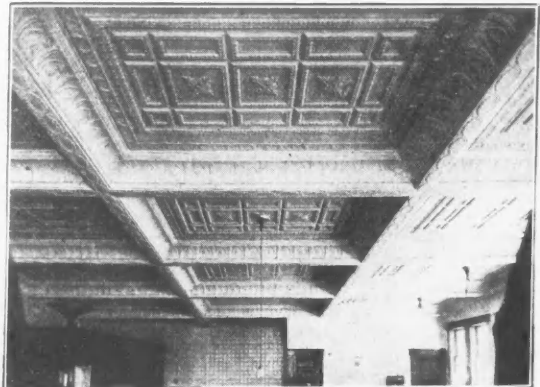
Are easy to sell and install. Every sale is a permanent advertisement and brings you more business.

Let us help you sell your prospects by submitting appropriate layouts and suggestions—no obligations entailed. Catalog and prices upon request.

The Eller Manufacturing Company

1500 12th St., S. W., Canton, Ohio

"Quick Shippers. Everything in Sheet Metal"



ANCHORLINE

An old and reliable line of Concrete Machinery. The Anchor System of a battery of small units does not require a large investment.

Start With A Single Unit And Add As You Grow

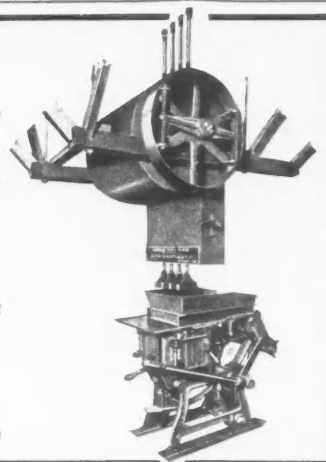
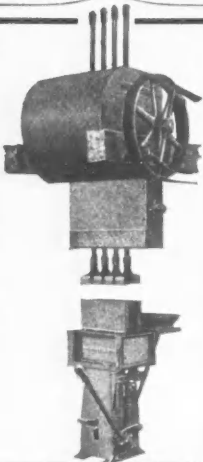
Makers of The Famous

Anchor Tamper
Hobbs Block Machine
Anchor Stripper
Anchor Batch Mixer

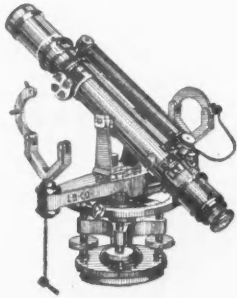
High-Test Tile Machine
Anchor Brick Machine
Anchor Double Wall Machine
Fancy Molds

Write Us

THE ANCHOR CONCRETE MACHINERY CO.
530 DUBLIN AVE. COLUMBUS, OHIO



"Look, Jim, some roll!"



"Earned it all this season, too. Haven't been out of work or out of luck a single day.

"But I'm not the only one to be congratulated. My old pal over there on the left has helped a lot. Plenty of bumps and beastly weather, but they failed to shake the accuracy of my Beckmann instrument.

"You know, Jim, their new booklet asks, 'What is an Instrument Guarantee worth?' I wrote Mr. Beckmann I couldn't see where it was worth a darn to me, but that the booklet was a daisy!"



Ask for one—HA-2

The L. Beckmann Co., 500 Adams St., Toledo, Ohio



THE Builder who selects a K&E Level or Transit shows good judgment, since he is thus sure of getting a sturdy, reliable instrument, moderate in price and made by a house whose reputation is based on quality and fair dealing.

Send for descriptive circular.

• KEUFFEL & ESSER Co. •

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CHICAGO, 116 & Dearborn St. ST. LOUIS, 811 Locust St. SAN FRANCISCO, 37-39 Second St. MONTREAL, 1500 Rue St. J.

Drawing Materials • Mathematical and Surveying Instruments • Measuring Tapes



Sturdy and Accurate

A glance at the cut shows how substantially this Builders' Convertible Level is made. In addition, it possesses an accuracy that is absolutely dependable. A quality instrument at a reasonable price.

Circular on Request

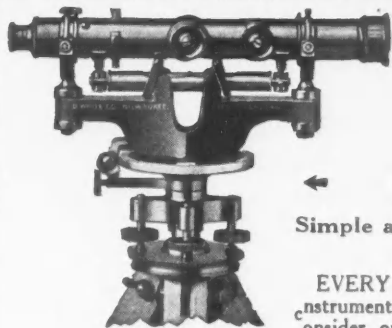
EUGENE DIETZGEN CO.

Right goods at right prices continuously since Year 1885

Branches:
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No. 2020

White's Improved Convertible Level

← USED AS A LEVEL And Ten Seconds Later AS A TRANSIT →

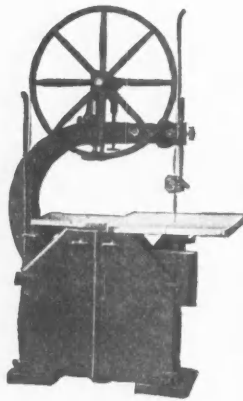
Simple and Dependable—No Loose Parts—Nothing to Get Out of Order or Adjustment

EVERY Contractor, Architect and Builder should own one of these modern instruments. EVERY Engineer, Road Builder, and Drain Layer should consider one a part of his regular equipment. Write for our circular. Ten Days' Free Trial.



David White Co., Inc., 904-914 Chestnut St., Milwaukee, Wis.

Crescent Band Saws



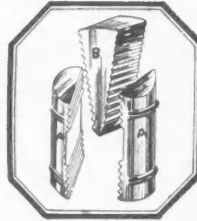
CRESCENT Band Saws are steady running, accurate and can always be relied upon to turn out a satisfying quantity of smooth work at a very slight expense for repairs. Built in six sizes and four styles.

Ask for catalog telling all about them and giving details of our splendid line of saw tables, jointers, planers, disk grinders, swing cut off, cut off tables, shapers, variety wood workers, borers, hollow chisel mortisers, planers and matchers, universal wood workers.

THE CRESCENT MACHINE CO.
224 Main Street LEETONIA, OHIO

No More Loose Handles

Every user of Hammers has had trouble with loose Handles. The VAUGHAN'S EXPANSION WEDGE is a sure cure.



This wedge consists of three parts. The two pins (A) are inserted in a hole drilled in the end of the handle. The Tapered Wedge (B) is driven between the pins. Ordinary Wedges cannot be reset. The VAUGHAN'S EXPANSION WEDGE can be reset. Simply set the tapered Wedge (B) a notch or two deeper and a tight Handle is assured.



Uncle Sam Supersteel Hammers
(Made of Vanadium)

Uncle Sam Hammers are inspected by the UNDERWRITERS' LABORATORIES and carry the Underwriters' Label on the Handle as an inspected and approved tool. Write for Booklet No. 10 telling how this Hammer was tested and approved. It is the only tool line carrying the Underwriters' Label. If your Dealer cannot supply you, send us your order with Dealer's name. All sizes and patterns.



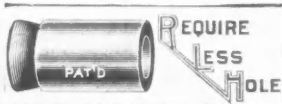
Price **\$2.00** Each

Vaughan & Bushnell Mfg. Co.
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THREE REASONS WHY *Ackerman-Johnson*

EXPANSIVE SCREW ANCHORS

SAVE TIME



- 1 They require holes of only about half the depth necessary for other types. Time saved. Drills saved.
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Write us for more WHYS.

Ackerman-Johnson Co.

MANUFACTURERS

627 West Jackson Boulevard

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QUICK ACTING *The Taylor* SELF LOCKING

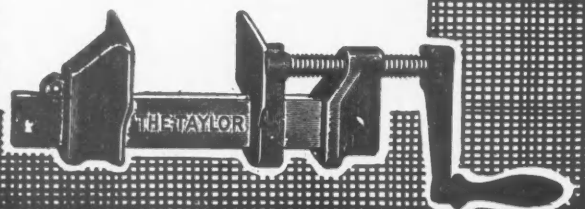
Clamps

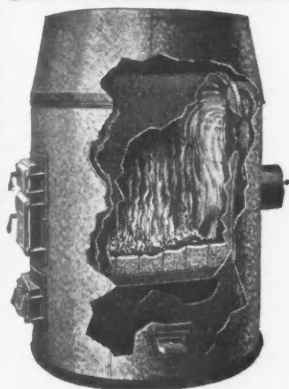
An Investment
Not an Expense

The quickest and strongest clamps made. That's why they're the standard in U. S. Government Works and in such concerns as General Electric Co., Singer Sewing Machine Co., Victor Talking Machine Co., etc.

We can PROVE it in your own shop. Write today.

James L. Taylor Mfg. Co.
Poughkeepsie, N. Y.





1922 Model

BOVEE FURNACES

27 YEARS ON THE MARKET
SPECIAL PRICES TO CONTRACTORS

Every Furnace a practical High Grade, Durable, Economical Heating Plant. They burn all kinds of coal, including Steam Coal or Lignite. Have large double doors, which admit large coal or rough wood.

We manufacture all sizes of each style, with fire-pots from 20-inches to 36-inches in diameter, suitable to heat any building from a small cottage to a large church.

Pipeless, Central Heating or for Regular Piping as desired.

Write for full description and our 1922 Price List

BOVEE FURNACE WORKS 50 West 8th Street Waterloo, Iowa



Cast Iron Pipeless

"It's More Attractive With The Tile Floor"

AND IT'S MORE ECONOMICAL, TOO

Tile floors and walls for baths, halls and porches, add a touch of distinction to the home. They have a substantial, solid "look." And as for beauty, nothing can compare with them.

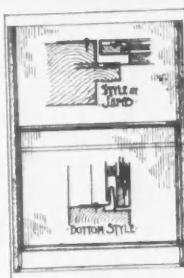
Once you put in tile—you are forever through with the painting nuisance that you have with wooden floors. And you no longer need to bother with prepared floorings, with their moldy sub-surfaces.

Send for our attractive catalog showing styles. It's a mighty handy book to have for future reference. Address

Hornet Mantel Co.
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World's Largest Mantel House.

Walstad Mono-Sash Windows



Window Detail

When Planning to Build

give the windows first consideration. They determine the style, comfort and convenience of your home.

The Walstad Mono-Sash Window meets all the needs—combining style, comfort, convenience and economy.

A one or twolight window operated the same as a double hung window, but without weights, cord or pulley, eliminating the cold pockets in the wall and simplifying construction by eliminating window frames and casings if desired, thereby making a great saving in labor and material and adding to the beauty and utility of a home.

Window held in any position by the weather-strip.

Factory assembled into one wooden sash with sliding detachable metal sash and bronze weather-strips, making it weathertight. Will replace any other window. Made in stock size of glass.

Shipped from factory complete, glazed, weatherstripped and screened ready to install in the wall. Ask your local lumber dealer for them, or order direct from factory. Insist on your architect specifying them. Write today for details and prices. The most convenient window for dealers to handle.

Safety Detachable Window Corporation
3009 Third Ave. So. Minneapolis, Minn.

Sand's Aluminum Levels

Always Tell the Truth

The standard of accuracy. And not only the most accurate—but easiest to read, even in the dark. Never rusts—cannot warp, split or crack—and are easily handled. The lightest levels made—strong and durable because the greatest strength is placed where most needed. Ask your dealer to show you these levels, and also write for our new circular showing full size levels.

J. SAND & SONS Originators of Aluminum Levels 4847 Rivard Street, Detroit, Michigan



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SHELDON'S RED GREEN, PURPLE, BLACK SLATE

is usually found protecting those who have carefully selected the roofing that gave to them assurance, of durability in point of years of use and during those years the lasting newness of color found only in slate.

Surprising—but its cost is no more than ordinary roofing.

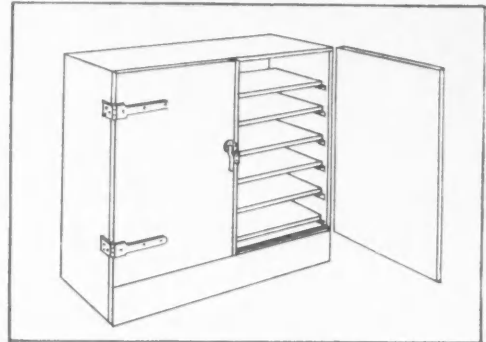
**F. C. SHELDON
SLATE CO.
GRANVILLE, NEW YORK**

The Most Enduring and the Most Attractive Roof at the Most Reasonable Cost



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MOISTURE AND SPECIMEN CABINETS



Structural Slate

Cabinets of slate with slate doors and slate shelves are especially well fitted for use in laboratories where the storage of delicate instruments and specimens either directly on the shelves or in glass bottles or tubes is necessary. Slate, because of its non-staining qualities and because it is so easily cleaned makes an exceptionally suitable material for this purpose.

**THE STRUCTURAL SLATE CO.
PEN ARGYL, PENNSYLVANIA**

"YANKEE" SCREW HOLDER RATCHET DRIVER

No. 110 (5 Sizes)

Great for overhead work and in tight places. A real quick, serviceable screw-holder, right at your fingers' ends when you need it. Slipped back on the blade out of the way for ordinary screw driving.

Compress the spring forward with thumb. This opens jaws. Insert screw head, release spring and it's ready for work. The holder releases as screw is driven home. Think how often you need a screw-holder quickly. If your dealer cannot supply, write us for prices.

Let us send you a
YANKEE Tool Book

NORTH BROS. MFG. CO.
Lehigh Ave. PHILADELPHIA, PA.



Vendor Service

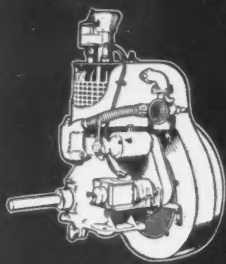
The kind that pleases

No other slate concern has at its disposal the enormous stock and production as that which we are able to offer our customers. Any size or grade can be loaded as soon as a car is placed at the quarry siding.

It will be a source of satisfaction when you learn that you can depend on us.

Vendor Slate Company
INCORPORATED
EASTON, PENNSYLVANIA

forget
Your old conception
of a gasoline engine
and consider only



The Air-Cooled, Multi-Purpose
"New-Way"
5 Engines in 1

COMPACT as an electric motor—flexible, dependable and light in weight. Especially designed to operate portable machinery, semi-portable, traction and stationary.

Operates by direct power or generator electric-motor driven units and tools in remote places.

Variable control, 2 to 5 horsepower. Weight, ready to mount on any equipment, 248 lbs. Write for Circular C-20.

Manufacturers and Users

Universalize your product with the "New-Way" Engine and sell to the world. Our engineering staff has had wide experience in the application of power to machinery of all kinds. They will be glad to help you.

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Lansing, Michigan, U. S. A.
Eastern and Export Office
Woolworth Building New York

PRYIBIL

CIRCULAR SAW
(TILTING TABLE)



FOR sixty-three years the P. Pryibil Machine Company has manufactured a complete line of Woodworking Machinery.

SEND FOR ONE OF OUR CATALOGS

P. PRYIBIL MACHINE COMPANY, INC.

Established 1859

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Manufacturers



COMPLETE IN A SACK

ELASTICA is the only magnesite stucco known that is shipped to the builder "Complete in a Sack."

Furthermore, it is the only stucco of any kind on the market that is thoroughly **Waterproofed** and fully covered by manufacturer's **guarantee**.

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| American Materials Co. 101 Park Avenue New York, N. Y. | Wisconsin Lime and Cement Co. Conway Building Chicago, Ill. |
| Art Stucco Materials Co. 12854 Oakland Ave. Detroit, Mich. | North-West Materials Co. St. Paul, Minn. |

ELASTICA
THE IDEAL EXTERIOR WALL COVERING

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MYERS HOUSE and CISTERN PUMPS



Every dealer, plumber, contractor or builder, who knows anything about pumps, knows that MYERS HOUSE PUMPS, from a mechanical and constructive standpoint are in a class by themselves. Neatness of design, attractiveness of finish combined with best of materials and patented features, represent the best that skilled workmanship can produce and make them worthy of any surroundings or service. Different styles and sizes meet all tastes and capacity requirements. Low prices on a guaranteed line promote profitable sales. Literature on request.

The F. E. Myers & Bro. Co.
ASHLAND OHIO

ASHLAND PUMP AND HAY TOOL WORKS

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How to Determine the Cost of a Mixer

There is a decided difference between the price you pay for a mixer and its ultimate cost in repair bills, delays due to break-downs and lack of mixing efficiency.

Based on performance, both as to quantity and quality of concrete, and economy of operation and upkeep, the Keystone Low Charger is the "Cheapest" in the end. And the price is very moderate.

KEYSTONE ALL-STEEL MIXER

This model, the Power Loader and the Half-Bag Mixer are fully described and illustrated in printed matter just off the press

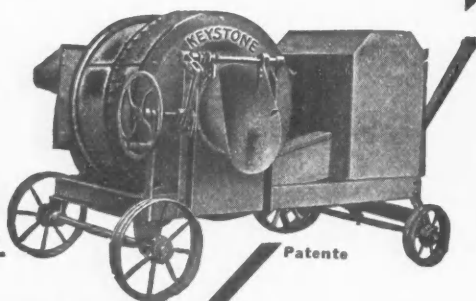
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GRAY IRON FOUNDRY CO., READING, PA.

Established 1903

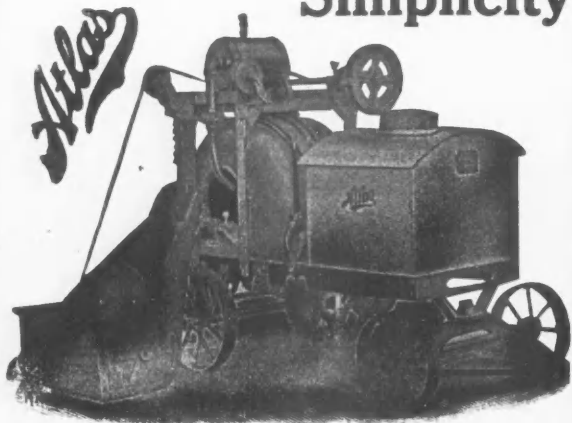
TEN
CUBIC
FOOT

LOW
CHARGING



Patents

Strength and Simplicity



ATLAS MIXERS

are easy to operate and adjust. There are no unnecessary parts to get out of order and delay your work. They run smoothly and turn out a thoroughly mixed batch in a hurry.

We make two styles of mixers in four sizes, suitable to all mixing needs. We will be glad to aid you in selecting the mixer best suited to your work.

Write for our latest catalog today

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The Mixer That Shovels

Contractors and Builders use and recommend Blystone mixers for use where a thorough and a quiet mix is essential.

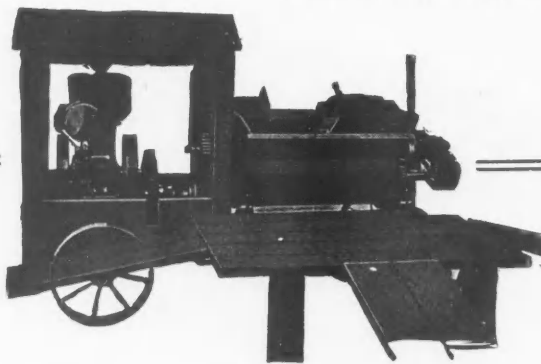
A letter or a card asking about Blystone Mixers for mixing hard wall plaster or the old fashioned wall plaster will receive our immediate attention.

Offices in principal cities all over the world

Blystone Manufacturing Co.

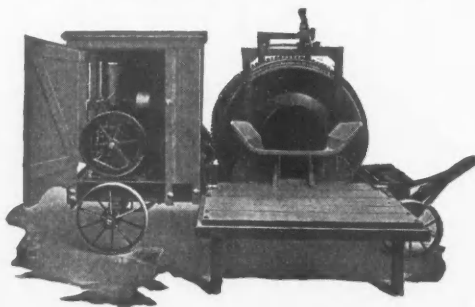
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Cambridge Springs, Pa.



"THE STANDARD"

Low Charging Concrete Mixers



INCREASE PRODUCTION—CUT COSTS

Speedy, thorough mixing and continuous, satisfactory performance are essential features of a good mixer. The construction of "THE STANDARD" and its reliable power, guarantee these features to the user. It can be used successfully as a mortar mixer, which makes it adaptable to all building projects.

"THE STANDARD" line also includes Hoists, Pumps, Air Compressors, Wheelbarrows, Engines, Block Machines—a complete line of contractor's equipment.

Send for Catalog M-4 and specify kind of equipment in which you are interested

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THE IMPROVED SCHLUETER

Rapid—Automatic—Ball
Bearing—Electric

Floor Surfacing Machines



Attention!

Get in LINE with all the Regular Contractors, Carpenters and Builders. What you need is an improved Schlueter Floor Surfer to scrape all your old and new Floors

Why surface by hand and suffer—Loss of Time—Money, and also Contracts on account of unsatisfactory work, when you can purchase an IMPROVED SCHLUETER SURFACER—the machine with all troubles left out.

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The Improved SCHLUETER Floor Surfer

will surface right up to the wall or baseboard without the use of Side Roller. Just the Machine you would want for surfacing all floors whether old or new. Perfect results guaranteed. More than 20,000 of our Machines now in use. Guaranteed against defect in material and workmanship for five years.

Manufactured by M. L. SCHLUETER

222 West Illinois St., Chicago, Ill.

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FLOORS SCRAPED WITH FOX MACHINES

put dollars in Builders' pockets

Features embodied in the FOX No. 4 Floor Scraper:

1. Body slides on the floor like a plane, insuring a cut of uniform depth.
2. Bottom of the Machine is planed and corrugated, making the cut true, and pull 50% lighter on the operator.
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6. Balance is such that Blade lifts automatically off the floor when not in operation.
7. Works equally well on all kinds of hardwood flooring, including Yellow Pine, Fir and Birch.
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Weight 95 lbs.

One of 5 Sizes

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Dept. A

Brooklyn, Wis.

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The machine is simple, easily handled, made correctly, built to last—the result of years of experience in building this specialty.

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Only surfacing machines having roller sanding even with base-board from either side of machine, doing away with uneven work of edge roller attachment. Removes old varnish, paint, oil-soak, black, etc., rapidly, or cuts downwarped edges quickly. Four sizes—for the largest areas or the smallest rooms.

The Little Automatic Electric Surfacing Machine (on desk) is a wonder for removing varnish from desk tops, counters, etc., or for new work, show windows, sills, doors, in corners, closets, or other confined spaces.

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Manufactured by

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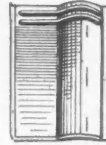
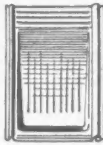
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The Shingles That Last



The Shingles That Last

The Most Complete Line of Designs

The Best Quality Workmanship and Finish

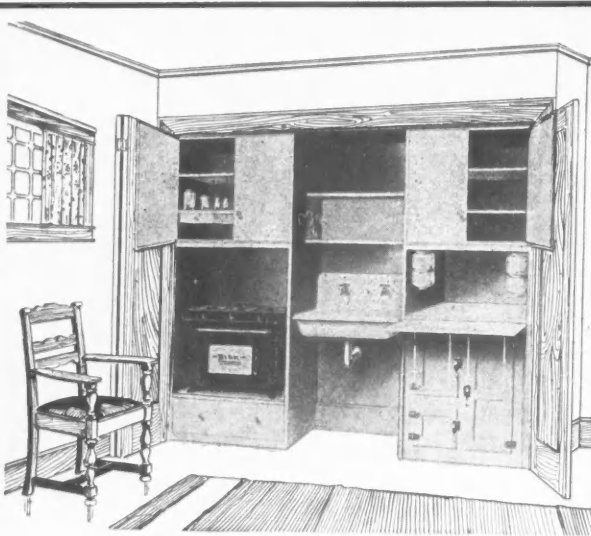
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A Complete Kitchen In 10½ Square Feet of Space

There is a wonderful way for saving space in your plans for small houses or apartments. Large builders in all parts of the country have reduced their cost and increased their income by its use.

"BISK" is a Built-In-Steel-Kitchen combining every necessary detail in one compact compartment. Refrigerator, sink, drain shelf, gas or electric range, cupboards and cutlery drawers. Heat and odors of cooking carried up the flue by our patented ventilator.

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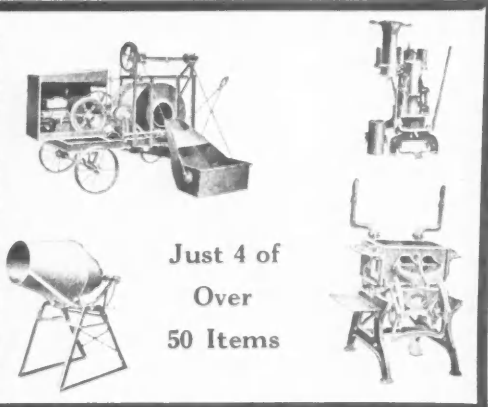
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50 Items

Each One a Money Maker

The Most Complete Line in Existence



THE "Panama Line" ranges from small portable concrete mixers to large batch mixers, from flower pot molds to porch column molds, brick machines or complete concrete plants, if desired.

The line is complete, built according to the most approved practice and attractively priced to interest both dealers and users.

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Established 20 Years

14 Front St.

THE WONDERFUL STRENGTH OF CONCRETE

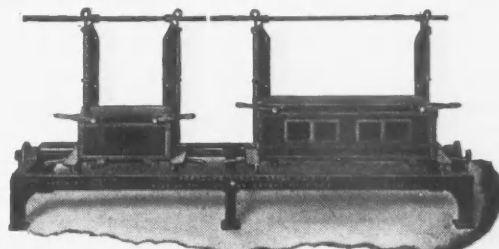
is often reduced in making concrete blocks owing to an improper method of manufacture.

The HERCULES Machine is designed for the use of a wet, coarse mixture which makes a stronger block with less cement. The block is made face downward which is most satisfactory for the use of facing material and gives a more clear-cut impression of the design. The mold is then rolled to the wall position with core holes vertical. When the cores are removed and the mold opened the block is resting on its pallet ready for removal.

Our molds are composed of plates which are interchangeable, therefore some plates can be used in any number of different molds. This reduces the cost of maintaining a large variety of molds to a minimum.

We also make The CENTURY Bag Cleaner. SAVE cement, freight, time, labor and bags.

Our catalog containing further information will be sent you on request.



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 Successor to CENTURY CEMENT MACHINE CO.
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Our Catalog Tells the Whole Story



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are unquestionably the most efficient, time and labor-saving scaffolds on the market today.

No bolts, screws or nails. They hook to the studding and your scaffold is up in much less time than it takes to tell you about them.

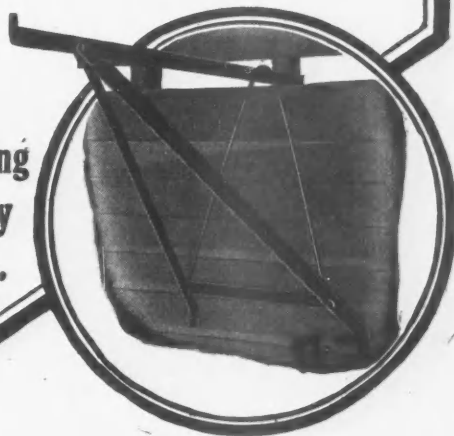
If you have been wasting many hours on each job building your own scaffolds, try "Trouble Savers" on your next job.

Use them for 30 days and if you are not extremely well pleased, we will refund your money.

Write today for our proposition.

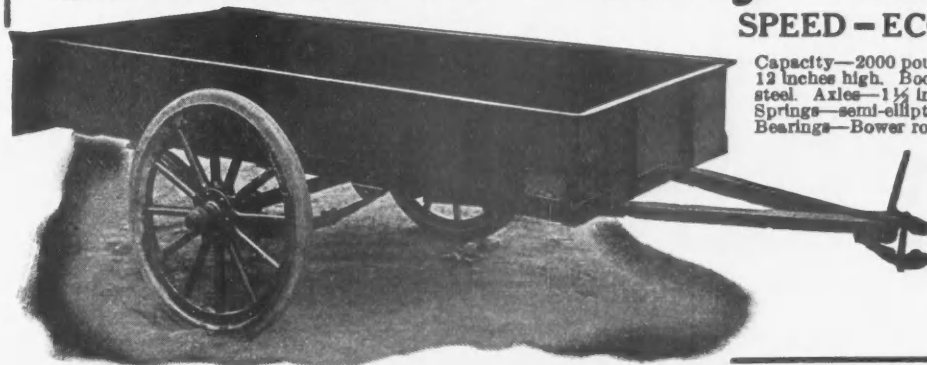
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Evansville, Indiana



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Capacity—2000 pounds. Body—8 feet long, 46 inches wide, 12 inches high. Body and under frame built of open hearth steel. Axles—1 1/2 inch square bed, special high carbon steel. Springs—semi-elliptic, oil tempered and double heat treated. Bearings—Bower roller. Wheels—1 1/4 inch spoke, artillery type, second growth hickory. Tires—32x2, solid rubber. Weight—584 lbs. Other models with gates at front; also extension tongue which permits carrying lumber, poles, ladders, etc., 30 feet long.


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They are *Nature's Own Colors*—permanent—brilliant—non-fading—uniform. Our Buff for Stucco Tinting is particularly fine—very strong. We are also manufacturers of whitening, silica and dry earth paint.

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Mortar Colors are the Strongest and Always Uniform in Shade



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Write today for sizes, specifications, and prices of this rigid, strong, non-corrosive, weatherproof chute.

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COMPLETE LINE OF
STORM SASH HARDWARE

No. 1711, **Sash Hanger**—holds the window firm, due to the peculiar construction of the eye; prevents jostling; easily taken off and put on.

No. 1722, **Sash Fastener**—an exceptional take-down feature; easily taken down without having to entirely unassemble; holds securely, yet provides ease in manipulation for cleaning, ventilation, etc.

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A MATTER OF ECONOMY

The MARTINIQUE IS GLAD TO ANNOUNCE REDUCED RATES

SOMEONE must take the initiative in making it possible for people to travel and spend less money—now that there is less money to spend.

So, hand in hand with Hotel McAlpin, which recently announced its reductions, the Martinique—just across the street and under the same management—becomes a leader in lowering hotel tariff. This is setting an advance style, as it were, for there has not been an appreciable reduction in the cost of running a large New York hotel.

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Frank E. Jago, Resident Manager

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G & B PEARL is made in two weights—regular and extra heavy. The best hardware dealer in your city sells "PEARL"


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Accept no Cypress without this mark



Trade Mark Reg. U.S. Pat. Off.

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IN the old days of the West, stray, unbranded calves were called "Mavericks." They were without pedigree—without identity—without known value. They were just *Mavericks*.

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An established trade-mark name protects you. For safety and economy today—

Buy Trade-Marked Goods of Known Value

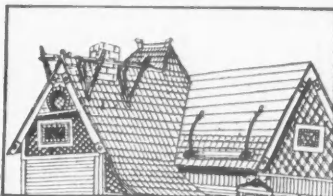
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ARE TIME AND MONEY SAVERS

Quickly placed in position and adapted to any style of roofing or pitch of roof. Especially designed to meet the need of a well built and economic scaffold. No nailing to the roof.

Send your order in today. If not satisfied with them, return them and your money will be refunded. Send or catalog.

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The Archer

Delivers the wet mix directly into the forms, is easily charged or discharged and is readily moved by two men.

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"BEARCAT" MOTOR SAWS

They Rip, Cut-off, Joint, Groove and Bore.

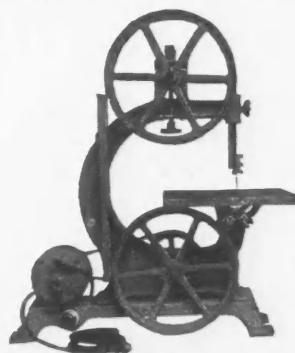
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Federal Metal Weatherstrip

for they require from 25% to 40% less coal than those without

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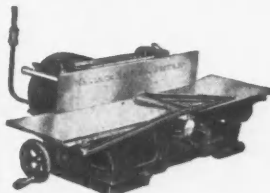
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Portable
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 is easily changed in *ten seconds* to the position shown. No detachable parts to get lost, no unsightly projections or obstructions preventing full view of level vial, and a vertical range of *over 45°*—a distinct step forward in instrument construction.

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Like a thermos bottle—Warmest in winter, Coolest in summer, Fire-proof, Everlasting.
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 The reason the most wall can be built for the least money is—because they are **STRONGEST—LIGHTEST—SIMPLEST** and most **PERFECT** and the price of a complete set can be saved on one small job.

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ABRAM CEMENT FINISHING TOOLS



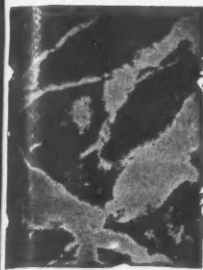
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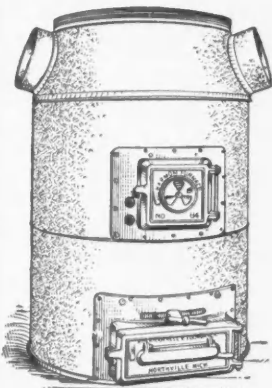
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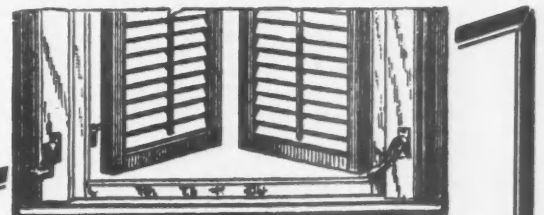
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Specially adapted for Hardwood operations; indispensable to the High Class Carpenter and for Cabinet and Pattern Work.

Manufactured by
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A sample bit up to 1 inch in diameter will be mailed postage prepaid, upon receipt of 75c to any woodworker or carpenter.



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Operates from inside by a simple turn of the handle
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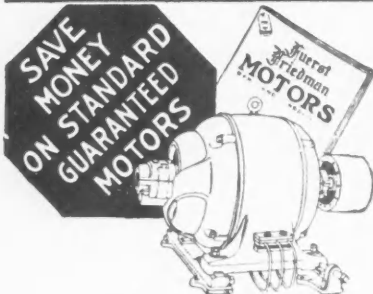
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| LENGTH | OF COMMON | RAFTER | PER FOOT | PER FOOT | PER FOOT |
| DIFFERENCE | IN LENGTH | OF JACKS | OF JACKS | OF JACKS | OF JACKS |
| FIGURES | GIVING | SIDE CUT | OF HIP OR | VALLEY | RAFTER |
| | | CUT OF | SHEATHING | IN VALLEY | OR HIP |
| | 22 | 21 | 20 | 19 | 18 |
| | | | | | 17 |

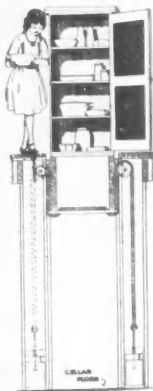
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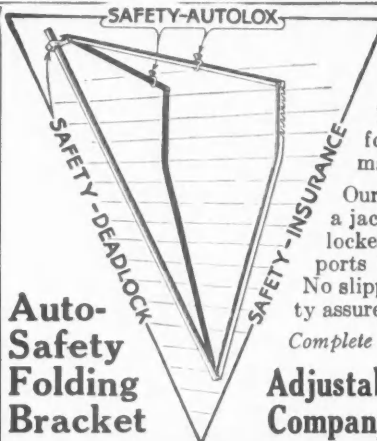
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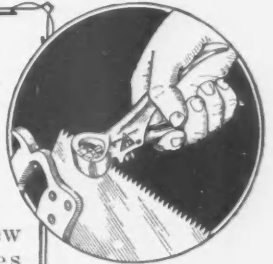
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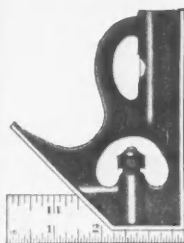
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Set anvil number corresponding to the number of saw points to the inch of the saw opposite the plunger point, run up the gauge screw until the saw just goes through easily, and proceed to set your saw.

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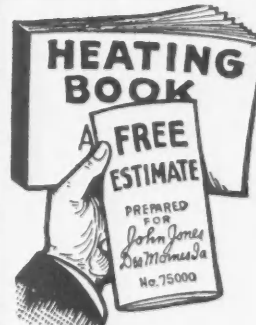
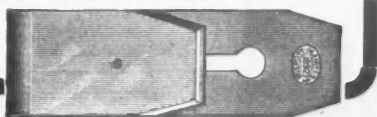
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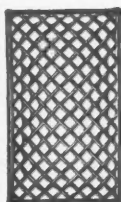
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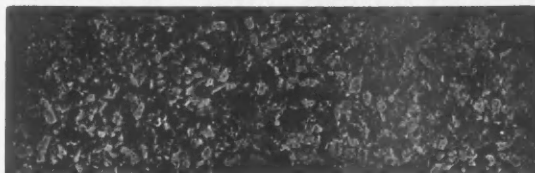


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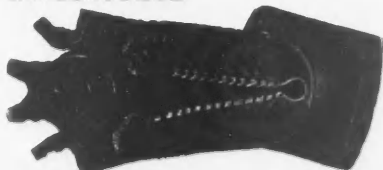
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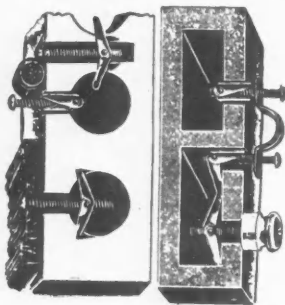


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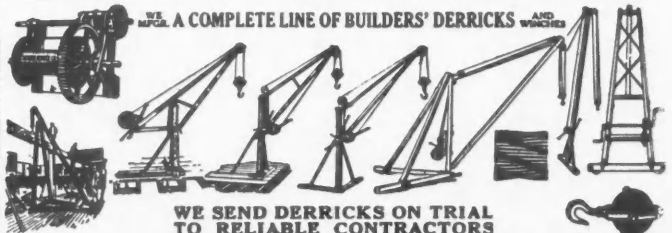
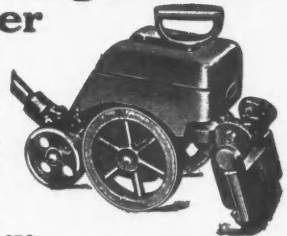
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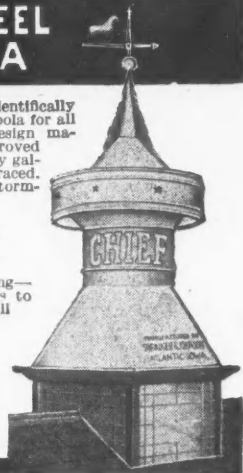
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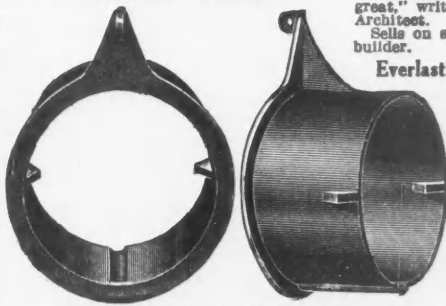
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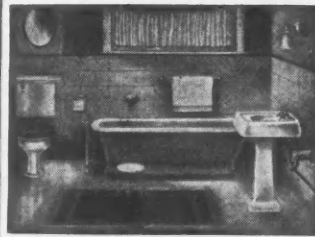


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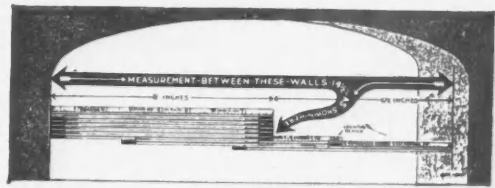


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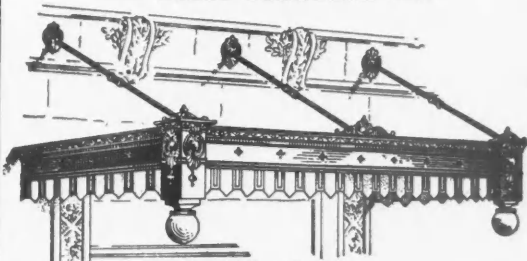
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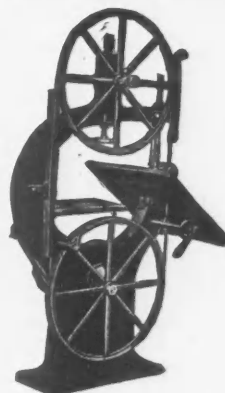
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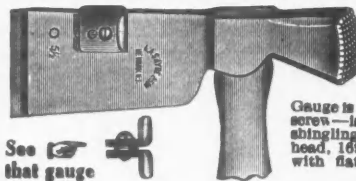
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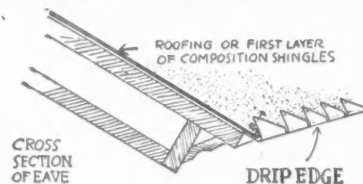
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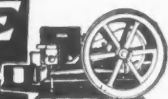
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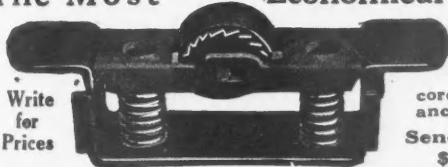
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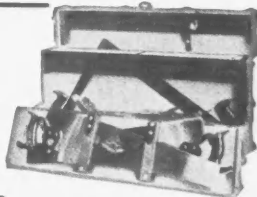
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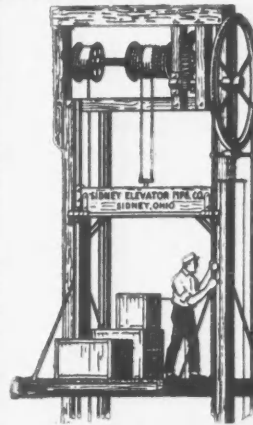
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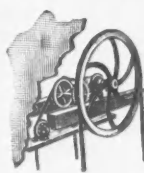
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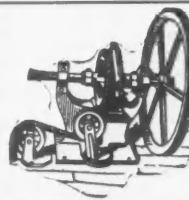
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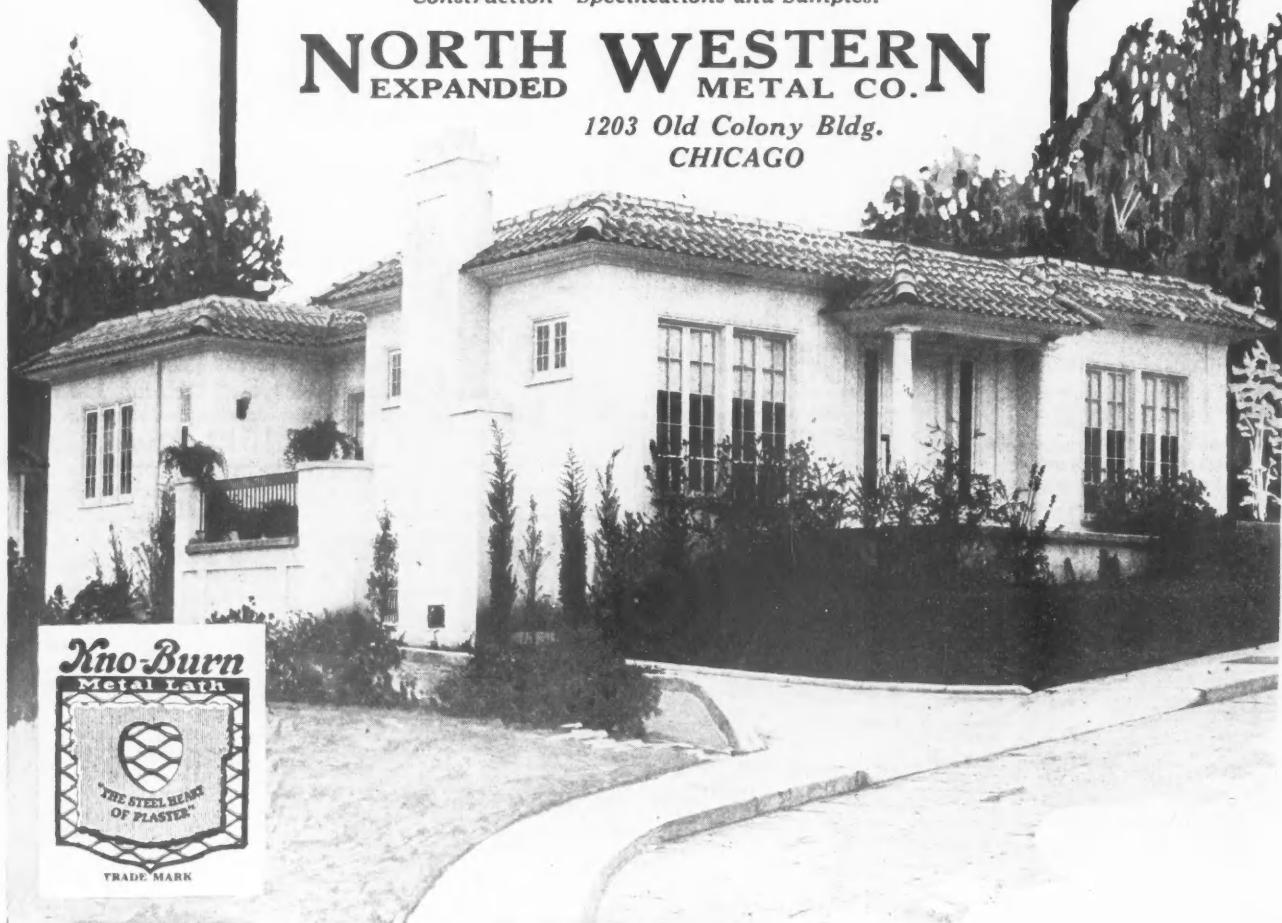
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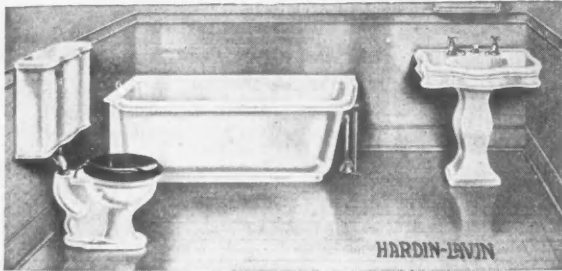
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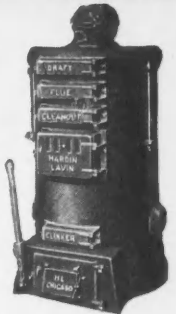
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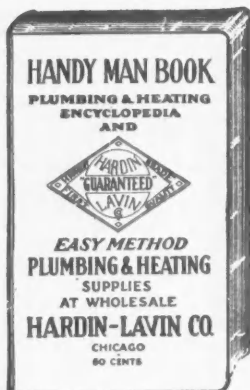


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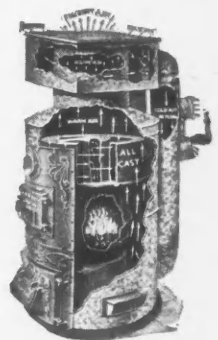
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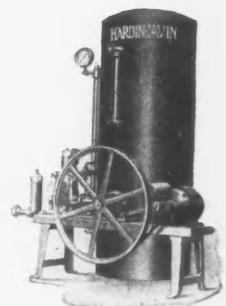
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