

# AMERICAN BUILDER

Including "BUILDING DEVELOPER" and "HOME BUILDING"

A SIMMONS-BOARDMAN PUBLICATION

Vol. 48.

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 AND OF THE ASSOCIATED BUSINESS PAPERS

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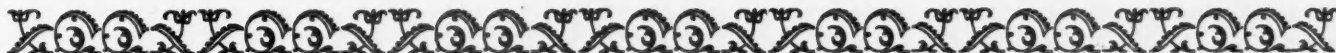
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# AMERICAN BUILDER



Including "Building Developer" and "Home Building"

BERNARD L. JOHNSON and CHARLES G. PEKER, *Editors*

105 West Adams St., Chicago—30 Church St., New York City

## Salesmen Wanted . . .

—An Editorial

**A**MERICAN BUILDER is strongly of the opinion that the Building Industry faces a big job, and a most important job, in selling home building to the American people.

A study of building figures for the past year and-a-half shows that to date this job has not been well done,—at least other lines of luxury-necessities have been sold so much more effectively that there has not been enough left of the "consumer's dollar" for home building.

What do the figures show?—In this period of nationwide prosperity, with every other important line of industry going at full speed and setting up new records, the building business alone shows a falling-off; and analyzing the building contract figures in detail we find that it is *home building* that is down. Other building is going along equal to, or exceeding former years.

For instance, a study of the reported contract figures shows that commercial building is up 6% from January, 1928; industrial building shows an increase of 40%; and public works of 20%. All non-residential building taken together has registered a gain of 8%; but home building has fallen off 33% from its position as of January, 1928.

Why?

**C**ERTAINLY it is not because of an over-supply of good modern homes! We have made up the critical shortage of housing, it is true, that existed after the war; but *housing* and modern satisfactory *homes* are two quite different things—and this country is a long way from the saturation point in modern homes.

It is reliably estimated that, in addition to the quarter of a million new homes needed annually to take care of new population, there are in the United States more than twenty million old homes that need modernizing. Fully half of these are lacking in those prime essentials to health and comfort—a bathroom with running hot and cold water, sanitary sewage disposal, and a basement heating plant. Some do not even have water in the kitchen, gas for cooking, or electric lights.

**H**OME modernizing campaigns have been launched and in many communities have achieved a considerable success. At least they have demonstrated that where builders, dealers and others interested will get together, and all work intelligently and aggressively, much can be accomplished. In other words, the public *can be sold* the home modernizing ideal and program when the men of the Building Industry really undertake that selling job.

The same should be true of new home building—the urge for it can be developed. Styles can be and are

being impressed on the public. To build a new modern home can be made the *smart* thing to do.

Home building and home owning, while one of the most important necessities to a family's satisfactory existence, can be offered and sold as the great luxury of luxuries—in fact the one basic luxury that will give permanency and flavor to all the other good things of life.

**I**N this era of high wages and general prosperity, when money is being spent so freely for every sort of heart's desire, and when billions of dollars are being poured out into investments of one sort and another—many of them of doubtful character—it does seem to the AMERICAN BUILDER that a great opportunity is offered the Building Industry to do a real job of selling home building, modern home conveniences, and the delights and satisfactions of the Home itself!

In such a program every branch of the Building Industry has its responsibility and its work to do.

**T**O put this through, the manufacturers must get out aggressively and let their wares be known. They already have developed and perfected wonderful materials and technical devices for building, equipping, finishing and furnishing modern homes; but they should not stop there—the big selling job must be done.

The dealers, too, should lend a hand. They must be prepared to supply the thousand and one requirements of construction, equipment and finish, and the numerous appointments which complete the modern home. They should not be content merely to warehouse these goods, but must really get out and sell them in a thorough-going, constructive way.

The builders, contractors and developers, of course, being the natural traders and salesmen of the industry, should fall in line with this big home building campaign and do a real job of contacting the public. With the urge of constructive advertising and salesmanship back of them they will and must carry the message personally to every prospect.

And these builders must not only do a good job of personal selling but also a careful job of estimating and a quality job of construction, so that final and lasting satisfaction—and much future business—will be had.

The architects have their important place in this program also, as do likewise the bankers and other financing interests.

The American people today know and appreciate beauty. The new home or the old home remodeled must have style and charm, if it is to compete on equal terms with the 1930 model stream-lined motor car or aeroplane. The architects are needed to style our offerings; and their services somehow should be made widely

# How to Make Watertight Concrete

With the Same Universal Cement Used for Regular Work

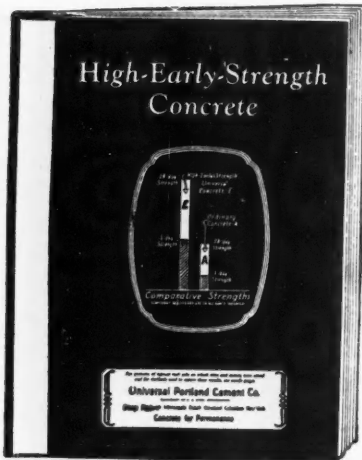
## Watertightness

Resistance to passage of water of 2 concretes both made with the same materials and cement

**High-Early-Strength  
Universal Concrete E-1**  
(made with the same Universal  
cement used for regular work)

**13 times more watertight than ordinary concrete**

Concrete as commonly  
mixed and placed



Send coupon for your copy

No mysterious or lengthy process is necessary to secure waterproof concrete. No special or unusual materials need be used to make concrete thru which water cannot pass. The same coarse aggregate, sand and Universal cement used for ordinary, everyday work are sufficient to assure watertight concrete, when mixed and placed by the methods described in this booklet

*High-Early-Strength Universal Concrete*, as shown in the above diagram, is over 13 times more watertight than concrete as ordinarily mixed and placed. It also has other equally desirable qualities. It is stronger in 3 days than ordinary concrete is in 28 days, hence is widely used to save time on rush jobs. It has a higher *permanent* strength and stands up under heavy wear.

Try *High-Early-Strength Universal Concrete* on the next home, store or other job you build. A basement that will *stay* watertight will help sell both your work and the building.

Name \_\_\_\_\_

Address \_\_\_\_\_

Universal Portland Cement Co.  
208 So. La Salle Street, Chicago  
Without obligation, please send me  
your new booklet giving full  
details for securing strong  
concrete in 3 days with  
the usual materials  
and labor.

A B 10-29

## Universal Portland Cement Co.

Subsidiary of United States Steel Corporation

Chicago Pittsburgh Minneapolis Duluth Cleveland Columbus New York

**Concrete for Permanence**

known and available for the majority of homes, rather than for the few.

With reference to the bankers and financial interests, home financing can be greatly simplified and improved—and it must be! This great industry must attack this problem of home financing, and make it as easy and attractive to start to buy a home as it is to buy an automobile, a radio or a fur coat.

**T**HE idea has been too much held in the past by the Building Industry that *building demand* regulates and controls. There is, of course, a natural demand—but today goods are not *bought* so much as they are *sold*. It is constructive and persuasive salesmanship that the home building industry needs; and it is the entire industry that should do this job of selling.

The home is the greatest value money can buy. It is the soundest investment. Homes today are better built than ever before; and modern home equipment—automatic heat, automatic cold, light at the flip of a finger, insulation comfort both summer and winter, fresh air, numerous bathrooms, efficiency wardrobes, sun drenched rooms—all these make living in the modern home a joy and a delight.

Many don't know these things. The average man doesn't realize how out of date his house or apartment is, or how cramped the life of his family because of the lack of proper home facilities.

Home building is *not* too costly. The mistake most folks make is in not spending enough for the home to get sufficient size, really good construction, and the modern labor saving conveniences. Education in real values is needed, and salesmanship. The AMERICAN BUILDER believes that the big opportunity for the entire Building Industry is here and now to sell the Home and modern home building to the home buying public.

### Five-Day Week Making Headway

**O**RGANIZED labor in the building industry seems to be swinging to the five-day or the forty-hour work week. As a result of a national survey it is reported by S. W. Straus & Co. that approximately 25 percent of the building mechanics of the country are now on this shorter week schedule. The backbone of this movement is found in the metropolitan district of New York, where 150,000 workers are on the five-day week basis. It is estimated that more than 300 cities and towns in this country now have the five-day week in one trade or more. Among important cities adopting this plan are: New York, Chicago, St. Louis, Pittsburgh, Spokane, Springfield, Mass.; Cleveland, Philadelphia, Providence, R. I.; Hammond, Ind.; Harrisburg, Pa.; Denver, Dayton, Elizabeth, N. J.; Cincinnati, Dallas, Atlantic City, Louisville, Boston, Birmingham, Toronto, Can.; Utica, N. Y.; Wilmington, Del.; Bridgeport, Conn.; Buffalo, Butte, Evansville, Ind.; Gary, Ind.; Rock Island, Ill., Pasadena, Calif.; Lynn,

Mass.; Seattle, Wash., and Scranton, Pa.

Representatives of building workers contend that the five-day week will aid in taking up the slackness in the unemployment situation, but this position is opposed by many builders who hold that on large projects as many craftsmen are already used as can be economically employed.

### Much New Work Ahead

**C**ONSTRUCTION figures for the month of August have just been published. These figures show that, in the 37 states east of the Rocky Mountains, contracts for \$488,882,400 worth of work were let. While this is a decline of 25 per cent from the July total, it must be remembered that July set a high record only surpassed by the month of May, 1928, and that August normally shows a marked decline from July. The decline from August of the record breaking year 1928, was only five per cent.

Of the eight districts covered by this report, two showed increases over the preceding month and three showed increases over August of last year.

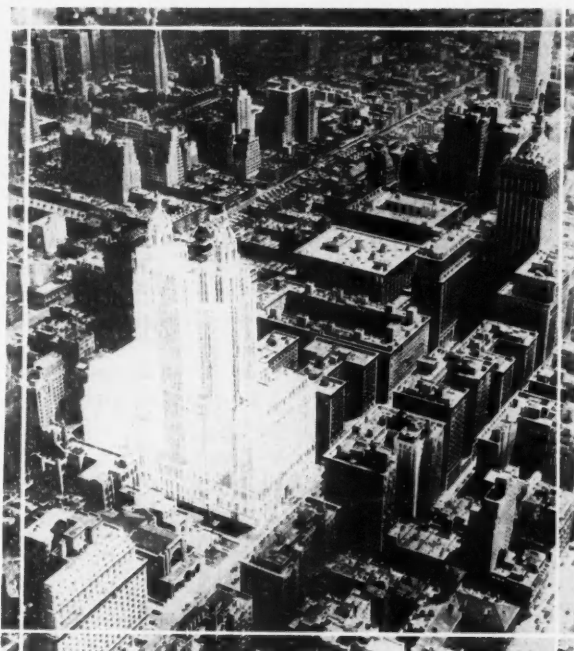
Probably the most significant figures contained in this report are those covering new work contemplated. Every district except one showed an increase over July, 1929, and all except three showed increases over August, 1928. New work contemplated during August, in the 37 states reported, amounted to \$657,832,000. This is an increase of 37 per cent over the preceding month and an increase of seven per cent over the corresponding month of last year.

While it seems hardly likely that the 1929 construction total will equal that of 1928, it is certain, beyond reasonable doubt, that the year will reach a mark not far short of that record breaking year and one which, as compared with other years will stand out as a big year in the building industry.

### The World's Largest

**H**ERE is an aerial view photograph of the Park Avenue-Grand Central zone, with sketch showing architect's conception of what the New Waldorf-Astoria will look like when completed in the fall of 1931. It will be the "largest hotel structure in the world." Estimated valuation is \$40,000,000, which includes the value of the land, cost of building, and furnishings. It will be 46 stories high and the steel will rise to the topmost pinnacles of the tower, 600 feet above the sidewalk level.

The demolition of the old New York Central Y. M. C. A. Building, and Power House, and the American Express Building, at present occupying the site of the New Waldorf, has been in progress for the past two months. Construction will be by the Thompson, Starrett Company, builders of many of the most noted public buildings of the country. Schultze & Weaver, of New York City, architects.

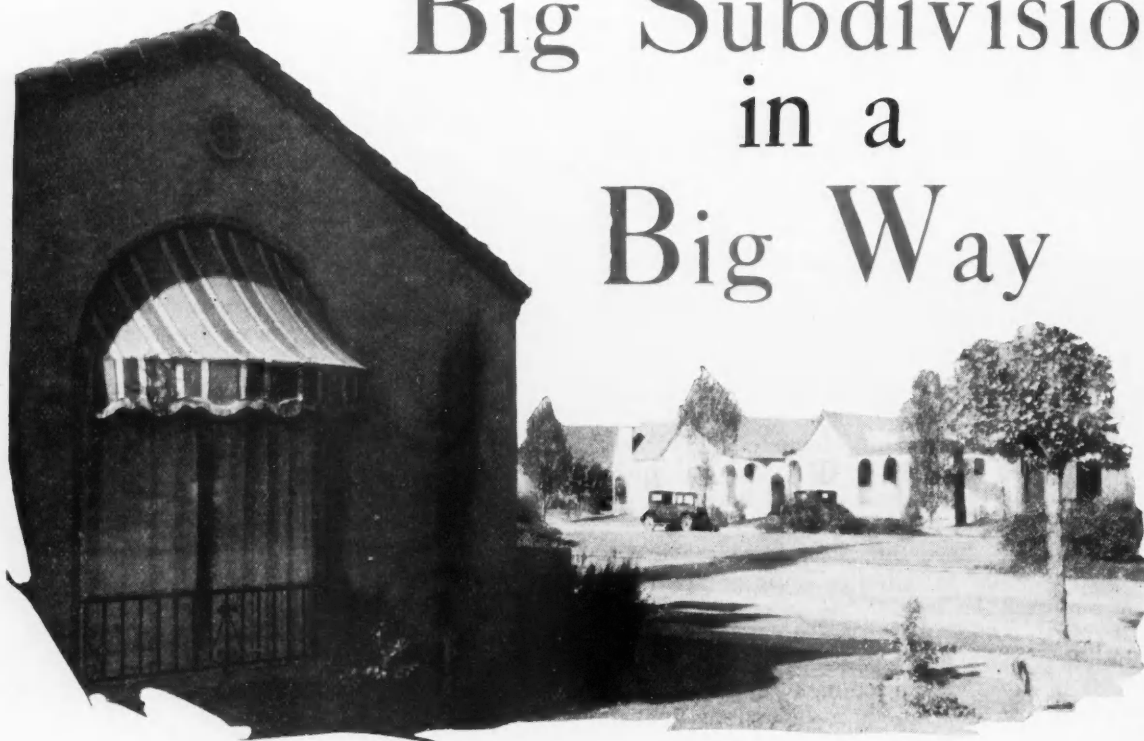


SCHULTZE & WEAVER, Architects

As the New Waldorf-Astoria Will Appear at Park Ave. and 50th St., New York.

Putting on

# Big Subdivisions in a Big Way



**I**T isn't only the character of the property and buildings which determines the success of the big subdivision—it is also the manner in which the proposition is put on. If it is a really big subdivision and if it is put on in a big way, then its success is much more certain than if the "front" the proposition puts up is far from impressive.

The public has been educated to expect an impressive "front" from the big subdivision because of the fact that everywhere, all the time, there is talk about the bigness of American enterprise. So if the subdivision runs into hundreds of lots and if there are hundreds of thousands of dollars involved in the construction program, the public feels that the attendant promotion work and publicity stunts should be on the same high plane as the enterprise itself.

Time and again this fact has worked out advantageously for those developers who realize its importance. And a present-day example of all this is found in the success attending the big "front" that the J. B. Ransom Corporation, of Los Angeles, is putting up in the marketing of its tremendous holdings of east side property.

Let us look at some of the things this corporation is doing as in this way ideas and suggestions may be presented which will be of interest and value to all of the readers of this article.

First, then, let us survey the extent of this particular enterprise. The Ransom corporation at the present time has a \$17,000,000 investment in east side Los Angeles property. First operations of the

By **FRANK H. WILLIAMS** corporation started in 1922. At the present time there are 1,500 people

employed, salesmen, construction department, architects, office employes and so on. At the present time four huge projects are being developed—Bandini, Montebello Park, Montebello Park Golf Club unit, Gainsborough Heath. A fifth big project is now being inaugurated consisting of the formation of a \$3,000,000 syndicate for developing Repetto Rancho, a 1,558 acre property, located within 4½ miles of the Los Angeles city hall. At the present time this concern controls 80 per cent of all the available subdividable acreage east of Los Angeles within the city limits.

Quite a big proposition, when it is realized that not only has the property been subdivided, but sewers, water pipes, streets and so on have been put in over miles of territory and hundreds of homes and business structures have been erected. In addition numerous huge factories have been brought to the east side by the Ransom corporation.

So much, then, for a survey of the proposition. And now for a recounting of some of the big promotion schemes which have been so helpful in giving the air of bigness to this whole proposition which has made such a deep impression on the general public.

Here are some of the major promotion propositions this concern has done, outside of the customary things in the way of streets and building work:

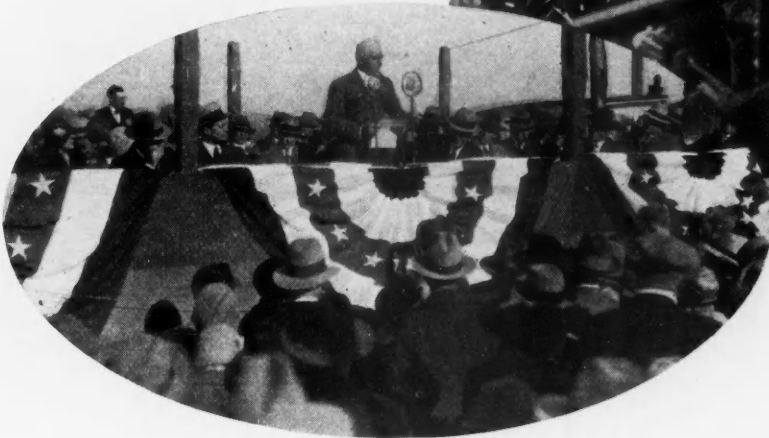
First—Erected a tract office on the property near Montebello at a cost of \$25,000 which is called "The



In NOVEMBER AMERICAN BUILDER will appear another notable Developer story; this time from Portland, Oregon. Read how HILLER-BUILT HOMES are merchandised.



*J. B. Ransom  
Corporation  
of  
Los Angeles  
Knows How  
to Do It*



Ten Thousand People Gathered Near a Ransom Subdivision to Hear Carl R. Gray, President of the Union Pacific R. R., Speak at the Ground Breaking Ceremonies of the Samson Tire & Rubber Company.

Development of the American Home." This tract office, with a frontage of several hundred feet on Whittier boulevard, is seen by thousands of motorists every day and it gets a great deal of attention because of its unique appearance. This building represents the rain-washed hills and mountains of the great southwest where the Indians and coyotes roamed. Housed in the structure are numerous extremely interesting exhibits—pictures of various parts of the development, maps showing the trend of population toward the east side and the projected major traffic arteries and so on.

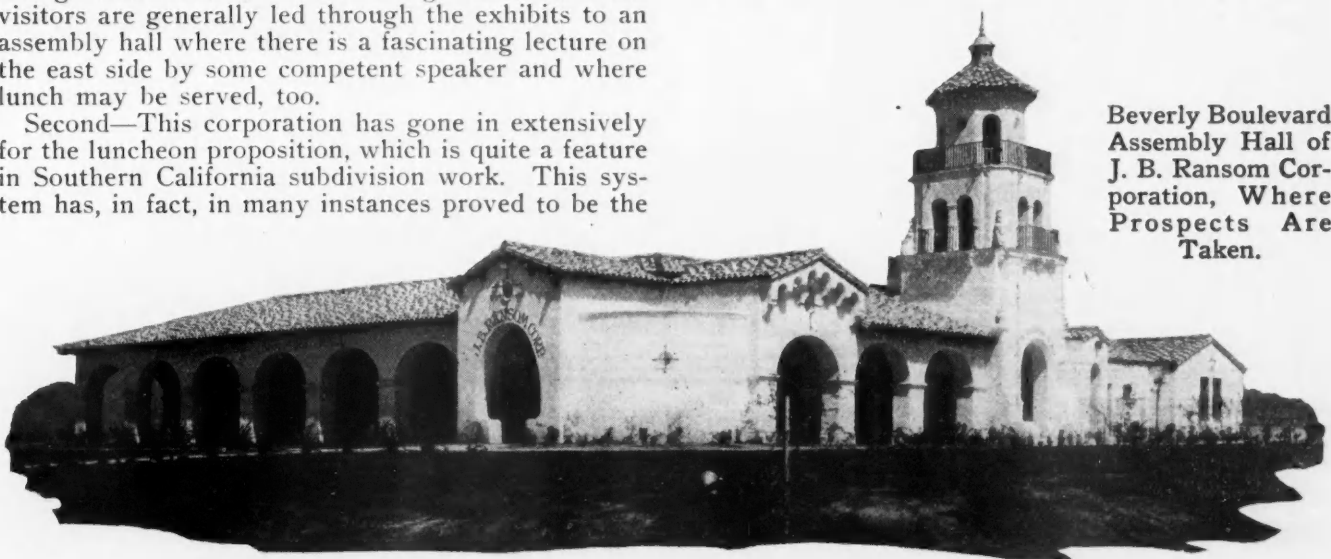
It is interesting to know that the Ransom corporation has traced hundreds of sales of property to the fact that this unique tract office has made people stop and look and step inside to see the various exhibits. Salesmen, of course, are always on hand to guide people through the various exhibits and deliver interesting talks to them while doing so. And such visitors are generally led through the exhibits to an assembly hall where there is a fascinating lecture on the east side by some competent speaker and where lunch may be served, too.

Second—This corporation has gone in extensively for the luncheon proposition, which is quite a feature in Southern California subdivision work. This system has, in fact, in many instances proved to be the

most economical selling system for many subdividers.

The luncheon proposition is worked in this way: Comfortable busses are either hired or purchased by the subdivider and parked at strategic points in the downtown sections of the city. Then men and women go through the park and streets offering free bus rides and lunch tickets to everyone who wants to go on a ride. Usually, these representatives have regular stands where they offer the tickets to passersby. Such representatives may be paid fifty cents each for every person they induce to go on one of the trips. The tickets turned in by the people for the rides and lunches carry identification marks, of course, showing the representative from which the tickets were secured. The representatives are paid according to the number of their tickets turned in by the people who take the trips.

On the trips the folks are given interesting rides



Beverly Boulevard Assembly Hall of J. B. Ransom Corporation, Where Prospects Are Taken.

Elaborately Built Roadway Signs Draw Interest.



through scenic points with, perhaps, a talk by someone in charge of each bus. The trip winds up at the subdivision tent or assembly hall where a good luncheon is served followed by another lecture on the subdivision. Then salesmen interview the folks and endeavor to make sales.

It is found that the law of averages as to the number of contracts takes care of sales. Also it is found that the personal contacts thus made often lead to sales later on, if not right at the time.

In going in for this system the Ransom company has given an added flourish to the proposition by constructing permanent assembly halls which, by very reason of having the permanent look about them, make the best sort of an impression on people. It is found that the evident stability of the assembly halls makes people realize the permanency of the whole proposition and so helps greatly in creating more sales.

Third—Right from the start

the Ransom corporation has looked toward the providing of adequate recreational facilities for the people who buy lots in the property of this corporation. This has been done because it is realized that recreational facilities are today one of the biggest factors in making subdivisions successful. Subdivisions having such facilities have rapid growth while in some cases subdivisions without such facilities have a hard time of it.

One of the big things done by this corporation along this line was the construction of the Montebello Park Golf Course and Club House, at a cost of \$50,000 for the course and \$50,000 for the club building. And in order to make sure that everything was of the best one of the foremost architects in this line of work, Max Behr, was secured to design the club house. In addition, the services of Willie Hunter, former British amateur champion and California open champion, were secured for instruc-

**GATEWAY**

**A Population**

... the power of the automobile... the growth of Los Angeles... the fact that the automobile is the most important factor in the growth of Los Angeles...

**J.B. RANSOM CORPORATION**  
"Developers of the East Side"

**KNOW THE EAST SIDE**

**WHITE SPOT!**

**INDUSTRIAL** activity is still far in advance of last year. For Los Angeles, automobile tires at wholesale increased 8.2 per cent as compared with August of a year ago. Bank clearings in Los Angeles to date are between 8 and 9 per cent in excess of last year.

**J.B. RANSOM CORPORATION**  
"DEVELOPERS OF THE EAST SIDE"

**KNOW THE EAST SIDE**

**NEW CITY**

**NEW** cities build around industries... the powerful magnet that attracts population... workers... payrolls... homes... stores... apartments... and expansion!

**J.B. RANSOM CORPORATION**  
"Developers of the East Side"

Compelling Newspaper Ads Blazon the Facts Broadcast. This copy ran 8x14 inches.



tion purposes at the club. Hunter has full supervision of the golf links. He stages tournaments, etc. The course is eighteen holes, all grass, open to the public on the pay-as-you-play plan and is always well patronized.

Fourth—Every time that a new industry comes to the east side it is the policy of the Ransom corporation to make a big thing of it. In other words, there is a dedication of the site, a grand opening when the buildings are up and flourishes all along the line as the industry gets going. This makes everyone realize that something important is happening and so helps to give the desired air of bigness to the whole proposition.

Recently, when ground was broken for the big new \$8,000,000 plant of the Samson Tire & Rubber Company near Bandini, elaborate ground breaking ceremonies were staged at which there were thousands of people in attendance and at which Carl R. Gray, president of the Union Pacific System, made the principal address. Also, the whole proceedings were broadcast over one of the leading Los Angeles stations and in this way untold additional thousands were reached.

Not only does all this help to impress the public but it also helps greatly in creating that sort of cordial, friendly feeling between developer and industries which is so essential to success.

Fifth—The Ransom corporation goes in strongly at all times for outdoor advertising and when using such advertising tries to make it all distinctive, unusual and better. In doing this quite a little money is spent on cut-outs projecting above the usual sign board and in unusual illumination and things of that sort.

It is found that outdoor advertising has a powerful appeal and is of great importance in helping to put subdivisions across. Elaborate outdoor advertising

(Continued to page 148)

**MONTEBELLO PARK - Center of Huge Development!**

750,000

**This is Montebello Park**

**J. B. RANSOM & CO.**  
National City Bank Bldg.  
Executive Office, Trinity 7511  
Metropolitan Sales Offices: 680-52

Center-Spread of Pamphlet.

**MONTEBELLO PARK**

**OPPORTUNITY**  
*Invest Today*  
**BIG PROFITS**  
Backed By Big Business

**RECREATION**  
*Golf Club*  
AS FINE A COURSE  
AS MONEY THE SKILL CAN MAKE

**Montebello-Park GOLF CLUB**

**Play Golf**  
with Willie Hunter

Pamphlets and Signs Feature the Golf Motive.

# A Colony of



## Started TWENTY YEARS Ago

**I**NVESTMENT building and maintenance of apartment dwellings is an art that the Lawrences of Bronxville, New York, have mastered. They have had forty years of experience in the upbuilding and beautifying of Bronxville, and have more than eight hundred tenants in their various apartments, stores and offices in this attractive suburban village near New York City.

The fact that for years they have had practically no vacancies, and that, in the hardest of times, their vacancies have never risen higher than ten per cent speaks volumes for the way in which they handle their properties.

Builders whose apartments seem to reach a quick obsolescence and those who fail to attract prospects with elaborately designed buildings wonder just what the Lawrence system is and how they have been able to keep twenty-year old apartments fully occupied and from time to time build new ones at minimum construction cost and rent them rapidly to the highest type of tenantry with very little, if any, advertising.

If it is at all possible to give a categorical answer to a question of this kind then it must be said that the Lawrence secret lies in the ability to cater to a "high hat" trade. Rigid restrictions, rigidly enforced, year after year, is the one big reason why the Lawrence group maintain their supremacy as the apartment house kings of Westchester.

Three men were talking at a luncheon table during an important conference of apartment house builders in New York recently. One of them was a professor of real estate in a Western university and another an

### *Alger Court Apartments in Bronxville Westchester New York*

apartment developer of some substance in the New York area.

"Professor," said the developer, "what do you suppose is the dominating factor in apartment house residence in New York and vicinity today?"

"Price?" asked the professor, tentatively.

"No!" replied the developer, "it's neighbors!"

More than twenty years ago the Lawrence interests began to establish apartment houses based on this idea and it has been their chief operating principle ever since.

Other factors which have stood out as important in their operations are: (1) The possession of great quantities of strategically placed land (2) the possession of enough money to adhere rigidly to a plan of long-time development and to keep apartment suites vacant if tenant qualifications were not immediately met (3) word-of-mouth advertising passed round among the type of prospective tenants most desired.

Location, of course, has been an important factor in the Lawrence success. Many years ago, a progenitor of the two brothers, Arthur and Dudley Lawrence, acquired a great deal of land along the Bronx River where the present town of Bronxville is situated. It is probable that as far back as that he visioned the tremendous growth of New York and the eventual demand for high-priced homes and apartments beyond the city turmoil.

# Country Apartments



## and STILL GROWING Today!

*Developed Throughout by Lawrence Properties, Inc. By ROY MASON*

At any rate, long before the general public ever dreamed that so many people would ultimately live in such garden apartments in semi-rural surroundings, there was started the colony of apartment homes illustrated here.

The nucleus of the group was Stoneleigh, home of the well-known Alger family, which was remodeled into an apartment house in 1906 by the Lawrences. The name "Alger" has been perpetuated in the name of the colony which is called "Alger Court".

Today, this old, remodeled residence is still doing service as a fully occupied apartment and the only thing they've done to it, except ordinary repairs and repainting, has been to remove the plumbing fixtures, as suites became vacant, and install modern equipment! Yet, tenants still crowd to get into Stoneleigh! Before any of them are admitted, however, they must submit six unimpeachable references to the management for approval and pass other rigid restrictive tests.

Thus Stoneleigh became the foundation for an apartment colony that now includes six apartment houses and will eventually comprise eight.

Just before the war, one additional apartment building was erected on each side of the original Stoneleigh and these two were also designed in the English manner. They were called Westbourne and Eastbourne and contained seventeen apartments each.

The Lawrences did not construct these apartments

with their own crews nor have any subsequent buildings been put up by gangs employed by them. Topographical engineering and roadway construction is undertaken directly by the Lawrence interests but after their own architect has designed a new building it is turned over to a low bidder among the contractors who commonly do work for them.

With their first apartment filled with a high type of tenant, the Lawrences made no particular effort as far as lavish expenditure on construction was concerned to attract the discriminating rental classes. It was unnecessary, for their reputation had become so well established that the proper type of tenantry was assured. Neither was newspaper advertising necessary! Amazing as it may seem, the Lawrences have built and rented apartments for two decades, practically unaided by newspaper advertising. A comparatively short time ago, they established a contact agency and information bureau in New York City and began to place square, compact ads in some New York papers. These ads emphasize the Lawrence reputation and prestige and make no mention of specific apartment buildings.

All this indicates that the Lawrences did not have to hunt feverishly for prospects; the right kind of prospects came to them. Hence we can understand why they kept building costs at an absolute minimum, commensurate with sound construction, and made no effort to catch prospects by extraordinary outlays on finishing and decorating. Yet the design of all of the buildings is effective and unified.

The presence of large quantities of stone on the property aided construction materially and made stone walls

possible to a height of two and three stories on some of the buildings. Higher up, the walls were stuccoed on a base of hollow building tile. Some of the apartments are of steel column construction with reinforced concrete floors.

Between 1920 and 1923, two more buildings, known as Northgate and Southgate, each containing seventeen apartments, ranging in size from six to nine rooms, were built and occupied, and in 1925 the large building known as Rivermere, which contains thirty-nine apartments of from four to seven rooms in size, was added.

While several types of architecture were used in completing this group of buildings in order to avoid the all-too-common stereotyped repetition, its general effect, with half-timbering here and there, in a garden setting, is decidedly English.

One typical floor plan of Rivermere apartments, the last one in the group to be erected, is shown on page 83. By the time plans were projected for this building, the trend toward smaller suites had definitely begun, yet with every surety of getting monied tenants able to pay the prices demanded for larger suites, the Lawrence interests did not feel forced to make more than a gesture toward the newer layouts. Hence, in Rivermere we find only *one* three-room apartment! This rents for \$80. Other prices range from \$105 for a four-room group to \$295 for a suite with seven rooms and three baths, overlooking the river.

These are typical prices for all Lawrence housing. Some of the latest apartments, outside of the Alger Court group, rent from \$90 to \$280 for nine rooms.

Community houses, of the single-family, attached type rent from \$185 to \$205 for seven rooms, containing two baths, and others for \$215 for eight rooms and two baths.

This will give the reader an idea of how the rental price level is rigidly maintained and tied up with the policy of holding a high class group of tenants.

Alger Court is the property of the Lawrence Investing Company and is managed by Lawrence Management, Inc. All of the Lawrence interests are known generically as Lawrence Properties which is a registered trade name. There is a Section Manager who is responsible for every detail concerning this group of buildings; and all complaints, adjustments and requests are handled by him. Close contact with the tenants is always maintained, and every effort is put forth in the utmost sincerity to cater to their comfort and happiness.

Unquestionably, one of the great secrets of the Lawrence success has been the management. Every building in the group has electric refrigeration, elevators, dumbwaiter service and incinerators. Individual electric refrigerators of several well known makes have



**LAWRENCE PROPERTIES IN BRONXVILLE**

... comprise apartment houses with elevators and electric refrigeration, charming community houses and distinguished private residences. All situated in Bronxville—garden spot of Westchester. Modern schools and shops—delightful parkways—yet trees . . . far-reaching views—yet but 30 minutes from the metropolis.

**LAWRENCE MANAGEMENT, INC.**  
131 PARKWAY ROAD, BRONXVILLE, N. Y.

For immediate response or May 1st Telephone for information . . . Bronxville, N. Y.



**"FORTY YEARS OF IT"**

Even Brand Whitlock's "Forty Years Of It" is less of an achievement than the Lawrence Properties' forty years of fine building in Bronxville . . . From a few scattered cottages in the early nineties, this organization has become an important factor in the real estate world—housing and servicing 800 distinguished tenants.

5 to 6 room apartments with elevator and refrigerator. Charming community houses of 7 and 8 rooms.

**LAWRENCE Management, Inc.**  
131 Parkway Road, Bronxville, N. Y.  
AVAILABLE FOR IMMEDIATE OCCUPANCY

For information or telephone Bronxville 0400

Local Newspaper Advertising of a Very Dignified Type is Being Used at the Present Time.

been used, but they are now considering the establishment of a central refrigeration system.

Heat and electricity are supplied to these buildings directly from a central power plant owned and operated by the Lawrence interests. This insures an ample supply of these two necessities at a minimum cost.



**The LAWRENCE POLICY**

THE atmosphere of Lawrence Properties is quite indefinable . . . save as it links itself with Lawrence tradition. For during the past forty years, these Properties have erected and operated their own buildings. Such a policy of exclusiveness and careful restriction communicates itself in an atmosphere reminiscent of old England . . . which 800 tenants are now enjoying.

*Apartments, Community Dwellings and attractive Building Sites.*

**LAWRENCE Management, Inc.**

131 Parkway Road  
Bronxville, N. Y.  
Tel. Bronxville 0400




**COUNTRY APARTMENTS IN WESTCHESTER**

Bronxville—in the heart of Westchester's rolling hills—has been largely developed by the Lawrence interests. One likes about Lawrence Properties their air of stability and fineness, their comfortable ease, suggestive of English rural life. And one appreciates the high character of service in each Lawrence apartment and community dwelling.

**LAWRENCE MANAGEMENT, INC.**

131 PARKWAY ROAD  
BRONXVILLE, N. Y.  
Bronxville 0400

250 PARK AVENUE  
NEW YORK, N. Y.  
Marraf Hill 2939



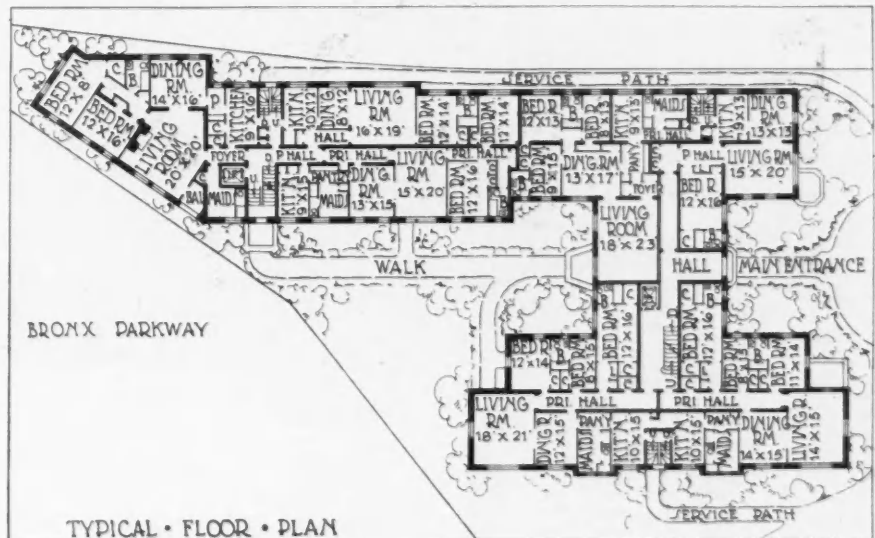
Advertising Copy is "Institutional" in Character.

are covered with ancient oaks and crabapple trees. Here and there are stone walks lined with flowers on either side. The oldest of the buildings are covered with ivy, and this adds greatly to their beauty.

So appealing was the effect of these buildings in their sylvan setting that great care was taken, in providing all modern conveniences, not to mar it by anything garish or crude.

Each of these apartment buildings has its own individual superintendent who lives in it and is at the service of all its tenants day and night. These superintendents take care of all minor repairs and make a thorough inspection of each apartment once a month. In addition to this the Lawrence Management Company, one of the subsidiaries of Lawrence Properties, maintain a complete service department to adjust on short notice any complaint or to make any necessary repairs that the superintendent is unable to handle. Repainting and redecorating is done every three years.

One great feature of Alger Court that undoubtedly contributes to its annual popularity among discriminative apartment dwellers, is its beautiful setting. Although it is within practically a stone's throw of the small suburban station, the surroundings are almost sylvan and this effect is maintained by efficient landscaping. The entire group is surrounded by spacious lawns that



Plan of The Rivermere Apartments, One of the Most Recent of the Lawrence Buildings.



**K**NOTTY Pine Panels Contribute to the Effectiveness of This Unusual Stair Hall; Residence of John Olin, Alton, Ill.; Chester Walcott, Chicago, Architect.

# Knotty Woods Return to Favor

**I**MITATION is a sure sign of appreciation and it is but a short step from the growing admiration for the old-time rooms paneled in knotty pine, to the present day fashion which favors the skillful use of knotty woods and of other woods containing charming variations in grain.

This may seem to be something of an innovation, for except in the case of the cedar chests, which are so often seen in bedrooms and halls, and are always liberally bespeckled with knots, clear wood had come to be considered essential.

But an inspection of old furniture and the interior trim in rooms of other days, reveals that this has by no means always been the case. In fact, many examples of the use of knotty wood can be found, and when skillfully done, the effects are most interesting. The present tendency to use knotty wood is, therefore, not new, but is rather a harking back to an older fashion.

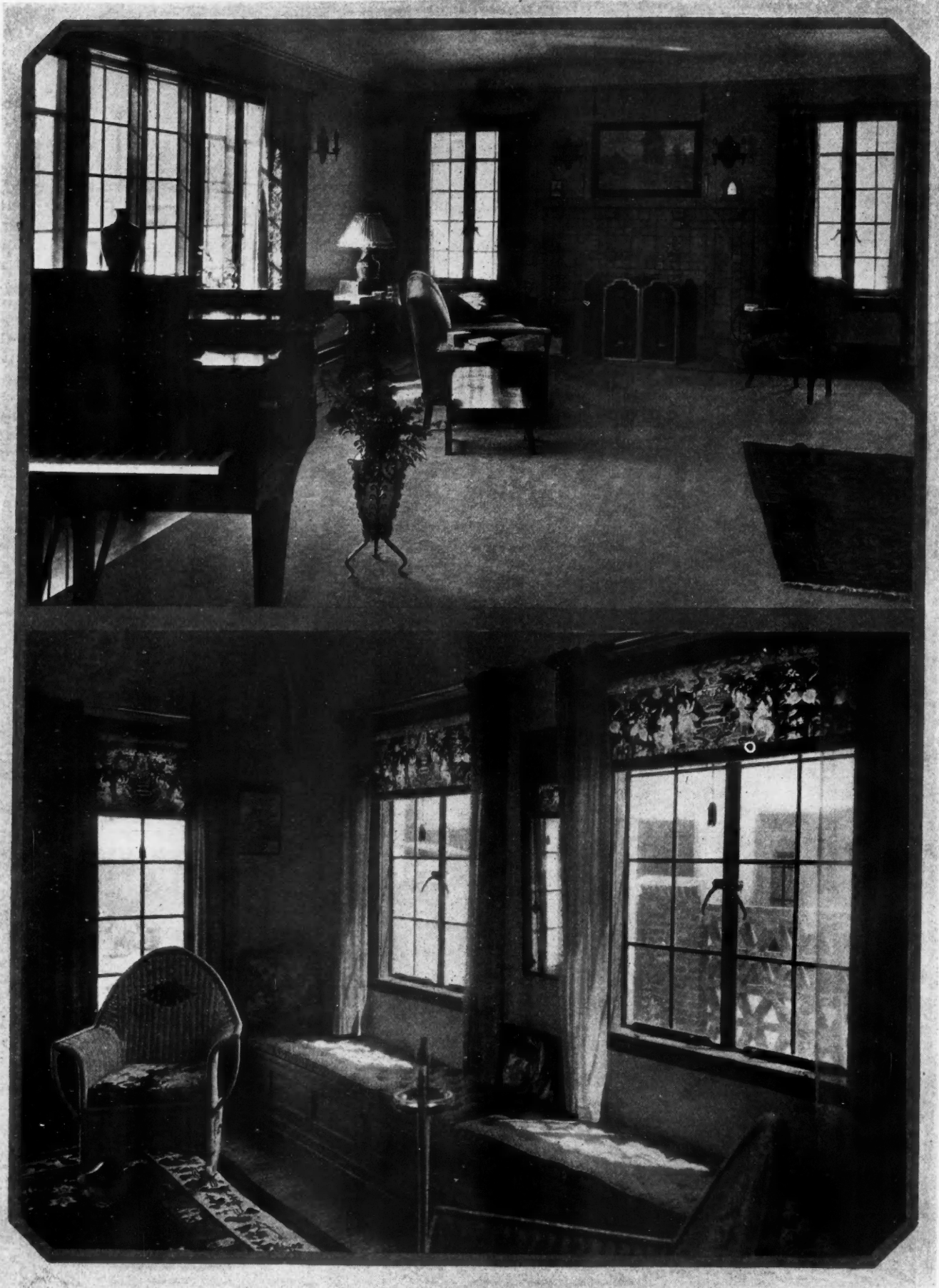
Supporting and emphasizing this trend of taste are the very real advantages of conservation of wood resources and reduction of construction costs. It is

this angle of the subject that is emphasized by the National Committee on Wood Utilization, which operates in connection with the Federal Department of Commerce. As this committee points out, small, tight knots do not mean defects either in beauty or strength, and the difference in cost between clear grades and those having a few tight knots is as much as 50%.

This is a real item in the cost of building. For instance, the growing practice of using knotty walnut for floors reduces the cost, making it economical to use this exceptionally attractive and desirable flooring, whereas, if nothing but the clear grade were used, the cost would be too great. The same is true of interior trim. The grain effects in knotty walnut are most interesting and such wood is being used for this purpose with very satisfactory results and at a cost which permits the use of this exceptionally beautiful wood, even in homes of very moderate price.

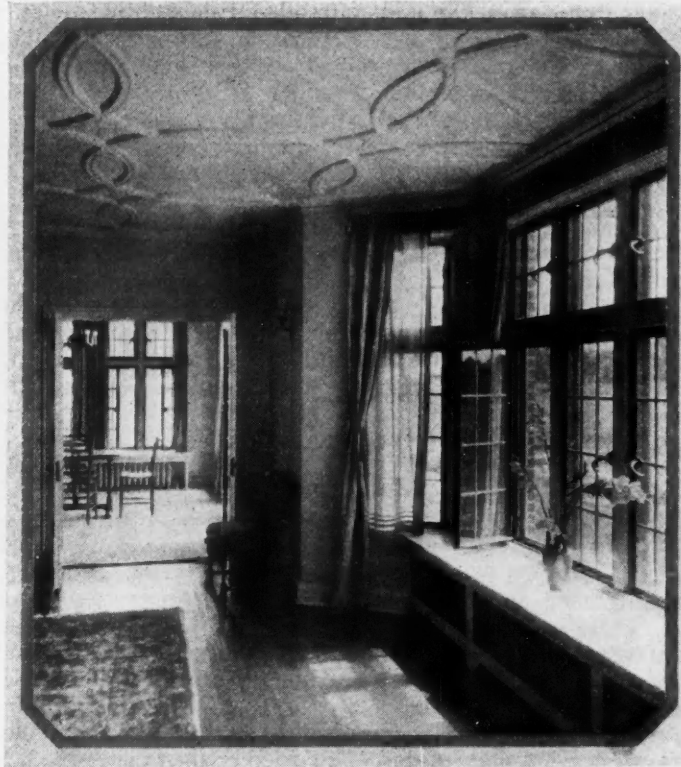
**Knots and Dovetail Keys or "Butterflies" Give This Pine Finished Room Extra Interest and Charm. Residence of Geo. F. Munn, Winnetka, Ill.; Wm. C. Wright, Chicago, Architect.**





Two Sunshiny Interiors Typical of the Present Vogue. Above, a Denver Home Designed by the Huntington Architectural Co.; and Below, a Los Angeles Home, Henry F. Withey, Architect. Such Cheery Living Rooms Greatly Appeal to Buyers.





*"Lots of Sunshine" in this  
Libertyville, Ill., Home; Puckey  
& Jenkins, Architects.*

## Wanted—Sunshine Homes!

***More Glass—Larger Windows—Casements and Other Attractive Window Designs—Weatherstripping—Storm Sash and Double Glazing; All Have New Sales Appeal for Home Builders***

By AMERICAN BUILDER FIELD EDITOR

**S**TRUGGLES of mighty forces—titanic upheavals—vast oceans of water—great masses of rock and earth thrusting through—and darkness. All waiting for the divine command: "Let there be light!"

And with the appearance of light, life and beauty were born. Grass, flowers, trees, the song of birds, the prismatic sparkle of dew on flowers and foliage—and man and his four-footed friends to enjoy them. Life in a dark world is unthinkable; life and light are all but inseparable.

What, you say, has all this to do with the design of homes or other buildings? Just this: it serves to remind us that we have no more priceless heritage than glorious light.

And yet many of our buildings have woefully dark interiors, with small inadequate windows and far too few of them. But the better builders, the more advanced designers, are letting in flood tides of crystal light by means of plenty of well placed, generously designed window openings.

Even a dozen years ago, there was a trend in this direction. In fact, window panes had grown to such size that they assumed ugly proportions. And they were unwieldy and expensive. The cost of a broken window pane was considerable. The answer to the problem was smaller window panes but more of them, with the sash arranged in attractive groups. Designers now make effective use of window groups, adding to the attrac-

tiveness of both exterior and interior. But there has been a temptation to use these window groups in only a few conspicuous locations and revert to narrow single units elsewhere. I have just inspected a new brick house of medium size. There was one three-window group in the first floor front, a two-window group above and a two-window group in one of the second story rooms at the rear. The others were all small single windows. The interior of the house appears light on a bright, sunny day but a few years later, how will it be? Window shades, curtains and drapes will cut down the light openings and shade trees around the house will darken the interior. This house will not have enough daylight. There will be a patch of light near each window and the rest will be gloom—unhealthy—unattractive.

Scientists are now proving the health value of light. Light is vibration. Shut out the light and you shut out health. In the twilight zones grow bacteria and the enemies to man's health. Even outdoors, when the shade gets too dense, grass will not grow, but mould and fungus appear. Tuberculosis germs cannot live under exposure to sunlight. It is man's friend—why bar it from our homes?

The merchant builder can capitalize on the value of light to make his buildings attractive. His investment in extra window openings and glass area will not be large and will return handsome dividends in making

his houses and apartment buildings extra attractive and salable.

A merchant builder in one of our metropolitan suburbs who builds for resale as well as on contract, related an incident the other day, which illustrates this point. He had sold a house some time previously to a small family, the members of which seemed pleased at the time of their purchase. Within the year, however, he heard that this family had sold and would probably be in the market for another home. He determined to investigate.

The owner's name was not Smith, so that name will do as well as any other. Mr. Smith was not at home when the builder called, but his wife was candid and cordial. She was reluctant to admit that they were not entirely pleased with the house bought from him. Finally, however, she told him their real reasons for selling.

"You know," she said, "we moved farther out largely on account of the children's health. We thought there would be more light and air in the suburbs. When we looked at this house, unfurnished, it seemed to be light and airy but since it has been furnished and the trees around it are in full foliage, there are numerous places in the house where you cannot read without artificial light in the daytime. My little boy, 'Bobs,' has not improved as he should. My husband and I talked it over and we have decided that we made a mistake in buying this house. Frankly, we decided not to buy from you again but to go to some designer who is more liberal in the daylighting of his homes. We have looked around and have seen homes with plenty of windows in liberal groups on every side. These houses seem cheerful, sunny and healthy. We want one of that sort."

This builder was big enough to admit his sin of omission and showed such interest in and enthusiasm

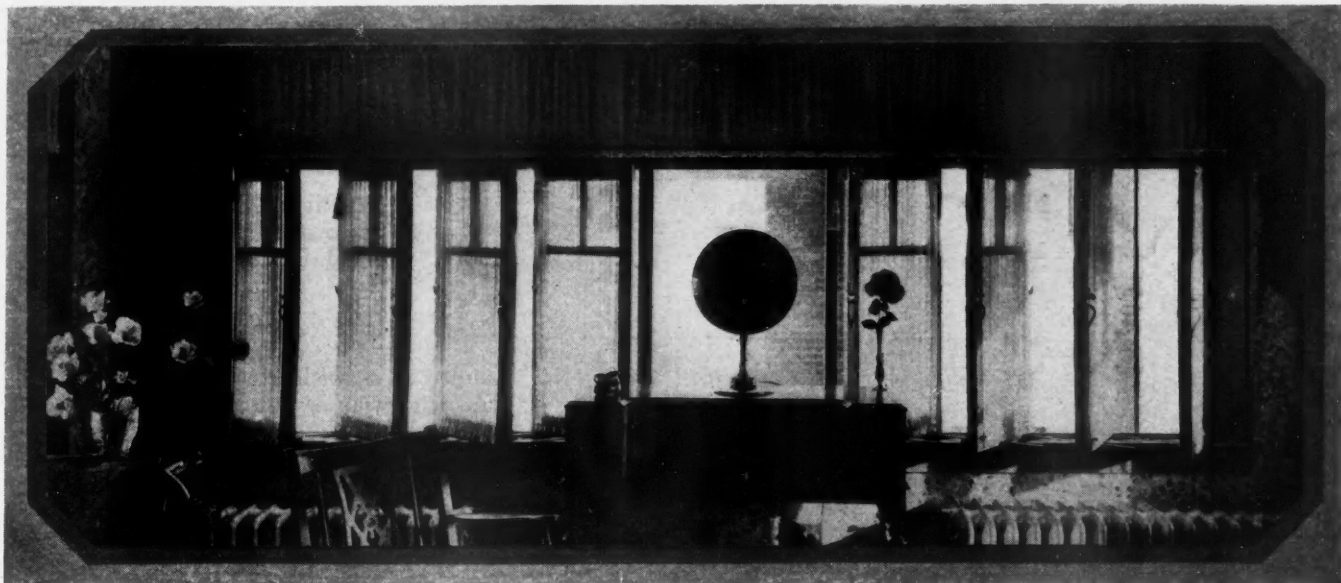
for liberal daylighting that the Smiths finally endorsed one of his plans. He built them a house which they dubbed "Sunshine House" and there, to the best of our builder friend's belief, they are living happily to the end of the chapter. He used full opening casements wherever possible, so that the owners can secure a refreshing volume of fresh air whenever desired and the house can be quickly cooled after a warm day. Full daylight illumination in every part of every room is a feature of this home and one universally admired. And he took particular care to see that the best grade of glass was used in glazing these windows so that every image of outside objects comes through the glass clear and sharp, free from blurring, wavy lines or distortion. Thus, there is a perfect picture from every window.

In a recent field survey by a representative of AMERICAN BUILDER, a number of the builders interviewed stated that the subject of windows and glass was one they could not ignore from a resale standpoint. Windows are prominent features of any building, sure to be examined and their defects, if any, on display. Too few windows, too small windows, inferior grades of glass—such things as these might easily spoil a sale. It is only good business judgment to take advantage of good glass, good windows and plenty of them to stamp a house with the hallmark of quality.

Other comfort features in connection with windows are to see that they are well screened in the summer and guarded against excessive heat loss in the winter. Single strength glass has a minimum thickness of eight one-hundredths of an inch, (.08"). This is quite thin. Double strength is better, having a minimum of one hundred and eleven one-thousandths of an inch (.111"), but heavy glass is better yet, being obtainable up to more than double the thickness of single glass. Now, it is a fact worth considering that heat conductivity of any material is inversely proportional to its thickness.



**H**ALF a Dozen Window Design Ideas Gleaned from East and West. Studio-Windows, Picture-Windows, Bay-Windows, and Mullion Groups are Popular Today.



With These Special Sliding Windows the Entire Side of the Room Can Be Opened to Sunshine and Fresh Air.

The very thin glass lets the heat out quickly and this rapid heat loss in cold weather causes rapid condensation of moisture on the inside of the pane. This causes steaming, followed by frosting in cold weather, especially at night when the temperature falls. With the higher temperatures of the daytime, this frost melts and runs down over window sills and walls, with resultant damage to finish and wall paper. Here we have a loss of light, a loss of heat and damaged finish—three things to be guarded against. Thicker glass, with its smaller heat loss, helps this situation considerably.

In considering heat loss, we must remember that this can occur in two ways—by conductivity through the panes and by infiltration of cold air around the sash. The latter can be prevented by the use of good weatherstrip, carefully installed. This is sure to be a contribution to comfort and will also effect an economy in the fuel bill. Metal weatherstrip used with wood sash will also prevent double hung sash from sticking in the summer, due to rain and moisture. Thus, weatherstrip is a year-round contribution to comfort.

A further saving in heat loss at the windows can be effected by creating a dead air space either by double glazing or by the use of winter windows, in addition to the regular sash. Perhaps you will not recognize the oldtime storm sash under its new appellation—"winter window." But why not a new name since it appears in a new dress? It is now painted in fancy colors and adds attractiveness in place of its former somber ugliness. Blue or some other attractive color outlining these winter windows has fully as great decorative effectiveness as the painted blinds added to so many houses for their color value.

Properly swung on patented fastenings, the winter window can easily be set in place from the inside, doing away with the old laborious ladder application from the outside. Swung in this way, winter ventilation is vastly helped. Windows can be left open at night, when desired, without admitting rain, hail or snow and without a violent direct draft. Closed in extremely cold weather, it prevents steaming and frosting. This means clear vision the year round and freedom from the gloomy, closed-in effect of frosted windows. As a fuel economy, there is scarcely any feature added to a house or apartment building which will do more to insure the comfort of a well heated home at the lowest possible heating

cost. Good insulation cuts down heat loss through walls and roof. Why not apply the same dead air principle between double windows with maximum comfort and economy?

No provision has, in the past, been made for winter windows or storm sash in connection with steel casements. However, such a development is in immediate prospect. A prominent steel sash manufacturer is now perfecting such a winter window to replace, in the winter, the screen now used in connection with their sash. It is to be a panel of the same size as the screen which fits the inside of their casements. The glass will be leaded into a light steel frame to fit the same spring clips which now hold the screen. The glass will be leaded into this frame with panes the same size as in the permanent window. The leading will thus parallel the main window muntins and to an observer directly in front of the window the fact that there are double windows will not be apparent.

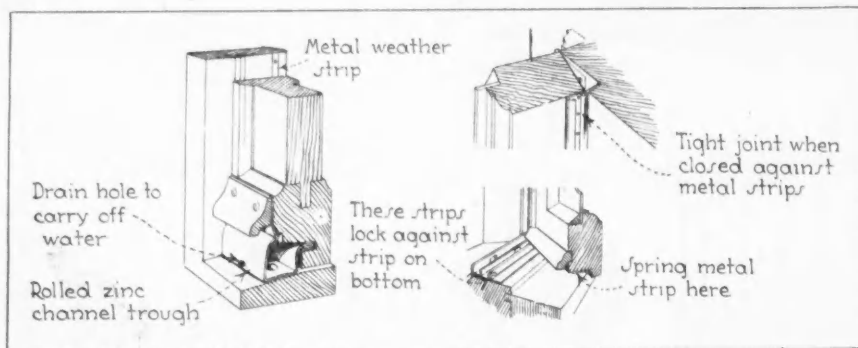
It may be helpful to designers of buildings in deciding on the number and size of window openings to quote from the standards set in the design of schools. H. H. Higbie, professor of electrical engineering at the University of Michigan, writing in collaboration with Professor Younglove, states:

"We have found that the usual criteria used in design of windows for daylighting are substantially reliable, namely: that the height of top of glass should not be less than one-half the depth of the room and that the glass area should be at least one-fifth of the floor area."

Stated in a different way, the amount of light falling on the plane of reading or work should be from five to ten foot-candles—one foot-candle being the light from a candle at the distance of one foot.

The first quoted specification is intended to apply where the windows are on one side only. Where the windows are on two or more sides of the same room, the rule is considerably modified, but still a good one to bear in mind, for it is better to exceed the allowance of daylight than to provide merely the minimum allowance. The rule quoted, however, requires a more generous formula when there is heavy shade just outside the window openings. In fact, the glass area should be increased at least 50% where this condition prevails.

When it comes to window frames, windows and



To Left, Zinc Weather Strip Applied to Inward Opening Casement.

To Right, Zinc Weather Strip Applied to Outward Opening Casement.

window hardware, there is certainly a wide range of choice to fit every need. The many types of sash on the market are known to comparatively few designers. It is a subject worthy of investigation. Double hung wood sash have been on the market the longest and have been the most universally used. Wood recommends itself to many because it is adaptable, easy to cut and fit on the job, takes paint well and is generally recognized as "warm" material—one which resists the loss of heat. By the use of special window hardware, it can be adapted quickly for either inner or outer opening casements or pivoted sash. Of course, with wood sash, the importance of good frames is not to be overestimated. In fact, sash are often blamed for leaks really due to the use of poor frames.

Of recent years, there has been a rapid increase in the use of steel, bronze and other metal sash for all types of buildings. One trend in the use of steel sash which is worthy of note is the use of ventilating panels above and also fixed panels around the opening sash,

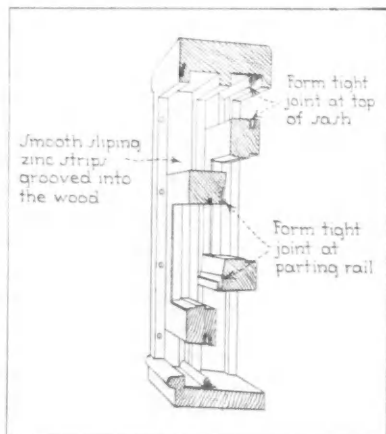
any desired angle; also with cleaning hinges which open the sash in such a way as to make both sides of the window panes easily accessible for cleaning from the interior of the building. This is more important than it might appear, because frequent washing of the glass is essential to good daylighting and the glass is sure to be washed more frequently with this easy cleaning arrangement.

Shades and screens can both be used in conjunction with steel sash but the use of draw curtains is recommended by many manufacturers, rather than to cut off daylight from entering at the top of the window. Daylight falls on windows at an average angle of about 45 degrees and, therefore, the most useful illumination is that which enters at the top of the window and penetrates farthest into the room. Roller shades can also be made to admit this useful light by placing the rollers at the bottom of the sash and running the cord over a pulley at the top.

A new type of screen on a steel frame to match and fit the steel sash is an interesting recent development. It takes but a moment to apply or remove this screen at the inner side of the outward opening steel sash. This screen is made by one of the leading steel sash manufacturers especially to fit their windows and it snaps into position against spring clips on the sash itself. Both the casement adjuster and the window latch work freely and easily through the screen without interference.

It is to the credit of builders, generally, that they were quick to seize the advantages of sun porches, outdoor dining rooms, sleeping porches and conservatories. Visitors from other shores are greatly impressed by the sun porch vogue they see in this country. Heated in the winter and screened for summer use, they easily become social centers of many homes. However, if they are to be delightfully cool on warm summer evenings, as they can be, they should be equipped both with screens and full opening sash. Types of sash are procurable which fold and slide to the extreme ends of the porch, leaving a clear, unobstructed opening to let in the summer breezes. This is a great contribution to living comfort which will appeal to prospective owners and one which resale builders will find effective when demonstrating to prospects.

The average builder is broad and liberal in his policies and possesses more than a modicum of human kindness. Such men realize that "good will" is an asset in their business, even more than in some others. Men of this type, with broad vision, are selling, not homes merely—but homes with real living comfort built into them. They will not skimp on glass, windows or their equipment.



Zinc Weather Strip Applied to Double Hung Wood Sash.

resulting in an increased glass area. This style of sash lends itself to decorative treatment. The window muntins obstruct so little light with steel sash that no shadows are observable from this cause which tend to darken the room. Ventilating steel sash are quite commonly used in good commercial or industrial buildings but their use in panels above casement sash in residential buildings is a more recent development.

Steel sash can be had which open either in or out, which are pivoted either vertically or horizontally and with casement adjusters which secure the sash firmly at

NEXT MONTH "PUTTING THE BASEMENT TO WORK" or How to Sell Seven Rooms in a Six Room House! Don't miss it!!



## Oil Burners Help Sales

*Widespread Installation of Modern Automatic Heat Is Revolutionizing Home Design and Speeding Up the Selling of Speculatively Built Homes*

A STORY FROM THE FIELD

By E. A. MAGURN

**S**TATED in your arm chair, wherever you may be, before your mind's eye let there pass a pageant of progress. What a dazzling array of improvements goes marching by! Airplanes, dirigibles, radios and television may lead the march from a spectacular viewpoint, but, after all, the more vital things are those in daily use by the great masses. In place of rutted dirt roads, we have many thousand miles of smooth, paved highways and automobiles and busses to traverse them at the speed of railroad trains.

Progress in the building and equipping of homes comes even more intimately into our daily lives and, here the newly built homes are startlingly different from those of the horse-and-buggy days. American standards of living have advanced to a new high mark. These standards of living are becoming the envy and despair of foreign peoples. Quite recently, they have aroused international discussion. Factories on the American plan are being built in several European countries and an increasing wage scale looms before European industrialists.

Most Americans are proud of the advanced living standards in this country. They would not willingly change for the conditions existing in any foreign country. They are proud of the fact that our mechanics ride to work in automobiles and have improved housing conditions over any foreign people. But, even here, standards of living are changing—developing with the improvements of a mechanical age.

One of the most important developments towards comfortable, carefree living is the oil burner, with its clean, automatic heat. And this great comfort-convenience is radically changing the design of homes and the resale methods of merchant builders.

I have recently returned from a 600-mile trip interviewing builders; and the question of oil burners was freely discussed. One fact stands out clearly; that, in some of our biggest and best cities, merchant builders and building developers cannot sell their finer homes to advantage unless equipped with oil burners and other modern conveniences of the latest type.

It is difficult to sum up the results of any field investigation in other than general terms. There would scarcely be room to print all the expressed opinions, nor would it be reasonable to expect that all opinions would be the same. You meet "pet peeves" in every trade or profession. One of these, repeated by a number of merchant builders, was the diminishing size of the down payment. It was said by some to have dwindled to the size of the monthly payment. The verdict on oil burners, while not unanimous, was surprisingly close to it in cities where building is active. Actions speak louder than words and builders are certainly buying oil burners. I have in front of me a partial list of 390 builders in the Detroit territory who have bought and installed oil burners—a majority of them repeat buyers and often buyers in considerable quantities. Many of those called on stated that it was practically impossible to sell a home of the better class unless equipped with a good oil burner. Incidentally, the greatest activity, at the time of my visit, seemed to be in the construction of houses having a price range from \$15,000 to \$40,000.

Builders like C. W. Banwell, or Rowland H. Starr, of the Starr-Massoll Company, Detroit, simply regard the oil burner as an essential in the class of homes they are building. On the other hand, the case is slightly different with men like Mr. Brownwell, of the Brown-

well Building Corporation, because his company builds a large number of medium priced homes and also homes in the lower price range. They have built a much smaller proportion of homes in the higher price range; these, however, they have equipped with oil burners.

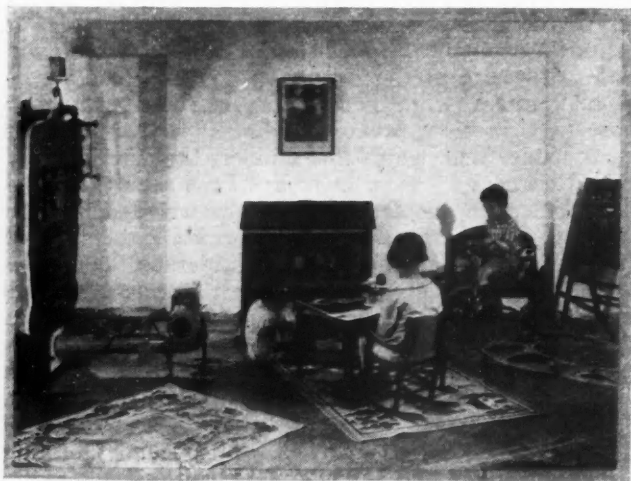
Mr. L. W. Frazer, of the John P. Frazer Company and the Frazer-Couzens Company, stated that they have installed oil burners in high-class single homes but are now specializing in the construction and rental of deluxe terrace apartments in the Grosse Pointe District. The latest group of these terrace buildings, about completed, required 30 oil burners. These apartments rent at sums ranging from \$300 to \$400 per month and Mr. Frazer stated that the installation of oil burners was a necessity for ready rental in this district.

Mr. George R. McKnight, building homes in the Detroit district to sell at around \$40,000, is installing oil burners quite generally and states that his clientele regard them as a necessity in a modern home.

One of the biggest construction companies in Detroit is the Miller-Storm Company, and they are installing oil burners in practically all of their higher priced homes, such as I saw on Holmur and Fairfield Avenues. Many of these homes are being built for resale and oil burners are found to be a popular feature with buyers.

Some other leading Detroit builders installing oil burners are E. A. Moldenhauer, Ray J. Fillion, Walter Gehrke, Hancock and Butler, Charles F. Heathfield, G. W. Hoffman, Hol-Lo-Wen-Quinlan Company, William Parma, Louis G. Palmer & Company, Thomas R. Sharp, R. C. Ranke, William H. Kuni, Leipold and Krause, Frank Couzens Inc., (now operating in Birmingham)—just to mention a few out of several hundred builders who find oil burners extremely effective in making the homes and apartments they build readily salable at profitable figures.

In the metropolitan and suburban areas of New York, Chicago and practically all of our American cities, oil burners are being sold in constantly increasing numbers for installation in both new and old buildings. Some idea of the rapid progress made by the oil burner industry may be gathered from the production and installation figures. Government figures on production show an output of 300,000 burners in 1928, compared with 100,000 in 1924. Even more impressive are the installation figures compiled by the Oil Heating Institute, which show that the number of domestic oil burner installations, as of January 1st, 1929, was 422,700, compared with 50,000 domestic oil burners installed in 1921.



**A Play Room for the Children Right Along Side the Oil Burner.**



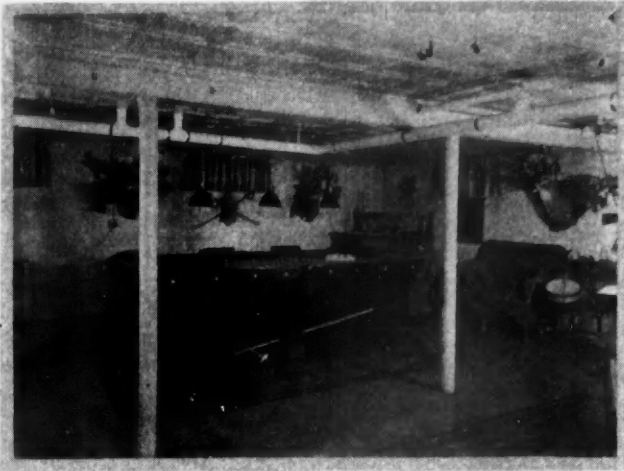
**This Basement Makes a Well-lighted Business-like Home Office.**

Practically all the builders I called on are installing oil burners in their residential buildings. Most of them are erecting homes of the better class, built to sell at prices ranging from \$18,000 to \$40,000, or apartments renting at several hundred dollars per month. On the other hand, there are sure and certain signs that oil burners are going to be installed more generally in medium priced homes and apartments. How is it possible, you ask, for a builder to add to his other equipment expense an oil burner and tanks costing several hundred dollars?

The first thing evident is that the buyer eventually pays for the land, the building and all the equipment in it. The financing charge to cover easy payments, if any, must also be included in the sale price. The cost of the built-in equipment in the building may all properly be included in the appraisal and building loan. The builder only loses when he cannot find a buyer. Here is a fact worth considering: the unsold houses are not the ones with attractive equipment in them but those which do not offer attractive equipment.

A further answer to this question leads at once to a discussion of design and building costs. Any builder knows that a heavy percentage of his costs on residential projects lies in the basement—its excavation, concreting, beams, posts, partitions, stairs and windows, without taking into account all the mechanical equipment. This cost will rarely be less than 15% and frequently in excess of 20% of the completed cost of the house or bungalow. Thus, we have, say, one-fifth of the entire structural cost invested in the basement, which, in the past, has been rather dark, musty and dusty—space wasted except to house the heating plant, the coal bin and, possibly, the laundry. This should give designers food for thought.

What the oil burner has already done for the basement indicates the future transformation of this space. Photographic evidence presented herewith shows full-length windows—casements at that—installed in basements of modern homes with oil burners. The use of such windows has, so far, been confined mainly to recreation rooms in basements. It seems certain that this practice will grow and extend to the entire basement space, which will then be thoroughly daylighted. With the basement properly waterproofed, damp-proofed and finished—as it should be, in any case—the space made available for clean, automatic heat may be used by designers to reduce, if advisable, the number of rooms upstairs and the total cost of construction.



**A Billiard- and Game-room in the Basement Has Strong Appeal.**

It does not take much imagination to foresee how basement space will develop along the lines of increasing usefulness. Already, it has become the practice to plan a recreation room in the basement of an oil heated home, but numerous other uses have also been made. Infinite variety is the only way to characterize the use of this space. I had the pleasure of inspecting, recently, plans for a rather costly home in a suburb of Chicago, which is to have oil heat and a bowling alley in the basement. At one side of the recreation room is to be a full-size fireplace and mantel of unique design. There will probably be a billiard table and a children's playroom also in the basement.

A basement playroom for children is one of the most popular ideas in connection with the oil heated home. There are so many days in the year when the weather is wet, windy, dismal or cold for outdoor play. The basement playroom is then a great boon to the family with children. Also, when it becomes dark outside or when the children have toys which require electrical connection or a smooth floor, it is ideal for them.

One basement playroom described to the writer had a ramp entrance leading in from the outside grade, up and down which children can easily trundle play wagons, bicycles or wheel toys of any description.

Ballrooms have been installed in basements of the newer oil-heated homes and the trend is to provide features for the entertainment of guests. Let me describe a typical basement as built in Detroit for a home to cost about \$20,000 and to be equipped with oil heat, electrical refrigeration and many other conveniences. This was one of a number being built in the general vicinity of Fairfield, Wildemere and Holmur Avenues, not far south of Seven Mile Road. This house was almost completed when the builder, Mr. C. W. Banwell, showed me through. The basement was partitioned by load-bearing partitions, so that no beams or posts were required. The whole basement was plastered and painted and the foundation walls were cement-plastered, tarred outside and plastered inside over a damp-proof plaster bond. Mr. Banwell has "Dutch" doors installed between the refreshment room and recreation room in another house he has built.

The basement was so arranged that it could be reached from the main hallway upstairs without going through kitchen or dining room, or else direct from the service door. There was a good size recreation room with plenty of windows, a refreshment room, a boiler room, a fruit room, a laundry and a lavatory and toilet room

in the basement. Provision was made for electrical refrigeration downstairs and the refreshment room was so arranged that guests could readily be served in the recreation room.

An interesting basement is that in the recently built home of Mr. Rowland H. Starr, of the Starr-Massoll Company, Detroit, which is equipped with an oil burner and many other features. Mr. Starr is an engineer and designer and has utilized part of his basement as a combined "den" and recreation room and here he has a desk, filing cases and typewriters, in addition to the facilities in his company's downtown office in the Majestic Building. Mr. Starr's basement room has full length, steel casement windows daylighted from outside areaways.

Practically all the higher priced homes designed with basement recreation rooms have more formal reception rooms upstairs. But the recreation room, with its informal atmosphere, is the more popular. As one hostess put it—"We receive our guests upstairs but we entertain our friends down here." There is plenty of room for big divans and overstuffed furniture and a general feeling of informality and ease. Some of these basement recreation rooms are handsomely furnished and many have pianos, radios, victrolas and other musical instruments in evidence. Surely this basement space will long be held in affectionate remembrance because of the good times enjoyed there.

These features are all made possible, of course, because of the clean, quiet, automatic operation of the modern oil burner. The power type of burner is in wide general use. "Gravity" types which require no electric power, cost considerably less. Thermostats are furnished with some of the best "gravity" burners. In the "gravity" type burner, the oil is vaporized by means of a heat manifold and burns with an intense heat. The thermostat governs the operation, but, in the absence of pilot light or electric ignition, cannot stop and start the burner.

With the power type of burner, full automatic operation is possible. Heat regulators or thermostats will start the fire at any time by turning up the pilot light or the electric ignition together with the oil supply. These thermostats can be set for any desired temperature and will maintain this temperature despite the fluctuation of the weather outside. Without them, automatic operation would be impossible. Some thermostats are furnished with clocks which change the temperature setting at pre-determined hours. With this arrangement, a



**A Clean Basement Oil Heated Makes a Comfortable Den.**

cooler temperature can be maintained at night than in the daytime and the house temperature can be brought up to 70 degrees before the members of the family are out of bed in the morning.

Practically all the power burners use electric power to pump and spray the oil; some of them use a mechanical method of atomizing the oil and some of them also vaporize by heat. With many of them, air is delivered under pressure at the nozzle in a converging stream, to mix with the oil as it enters the combustion chamber. Rotary type burners use the centrifugal principle to break up and atomize the oil, some with spinning oil cups; others with slotted devices. Some types of burners spray the oil in a jet against refractory firebrick at the far side of the combustion chamber, following the principle of most of the industrial burners. Others project flaming oil in circular form from a central point towards the walls of the combustion chamber. Many oil burner manufacturers can regulate the shape of the flame to suit either circular or oblong types of boilers and furnaces.

Tanks are necessary with any type of oil burner and there is a distinct operating economy in providing adequate tank capacity.

The minimum installation is to have one tank of 100 gallons capacity, and one of 50 gallons capacity, located in the basement. A much better arrangement is to have a large tank outside, underground, with a capacity of, say, 1000 gallons, in addition to the inside tank. The price of fuel oil is considerably lower in the larger quantities. However, in localities where daily deliveries can be had from tank wagons or trucks, many owners prefer to buy in the smaller quantities. For this reason, builders hesitate to add the investment expense of larger tanks. As a matter of operating economy, the larger tank will pay for itself in time.

Oil burners are not usually sold on the basis of effecting a saving over other types of fuel but rather on the extra comfort and labor saving of clean, even automatic heat. There are, however, well authenticated cases of oil heat having shown an economy over coal in the same heating plant. One of the large oil burner companies has had so many of these cases come to light that they are preparing an advertising campaign in which this evidence will be published. Operating costs are largely governed by the design and construction of the building, as well as the heating plant. The use of plenty of good insulation in the walls and under the roof, together with winter windows in exposed locations, is sure to prevent excessive heat loss. With oil heating, thermostatically controlled, the full value of the insulation economy may be realized. In the past, oil heating has cost more than with the cheaper grades of coal, unless indirect costs are taken into consideration. With

such grades of coal, however, there is more than the usual amount of soot, ashes, dirt and dust. This causes greater expense for redecorating interiors and for the cleaning of curtains and drapes. Also, there is often a labor expense in the hand-firing of coal and the removal of ashes. With these items considered, oil heating may readily be the more economical, to say nothing of the great gains in living comfort and freedom from household labor.

In comparing heating costs with coal and oil, it is well to remember that heating plants designed for coal burning can be still further improved when especially designed for oil burning. It is safe to predict that, with the more general use of boilers and furnaces especially designed for oil fuel, there will be a marked lowering of costs and even more efficient operation.

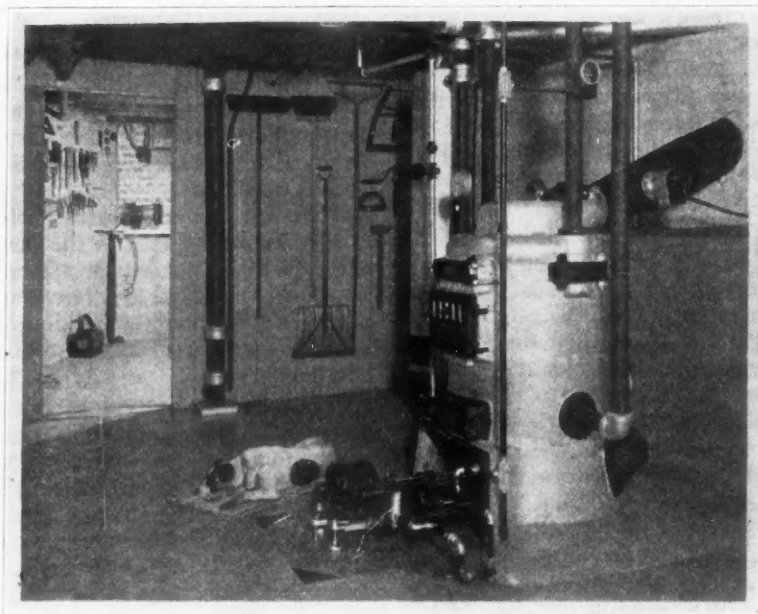
There was exhibited at several of the oil burner conventions a warm air furnace especially designed for oil heat. An unusually long fire travel was provided which it was claimed increased the heating efficiency and lowered the operating cost. One of the largest companies manufacturing heating equipment has recently announced two types of boilers especially designed for oil

burning. These boilers have extra length of flues and should produce far better results with oil burners than former types. They will undoubtedly provide more heat from a given quantity of oil.

In apartment building operation, there is a labor saving economy in the use of oil burners contrasted with the operation of hand-fired coal boilers, depending on the size of the building and the rules of the local janitor's union. If coal is to be hand-fired, an extra janitor might easily be required. In such a case, the oil burner should be credited

with the payroll expense of one janitor. In this way, the oil burner would pay for itself in a year or two. A very large percentage of oil burner sales go into apartment buildings, apartment hotels, club, church, school, store, commercial and amusement buildings and every builder should know the possibilities of efficient oil burner operation in buildings of these types, as well as in individual homes.

How will the oil burner affect the future design of homes? We have already seen how it is affecting the design of homes in the higher price range. It will not stop there. In fact, it is altogether likely that automatic oilheat will cause the evolution of an entirely new type of home within the lower price range. This will be a dwelling with practically all the comforts of the larger, higher priced homes but with enough waste space eliminated to bring the cost down sufficiently to pay for oil burner and tanks. That the oil burner manufacturers



**Good Housekeeping in the Basement is Encouraged  
Where Clean Fuel is Used.**

(Continued to Page 130)





*Typical Modern Department Store—Gold & Co., Lincoln, Neb.*

## Today's Department stores\*

*Modern Buying Whims, Service Demands and Conveniences Must All Be Considered When Building*

By GUS HENNING

**T**HERE is no use in referring to the department store of the past as it is passe! Retailing today has become a profession, and the building and its equipment can be considered the tools with which the job is done.

It is sad, but nevertheless true, that there are fewer architects and builders specializing on department stores than any other specialized field. The amount of money invested in this field totals billions of dollars and it is safe to say that several millions are spent each year in building new department stores and remodeling those that exist.

Today's department store is many stories high. This is due to the high cost of land, taxes, and the scarcity of choice locations in the heart of the business districts. In Pittsburgh selling is conducted as high as the twelfth and fourteenth story. There is no set height—the average store throughout the country ranging from four to eight stories. The ten, twelve, fourteen and higher storied buildings are located in about ten of our large cities.

Steel and concrete form the major materials used in construction. With the exception of interior equipment no wood is used. Doors throughout the building are of metal. Walls, if there are any, used to separate sections are all of hollow tile or are built as part of the building and made of brick or concrete. The finish of our modern stores is not confined to any particular material. Some are of concrete while others are of art brick or terra cotta or a combination of both. A number of stores are finished in tile faced brick that allows the building to be cleaned easily.

Plenty of entrances are an asset to any store and especially so to the modern department store. This is due to the fact that they cover so much ground and the

average customer desires an entrance that will lead her into or near the department in which she desires to make a purchase. Display windows are considered a valuable business getter and each year more money is spent on making them such. Mass displays are a thing of the past. The unit idea of display is used today and this necessitates giving attention to the permanent backgrounds, lighting, flooring, etc. The background today is either caen stone or composition. If wood is used it is finished in a soft finish such as French gray or cream. These backgrounds eliminate objectionable shadows from without. Natural wood, such as walnut, oak or maple is seldom used today. The floors of the windows are either of hardwood, marble, travertine or built with a stone border and the center depressed so that special floors can be installed for different displays.

Window lighting has developed into an art. Many stores are equipping their windows with three banks of lights, arranged along the upper front, so that the display manager can obtain any intensity of light he desires. In modern windows there are provisions made so that spotlights can be used. All windows are closed off from the store and ventilated.

The modern store strives for a high main floor. Eighteen to twenty feet are considered ordinary heights, while some stores have a height of twenty-seven feet in the clear. Hanging ceilings are springing into popularity as they allow all sprinkler pipes and tubing to be concealed. Art has been put into the pillars and today most pillars are being enclosed with marble or composition. The upper floors vary in height and the top story usually is the lowest.

Flooring is an important subject in the store. Most stores are turning to floors of travertine, marble, tile, or composition. As a rule the upper floors are of maple

\*This is the third of a series on the Important Classes of Structures other than Residential which go to make up the total building activity of American Builder readers. Next month PUBLIC SCHOOLS will be surveyed—Editor



Ready-to-Wear  
Sold Mid  
Splendor at the  
Robert Simpson  
Co., Ltd.,  
Toronto, Canada.  
All goods  
behind fixtures.

rest or lounging room has really become a necessity to the average store. Here the tired (?) shopper spends hours reading the books and magazines furnished by the store; uses the store's writing paper and envelopes; keeps appointments with her friends and expects to get any and all kinds of information that she desires. In the larger cities a section

or parquet, the ready-to-wear floors being covered with carpet.

An important factor in retailing today is the proper placing of departments and the location of allied lines of merchandise. On the main floor are the smaller lines of merchandise such as stationery, jewelry, leather goods, handkerchiefs, hosiery, silk underwear, etc. On the traffic aisles we place what we call impulse goods. This type of goods is what a customer is drawn to and buys because it appeals to her eye. Popular priced jewelry, leather bags, novelties and such are included in this type of goods.

Showcase counters are used wherever possible, thus, the counter actually becomes a display case at the same time. Wall cases are all of unit construction. This allows them to be taken apart and used wherever desired. A wrench, screwdriver and hammer are all that is needed to make a shift. In the ready-to-wear sections all fixtures are constructed so that most of the merchandise is behind glass. Provisions have been included for fitting rooms. These are sumptuously furnished today.

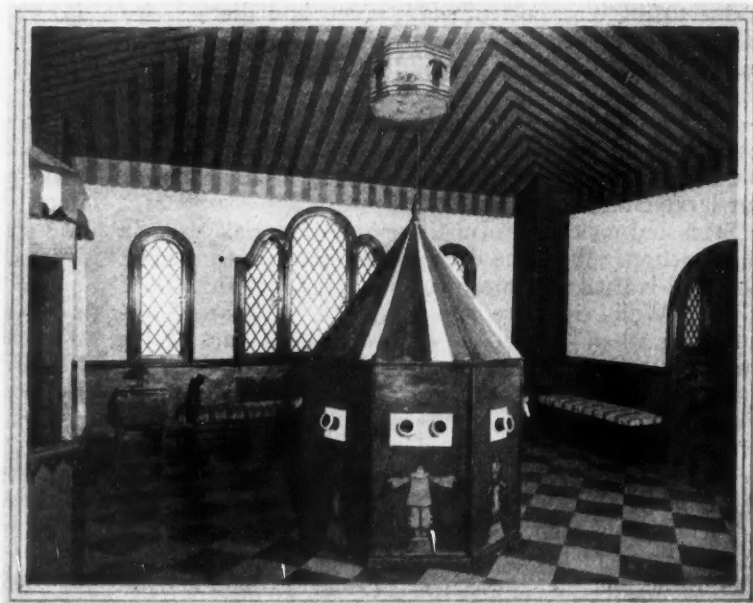
While the merchandise in the store is an important factor, the services and equipment necessary to sell it constitute a greater factor. If a store is not up to the minute in every respect it is almost impossible to dispose of the goods. The public want SERVICE. By service is meant a lot of frills which in many cases have nothing whatever to do with the merchandise.

Customers expect an air of dignity and grandeur surrounding the merchandise. A

is set apart for the sale of theatre tickets, railroad tickets, a telegraph desk and public telephones. In addition, in many stores, there is a service desk on each floor where the customer can get all kinds of service similar to that furnished in the lounge. Writing rooms and smoking rooms for both women and men are becoming common. Circulating ice water with free paper cups is expected on every floor.

A customers' restaurant is another added feature that is connected with every modern store. This usually is located on one of the upper floors and usually where the diners can obtain a fair view of the city if the store building is high enough. A soda fountain and buffet luncheonette is another feature found in both the large and small store. This usually is located at the rear of the first floor or in the basement.

A fur storage section has become a necessity to the store of today. In the past the store made arrange-



The Kiddie's Play Room and, on  
Opposite Page, Their Barber  
Shop at the J. L. Hudson Co.  
Store, Detroit, Mich.

**Main Aisles of Lord & Taylor, New York. The ceilings are built concave. Ceilings, pillars and floor are all of travertine.**



ments with an outside storage plant to store its customers' furs. Today this business has become so large that the store has the vaults built into the store building or in a service building if the store operates one. These storage vaults require an elaborate set of refrigerating machines which, as a rule, are placed in the pent houses on the roof. Adjoining these

pent houses are a number of rooms for cleaning and examining the furs, garments, rugs and other items before they are placed in the vaults. Many stores have two sets of these rooms. One is located on the storage floor and those on the roof are just wire enclosures.

Vertical transportation of customers has always been and is yet, a problem for every store. The average customer will not walk up stairs. Elevators have been added to each store, one store in New York operating thirty-six elevators. Even with this number of elevators the vertical transportation problem was not solved. This store has recently installed a complete set of up and down escalators.

The escalators, or modern moving staircase, has gone a long way toward helping to solve the question. One large Pittsburgh store has sixty-six such escalators in addition to its large elevator equipment. The president of this company recently stated, "We have found that

women favor the escalator because of its unique safety, hygienic advantages and convenience." There are many things in favor of the escalator. Its original cost may be about twice that of an elevator but it is operated automatically, no operator being needed as in an elevator. It has a continuous motion and customers get on and off while it moves. It can be operated by a very small motor and the safety factor is greater than with an elevator. The elevator in use today is of the self leveling and automatic door opening type. The automatic stop elevator is being used in much of the new construction work.

Proper lighting of the store has made great strides of late. In the past any kind of light was good enough as long as it dispelled darkness. Today the store demands perfect light that approaches daylight. No longer will a customer go to a door or window to match colors. She buys a color as she sees it under the store's lighting system and has come to depend on the light. Where actual daylight colors are desired lamps which produce daylight effects are placed on the tops of the counters. The lighting unit has gone through many stages and today it is a work of art in addition to being efficient. The old idea of a large number of units placed indiscriminately has disappeared and today there usually is one large unit in the center of each well.

Within the last decade the proper ventilation of stores has received great attention. Air ducts are placed throughout the store. In some cases they are built around the bottom of the columns and in others they are



**The Cost of This Children's Barber Shop Exceeds the Cost of an Entire Department Store Building of Former Years.**

placed against the ceiling. The air usually passes through water to remove dust and dirt and is then driven through the ducts by a large blower. Many of the ventilating systems recondition the air so that much of the same air is used over and over. The ventilating plant in many of the larger stores is such that the air is warmed in the winter and refrigerated in the summer. One large store recently installed a refrigerating air plant at a cost of more than one million dollars. This plant supplies refrigerated air to the main floor and basement of the store and is a trade getter.

Every store requires stock rooms. These must be placed in a location from which merchandise can be hastily obtained. These are placed in the basement in some stores although in the majority of stores the stock rooms are placed on the top floor. Automatic dumbwaiters are used to bring the merchandise down or a spiral chute is used. The chute is so built that a deflecting blade on each floor causes the goods to slide on to a landing. No longer must a customer wait until a messenger goes to the stock room and brings the merchandise down on the elevator. The salesperson simply calls the stock room on the department-stockroom telephone and the stock clerk places the goods on the chute or dumbwaiter. The goods are in the department within a few minutes.

Of late many of the large stores are selling certain lines of merchandise from sample and filling the orders from the warehouse. These lines embrace housefurnishings, rugs, china, large toys and in some cases toilet goods packed in glass. This system is carried out in most stores that have a remote delivery station.

Every progressive store gives much thought to its employees' welfare. Locker rooms are provided for their garments. A restaurant is provided where they can purchase food at cost. Rest rooms are set apart for male and female employees. A hospital is maintained with a registered nurse in attendance and some stores have incorporated a roof garden for their employees. Usually the hospital is divided so as to take care of customers if an emergency arises. Many of the stores maintain a rest house or camp, which is located in the country and to which employees are sent if they are ill or they may spend their vacations at this camp.

No store is complete without a basement where mer-

chandise is sold. The basement has developed to the point where in the larger stores in the larger cities it is a complete store in itself. Almost every line of merchandise that is sold in the upper part of the store is sold in the basement. These basement stores are operated by a separate force than that which operates the upstairs store. At one time the basement fixtures consisted of nothing but tables, counters and shelves that were erected by the store carpenter or a local cabinet maker. Today the fixtures used in the basement store are duplicates of those used in the upper store. Lighting and ventilating

progress have been responsible for uplifting the basement to its present standing.

There is hardly a store that does not maintain a delivery department. In fact this service is a necessity as there are many items in the store that cannot be carried on account of their size or weight. The cost of this service exceeds one million dollars per year in some stores. Fleets of vehicles ranging from three or four vehicles to nearly three hundred are used to deliver the merchandise purchased.

The location and layout of the delivery are important. The ideal location was considered in the basement of the store building. However, in the larger cities this space has become too valuable for selling purposes and some stores are erecting remote delivery stations. In these instances the parcels reach a designated section of the basement through a spiral chute. They are then placed in wheelers or locked ham-

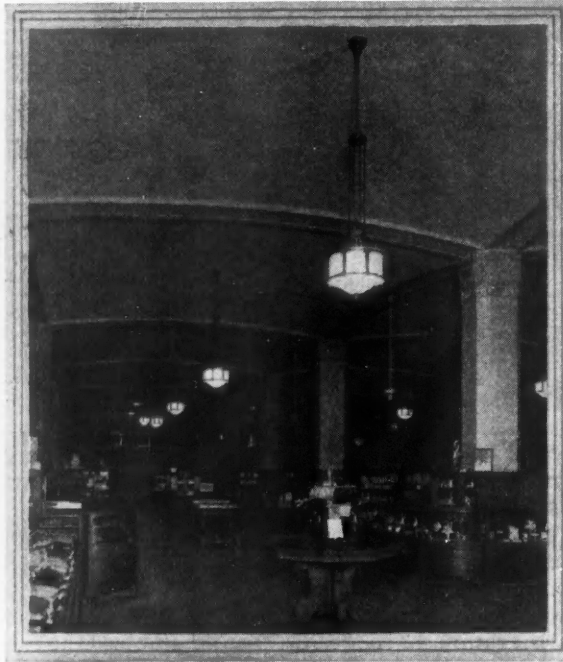
pers and are then relayed to the remote station where they are sorted, recorded and finally delivered to the customer.

A delivery department requires a section where the parcels are received and sorted and then each vehicle requires two bins for the parcels that it must deliver. One bin receives the parcels when they are sorted and after being recorded they are placed in the other bin, known as the driver's bin. There must be room enough in the delivery department to take care of the peak number of parcels and still it must be small enough not to become a burden throughout the dull or quiet seasons.

In addition to the delivery section the store must maintain a garage where its vehicles are housed.

In the store of today there are many invisible services that play a great part in the success of the store. Pneumatic tubes that silently carry the cash from all parts of the store to one point; inter-store telephone systems that connect all parts of the store, bookkeeping, credit and auditing offices together with all buying offices; the heating plant of the store that must be efficient yet inconspicuous; the water service system that furnishes water for drinking, fire sprinklers and lavatories. These are all things that must be given attention.

The retail store of today requires a far different building than that of years ago. Then any building would do. Today, however, every phase of the store's life and operations must be considered.



Store of Neiman-Marcus Co., Dallas, Texas, a Recent Building; Lighting Units in a Modernistic Design.

## SCHOOLS next month

John A. McNamara, author of "Hospitals of Today" presented in August *AMERICAN BUILDER*, will cover "Modern Schools" in November. Follow this helpful series.

# One Thousand Dollars Saved!

## *A Satisfactory Scheme for Doing Away with Inside Trim Details on Next Two Pages*

By CHARLES P. RAWSON, *Architect*

UP to sixty or seventy years ago American houses were built with door jambs, door and window casings, and base boards all in place before the lathing and plastering was done, and the plastering was carried against the trim. Then came the period of extremely heavy and ornamental interior trim and the use of stained and varnished woods. As these could not well be put on before plastering, the use of grounds was introduced. Later on when the cost of lumber, mill-work and labor had reduced trim to the minimum and paint returned to use, no change in the method of installing was made.

With the advent of plaster for exterior use and the extensive adoption of Spanish and other European styles, it was found desirable to do away with both exterior and interior trim, but no method of doing so was developed. During the recent building boom in Florida where the Spanish style was almost universally used, and where cost and the saving of time were very important factors to be considered, the author introduced the type of trim and method of use detailed on the following pages. It has since been used in other parts of the country quite extensively, and successfully so.

Among the many advantages of this trim may be mentioned:

1. It may be made up in from 10-foot to 16-foot strips at the mill and quickly put together on the job, the window jambs, head and sill being all from the same kind of strip; and both interior and exterior door jambs and head being the same. This is a big saving in mill-work.

2. It does away with one piece of studding around all openings.

3. It eliminates entirely the use of grounds for plastering.

4. It saves entirely the purchase and installation of all interior casings and base and of all exterior trim around doors and windows. One can readily see what a saving in cost of mill-work and labor this will amount to.

5. The first coat of painting is done while the material is still in strip form and the second before plastering is done.

6. As only the final painting and the hanging of the doors and sash have to be completed after the plastering, a saving of several weeks in the completion and occupancy of the house is made.

7. It makes a job neater and more true to style.

8. It gives a plaster reveal around exterior openings and keeps them from leaking.

9. It saves exterior maintenance.

It has been found that a saving of nearly \$1000 and a month of time can be made by the use of this trim in a seven-room house.

With all of these points in its favor, it seems likely that this style of finish will soon become universal. Its use may not be confined simply to homes of Spanish and Italian design, but proper adaptation may be made for other domestic architectural types also.

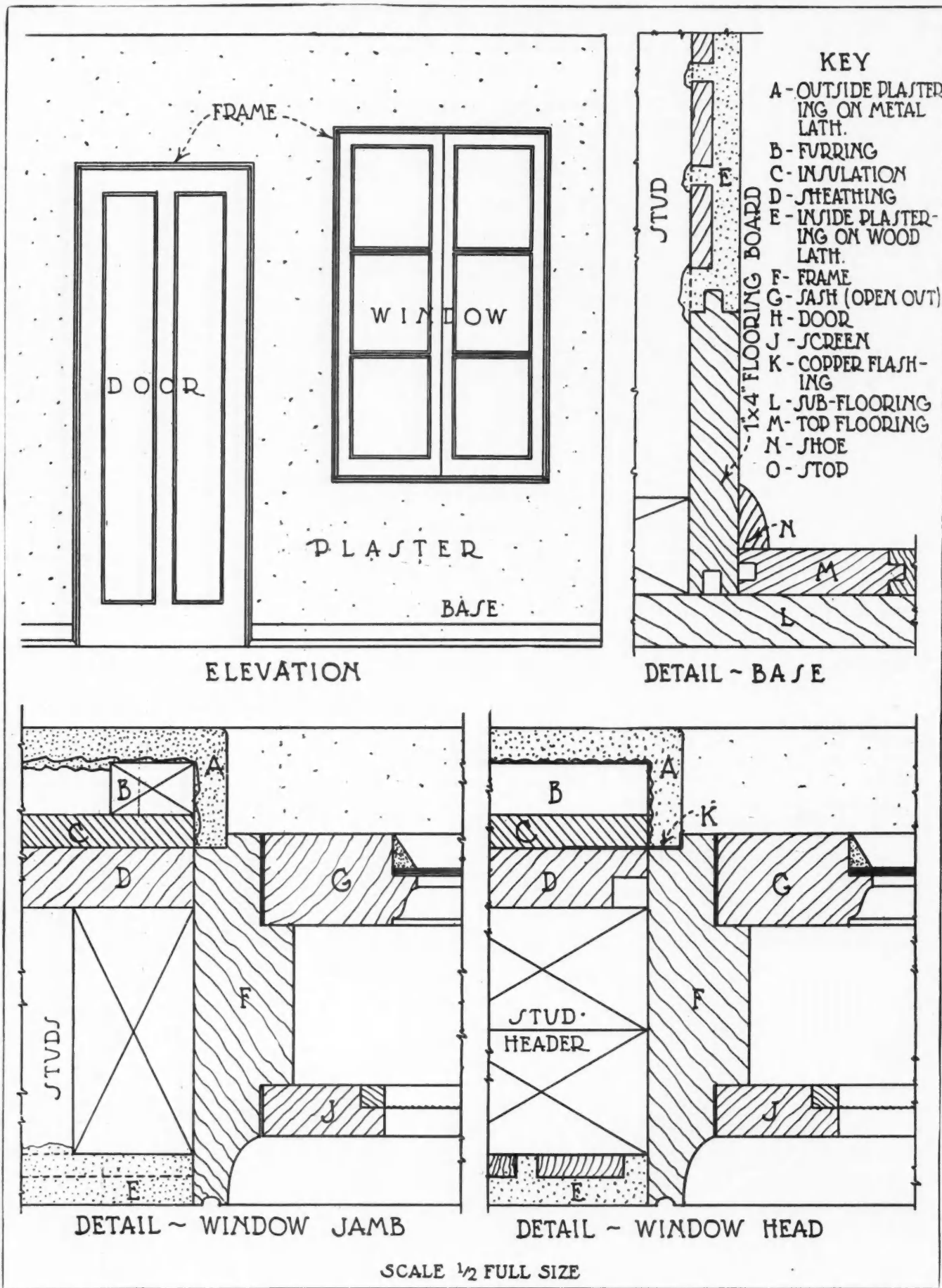
Of course, opposed to this no trim tendency, there is developing a more generous use of wood for interiors.

*Have you ever used this or any similar No-Trim method? Seems to be O. K. for Spanish or Italian Style Homes. Will this plan prove out? Write us your ideas.*

—The Editors



Unique Sales Office of J. B. Ransom Company, Los Angeles, Successful Building Developers, Simulates a Mountain Range and Suggests the Scenic Beauties of Their Properties.

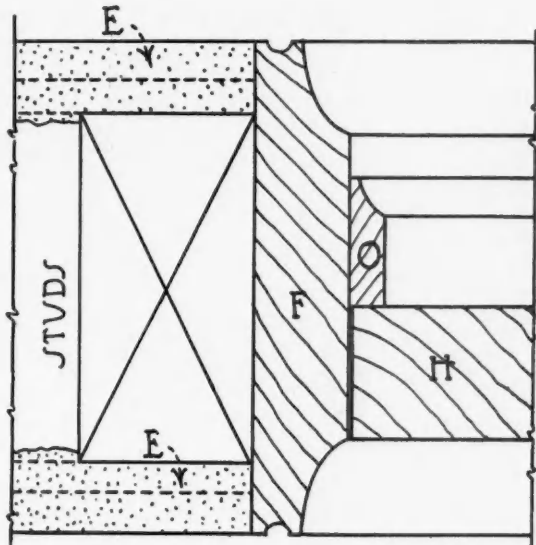


**S**PANISH and Italian Styles Favor Trimless Rooms. The Author Recommends These Details for Low Cost and High Quality. \$1000.00 Saved on a 7-Room House!

NOTE:-

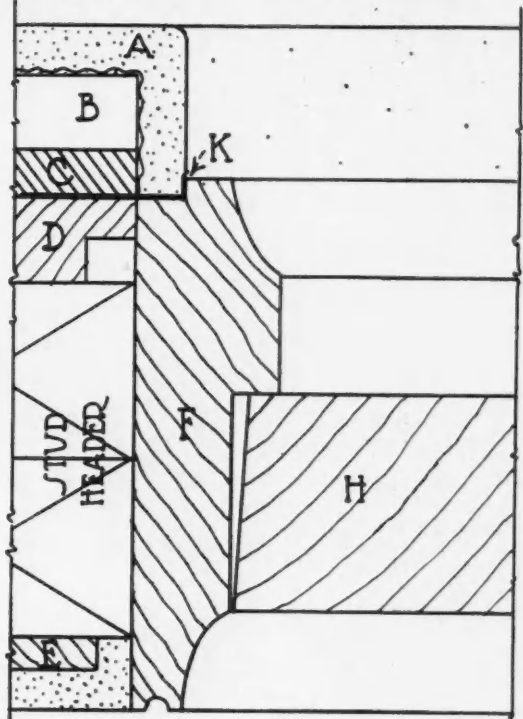
THE USE OF THIS FRAME FOR DOORS AND WINDOWS DOES AWAY WITH GROUNDS AND INTERIOR TRIM ENTIRELY AND ALLOWS OUTSIDE PLASTER TO RETURN AGAINST THE FRAMES INSTEAD OF USING OUTSIDE TRIM.

THIS FRAME MATERIAL MAY BE MADE IN TEN-FOOT TO SIXTEEN-FOOT STRIPS AT THE MILL AND MADE UP ON THE JOB. THEY SHOULD BE PAINTED TWO COATS BEFORE PLASTERING. ONLY FINAL PAINTING IS NECESSARY AFTER PLASTERING TO COMPLETE THE WORK.

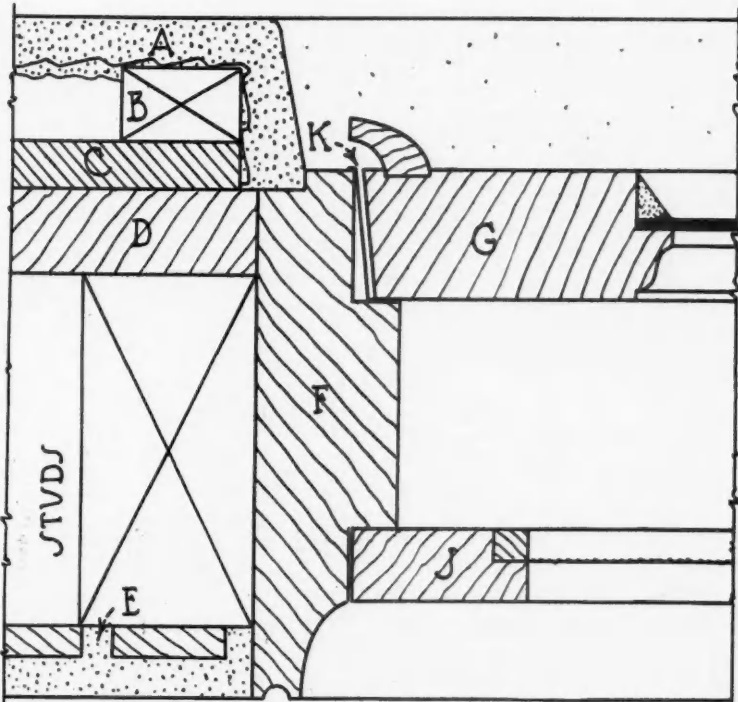


DETAIL ~ INSIDE DOOR HEAD

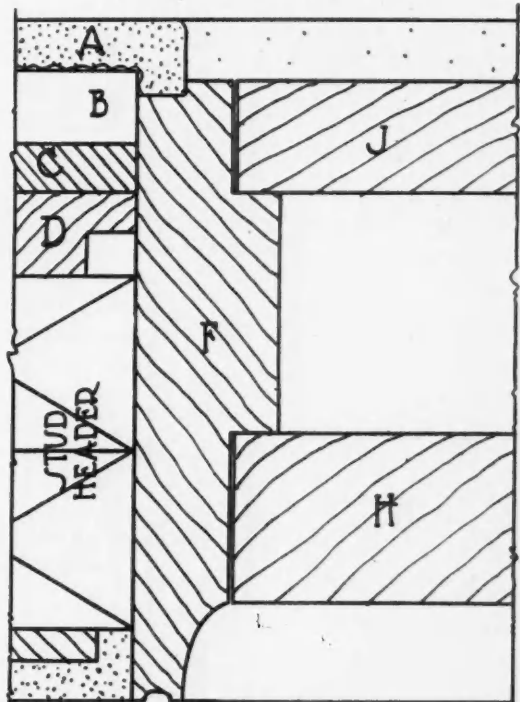
NOTE:-  
INSIDE AND  
OUTSIDE DOOR  
JAMBS ARE  
SIMILAR TO  
DOOR HEADS



DETAIL ~ OUTSIDE DOOR HEAD  
(WITHOUT SCREEN)



DETAIL ~ WINDOW SILL



DETAIL ~ OUTSIDE DOOR HEAD  
(WITH SCREEN)

BY CHARLES P. RAWSON, ARCHITECT ~ SCALE 1/2 FULL SIZE

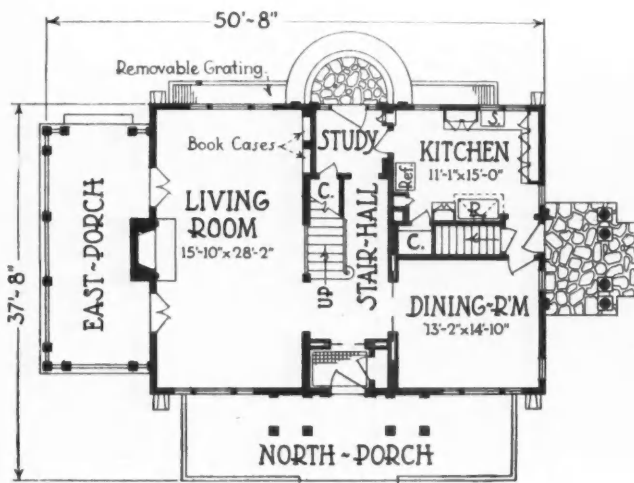
**C**OMBINED Frames and Trim for Doors and Windows Where No Inside or Outside Wood Work Is to Show. See Author's Explanation on Page 99.



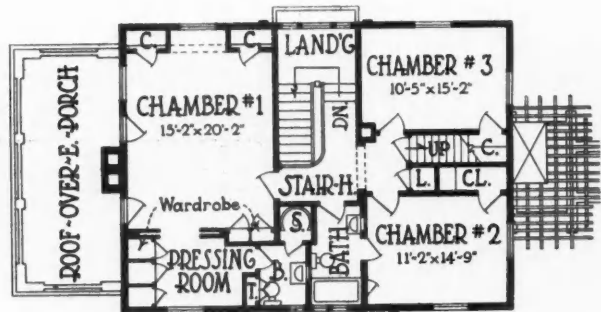
HANSEN AND WAGGONER, Mason City, Iowa, Architects

# HIGH COLUMNS ADD DIGNITY

*True Southern Colonial home of six rooms and two baths, all of generous proportions and well arranged.*



FIRST-FLOOR-PLAN



SECOND-FLOOR-PLAN





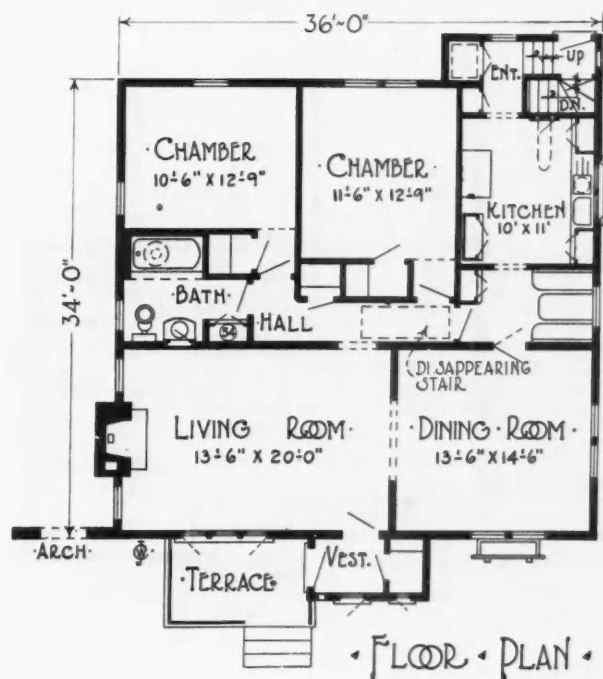
## WITH CHARMING PERSONALITY

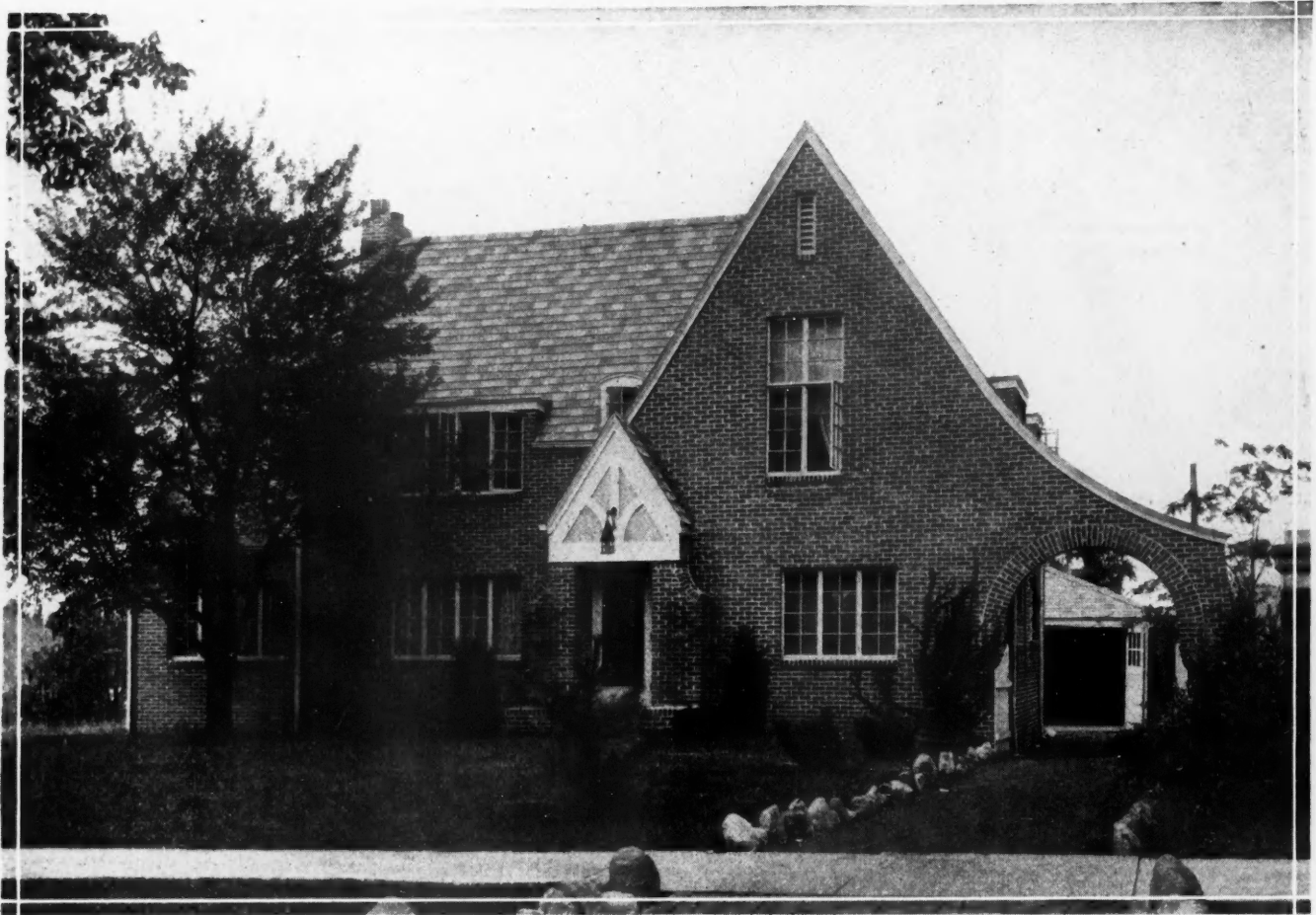
*This Shingled Cottage was first built near Seattle and has been a popular development house, selling quickly to the discriminating.*

### SERVICE TO HOME BUILDERS

*Throughout this magazine we present many building designs. A variety of home plans are included, selected from many parts of the United States and designed by various architects of standing.*

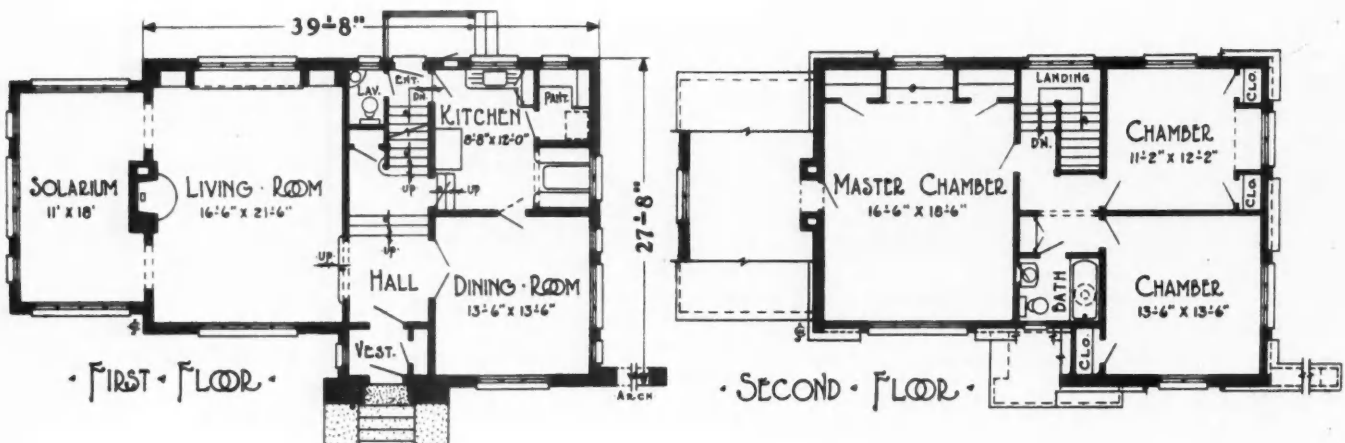
*The "American Builder" will gladly serve its readers by bringing them together with these architects if any further information or plans are desired for any of these designs. Address the American Builder Home Planning Service, 105 West Adams Street, Chicago, or 30 Church Street, New York City.*





## ARCHED DRIVE ADDS WIDTH

*Clever trick of design builds out an impressive front, besides giving to the roof an extra graceful curve.*

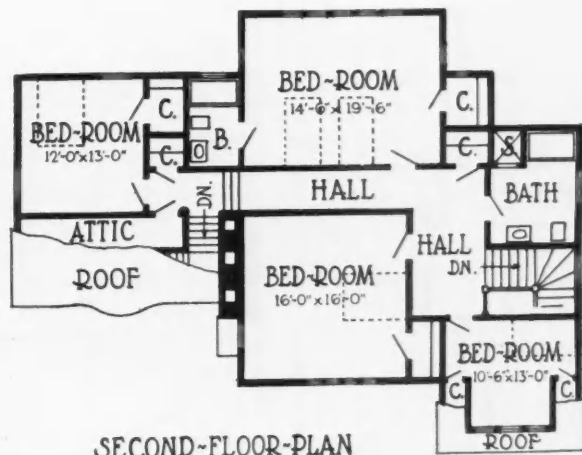
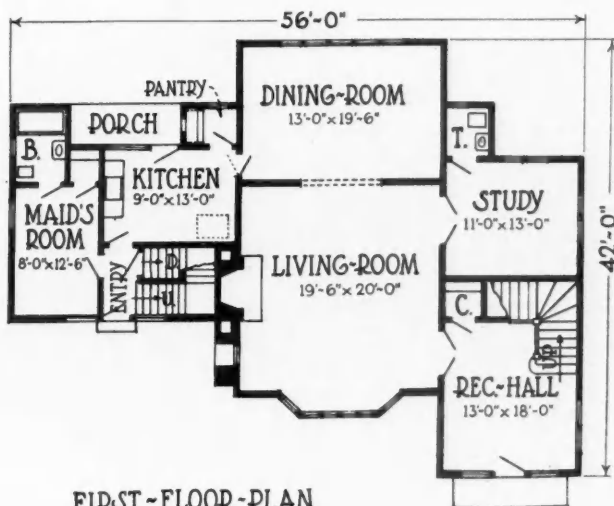




CHARLES C. MAY, New York City, Architect

## RAMBLING AND RUGGED

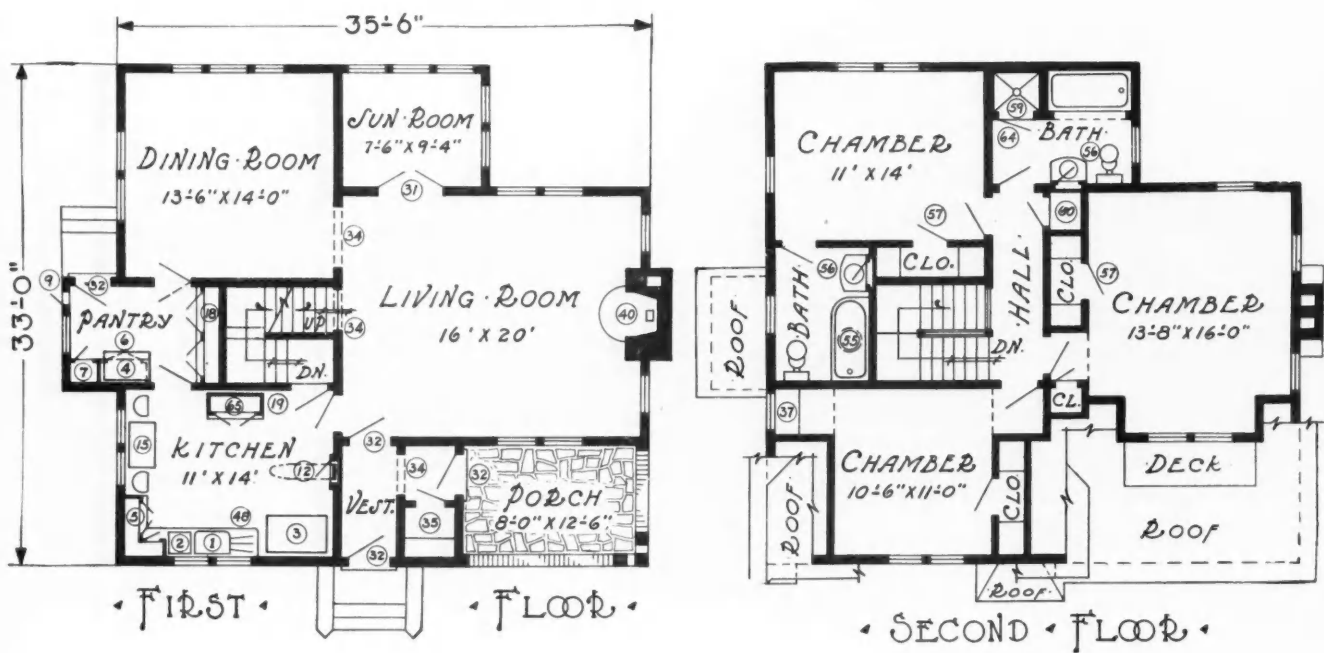
*Rough slate in mingled colors tops appropriately the Old English walls of cement plaster on hollow tile. Hewn timber work in harmony.*





## UNUSUALLY GOOD LAYOUT

*The kitchen is toward the street, the dining room and living room face the garden. Three big bed rooms and two baths.*

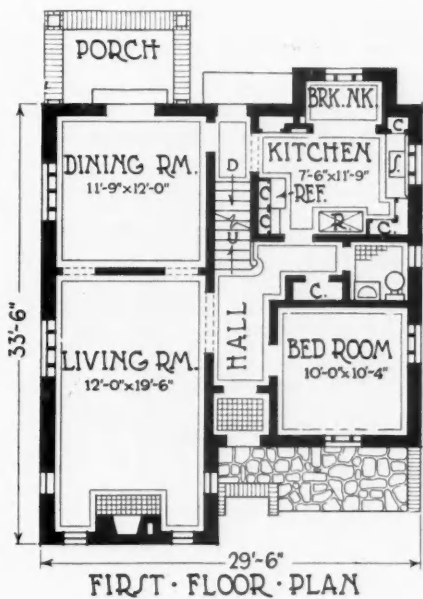


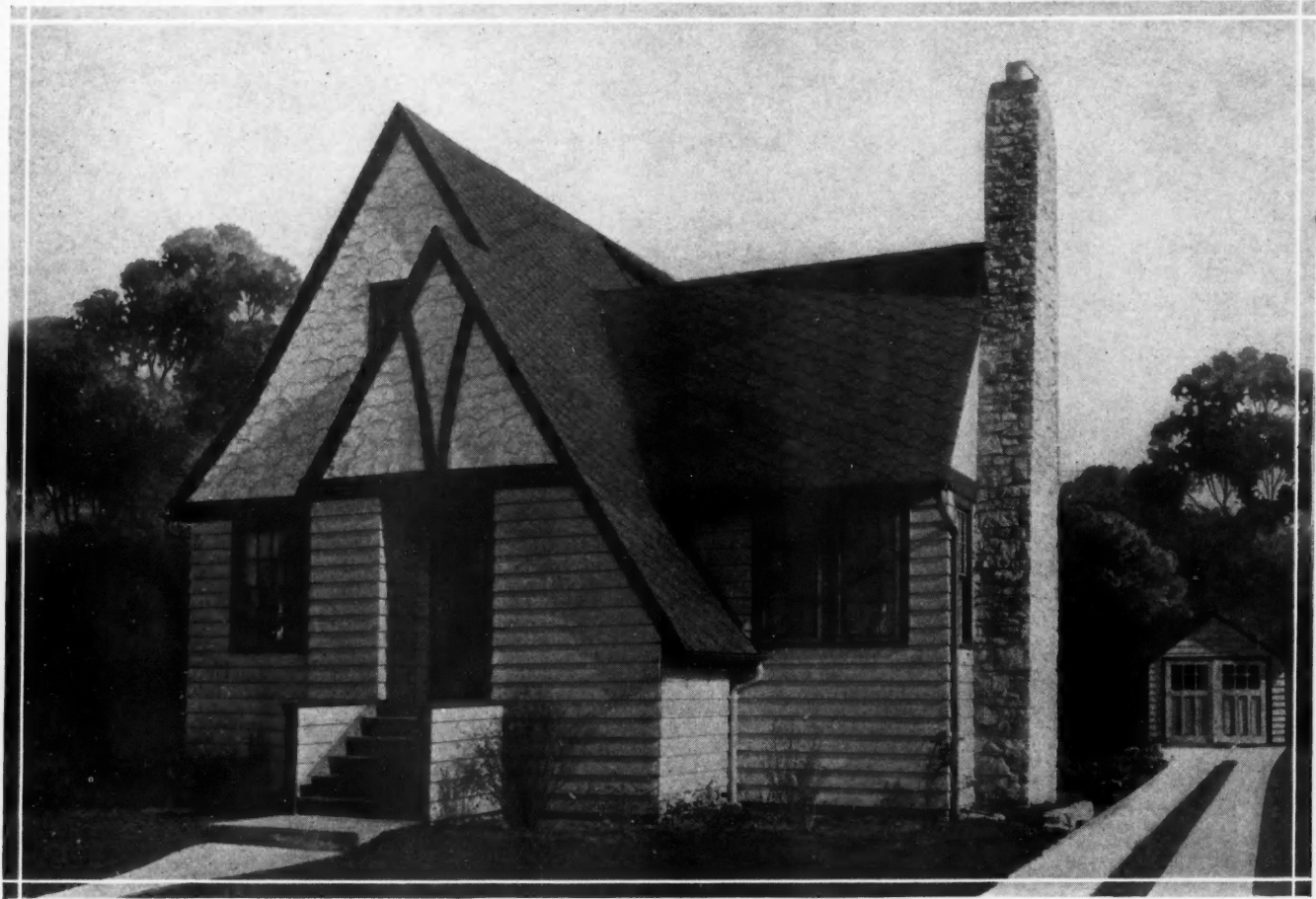


PALMER PLAN HOMES, INC., Detroit, Architects and Builders

## A QUICK SELLING HOME

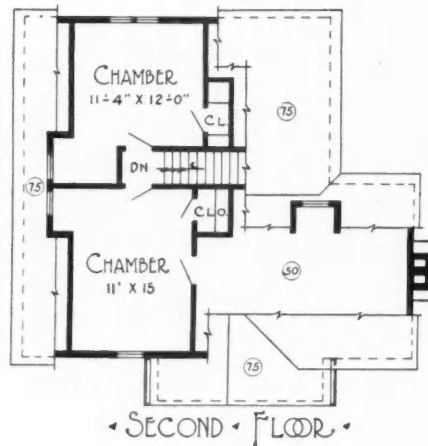
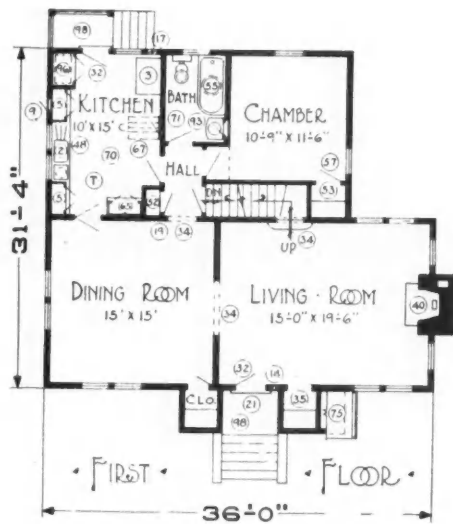
*Compact, yet ample, this six-room-and-bath home, with garage and driveway, goes nicely on a forty-foot lot.*





## LOW COST AND HIGH VALUE

*Merchant-Builders have used this design with success. It is a quick seller always,—offering individuality and style.*

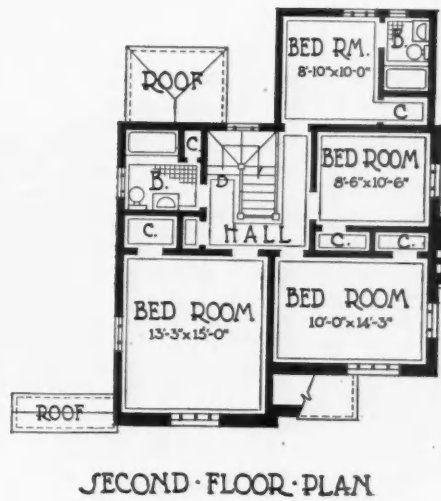


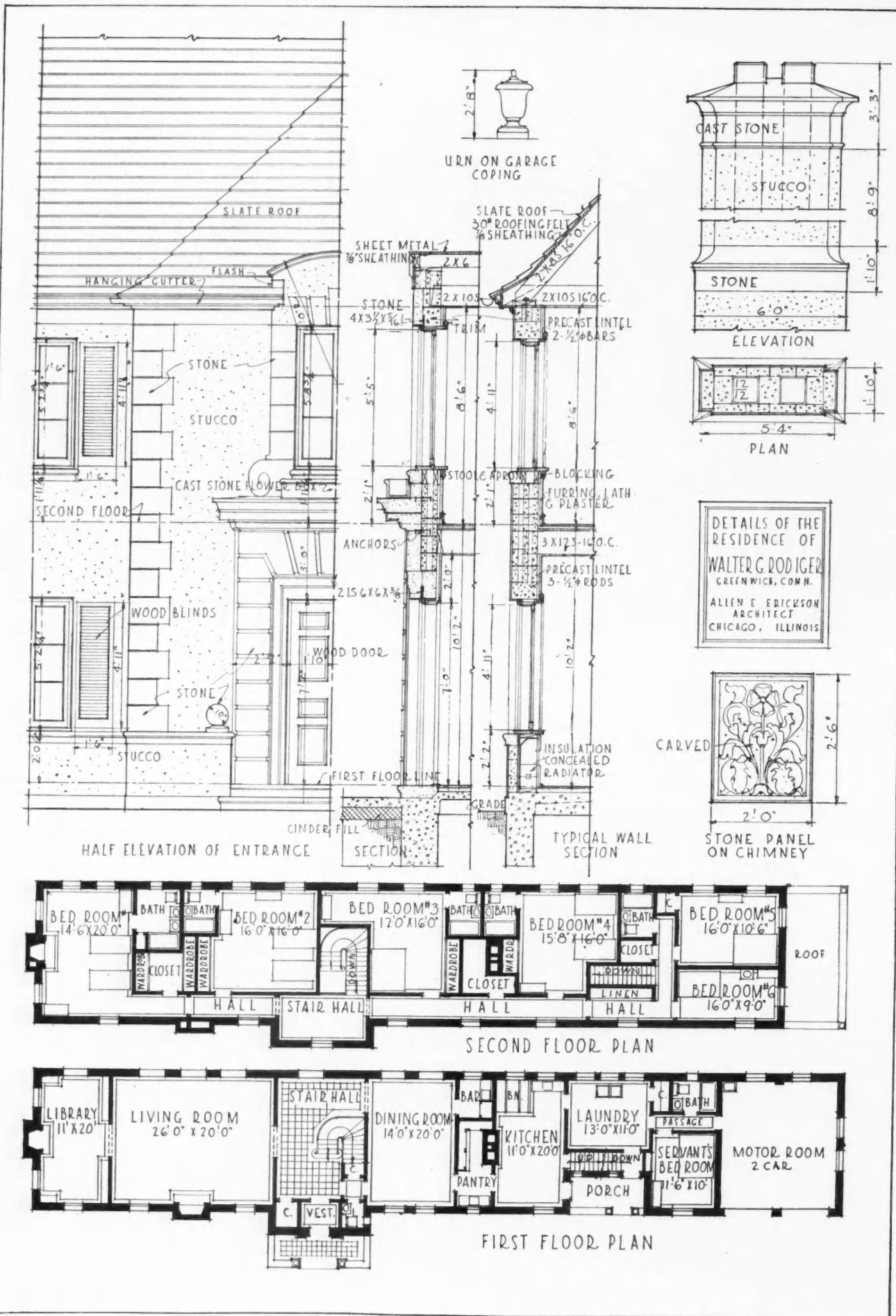


PALMER PLAN HOMES, INC., Detroit, Architects and Builders

## VERY POPULAR IN DETROIT

*Extra large windows and plenty of them help to draw the buyers to this cheerful, well-arranged, substantial home.*





Floor Plans and Details of French Country Type Home Illustrated Opposite.



# French Type

## *Design and Details of Home Built at Greenwich, Conn.*

By ALLEN E. ERICKSON, A. I. A.  
*Architect*

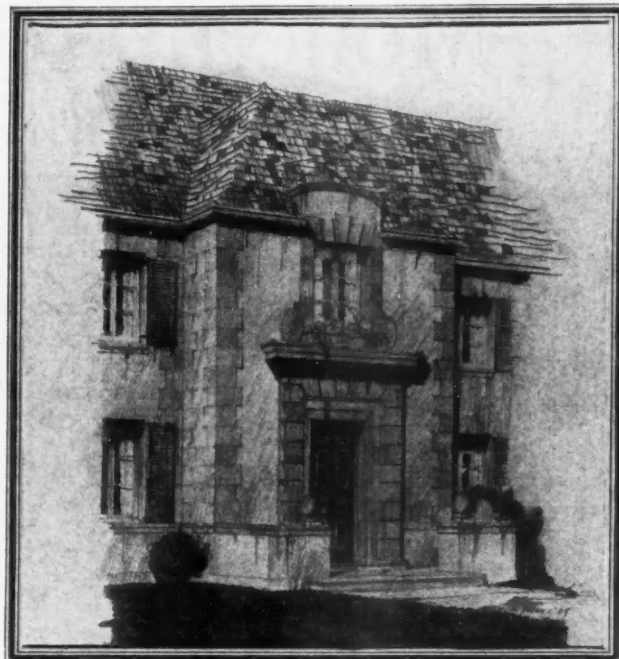
PEOPLE, having traveled extensively, often return to their own country imbued with a desire to build a home. France has been visited by many who have been charmed by the French domestic architecture.

In the design of this house, the French type of country house was kept in mind and the plan was built up in as simple a form as possible with good proportion and proper use of materials.

The design of this house is emphasized in the use of materials. The main entrance detail is most charming and yet simple. The smooth plaster surfaces accentuate the stone entrance and stone quoins on the corners. Chimneys at the end of the library and in the living room serve to accentuate this type of architecture. The unusual high pitch on the roof which is covered by slate has a distinct French feeling. All windows are casements and have shutters. The terrace doors likewise are of the French type and are equipped with shutters.

The house was designed to fit a particular plot of ground which had a fairly level approach from the road to the entrance. Immediately back of the site of the house, the ground sloped down considerably affording a splendid view. Due to this natural setting, the house was planned with rooms of the first floor opening upon a paved terrace. The logical arrangement of the first floor rooms is illustrated in the block plan. The service portion of the first floor contains a completely equipped laundry, servant's bedroom and bath, large closet space, an outside porch and the two-car garage.

The second floor contains 6 rooms and 5 baths. Bedrooms 1, 2, 3 and 4 each have private bath and are for members of the family. Bedrooms 5 and 6 are



for servants and are provided with one bath. The arrangement of the second floor gives access to the bedrooms by means of two halls. The rooms are all of good size and well lighted.

The construction is one of great stability. The walls are built of concrete masonry covered with three coats of portland cement stucco. Furring and metal lath has been applied to the interior. The house has been insulated throughout and is heated with gas.

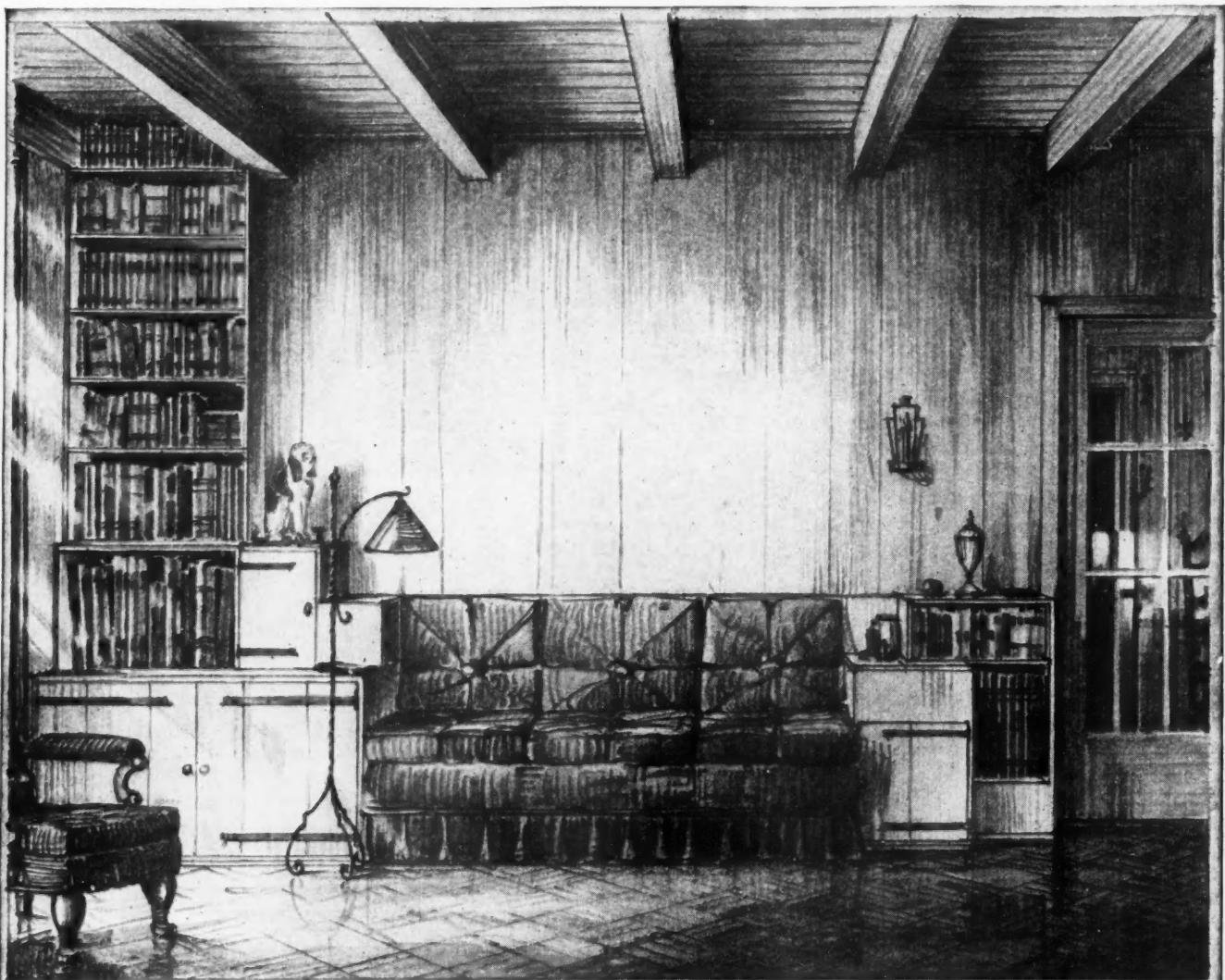
Several items which are unusual in this plan are the fuel lift from the wood storage in basement to a trap door underneath the stairway. Fuel is thus brought up for the living room fireplace. In the kitchen is a breakfast nook for the servants. There is a large incinerator which has a separate flue in the main chimney. Heating in the main rooms is by concealed units built into the walls.

In the carpentry details of this house, use was made of stock details of wood work, trim, doors, etc. An unusual saving was thus affected. The sash were sized so that many were of the same size, there being only four different sizes of windows called for.



# Modern Home Interiors

*The Fourth of a Series of Plates*



## A BUILT-IN DAVENPORT ENSEMBLE

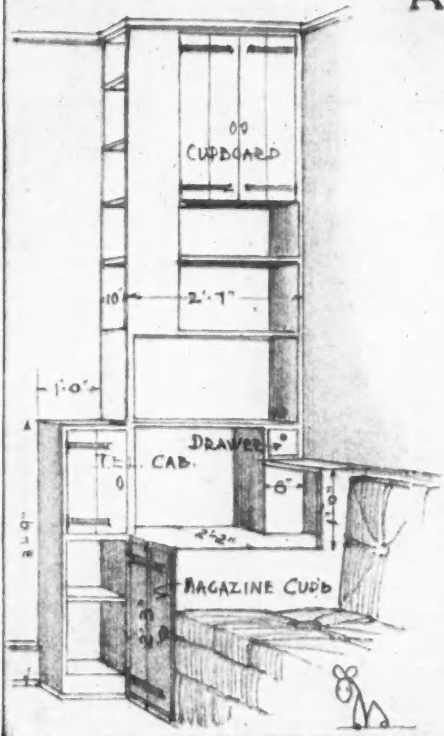
MODERNISTIC DECORATION NEED NOT BE SO RADICAL AS TO UPSET FAVORED TRADITIONS & ESTABLISHED PREFERENCES.

THE INFORMALITY PERMITTED IN THE NEW STYLE IS OF OBVIOUS ADVANTAGE:

- ① LESS HEAVY FURNITURE TO MOVE WHEN CLEANING;
- ② SIMPLE AND SUBSTANTIAL CONSTRUCTION;
- ③ LESS EXPENSIVE MATERIALS MAY BE USED;
- ④ A ROOM MAY BE WELL FURNISHED IN THE COMPACT ENSEMBLE MANNER WITHOUT OVER-CROWDING THE FLOOR.
- ⑤ THERE IS MORE FLEXIBILITY IN DECORATION AND MORE ADAPTABILITY TO PERSONAL REQUIREMENTS.

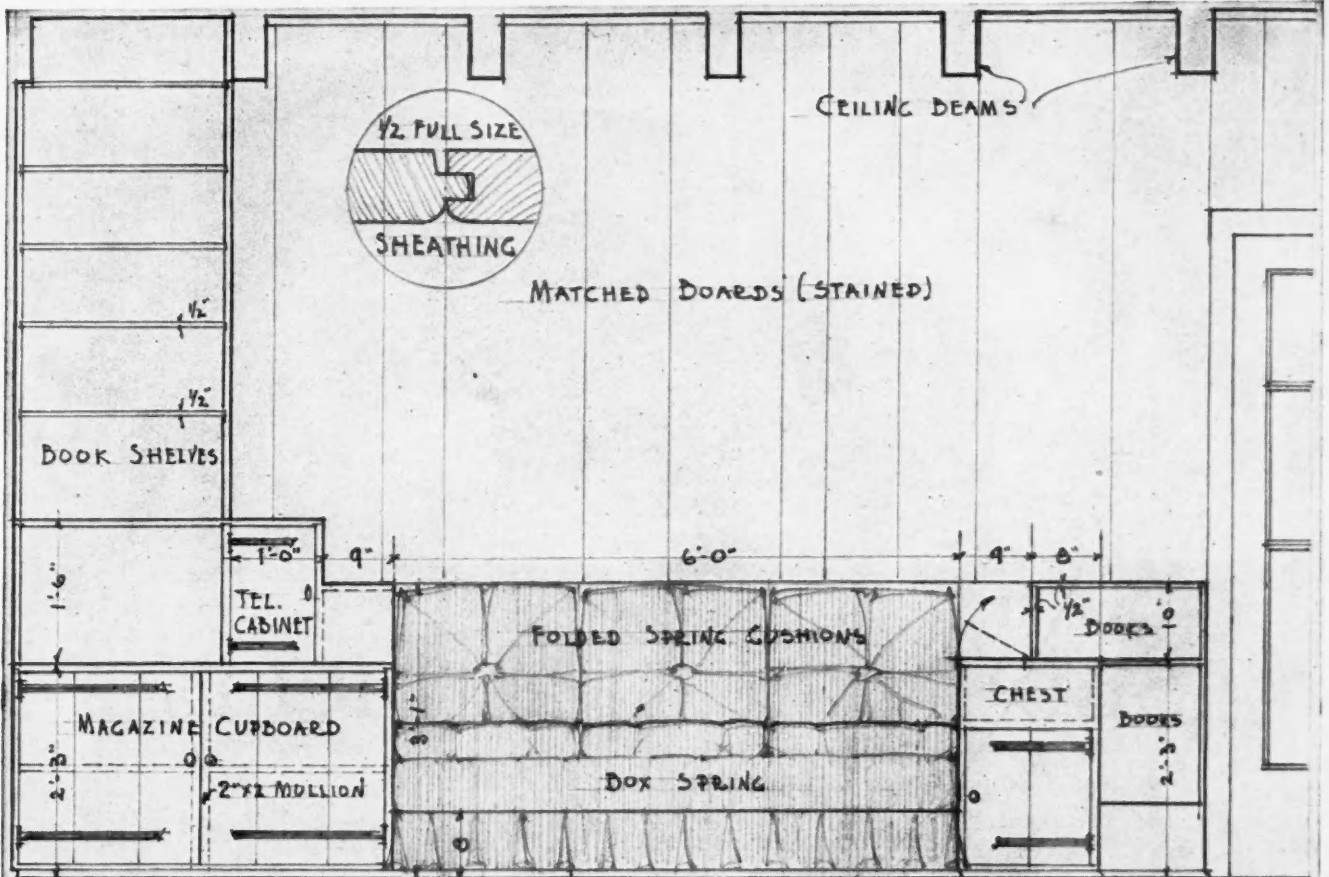
AT THE LEFT IS A VARIATION REQUIRING LESS ROOM. NOTE THE BUILT-IN TELEPHONE CABINET.

THIS ENSEMBLE MAY BE BUILT IN SECTIONS AT ONE'S CONVENIENCE.

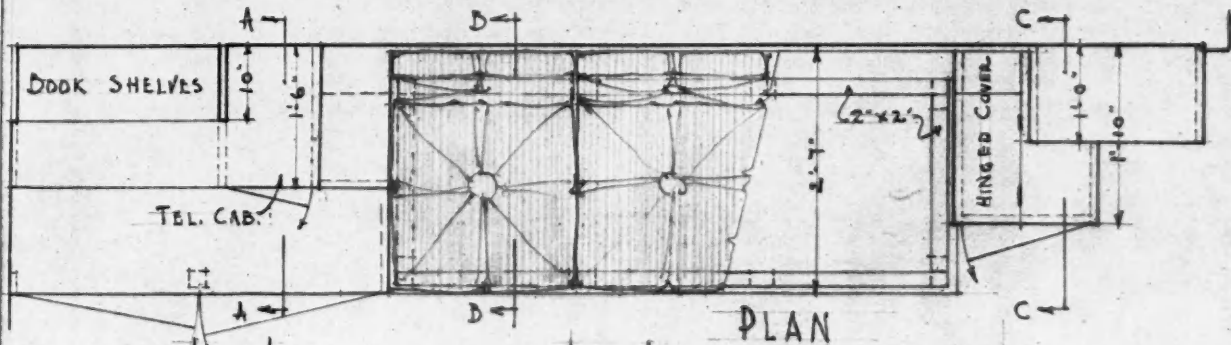


# —Details of a Living Room

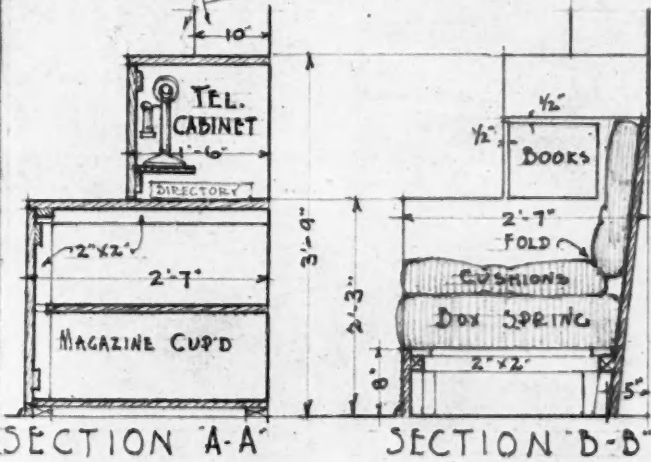
Prepared by Eldred Mowery and Richard G. Kimbell



ELEVATION OF DAVENPORT AND BOOK SHELVES

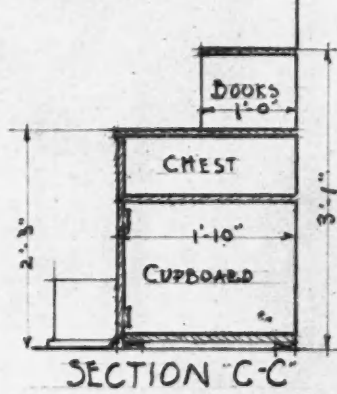


PLAN



SECTION A-A

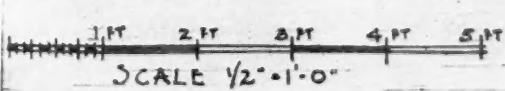
SECTION B-B



SECTION C-C

**NOTE -**

ALL JOINTS SHOULD BE RABBITED, GLOUED, & NAILED. USE 1/2" MATERIAL FOR DOORS, SHELVES & MIRROR PARTS.



## CONSTRUCTION DETAILS

FOR DAVENPORT & BOOK SHELVES ON PRECEDING PAGE



# Suburban Apartments

*Three Interesting Designs Presented*

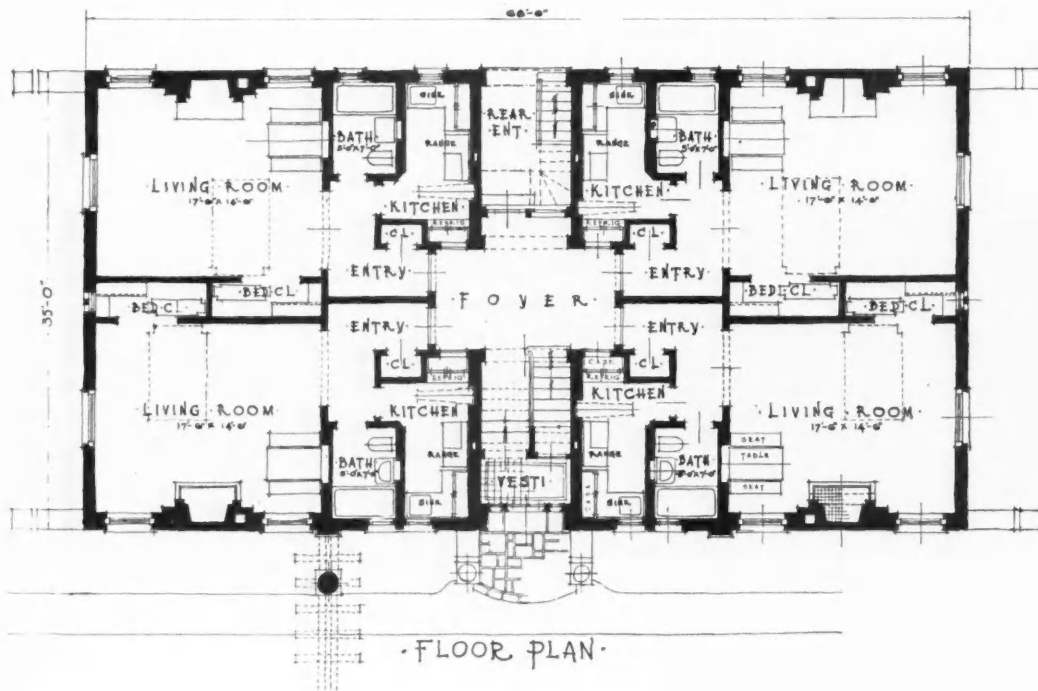
By WILLIAM G. and ARTHUR W. KRIEG

*Architects*

**T**WO story apartment buildings containing from four to eight units are mostly built in suburban districts and smaller cities where property is reasonable in cost.

The need for buildings of this kind develops in or

close to residential districts. Children will grow up and get married; they prefer to live alone, but are not ready to assume the responsibilities and care of a house and garden. So they seek a small apartment as close as possible to where ma or pa live.



Ground Floor Plan for the Two-Story Eight-Apartment Building Pictured Above.

Vacant property with good transportation exists close to residential neighborhoods nearly everywhere, and the small apartment house on a fair size lot with surrounding lawns and gardens is not detrimental to any residential district and provides modern housing for the younger generation in the neighborhood of their youth.

The illustrations on these three pages show three of this kind of buildings as designed by William G. and Arthur W. Krieg, Architects, of Chicago.

Good light and air circulation with views of gardens and lawns in every direction are the keynotes of planning in these buildings, not forgetting essential modern equipment, arrangement of rooms and the all-important item of income on the investment.

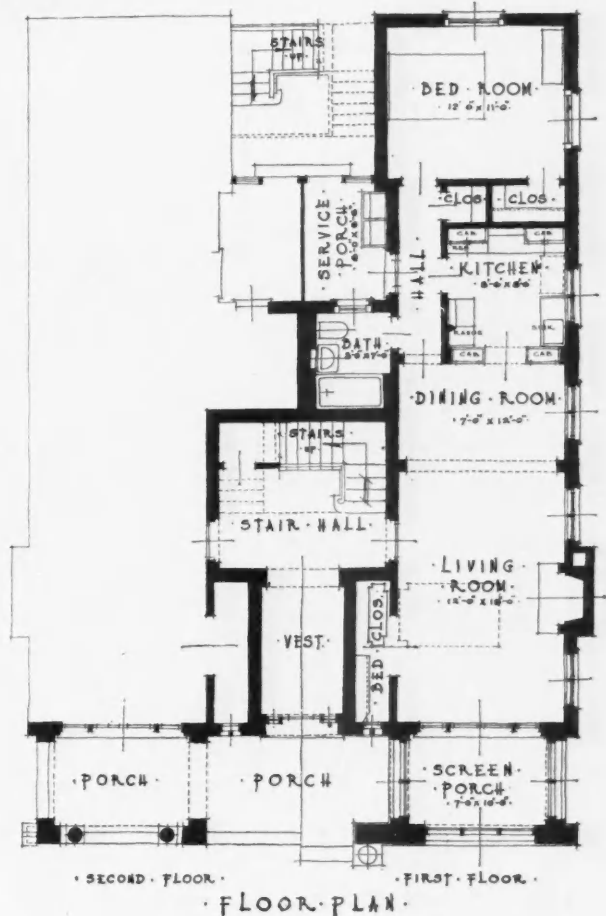
In some instances as shown in the perspective on page 114, a pair of buildings with driveway and formal gardens between make a pleasing development; and as suburban lots are nearly always longer than city lots, there is ample room for the housing of automobiles back of the buildings.

The buildings here illustrated are not stock or book plans but are the original preliminary drawings from which the final building plans have been made embodying the special requirements of the owners. They contain ideas that may be useful to others who own suburban vacant and do not know how best to improve it.

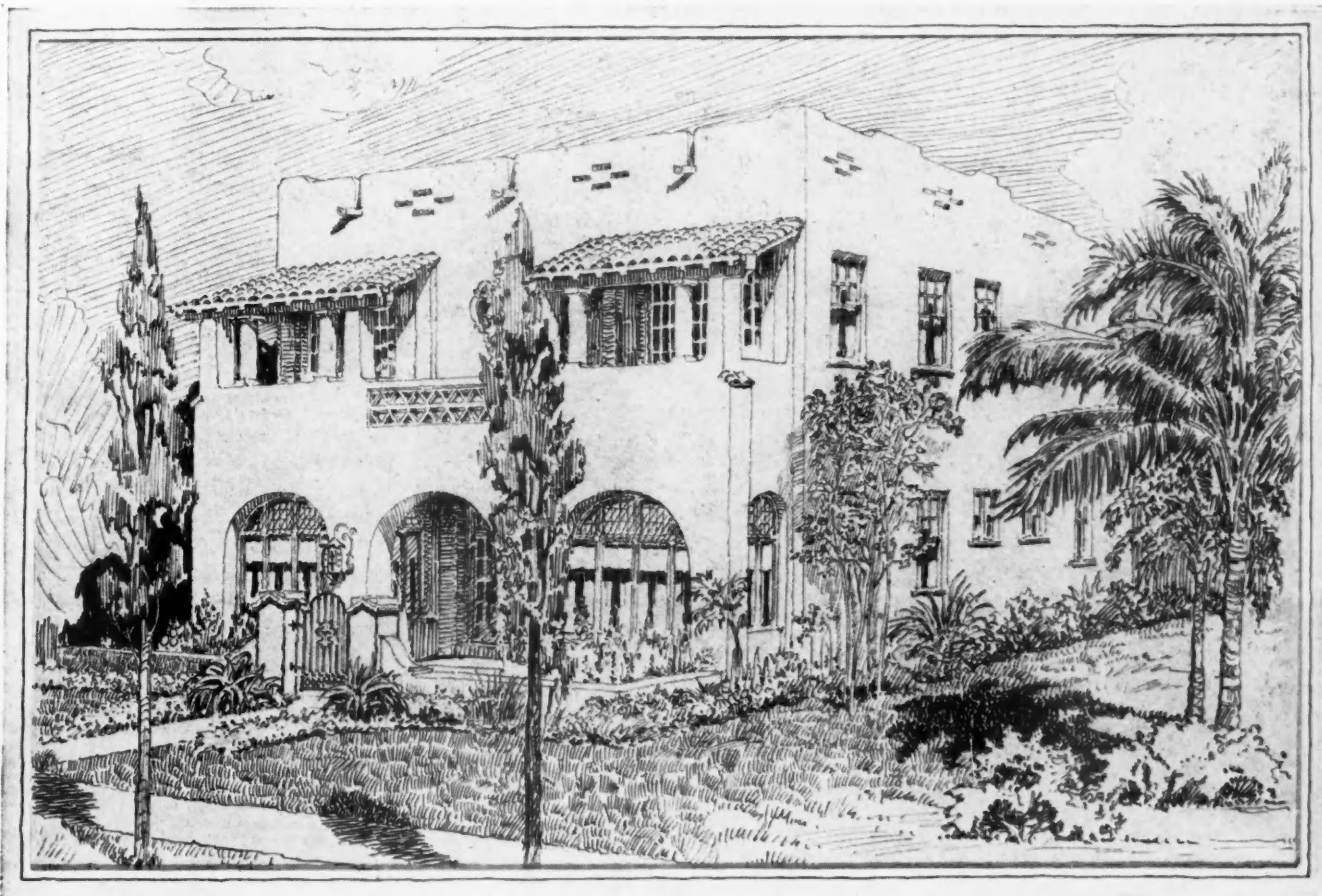
**Insurance Funds for "Model" Projects**

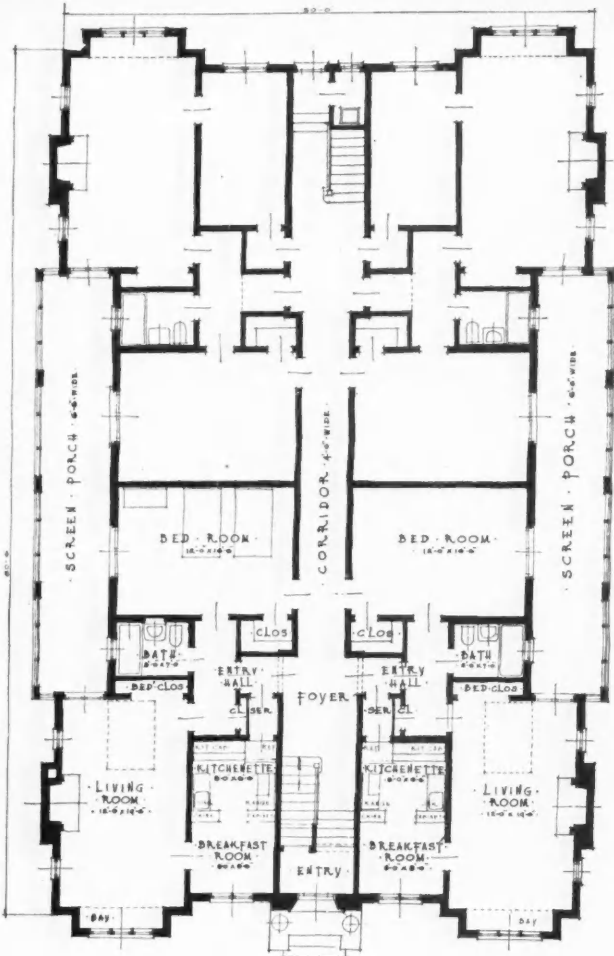
Discussion of methods of financing homes and of planning apartment developments in large cities in this country occupied an important place in the International Housing Congress held recently in Rome, Italy, which was attended by housing experts and town planners from a score of nations.

Papers prepared by three Americans were presented



**An Apartment Designed for These Modern Times—Five-Room Efficiency in Two Large Rooms. Extra light and extra space by eliminating partitions.**





FLOOR PLAN

Another Very Ingenious Modern Apartment Plan by William G. and Arthur W. Krieg, Architects.

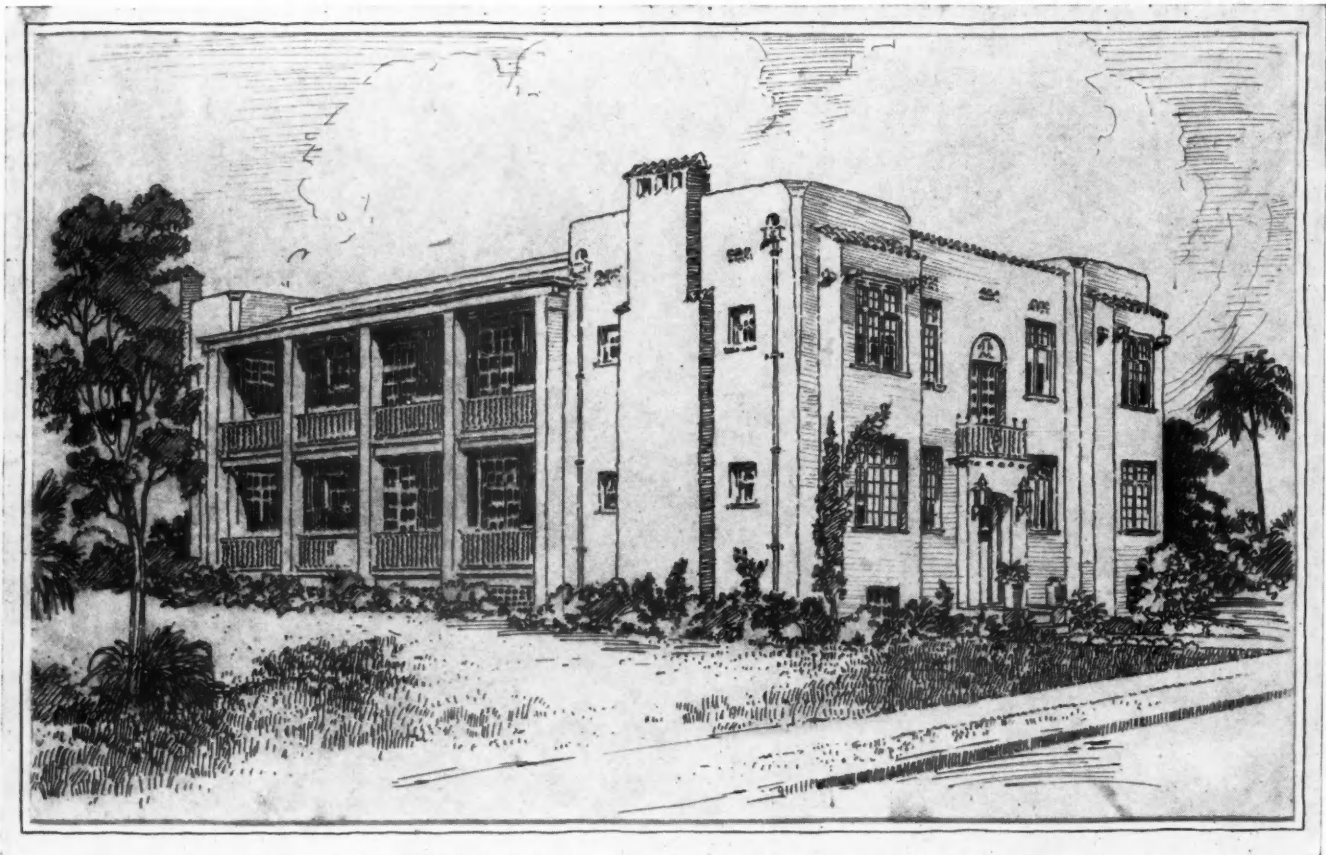
to the convention. One by Alexander M. Bing, president of the City Housing Corporation, discussed the financing of small homes and suggested that insurance companies devote a portion of their assets to model housing projects.

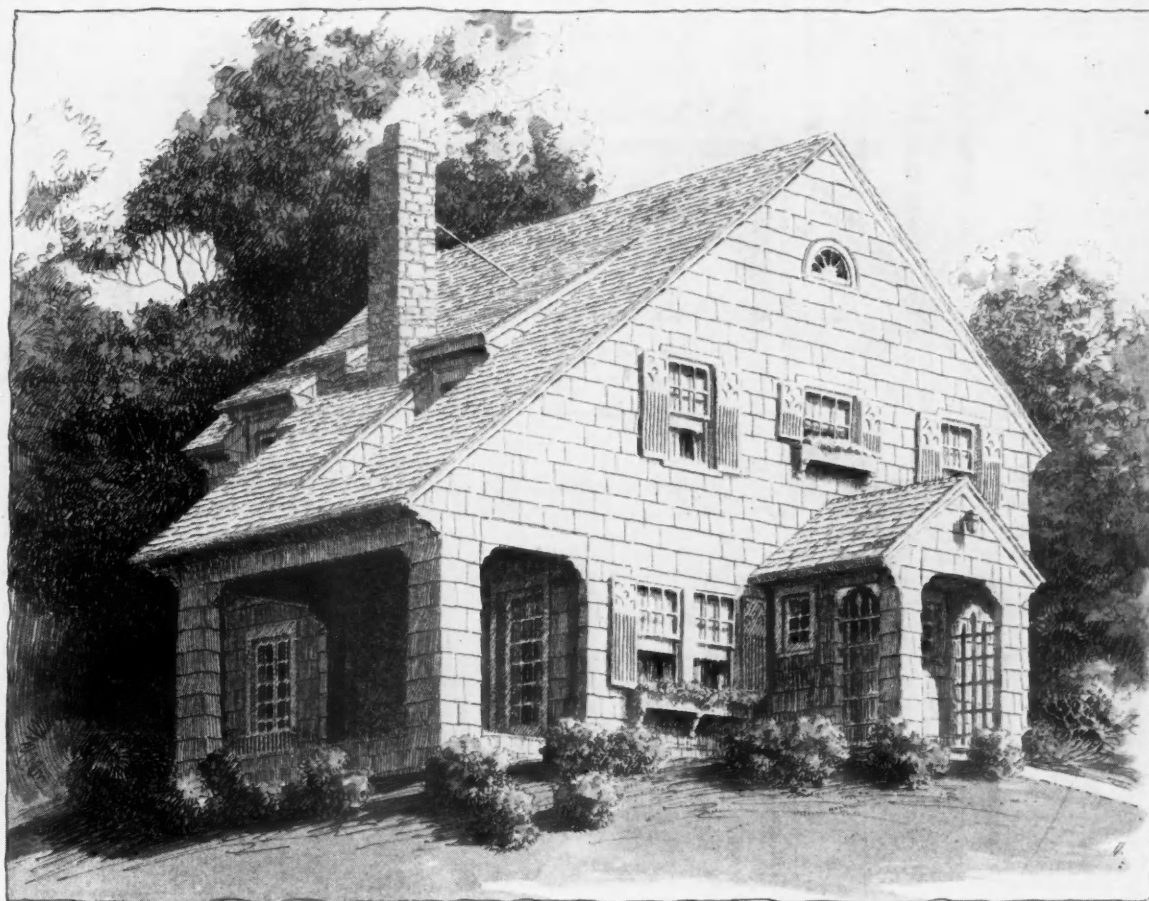
Mr. Bing declared that, generally speaking, there has been an ample supply of first mortgage money here, with loans ranging from 45 to 65 per cent of the market value of the property, for home building. The principal sources have been insurance companies and savings banks and building loan associations, with endowment funds of churches, colleges, foundations and other philanthropic societies contributing a share.

In 1927 insurance companies possessed assets of more than \$18,000,000,000, of which one-third was invested in mortgage loans. Many of the largest companies prefer large loans on business property, hotels and expensive apartments to dealings affecting small houses.

A recent survey in different cities in the United States showed second mortgage interest rates of from six to eight per cent, and for loans having four years to run discounts carrying from 16 to 30 per cent. This bonus is collected in advance, a system which increases very much the cost of financing—in fact, the total interest charges, including bonuses, ran from 10 per cent to as high as 20 percent a year. . . . The conditions surrounding this type of financing have materially increased the cost of homes to the person of small means.

Mr. Bing suggested that insurance companies, with their assets well in excess of \$18,000,000,000, could accomplish much on such projects by devoting 5 per cent of their resources for this purpose, thus providing nearly a billion dollars for model housing and model communities, earning 6 per cent on the investment and providing living quarters for some 200,000 families.





THE AMERICAN BUILDER ALL-FEATURE HOME

## Complete Working Plans

*Popular Shingled Colonial Style Home Fully Presented in Eighth-Inch Scale Drawings*

**T**HE house that is perfectly square is known to be the most economical to build, giving the most house for the least money. Artistically, however, the square, blocky lines are not appealing. In the AMERICAN BUILDER All-Feature home presented herewith, our architects have taken a perfectly square plan, 26 by 26 feet, and have added an open porch at one side, bringing the main roof of the house down over the porch in a long sweeping line, disguising very effectively the square cubical box. They have created a delightful and interesting picture and that, too, without adding appreciably to the cost.

On the four pages following we present the working drawings of this house to a scale of one-eighth-inch equals one foot. It is possible to build direct from these published plans and many do so. Their principal value, however, is in the

suggestions they carry, and the definite information regarding the construction, layout, and equipment of modern popular-sized homes.

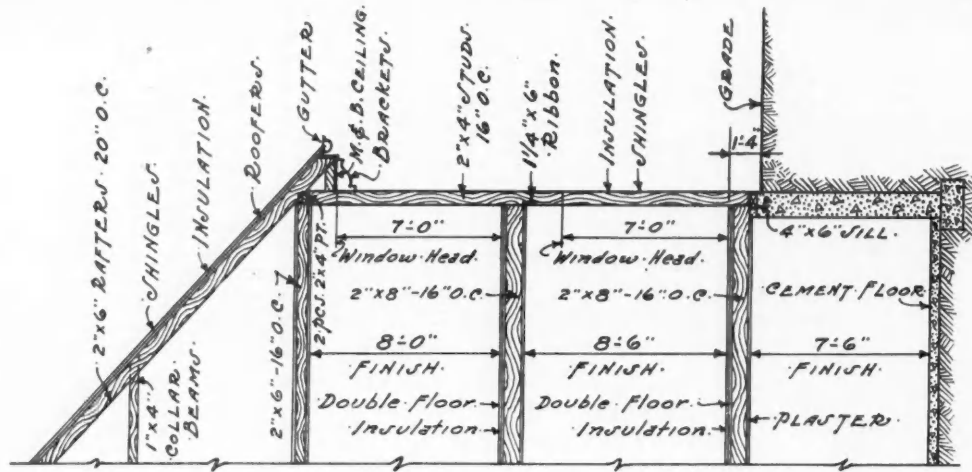
It is seldom that a stock plan exactly fits individual requirements. These plans as published give opportunity for any changes desired; and our architect and builder readers are invited to make use of them in any way they please.

A study of the floor plans on the next three pages and of the typical elevations on page 121 will reveal the careful and thoughtful work that has gone into this particular home design. While small, it is really complete and would make a home that would grace any community.

Many of the popular home conveniences and labor saving appointments have been provided for in these plans. Even the small homes today are fully equipped.

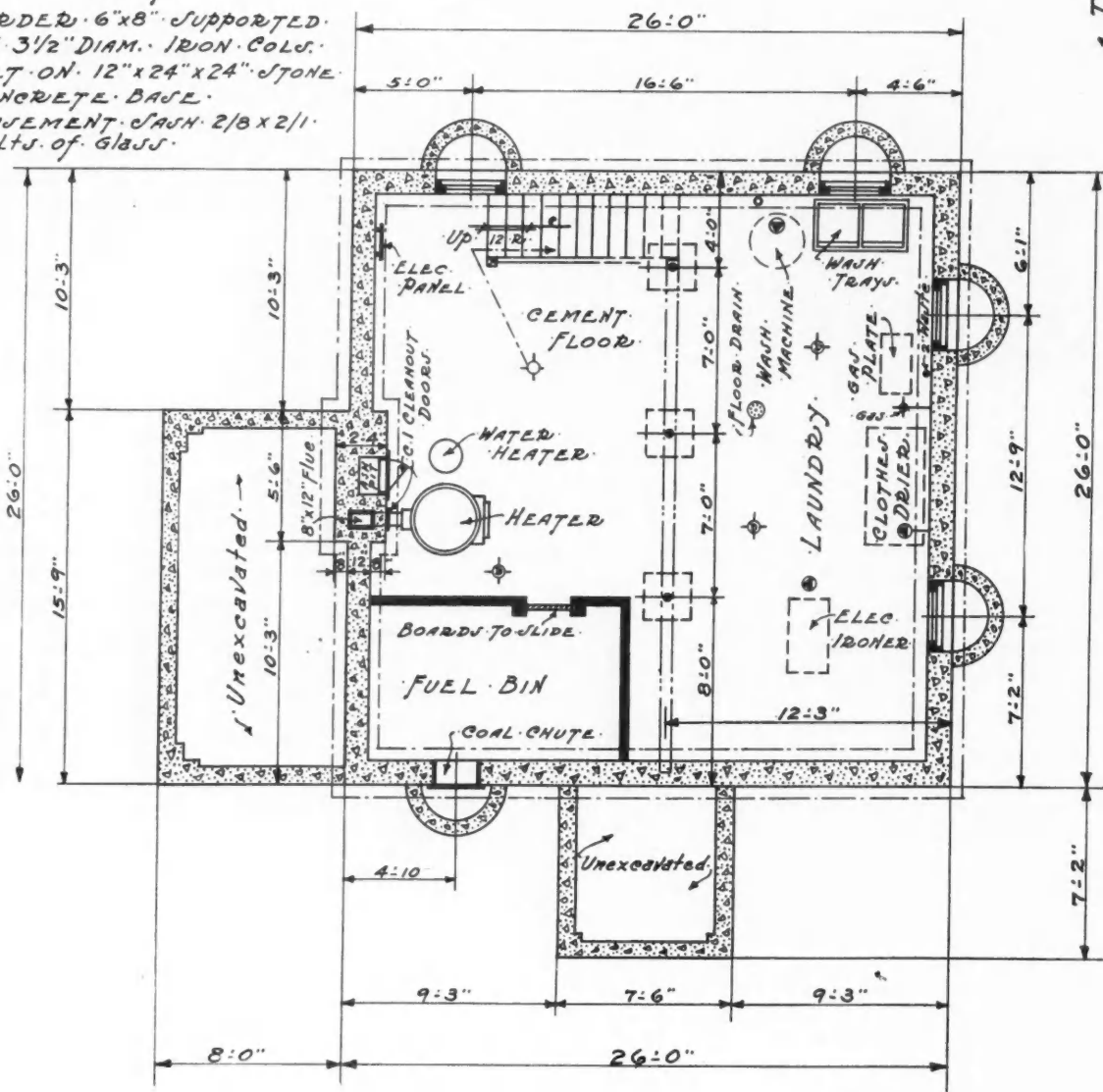
### NEXT MONTH

Complete Plans of 5-Room  
English Stucco and Half-  
Timber Home



NOTE

- GIRDERS 6"x8" SUPPORTED ON 3 1/2" DIAM. IRON COLS. SET ON 12"x24"x24" STONE CONCRETE BASE.
- BASEMENT SASH 2/8 X 2/1 3 Lts. of Glass.








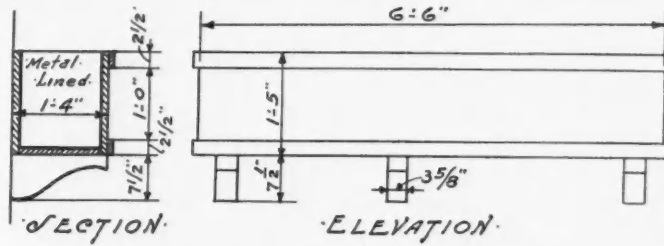
BASEMENT PLAN

SCALE 1/8" = 1'-0"

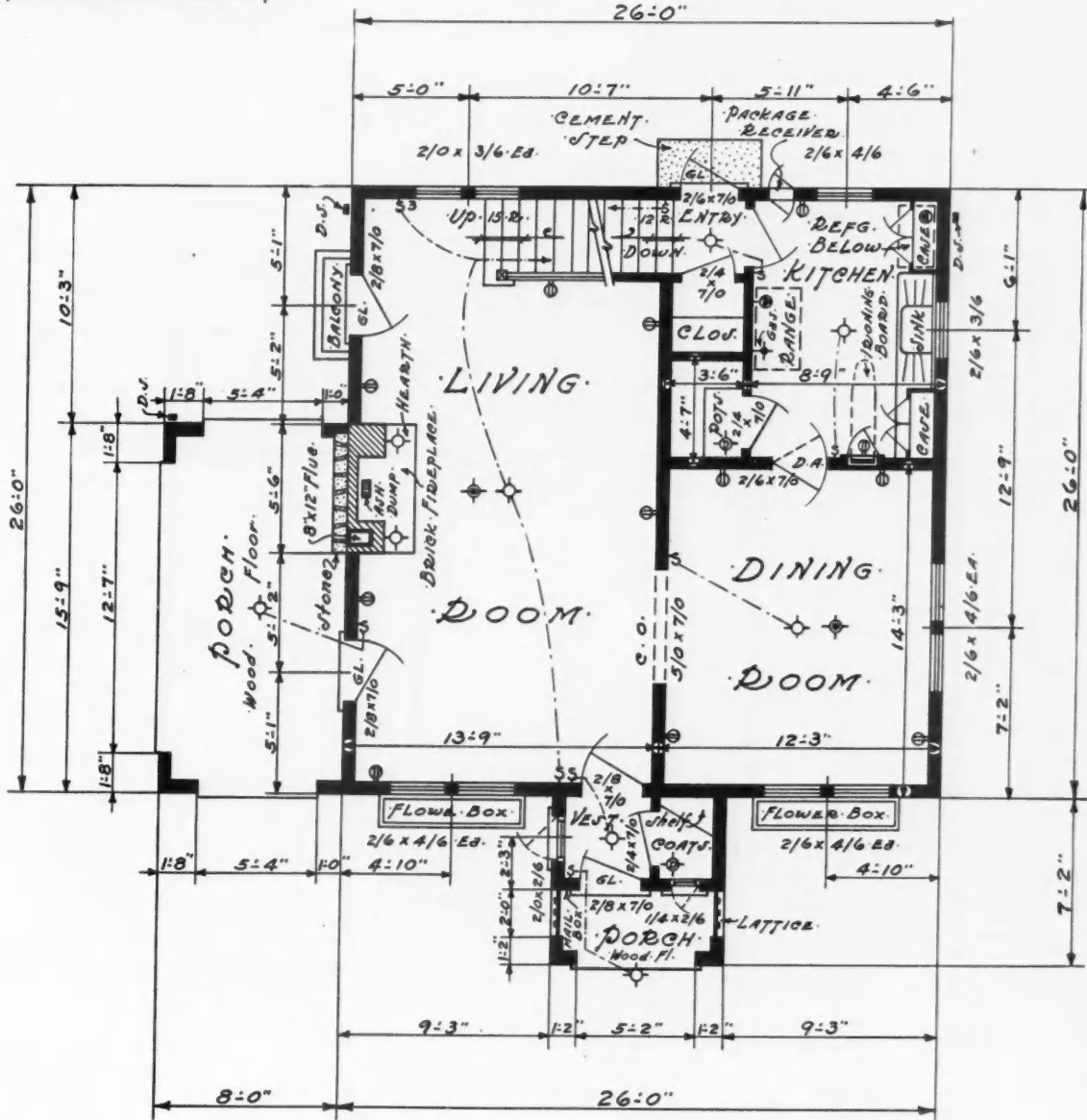
The Basement of the All-Feature Home Is 26 by 26 Feet, All in One General Room, Except for the Partitioned Fuel Bin.



MATERIALS.	
	WOOD.
	BRICK.
	STONE.
	STUCCO.
	CONCRETE.



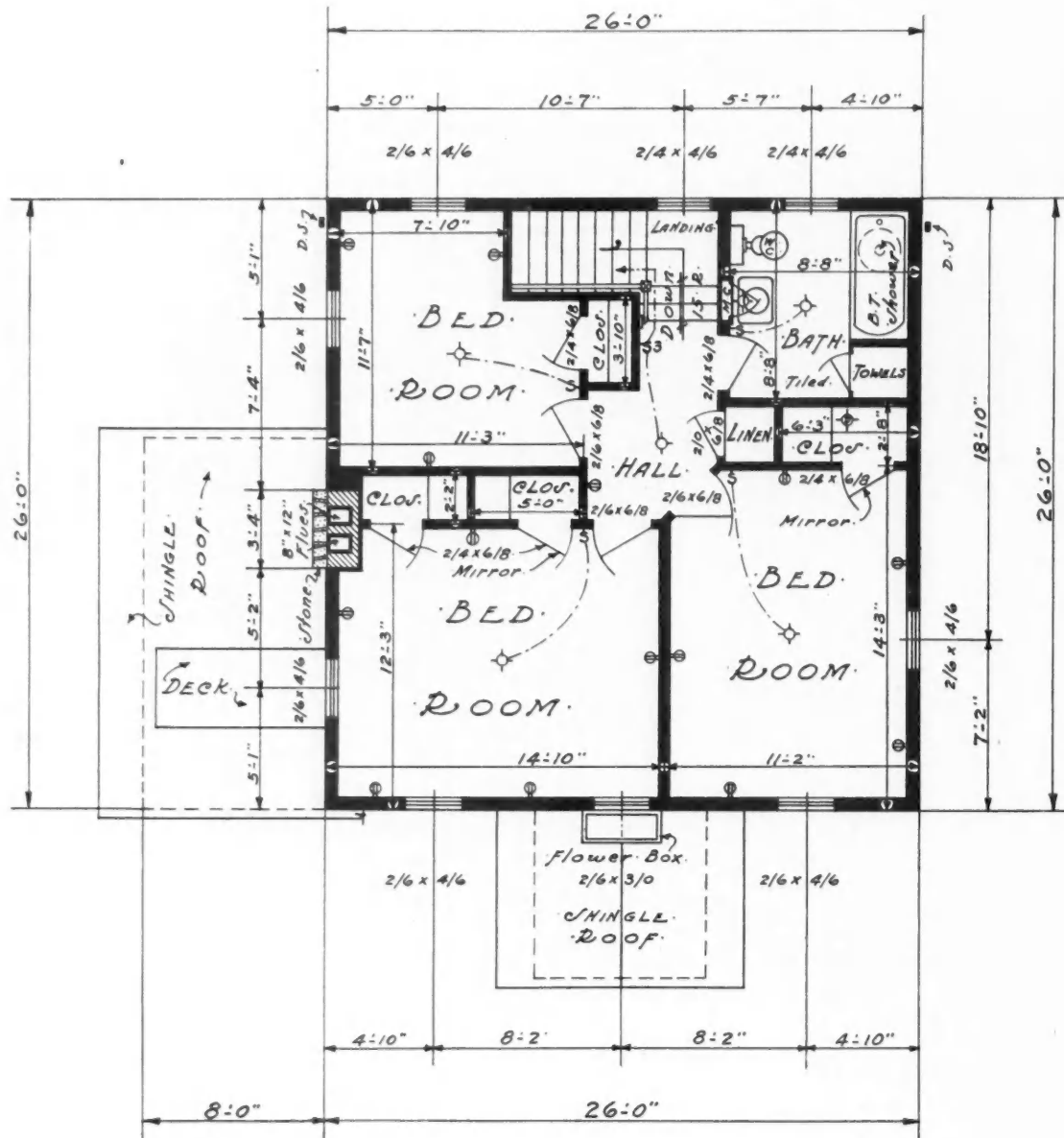
FLOWER BOXES.  
SCALE 3/8" = 1'-0".



FIRST FLOOR PLAN.

SCALE 1/8" = 1'-0".

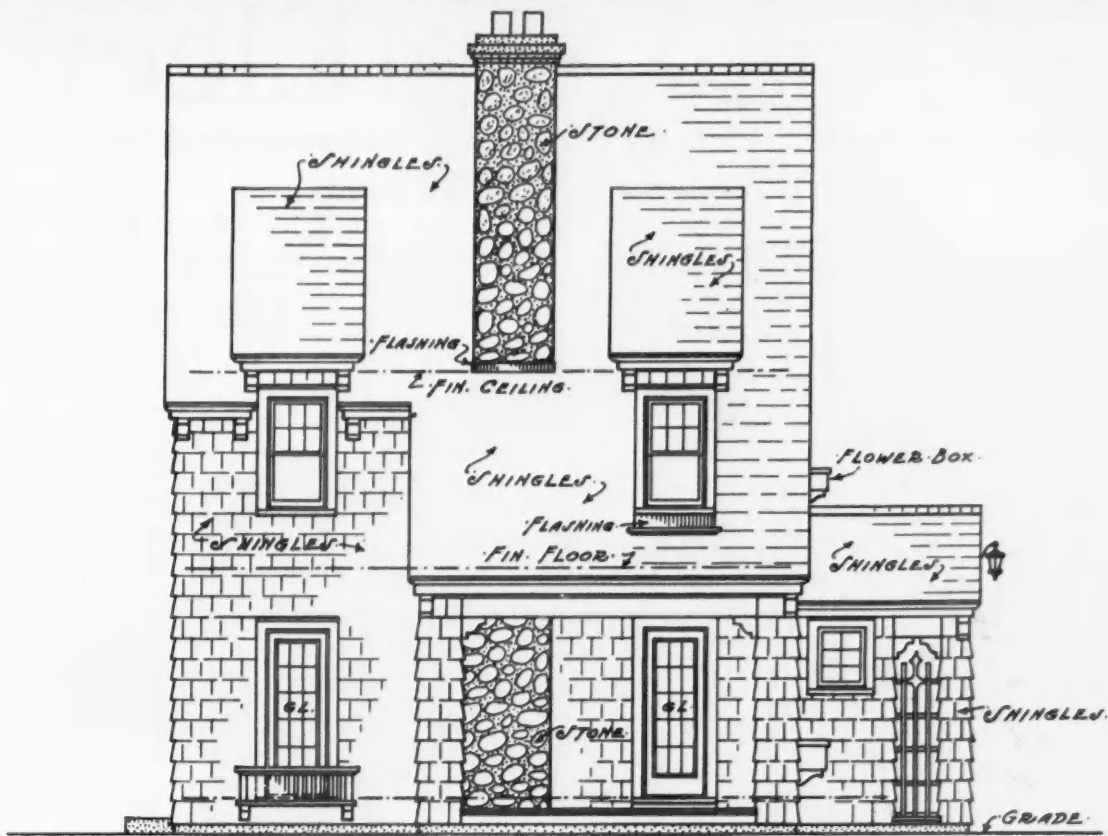
The First Floor Has a Delightful Living Room, 13 by 25 Feet, and a Well Arranged Kitchen and Dining Room Occupying the Other Half.



• SECOND FLOOR PLAN •

• SCALE • 1/8" = 1'-0" •

Upstairs in the All-Feature Home for This Month Are Three Corner Bedrooms and a Bath of Generous Size, Conveniently Located.



• LEFT • SIDE • ELEVATION •



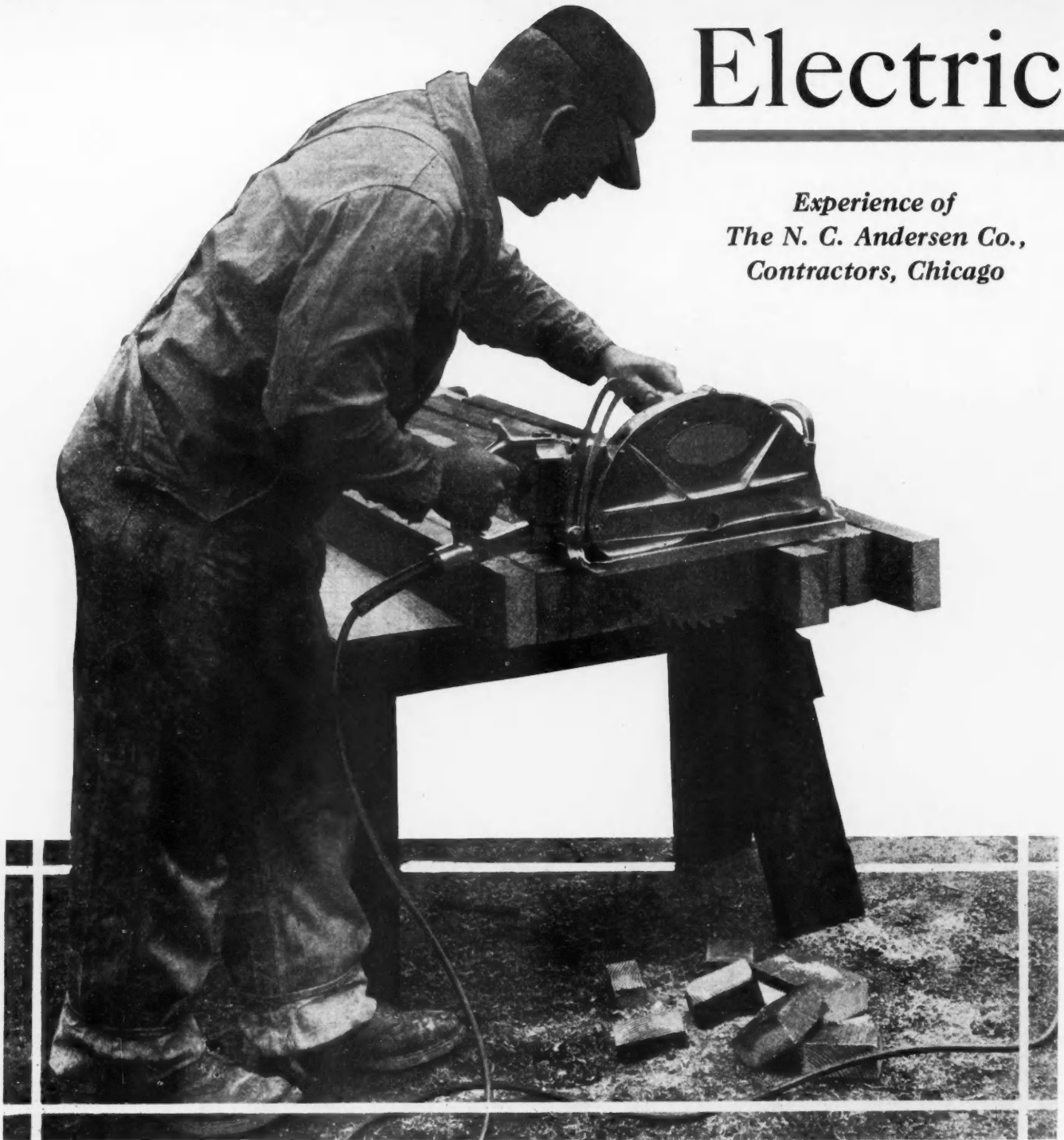
• FRONT • ELEVATION •

• SCALE • 1/8" = 1'-0" •

The Elevations Show in Detail the Features of Design and Finish Which Produce the Pleasing Results Shown in the Sketch on Page 117.

# Electric

*Experience of  
The N. C. Andersen Co.,  
Contractors, Chicago*



**Actual Experience Has Proved That One Man Equipped with an Electric Hand Saw Can Turn Out as Much Work as Four Men Equipped with the Old Style Hand Saws.**

**T**HREE thousand four hundred twenty-two dollars and fifty cents was saved in two months by the N. C. Andersen Co., Chicago, contractors, by the use of electric hand saws. That is not an estimate. It is the actual record established through a survey we made of performance on a typical city apartment construction job. The story of this survey definitely establishes the advantages of using power tools as compared with the old hand methods.

The N. C. Andersen Co. specializes in the construction of houses and small apartment buildings. Until about two and a half years ago, all the sawing done on its jobs had been done with the ordinary

hand saw. In February, 1927, it was decided to try out power tools and two electric hand saws were purchased and put to work on the construction of a four-story apartment building.

On this job these two saws were used almost constantly, eight hours a day, over a period of two months. During that time they did the work of eight men with hand saws. To arrive at the actual savings thus effected the operating cost of the saws was first calculated.

Their first cost was depreciated on the basis of a five-year life and, including interest on the investment and an estimated allowance of \$30.00 yearly for repairs on each unit, the annual fixed charges on

# Hand Tools Cut Costs

Survey by the A. C. NEILSEN CO.

## Increased Production Resulting in Lower Labor Costs Makes an Investment in Electric Hand Saws Pay Large Dividends.

the two saws amounted to \$142.60. It was estimated that under average conditions of building activity, the saws will be used about 100 days yearly, so that the daily fixed charge will amount to about \$1.43.

The daily operating costs include the cost of estimated power requirements. Under normal conditions it is found necessary to touch up blades once daily and to sharpen them rather thoroughly once a month. The total sharpening time, when pro-rated to a daily basis, amounts to about 20 minutes per blade and the sharpening cost for the two saws amounts to \$1.00 daily. Including labor, two men, eight hours daily, at \$1.50 an hour, the total daily cost is \$27.55.

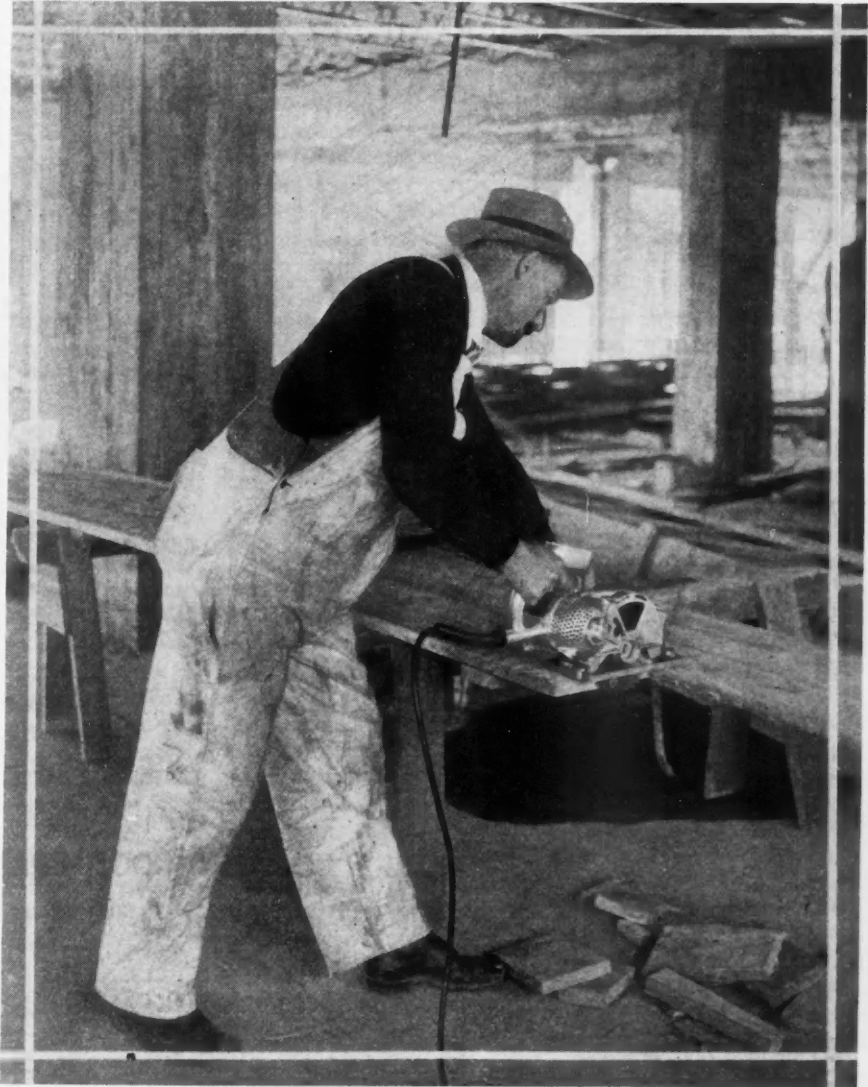
If the same amount of sawing were done by hand, eight men would be required, eight hours a day, at \$1.50 per hour, at a total cost of \$96.00 per day. This, of course, does not include depreciation and sharpening of the hand saws used. The difference in daily cost of the two methods shows a saving, in favor of the power saws, amounting to \$68.45 daily. For the 50-day operating period, on the job mentioned, the savings amounted to \$3,422.50.

The possibilities of obtaining maximum production from comparatively high-priced labor through the use of electric tools is well illustrated by the experience of the N. C. Andersen Co. It has been shown that fixed charges and power costs for these units are insignificant as compared with the saving in labor costs. The economy is all the more impressive in view of the fact that it was effected with no sacrifice in quality of work.

This economy in labor costs has been found of great value in combating the particularly keen competition encountered in this type of contracting.

The particular saws used on the job described are built with an aluminum body and an automatic guard which completely encloses the blade. As the saw is pushed into the material being cut, the lower half of the guard turns and telescopes into the upper half. As the cut is completed the lower half snaps back into normal position, thus insuring complete safety for the operator.

These saws are used on all types of construction work and have been found particularly valuable dur-



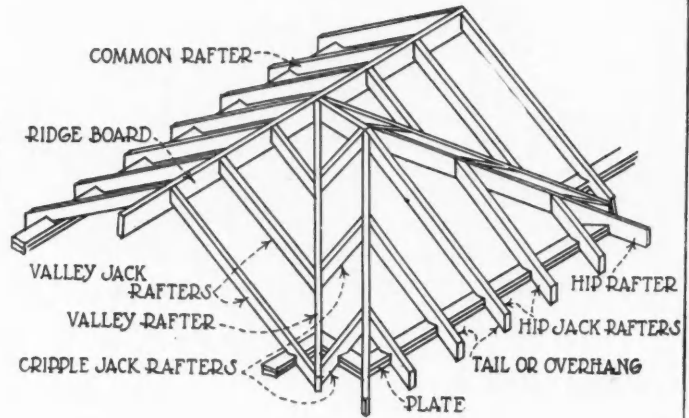
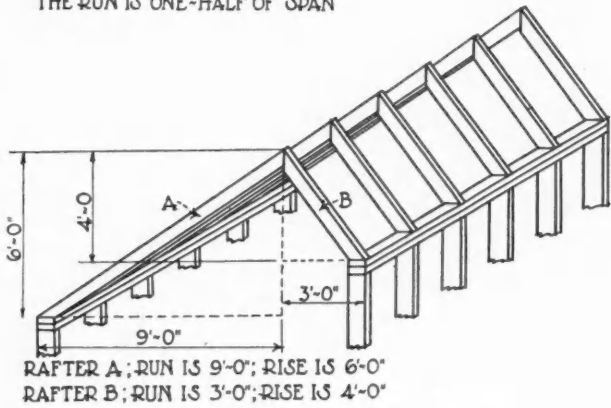
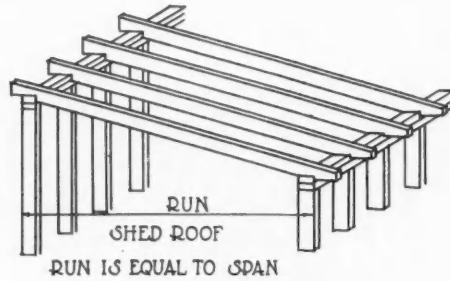
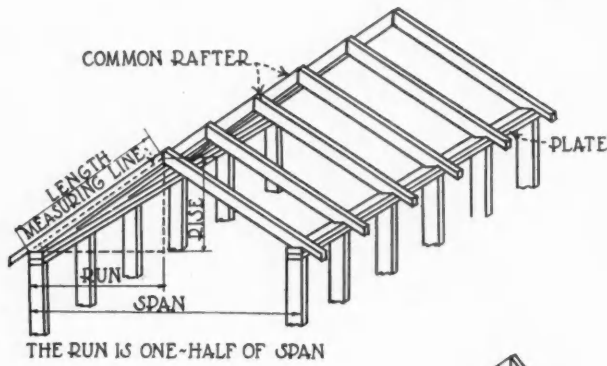
ing the early stages of building erection where they are used for cutting, framing lumber and form work.

### HOW COSTS WERE REDUCED

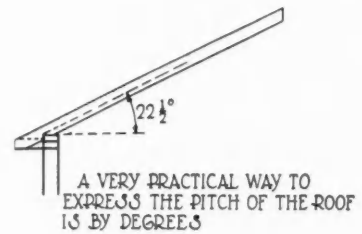
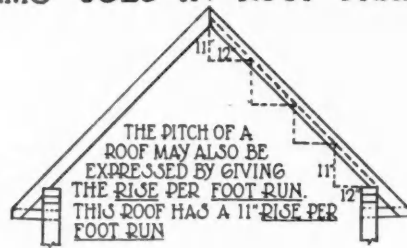
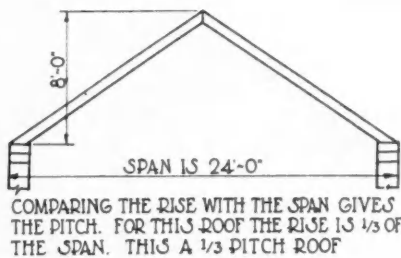
Investment—2 saws @ \$175.00 each.....	\$ 350.00
<b>Annual Fixed Charges on Two Saws:</b>	
Depreciation—\$350.00 ÷ 5 years.....	\$ 70.00
Average interest @ 6% = $\frac{6}{100} \times \$350.00 \times .06/2$ ....	12.60
Maintenance and repairs—estimated.....	60.00
Total .....	\$ 142.60
<b>Daily Operating Costs of Two Saws:</b>	
Fixed charge—\$142.60 ÷ 100 days.....	\$ 1.43
Power—.7 kw.-hr. × 2 saws × 8 hrs @ \$0.10 per kw.-hr. ....	1.12
Sharpening labor 20 min. per day × 2 saws @ \$1.50 per hr. ....	1.00
Operating labor—2 men × 8 hr. @ \$1.50 per hr. ....	24.00
Total .....	\$ 27.55
<b>Daily Cost of Hand-Sawing for Same Amount of Work:</b>	
8 men × 8 hrs. @ \$1.50 per hr. ....	\$ 96.00
<b>Savings Effected by Two Saws:</b>	
Per day—\$96.00 — \$27.55.....	\$ 68.45
For job—\$68.45 × 50 days.....	\$3422.50



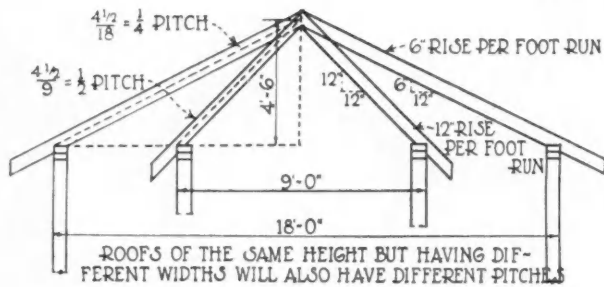
BASIC TYPES OF ROOFS



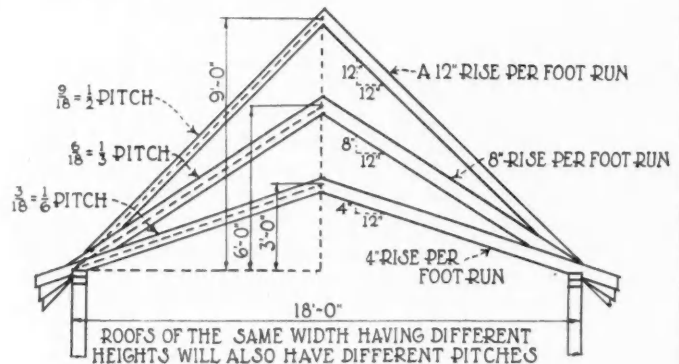
TERMS USED IN ROOF FRAMING



THREE WAYS OF EXPRESSING THE PITCH OF A ROOF



ROOFS OF THE SAME HEIGHT BUT HAVING DIFFERENT WIDTHS WILL ALSO HAVE DIFFERENT PITCHES



ROOFS OF THE SAME WIDTH HAVING DIFFERENT HEIGHTS WILL ALSO HAVE DIFFERENT PITCHES

# Back to First Principles

*Presenting the Elementary Facts of Roof Framing—Diagrams on the Page Opposite*

By JOHN T. NEUFELD

**M**ANY requests for help on Roof Framing read about as follows: "Tell me all about the steel square"—or "I would like to know more about the steel square."

## The Mysterious Steel Square.

The general impression seems to be that there is some mysterious thing about the steel square that if a person knows it he will be able to do any kind of roof framing. Perhaps it works like a slot machine, put in the coin and out comes the information.

It is true that the steel square is a wonderful tool but it is also true that the usefulness of the steel square is based on very simple mathematical rules, and therefore what the carpenter needs first of all is a knowledge of the principles of roof framing. Perhaps it would be even more to the point to say that the carpenter needs to understand the mathematical principles by which the framing of roofs is figured.

The steel square will lose much of its mystery if we understand *arithmetic*. The purpose for these articles has been and will be to teach the *why* of the methods and rules of roof framing and not simply to give a set of so-called rules and short cuts. The man that understands the principles will develop his own rules and methods.

## The Best Method.

Other letters and requests have brought the idea that there should be one best method of obtaining the lengths and cuts of rafters. Many, too, believe that their particular method is the only one that is of any use. I would answer these that the important thing is to learn the principles of roof framing and then develop the methods that are best suited for their particular work. In these articles different ways or methods of arriving at solutions will be given and explained. Get the good points in favor of each and you will benefit by them.

## The Pitch of a Roof.

Very often the most simple things cause the most confusion. It seems that this is true with the subject of "pitches" in roof framing. There seems to be an endless amount of confusion on this point among beginners in roof framing, partly because of the fact that there are several methods of expressing the pitch of a roof.

By the "pitch" of the roof we mean the slant or slope of a roof; or expressing it the other way the proportionate degree of rise that the roof

has. This degree of rise or the proportion of rise is usually expressed as the rise compared to the span, that is, we would call a roof having an 8-foot rise and a 24-foot span, a one-third pitch roof, because the rise is one-third of the span.

This method of expressing the pitch of the roof comes to us from the customs of early builders. They expressed their degree of pitch by comparing the total height of the roof with the width of the roof and then called a roof where the height of roof was one-half of the width, a one-half pitch roof, or where the height of the roof was one-fourth of the width of the roof, it was called a one-fourth pitch roof. The ordinary pitches are one-fourth, one-third, and one-half (and perhaps a few others) but these three are the most common.

At the present time we use this method of expressing the pitch of a roof; but we also use another method whereby we compare the rise of the rafter to the run of the rafter. This we usually express by giving the amount of rise in inches per foot of run. Thus a rafter has a 6-inch rise per foot run or an 8-inch rise per foot run, etc. Both of these methods of expressing the pitch of roof are easily understood by themselves, but when it is desired to change one method to the other, we find some difficulty.

To illustrate this we will assume that the building has a one-third pitch and that it is desired to express this as a certain amount of rise per foot run. For a one-third pitch the rise is one-third as much as the span, therefore, for every foot of the span we would have one-third of 12 equals 4 inches of rise; but the run is only one-half of the span and we wish to express the rise per foot of run. If the rise is 4 inches per foot of span,

then it also is 4 inches for every 6 inches of run, or 8 inches per foot run.

A simple rule to follow here is to multiply the pitch expressed as a ratio of the rise of the span by 24. Take, for example, the problem worked above. A one-third pitch roof has a rise per foot of run equal to one-third times 24 equals 8 inches. To illustrate this further, we will work out a few more examples.

For a one-fourth pitch the rise per foot run is  $\frac{1}{4} \times 24 = 6$  inches.

For a one-half pitch the rise per foot run is  $\frac{1}{2} \times 24 = 12$  inches.

For a two-thirds pitch the rise per foot run is  $\frac{2}{3} \times 24 = 16$  inches.

The pitch of the roof is also expressed by the number of degrees of the angle that the rafter makes with the

(Continued to Page 130)

## Questions

1. A roof has a rise of 10 feet and the span is 30 feet. What is the pitch expressed as a ratio of the rise and the span?
2. A roof 26 feet wide has a 10-inch rise per foot of run. What is the total rise of the roof?
3. Give the rise per foot run of the following pitches: one-third, three-eighths, five-twelfths.
4. The total rise of a certain building having a one-fourth pitch roof is 8 feet. What is the total width of the building?
5. Express in degrees the pitch of a roof having a rise of 8 inches per foot run.

## Answers

1. The pitch is  $10 \div 30 =$  one-third.
2. The building is 26 feet wide and the run is 13 feet. As the rise per foot run is 10 inches we find the total rise by multiplying  $13 \times 10 =$  10 feet 10 inches.
3. The rise per foot run for a one-third pitch is 8 inches, for a three eighths pitch is 9 inches, and for a five-twelfths pitch is 10 inches.
4. The total width of the building, as the pitch is one-fourth, is  $4 \times 8 =$  32 feet.
5. The pitch as expressed in degrees is 33 degrees and 41 minutes.



# Questions and Answers

This Department Conducted by  
V. L. SHERMAN

Have You a Question You Would Like to Have Someone Answer?  
Have You An Answer to Any of the Questions Listed Below?

## QUESTIONS TO BE ANSWERED IN THE DECEMBER ISSUE

Give Us Your Answer—Those Published Will Be Paid For.

1. A cement-laid rubble stone wall is to be finished inside with plastered walls. What construction would provide best against cold and dampness?

2. Can you give any information regarding a "manual for carpenters" to be published by the Department of Commerce?

3. How is the vanishing point determined in making a perspective drawing of a house?

4. What experience have you had with non-splitting nails?

5. If the scissors truss shown in the sketch, Figure 1, carries a plastered ceiling is the construction shown strong enough? Can you find the strains in the different members for me? The trusses are to be two feet apart and the covering is sheathing and composition shingles.

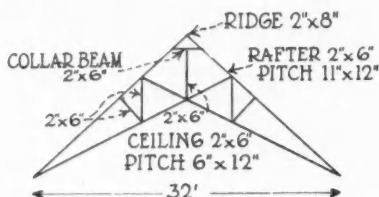


FIG. 1—ROOF TRUSS TO CARRY CEILING

6. If a theater or hall is being properly ventilated is the air withdrawn from the hall ever used over again?

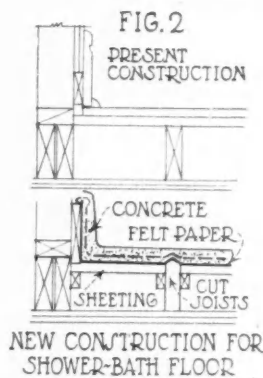
7. Will you give me a design for a high corner fireplace such as is used in Sweden?

8. I have a doorway opening 2' 8" wide by 6' 8" high into which I wish to put some sort of folding door as there is only 1' 8" of space in which to swing back. Can anyone show me how it can be done?

SEE NOVEMBER FOR ANSWERS TO SEPTEMBER QUESTIONS

## Following are the questions asked in the August issue, and their answers

**Question:** Please show a method for flooring a shower bath over a wood floor.



**ANSWER:** The drawing, Fig. 2, is substantially as shown in drawings submitted by J. R. Arena, St. Louis, Mo., and L. B., of Chicago, Ill. No description was submitted since the drawings speak for themselves.

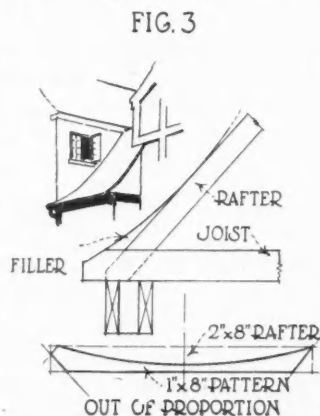
**Question:** How is it best to frame the curved roof shown in the picture?

**ANSWER:** Referring to the sketch and diagram shown in Fig. 3, R. C. Randle, of Grayville, Ill., writes:

"For an exact method of curved roof framing it is necessary to lay out a full-sized pattern of the rafter or a filler piece to be nailed on the top edge of the rafter, and have the curves sawed with a band-saw. The plumb and level cuts and the length from point to point are the same as for a common rafter, having the same rise and run. All that is necessary to get cuts and lengths is to use a 1 by 6 inch or 1 by 8 inch as a pattern which is laid out exactly the same as a common rafter."

**Question:** I wish to stucco an old brick chimney using expanded metal lath. How should I arrange for the flashing?

**ANSWER:** On stucco homes chimneys are often finished in stucco to harmonize with the walls. The chimney itself is of masonry and lined as usual to conform to the general codes. The stucco base is of expanded metal lath, firmly fixed to the chimney by furring plugs and screws or expansion screws. The expanded metal must be sufficiently rigid before applying the stucco to withstand the weight of the stucco and not allow cracks or sags to develop. The flashing should be run well up under the lath, see Fig. 4 (page 128) and far enough down to prevent backing of water during a thaw. Between the header and the chimney a strip of lath should be hung and the space lined with cement plaster.



In using stuccoed chimneys it is best to provide a chimney cap of stone or cement with enough overhang to allow for a drip groove on the under side of the cap and well away from the stucco of the chimney.

**Question:** Can the concrete-slab roof shown in the sketch be built without danger of its cracking?

**ANSWER:** (The roof shown in the August issue had a span



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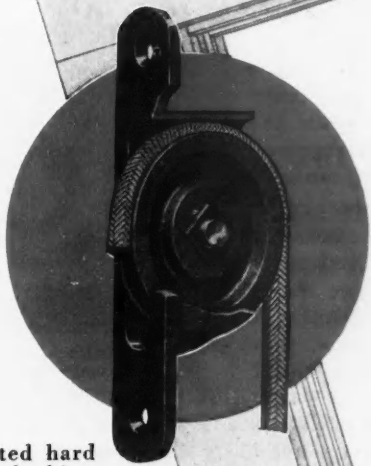
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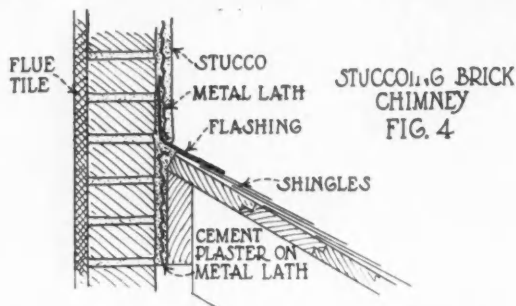
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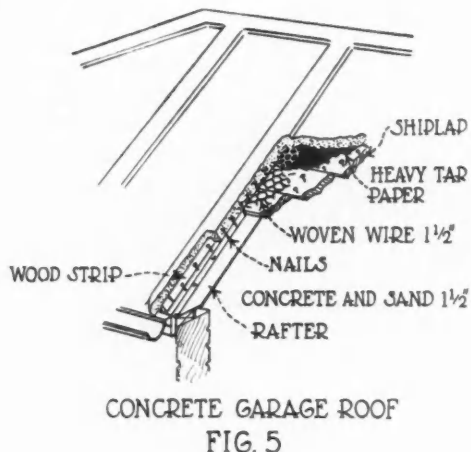
**Andersen FRAME CORPORATION., Bayport, Minn.**

WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN BUILDER

of 28 feet 0 inch, with 2 by 8-inch rafters, 16 inches O. C., 3/4-inch ribbed lath base for a 2-inch concrete slab. Cement tile was laid in the concrete before hardening set in. The roof was 1/3 pitch. Its appearance should be very pleasing and in this instance was to cover a Spanish type bungalow. No correspondent so far has declared that the roof would crack. The editor of this department does wish to say, how-



ever, that there is considerable danger of its cracking. What the consequences would be if it did crack, or rather more likely develop a great many small cracks, would be hard to say. Its chief effect would be loosening the tile covering, allowing moisture underneath the tile and into the slab to increase the cracking and a final general deterioration of the roof.—EDITOR.)

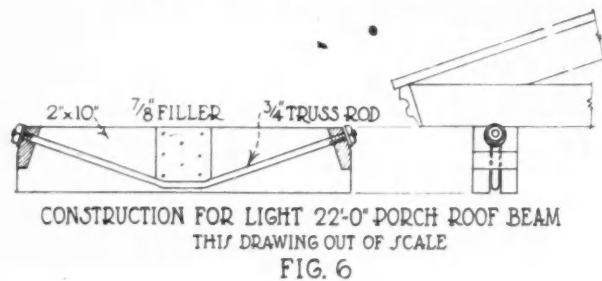


"In answers to Question 4, in the August issue, in regard to possibility of concrete roof cracking, I wish to submit a method and two photographs of my garage roof which I put in myself. It is apparently successful for it has stood two years without any resultant cracks. I am a mason and plaster mechanic."

This roof, shown in Fig. 5, is the work of Hubert Hughes, of Kitchener, Ontario, and from the photographs submitted we would be willing to endorse the results.

**Question:** What construction can I use to build a light beam for a porch roof? The span is 22 feet.

**ANSWER:** A light but strong beam for a porch can be made by using two sound 2 by 10-inch pieces and a 3/4-inch iron rod threaded at both ends. The rod runs the full length of the span, as shown in the sketch, Fig. 6, being



bent upward from the center toward both ends. The space is to be filled out with 7/8-inch stuff and spiked or bolted together.

For a roof with a higher pitch a very strong beam can be made by using a 2 by 8-inch on edge with a 2 by 6-inch placed on edge about 4 inches above. These two are connected by nailing 1 by 6-inch pieces at 45 degrees, lattice fashion, opposing the angles on opposite sides of the two main pieces. A space of 3 inches can be left between the cross pieces. The lower and heavier part of the beam can be lined with finishing boards to any size desired.

P. H. SMITH, Benzonia, Mich.

**Question:** Can one soil stack be made to vent fixtures from the first and second floor bathrooms if they are in line or nearly so?

**ANSWER:** Fixtures being drained into a soil stack must necessarily be vented. This is the main question. Offsets in the stack should not be such that any material hindrance is given to drainage. Proper venting of fixtures cannot be supplied when drainage from a fairly large source, such as a closet, empties above a lower fixture which depends on the stack for venting. For this reason separate vent pipes are required in some localities, and are of course to be preferred. In this case the fixtures on the first and second floor should drain into separate stacks which may be hooked up above the second floor fixtures into one vent which can be taken through the roof. See Fig. 7.

Turns in pipe, fittings, offsets, or anything calculated to offer the least obstruction to flow should be cut to a minimum. A little extra expense in the original layout will save considerable later.

**Question:** When building a frame house and using steel joists and posts, how much shrinkage should be figured in the framing? Is it any less than when wood joists and posts are used?

**ANSWER:** In figuring shrinkage when building a frame house with steel joists and posts no shrinkage is reckoned below the floor if the joists rest altogether on the foundation wall and metal columns. If, however, wood joists and posts were used shrinkage should be figured to obtain level floors. This should be figured from the footing of the posts and the level of the supporting plate on the foundation wall. It should be remembered that timber shrinks differently across the grain and with the grain and that shrinkage to a permanent size depends somewhat on the sort of lumber used and the locality of the building. Any local dealer could furnish data for the various grades used in the vicinity.

**Question:** If I hire a surveyor to set the batter board for a house and later find that I have gone outside my own property lines while building, who is legally responsible for the mistake?

**ANSWER:** "The question does not go into particulars regarding the extent of the foundation and the size of the lot. I shall endeavor to answer the question accordingly.

"The surveyor was employed to set the batter boards. This is the measure of his contract of employment; if he set the batter board correctly he rendered a service he was hired to do.

"The question does not even hint that the surveyor was employed to locate or to establish lot corners. If the owner or contractor wished to know where his lot corners were it was his duty to himself to tell the surveyor that he wanted his corners located. If the owner neglected this and showed



DIVIDED STACK  
FIG. 7

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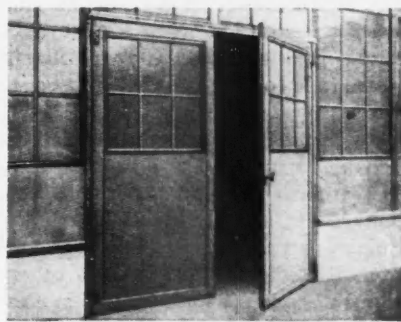
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the surveyor what was supposed to be the owner's lot, the surveyor was under no duty to question title or boundaries on side lines.

"If, however, the surveyor had been engaged to locate and establish the boundaries of the lot and had done so carelessly or erroneously, then the surveyor would have been liable for such damage as resulted from his fault.

"One who is employed to locate boundaries of a lot, upon which, to his knowledge, the owner desires to place a certain character of building, will be liable for the cost of moving the building, in case through his error in making the survey, the building is not located on the owner's property. This is the gist of the case of Taft vs. Rutherford, 66 Wash. 256, 119 Pac. 740, 38 LRA ns 1043.

"But the law does not make the surveyor an insurer of his work. If he locates city lots as a part of his official duty, he is liable for his negligence or fraud; if he is doing the work as a professional surveyor, he will be liable not only for his negligence or fraud, but also for his want of skill. One who holds himself out to the public as a professional man, thereby agrees with those who employ him, that he will do his work carefully, diligently, honestly and skillfully. An absolute correctness is not the test of the amount of skill the law requires. A reasonable amount of skill is all that he is bound to bring to the discharge of his duties. *McCarty vs. Bauer*, 3 Kan. 237; *Highway Commissioners vs Beebe*, 55 Mich. 137, 20 N. W. 826."

LEON L. BULEN, Attorney and Counselor, Missoula, Mont.

ANSWER: The question implies (1) that the owner of a certain lot has built some structure thereon acting as his own general contractor, and (2) that part of the structure is set outside the boundaries of said lot.

The direct legal responsibility is from the owner to the owner of the adjoining land upon which said structure encroaches, since the surveyor, who set the batter boards, and the sub-contractors and workmen, who built the structure, are the agents of the owner. The owner of the structure may be compelled to remove the structure from said adjoining land and to pay any damages which may have been caused by said encroachment.

If the error in locating the structure is due to error of a surveyor in setting the batter boards, the surveyor is probably liable to the owner in the amount of the cost of correcting the error in location of the structure. In such case, however, the owner would have to prove that the building was actually built according to the erroneous setting of the batter boards.

The part of the question which states, "I have gone outside my own property lines while building," might be taken to mean that the owner or his sub-contractors or other agents, have, during building operations, trespassed upon adjoining property by going upon same, piling or allowing material to be upon same or otherwise damaging same, although structure itself is within the lot boundaries. This presents a different question, namely, whether the owner is responsible for such wrongful trespassing of his agents. In such case I do not believe that the owner would be liable to the owner of the adjoining property, except for his own personal trespasses, but that the responsibility in such case would be direct from the trespassing agents to the owner of the adjoining property with similar liability from the owner to his agents if they have been misled by an erroneous survey or other erroneous information as to the true boundary lines of the owner's lot furnished by the owner himself.

*It is essential in order to relieve owner of liability that he have his lot boundaries so marked or otherwise protected as to make it impossible for any reasonable person to mistake the location.*

RALPH TREADWAY, Du Page Trust Company, Glen Ellyn, Ill.

## Oil Burners Make Sales

(Continued from Page 94)

are alive to the big market in the smaller homes is shown by the fact that a number of the leading manufacturers have special models for small homes priced at a lower figure than their larger burners.

The cost of a complete oil burner installation must, of course, be added to the selling price of any building erected for resale but it is the buyer who ultimately pays the entire cost, including the financing charges. Loan companies will, without doubt, loan more on the better equipped building. This is especially true where a good oil burner is installed, as it directly affects the resale and the rental value. Appraisals today are largely on the basis of rental value because that is the income-possibility of any property. If a house is priced to sell at \$15,000.00 without an oil burner, then it will be a readier sale at \$15,750 with a good oil burner installation.

As we look back over the years, we see that successful builders have been progressive in keeping up with modern living standards. They would not think of offering for sale, today, houses with nothing in them but the bare partitions. Today, everything must be complete for the modern scale of living, if the building is to be quickly sold at profitable figures. One of the first and strongest factors in any sale is attractiveness. It creates desire and the sale is as good as made if the prospect's desire is strong enough. When he sees, in addition to other modern conveniences, a bright, clean basement, with recreational or living features, made possible by clean, automatic heat, he visions a comfortable, carefree, happy home—and that is what builders should aim to sell.

To return to the subject of design, let us see just how structural economies may be brought about by homes especially planned for oil burner installation. Here is the logic of the situation: basements now have invested in them 20% of the merely structural cost of the entire dwelling. Now, if by the use of the clean, automatic features of oil heat, we can transfer to this space some of the rooms now occupying space upstairs, eliminating their construction cost, a saving equal to the cost of the oil burner and tanks can easily be effected. This can be done in a number of ways. I expect to show in a future article plans of a new type of home especially designed to reduce construction costs by means of the features of clean, automatic heat.



## Elementary Facts of Roof Framing

(Continued from Page 125)

horizontal. For example, we may have a 30-degree roof, a 35-degree roof, etc. This method, however, is not commonly used, but no doubt will be used to a certain extent in the future.

In order to compare the three methods of expressing the pitch of a roof we have the following table of comparative pitches.

Rise Span	Rise Per Foot Run	Degrees
1/6.....	4.....	18° 26'
1/4.....	6.....	26° 34'
1/3.....	8.....	33° 41'
3/8.....	9.....	36° 52'
5/12.....	10.....	39° 48'
11/24.....	11.....	42° 31'
1/2.....	12.....	45° 00'
5/8.....	15.....	51° 20'
2/3.....	16.....	53° 08'
3/4.....	18.....	56° 19'

# This lumber of **Guaranteed Quality** marks the dependable contractor



This Sign of CONFIDENCE Identifies the 4-SQUARE DEALER

**A** REPUTATION for dependable work is the finest thing any contractor can have. The confidence of an increasing number of people in the materials he uses and in his workmanship is the only thing that can make his business grow.

Now, for the first time, the reliable contractor has the advantage of lumber that is trade-marked and guaranteed. That marks him as dependable. The square-dealing contractor has nothing to hide, therefore he uses lumber that is plainly marked for species and grade so that anyone can identify it.

Further, he can actually use this as an

advantage in selling his houses. For national advertising has acquainted the American public with 4-Square Lumber. It is much easier to sell a house in which guaranteed lumber of unmistakable quality has been used.

Progressive lumber dealers everywhere are hanging out the 4-Square sign. If yours is not yet ready to supply you, write us.

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*Species and Grade are Marked and Guaranteed*

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**SOLD BY 4 SQUARE DEALERS**

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*A Department for Passing "Life Savers" along to other Builders*

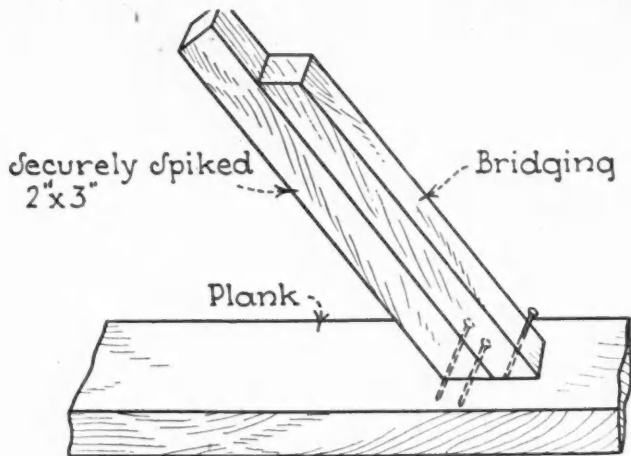
*\$2 for an Idea*

Dan is an ingenious cuss. Nothing ever stumps him. He always knows the way out when he runs into a tough problem out on the job or in the office. Dan is editor of this Department and will pay \$2.00 each for every good idea he can use here to show and tell other builders "how to do it." Send him a rough sketch and a short description of what the tough job was and how you handled it.

Address Dan-Do-It, care of American Builder, 105 W. Adams St., Chicago, Ill.

## Nailing Bridging Made Easy

HERE is a device that has proved handy when driving nails halfway into bridging, as is generally done, before the bridging is put in place. I cut a 2 by 4 with the same bevel as the bridging and spike it securely to a plank as shown in the sketch. The bridging can then be laid against this and the nails are easily driven at the lower end. The



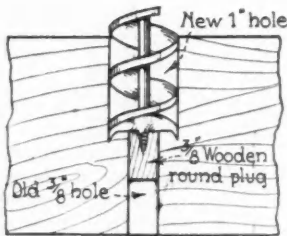
Just a Plank and a Piece of Bridging Spiked Together but It Simplifies the Work of Placing Nails.

protruding nails will not be in the way when the piece of bridging is reversed to drive the two nails into the other end. This makes it possible to get just the right angle on the nails if one tries the first couple of pieces before placing all the nails. PAUL NESS, 1036 S. Union Ave., Los Angeles, Calif.



## To Center the Bit

THE sketch shows a little idea I have found helpful in boring holes. I had to bore a one-inch hole over a 3/8-inch hole, recently. In other words, I had to make a one-inch hole out of a 3/8-inch hole. As the bit would not center correctly this was impossible to do accurately till I hit upon the idea of making a small plug, 3/8 of an inch in diameter, which I centered onto the screw part of the one-inch bit. With the plug inserted into the 3/8-inch hole the bit was perfectly centered over the hole.



Start the Bit in the Center of a Plug Which Just Fits the Old Hole.

RAY ARVIDSON,  
1650 Church St.,  
Detroit, Mich.

## For Better Stair Work

MANY carpenters cut their stair horses as shown at (A) in Fig. 1, which is, in my estimation, a very poor method. I always frame the opening at the head of the stairs the

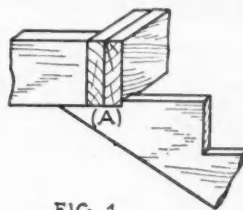


FIG. 1

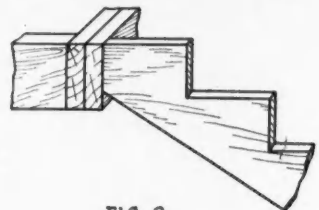


FIG. 2

The Method Shown in Fig. 2 Makes a Much Stronger Stair Than That in Fig. 1.

width of one tread longer than the finished measurement. This allows the horse to be framed against the double header joist, instead of toe-nailing it from beneath, and makes a stronger, better job.

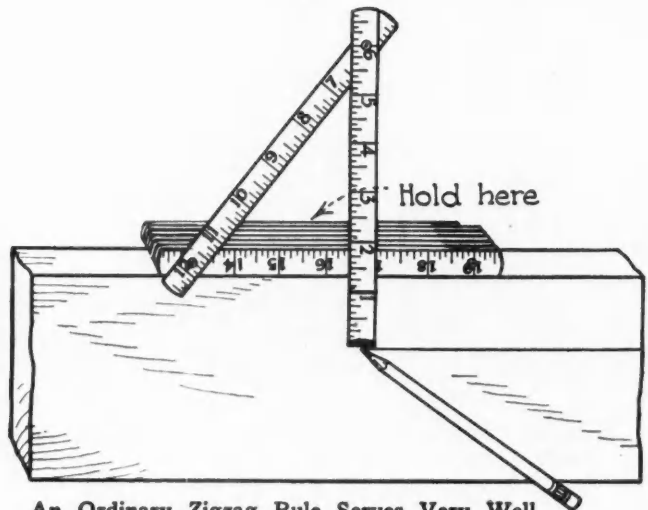
L. W. PIKE, 17 Brattle St., Brattleboro, Vt.



## A Convenient Scriber

THE sketch shows an easy, as well as accurate, way of scribing a piece of material by means of the ordinary zigzag rule which every carpenter carries. The rule is fixed in a figure four position with the single arm projecting just the distance of the width to which the material is to be scribed. With the rule used this way the chance of getting splinters in one's hand are eliminated and the scribe can be adjusted to any desired width.

MAURICE LILLY, Hagerstown, Ind.



An Ordinary Zigzag Rule Serves Very Well as a Scriber When Used in This Way.



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Safe-n-dry is not only "more than water-proof," and weatherproof, but it is also impenetrable to wind, air, smoke, odors, frost, mildew, summer heat, winter cold, and vermin. Rats and mice dislike asphalt and will not gnaw through this heavy asphalt blanket.

Safe-n-dry is clean to handle, saves time and labor, one man can apply it; requires no cleats to hold it in place; is moderately priced.

Consider these important facts when you must have SUPER-PROTECTION on the structures you build, for once you have used Safe-n-dry, no other paper will satisfy.

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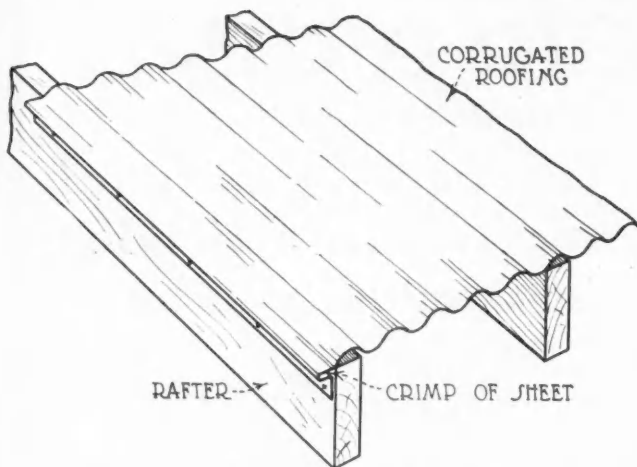
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A. B. O.

Firm Name.....  
 Street..... City.....  
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### Roofing with Sheet Metal

THE sketch shows the way I put on the end sheets of corrugated metal roofing. It makes a neat smooth finish if the metal is properly bent and keeps the wind from getting underneath the roofing and blowing it off. I measure back about two or 2½ corrugations from the edge of the sheet,



Bend the Metal Roofing in This Manner and Nail It to the Rafter to Keep Out the Wind.

bend the sheet down and, using a straightedge, bend about one inch out at right angles. This one-inch strip I nail to the side of the rafter as shown.

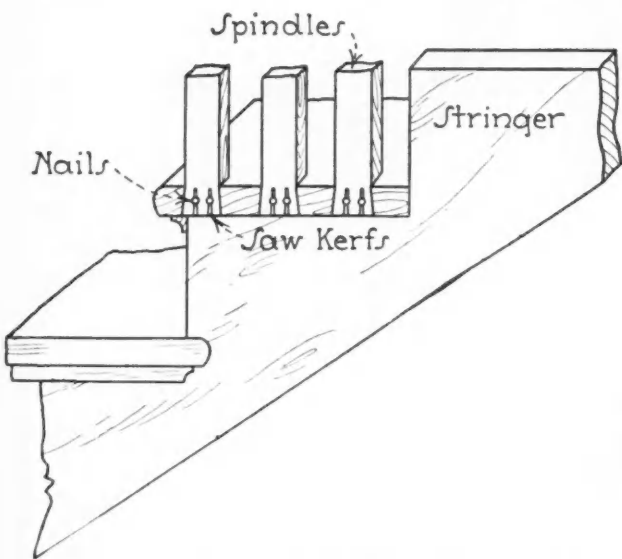
E. S. BRITTON, P. O. Box 133, Steele, Mo.



### Making a Solid Stair Rail

THE sketch shows a good way to make a solid stair rail in geometrical stairs. Cut the openings in the treads for the spindles the same size as the spindles at the top of the treads. Dovetail one side so that it is ⅛ of an inch wider at the bottom. With a thin saw (a tenon saw) saw up from the bottom of the spindle a distance equal to the thickness of the tread. Glue the three sides and drive a nail in each saw cut. This expands the kerf and secures a very tight joint on all three glued sides. I have found by experience that it makes a better job than wedging, is quicker, stronger and more rigid.

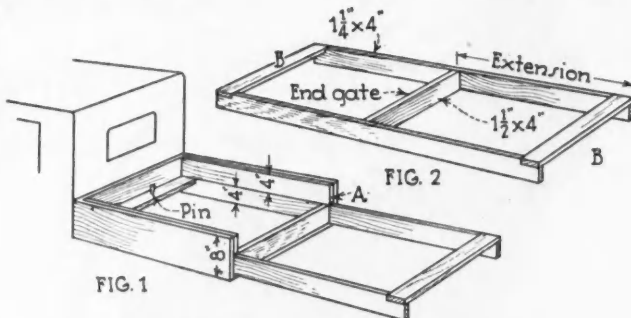
ELIAS A. W. BEEMER Langstaff, Ont., Canada.



This Method of Setting Stair Rail Spindles Is Said to Be Better and Quicker Than Wedging.

### Making the Truck More Useful

HAVING a light delivery truck, with a plain square box body, as in Fig. 1, I found I could make it equally useful



Such a Frame Fitted to the Small Truck Makes It Possible to Haul Lumber When Needed.

for other purposes than merely hauling tools. I made a frame to fit onto this truck which enabled me to use it for hauling small amounts of lumber, long pieces, such as are frequently needed for a job.

I made a frame of 1¼ by 4 inch material, as shown in Fig. 2. This sketch is self-explanatory except for one point. At the proper point there is built into this frame a cross piece of 1½ by 4 inch material in such a fashion that, when the frame is slipped toward the box body, the cross piece will be in the proper position to serve as an end-gate.

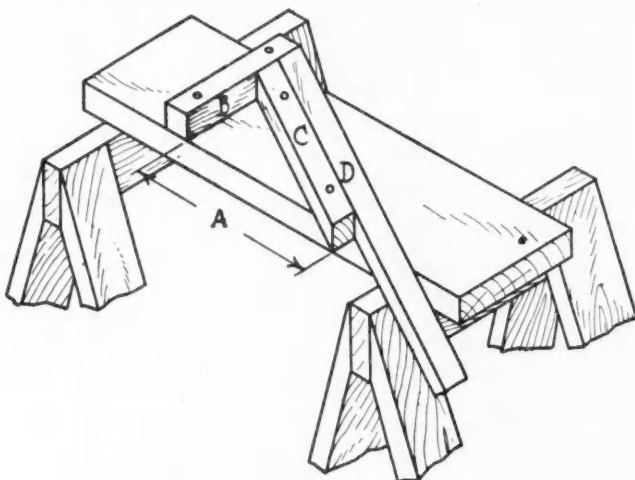
The top edge of the cross piece and the two cross bars, B and B, will support quite a considerable amount of finish material or piping of varied lengths or doors.

BERT W. CULBERTSON, Route 4, Jackson, Miss.



### An Aid in Cutting Bridging

CUTTING bridging seems to be quite a problem for some workmen. Here is a method which is quick and easy. Secure a piece of board about four feet long, of the same material as the floor joists. Mark a space on it equal to the



A Form for Cutting Bridging Will Save Much Time and Assure a Good Fit on Every Piece.

distance between two floor joists (A) in the sketch. This is usually 14½ inches but should be measured accurately. Nail the block (B) at one mark.

Next cut a piece of bridging material (C) to fit between the two marks on the board and nail as shown in the sketch. The bridging (D) can be pushed up against the block (B) and cut the same length as the pattern (C). The whole thing can be rested on two saw horses and used anywhere.

HUDSON R. HUFF, Cedar St., Livingston, N. J.



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**Playroom**



**Bed Rooms**



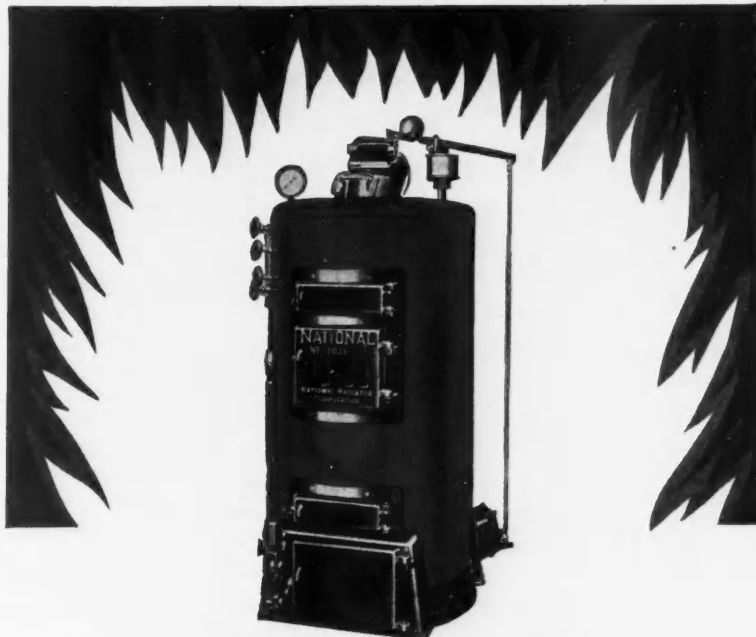
**Grandma's Room**



**Bath Room**



**Living Room**



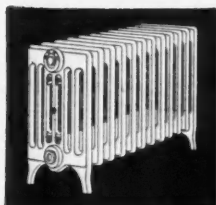
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WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN BUILDER

# Law for the Builder

Conducted by M. L. Hayward

## A Question of Agency

"DO you want to take the five per cent discount for spot cash?" the salesman of the X Company inquired.

"I certainly do," the builder agreed, reaching for his checkbook.

"You'd better make the check payable to me, personally, to save time," the salesman suggested.

"Not on your life," the builder retorted. "The last time I did business that way I had to pay for the goods twice before I got them."

The salesman "flashed" a paper, signed by the president of the X Company.

"There's a written statement from the company authorizing me to collect cash on any orders that I take," the salesman declared.

The builder read the document in question and made a check payable to the salesman. The goods did not arrive. The builder wrote a letter of inquiry to the X Company, and that company repudiated the whole transaction on the ground that the salesman had no authority to collect money and that the document which he showed to the builder had been obtained from the company by fraud.

Then the builder ascertained that the company had sued the agent to make him pay over what he had received from the builder—the latter rested easy and justifiably so, as the courts have laid down the rule that a principal who brings suit against an agent to recover the proceeds of a certain transaction, cannot repudiate that transaction as against the other party on the ground of the agent's lack of authority. In other words the principal, by bringing the suit, thereby ratifies the action of the agent.

"By bringing the suit for the purchase price, knowing all these facts, the principal must be held to have affirmed the sale and waived his right to maintain the present proceedings based upon the disaffirmance of the sale," says the U. S. Circuit Court of Appeals in a case on this point.



## Approving of the Auditor's Report

"I AM enclosing herewith your account to date, and if you find the same correct, I would be glad to receive your check to cover the same by return mail," the creditor writes.

"Your account received, the items of which are all correct and, as I am short of funds just at present, will send you check inside of one month from today," the debtor replies.

Now, the foregoing correspondence constitutes what the lawyers call an "account stated," in an admission by the debtor that he owes the amount of the account which, as a general rule, he cannot afterwards deny.

In a recent case decided by the Kansas Supreme Court and reported in 185 Pacific Reporter, 893, a new phase of this question was presented to the court.

It appeared in this case that X had been working for a certain building corporation and claimed that there was \$750 due him as a balance on salary, which the corporation was unable or unwilling to pay, and X sued in the Kansas Courts.

"We don't owe you that amount," the corporation contended, and X pointed out that the company had approved of an auditor's report on the general accounts of the company in which X's claim was listed as a liability.

"The report of an officer to his association is not an 'account stated.' It is a mere tabulation of facts for the information of the corporation. The approval of such a report does not estop the corporation to deny its accuracy," said the Kansas Supreme Court in ruling in the company's favor.



## When Are Goods in Transit?

"TAKE these goods down to this man Dunn at this address and bring back the cash," a New York contractor told his salesman. An hour later the salesman returned and handed over a certified check for the face of the invoice.

"Is this what you call a certified check?" the contractor demanded, and pointed out to the astonished salesman that it was merely stamped certified, without being signed. The salesman promptly reported the matter to the police, but Dunn and the goods had disappeared without leaving any address.

The contractor looked up his indemnity bond which protected him against loss, "Through robbery, holdup, or theft, by any persons whomsoever, while any goods are in transit within 20 miles of any of the stores covered thereunder, and in the custody of any of the insured's partners, or any of the employees, or any messenger temporarily employed; or through negligence on the part of any such employee or messenger having custody of the property while in transit as aforesaid."

"The goods were not lost in transit, but the loss occurred after the goods were in Dunn's hands, and the transit had ceased," the indemnity company contended.

"The goods were still in transit in the process of being taken somewhere for delivery, or to be returned to the seller when stolen from the salesman. It was a cash transaction. Delivery was to be made only for cash or a certified check," said the New York Court of Appeals in deciding that the policy covered the loss.



## What Alters a Note?

IF a debtor gives a builder a note at seven per cent, and the builder without the debtor's consent, changes the rate of interest to eight per cent, this is a "material alteration" which renders the note void.

This is an ordinary bit of business law which every office boy knows, but, suppose that the debtor gives the builder two notes, later on he makes a payment, without saying which note it is on, and the builder endorses the payment on the back of one of the notes, decides that he would stand better if the payment were on the other note, erases the payment from the first note, and endorses it on the back of the other.

Is this a material alteration?

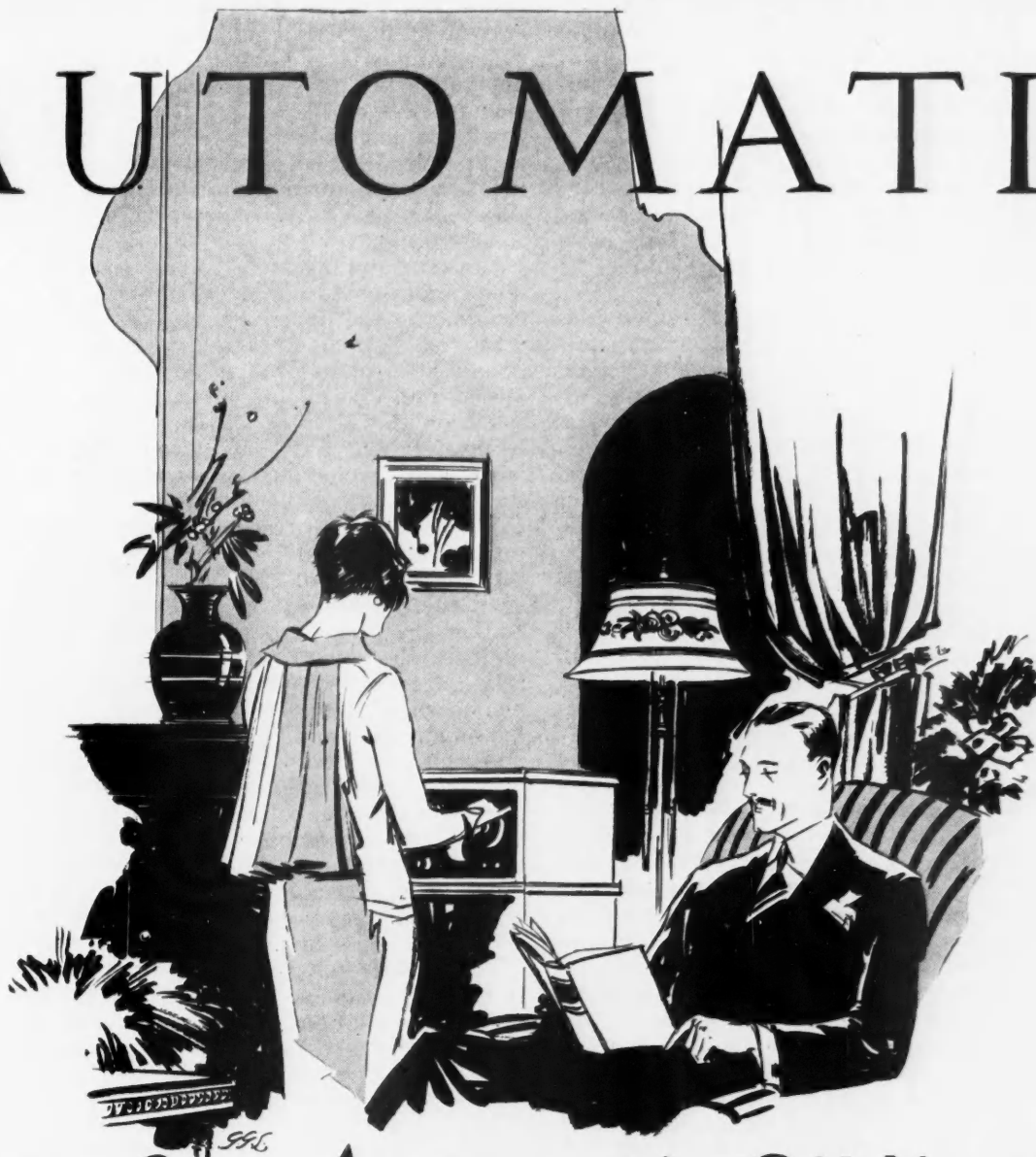
This point came before the South Dakota Supreme Court in the recent case of Harrington vs. Leighton, 208 N. W. 1536, where the court ruled that the note was still in full force.

"A memorandum of a payment endorsed by the holder on the back of a promissory note is no part of the contract of the parties. The original note, which constituted the evidence of their contract, remains intact," was the reasoning of the Court. The Florida, Massachusetts, Minnesota, and North Dakota courts have all arrived at the same conclusion.





# AUTOMATIC



## *Care free Automatic Oil Heat! With Only Three Moving Parts!*

"This Place Heated With A Wayne Oil Burner." Down goes the sales resistance in the sale of a home or renting of an apartment when a sign is displayed with those few words! For it means that the future occupant will enjoy all the genuine, carefree, dependable heating comfort, Convenience, Quietness and Economy—that only a WAYNE OIL BURNER—with only three moving parts—can give!

Builders are rapidly learning that the new perfected WAYNE OIL BURNER is Easy to Buy, Easy to Own, and Easy to Install! And it adds much more than it costs to the value of any building! Just drop us a line and we'll gladly tell you where you can see it in operation!

With WAYNE—automatic oil heat is no longer a luxury—but a necessity in the modern home and apartment! It is vitally essential to health and comfort! A constant, warm, humidified temperature is maintained—just by setting the thermostat! Nothing but solid comfort, absolute cleanliness—in every nook and corner! No Coal! No Ashes! No Dirt, muss or fuss! No work or worry!

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Office and Factory  
Fort Wayne, Indiana

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which, it will be noted, is ten days late. This, in turn, affected the completion of footings and foundation walls. The delay continued in the erection of floor forms and the placing of steel and concrete but the speeding up of these latter items showed the concrete second floor completed on time.

The second story construction was of steel and it was considered advisable to use extraordinary care in handling this steel over the newly placed concrete floor below. For this reason the start of steel erection was delayed slightly as shown, also delaying the roof plank.

It may be well to emphasize here that, when considering a single operation by itself, a delay of a few days appears insignificant. As in this case, however, with a fairly close schedule, permitting little time to be picked up, such a delay affects many other operations and is in evidence well beyond the time when the particular operation in which it started has been completed. As a matter of fact, an unusual amount of rainy weather made it impossible to gain lost time on this work. Under average weather conditions it is probable that this short delay might have been made up.

It will be noted at this point that paving is starting several days ahead of schedule. This is due to the fact that with this item, followed by granolithic, completed, all concrete in the job would be done. This item was, therefore, advanced to follow closely the placing of second floor concrete. A more careful consideration of this point when the schedule was prepared would probably have advanced it several days.

The four later items shown on the schedule; that is, heating, lighting, plumbing and sprinklers, are all subcontracts. Because of the difficulty in controlling work which is subtle, too much emphasis cannot be placed on the need of following the start and progress of subcontracts with extraordinary care. As a matter of fact the selection of dependable subcontractors whose cooperation is assured is of major importance.

The second copy of the schedule shows the work completed. The delays shown in finishing brick and stone work and steel sash, glass and roofing, while properly indicated on the schedule, actually had little or no effect on the completion of the work as a whole, the brick work having been substantially

completed but the pointing up and cleaning down making it impossible to show the item as finished. A similar condition applies to the glass where a small amount of broken glass remained to be set until the closing days of the work. In the case of roofing, a small amount of uncompleted flashing showed this as an uncompleted item. However, by continuing to show these items as uncompleted, they are constantly before the Manager of Construction for his consideration.

Opposite the last item a second triangle is shown. This indicates turning over the second floor of the building to the owner on July 3rd, he expressing a wish for occupancy to take care of holiday trade. As a matter of fact the work was substantially completed and the architect's and owner's inspection made on this day, the remaining days in the week being required only for miscellaneous cleaning-up items and the installation of several items of hardware.

From these illustrations it will be seen that the purpose of a schedule is not to definitely determine the exact dates of starting and completion—since such determination is a practical impossibility. Rather the purpose of the schedule, as shown, is to indicate the exact standing of each operation, its relation to other operations as the work proceeds, and to show clearly and quickly what effect the delay on any one item will have on the work as a whole. The schedule here shown covers an average condition. In some cases, particularly on a large operation, the delay in delivery of some major item might well throw the complete schedule off balance, an unexpected foundation condition encountered might require an appreciable added length of time or some other unforeseen condition disrupt the time forecast. In cases of this sort, with one operation so far out of line, the schedule as a whole must be revised if it is to form an efficient guide for the work.

The compilation of a schedule such as that here shown is not a difficult task. Even the builder handling work of a comparatively small nature, once he gets in the habit of plotting his work in some similar form, will find himself thinking ahead in matters of progress much more clearly than if the relation of operations on a contract had not been emphasized through a graphic schedule.

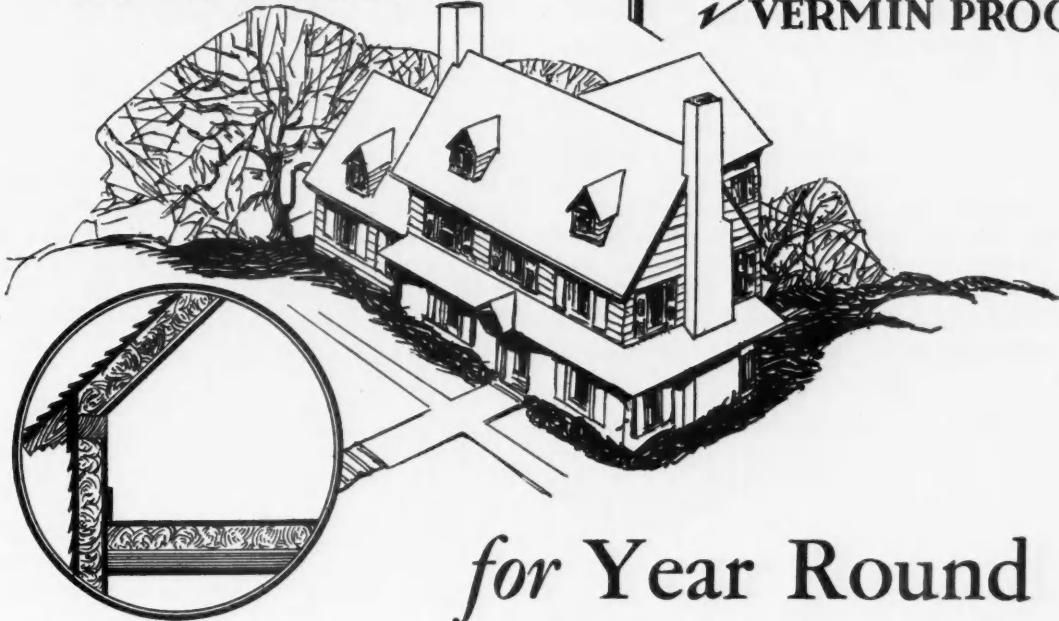


Although Built of Pine Logs in Regular Log Cabin Style, the Interior of This Home, Built by E. D. Maxwell, Marlin, Texas, is Finished Exactly Like the Conventional Dwelling.

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# Talks on Estimating

## *The First of a Series*

By L. G. KELLEY

SOME time ago at luncheon a man remarked—  
 “There is only one sort of transaction that really pays in the long run, and that is where both parties profit.” For years this man has been engaged in selling a rather high priced building specialty. The resistance he met with in selling this product taught him this fundamental lesson.

Undoubtedly the building business would be better today if everyone had profited by all transactions in the past. However, we are sorry to say that what appears to be unfair competition and price cutting has entered into the building field during the past few years to such an extent that in many cases we cannot say that both parties to the transaction have profited. We are quite convinced of two things, first, that the contractor in most cases has not deliberately attempted to use unfair methods, and second, that, regardless of who or what may be at fault, something has created a situation where many “building-minded” people, as we might say, do not have the proper amount of confidence in the building industry in general, and in certain members of the building fraternity in particular.

When a contractor bids lower than he should on any building, he tends to deprive himself of profit, his competitors of profit, and we have known of cases where he was forced to “skin the job,” and this creates a bad impression among the people who would normally desire to build. Yet we feel that in the majority of cases he has not really wished to injure his competitors or the public, but has been misguided in regard to the costs of a building, and has, no doubt, been *misinformed in regard to the value and usefulness of certain systems of estimating.*

Some time ago I heard a remark made by a man, who is considered as an authority thoroughly familiar with building costs, to the effect that a certain system of estimating when applied by intelligent trained men could be used to estimate the costs of a building without any errors greater than 10%, and generally not greater than 5%. This, he stated, should be considered good, inasmuch as contractors’ estimates varied all the way from 5% to 25% or even more for a given building. This was not intended as a criticism of contractors, but it certainly cannot be considered as a compliment. It would appear, as it appeared to the listeners at the time, that a number of contractors were guessing in each case. No, they were not guessing, they were probably using some short cut methods which have been over-advertised.

We do not wish anyone to feel that we are condemning the short cut methods. We are not, but we do say that *where a detailed estimate is required, a detailed estimate should be used,* and furthermore every estimator should be familiar with all the various systems. We wish further to say that we should give a vote of thanks to every man who has attempted to devise some short cut method for estimating the costs of a building, at the same time objecting strongly to the use of a short cut method when a *detailed* estimate is really required.

We know well enough that the detailed and the unit cost methods of estimating are the only ones

that can be said to be reasonably accurate. We also know that the detailed estimate requires a considerable amount of hard work on the part of the estimator, and that the estimator *should be well trained.* We also know that short cut methods are used primarily to avoid the labor of making a detailed estimate. It would seem then that if someone could revise our methods of estimating in such a way that a great deal of the labor in making up a detailed estimate is eliminated, more contractors would be using this system and the entire business of contracting and building would be on a saner and more profitable basis.

### Some Pertinent Facts:

Sooner or later we become aware of certain facts pertaining to contracting, and in particular to estimating.

First, that *an estimate is worth just about as much as you put into it.* If you do not put in much time and effort in making the estimate, in all probability it will not be worth much. It may even be the cause for considerable loss. Also the detailed estimate, although requiring more actual labor, *requires less training,* and the short cut methods, which require little or no labor, actually *require very extensive education and considerable experience to apply them even half way intelligently.*

Second, that really good estimating is not exactly easy, nor is it “scientific guess-work.”

Third, that in order to provide for making the detailed estimates which we are compelled to use, we should by all means use some short cut system for the rough estimates we are asked to make. It is no more logical to attempt to use a long detailed system for every estimate than it is to use a short cut method for every estimate. In the one case we lose money on “overhead,” the other on the job. Where only a rough estimate is required if we can use a short cut method, considerable time can be saved and thus we can spend more time on what detailed estimates we are required to make.

Fourth, we must remember that all systems should be understood and used. By this we mean that every office should have data pertaining to the four common methods of estimating available, so that the estimator can take full advantage of what information has already been gathered for his use. And upon completing every contract the actual costs of the building should be turned over to the estimator so that he can make a record of not only the Total Contract Price and the Quantities, but also perhaps Square Foot Costs, Cubic Foot Costs, and costs based upon the Percentage method of estimating. This, then, should be filed for use at some future time when a similar building is on the boards and the owner is calling for bids.

We are showing a sample Cost Record which may be used for tabulating cost data for at least four different methods of estimating,—the Detailed, the Unit Cost, the Geometrical (square foot and cubic foot systems), and two variations of the Percentage system. The costs pertaining to the Detailed and Unit



# Put WILLIAMS OIL HEAT to work for you!

**O**FFER your prospects the greatest autumn sales producer—carefree heating! And offer them the type they'll recognize as insuring warmth without work or worry—Williams Oil Heat!

Williams oil burners are heating more homes and apartments by far than any other oil burner. Williams Dist-O-Matic is the low-cost unit for smaller homes. Like the famous Oil-O-Matic, Williams Dist-O-Matic provides abundant heat efficiently and quietly.

Stress Williams oil heating in your fall advertising and selling. Cash in on Williams big national magazine, newspaper and radio advertising campaign that continually tells your prospects the advantages of Williams warmth. Talk with your Williams dealer today or use the coupon below right now.

*Larger houses—apartments*

**WILLIAMS  
OIL-O-MATIC  
HEATING**

*Listed as Standard by Underwriters'  
Laboratories*

*For small houses*

**WILLIAMS  
DIST-O-MATIC  
HEATING**

*Listed as Standard by Underwriters'  
Laboratories*

*Medium size homes*

**WILLIAMS  
OIL-O-MATIC  
HEATING**

**NEW JUNIOR MODEL**

**WILLIAMS OIL-O-MATIC HEATING CORPORATION**

*Factory: BLOOMINGTON, ILLINOIS*

*Branches and Dealers Everywhere*

**LISTEN  
TO THIS!**

Tune your radio to WJZ and NBC chain stations at 10 o'clock Eastern Standard Time each **TUESDAY** night. Each **FRIDAY** night at 8:30 Central Standard Time, tune in WGN, Chicago.

<p><b>WILLIAMS OIL-O-MATIC HEATING CORP.</b> B.D.-10-9 Bloomington, Illinois</p> <p>Without obligation, send me detailed information on lowest cost automatic oil heating for..... houses.....apartments.....buildings.</p> <p>Name .....</p> <p>Address .....</p> <p>City and State .....</p>
--

Cost systems are self-explanatory, but perhaps we should state that the Percentage systems are used in two different ways—(1) By considering the cost of material as 100% and the cost of labor as a percentage of the cost of material (see column marked “% labor”), and (2) By considering the cost of the whole building as 100% or the base, and the cost of any part as a percentage of the total cost (see column marked “% Bldg.”).

in many cases be more convenient and probably fully as accurate, if not more so?

The following are a few instances where time can be saved by taking advantage of certain fundamental facts:

When we attempt to estimate any material we will find that there are certain peculiar conditions to be met with and understood which perhaps pertain only to that particular material. We will also find that

COST RECORD						J. P. Jones—Job No. 114						
Building		Notes		Contract Price		Cost						
Residence		Good Work (English)		\$10,000.00		\$9,200.00						
(See items for sub-totals)												
SQUARE FOOT and CUBIC FOOT COSTS												
Bldg.	No. Sq. Ft.	No. Cu. Ft.	Est. Costs			Actual Costs						
			Sq. Ft.	Cu. Ft.		Sq. Ft.	Cu. Ft.		Sq. Ft.	Cu. Ft.		
(114)	2000	18,000	\$5.00	\$5.55		\$4.60			\$5.11			
SUB TOTALS												
ITEM	Estimated Costs						Actual Costs					
	Total Cost	Unit Cost	Mat. Cost	Labor Cost	% Labor	% Bldg.	Total Cost	Unit Cost	Mat. Cost	Labor Cost	% Labor	% Bldg.
Excavation....	\$200.00	\$1.08	.....	\$200.00	.....	2	\$199.25	\$1.08	\$5.00	\$194.25	.....	2
Grading, Etc....	25.00	.50	.....	25.00	.....	1/16	25.00	.50	.....	25.00	.....	1/16
Foundation....												
Concrete.....	276.58	11.50	\$198.41	78.17	40	2 3/4						
Forms.....												
Brick.....		etc.										

We should, however, take advantage of everything we can to eliminate any unnecessary waste of time in making up any form of estimate, whether it is a Detailed estimate, a Unit Cost estimate, Cubic Foot Cost estimate or some other form. This can be accomplished, not by correcting some one fault, but by improving on all of our methods. Some suggestions follow:

First, we should revise our mathematics, as we find many cases of where estimators and contractors have used a certain solution for a given problem when a much shorter one that is fully as accurate is available. Why, for example, should we divide by 27 in turning cubic feet to cubic yards, when the same practical result can be obtained by pointing off two places and multiplying by 3.7? *Why divide at any time when we can by any chance use multiplication*, inasmuch as long division especially is three or four times as difficult as multiplication? In many cases why should we use a Detailed estimate when a Unit Cost estimate would be fully as accurate and much easier to make? The fundamental principle of the Unit Cost system is simply this: That instead of making a number of small calculations we group or add certain items and make one calculation serve for several. Yet this is not always thoroughly understood by many estimators and contractors. Again, why use a certain unit, for example 1000 brick, when we can see that 100 sq. ft. of wall would

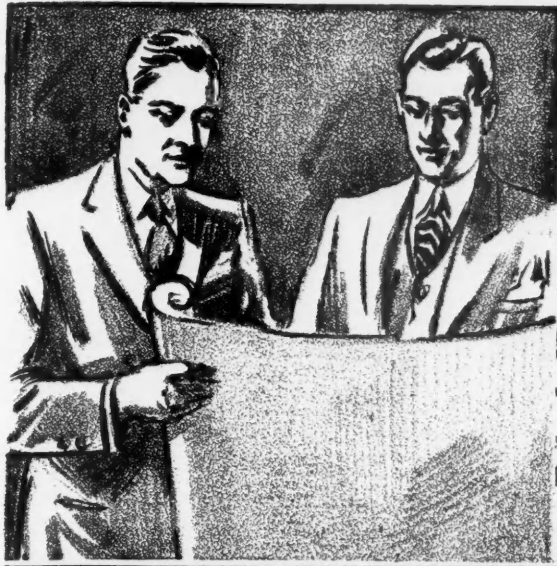
in the case of any manufactured product, or almost any product for that matter, there is certain definite standard data. Much of this data has been tabulated in such a form as to relieve the contractor and estimator of an immense amount of figuring and make his work as easy as possible. Even in ordinary estimating problems where we find cubic feet of wall or cubic yards of excavation or concrete, there are certain factors which are peculiar to these operations and if we wish to utilize them, they will save us an immense amount of labor.

**Figuring Excavation by the 3.7 Method:**

As an example, we might mention the more or less well developed system of taking off both excavation and concrete by what is known as the “3.7 method.” The very basis of this system is in itself a labor saving proposition. That is, instead of dividing by 27 we divide by 100 and then multiply by 3.7. It saves labor simply because most any problem of long division is three or four times as difficult as a similar problem in multiplication. Also we must remember that if we can reduce problems to multiplication, we can make up tables, which we cannot do if we rely on dividing by 27 each time.

One of the most convenient tables that the estimator can have, and which is very little known, is the table of decimal equivalents for 27ths. The factors generally used in applying the 3.7 method are

# The **BUILDER** Speaks.



**A** COMPARISON of Cyclone Safety Shingles with other types invariably results in specifications for "Cyclones."

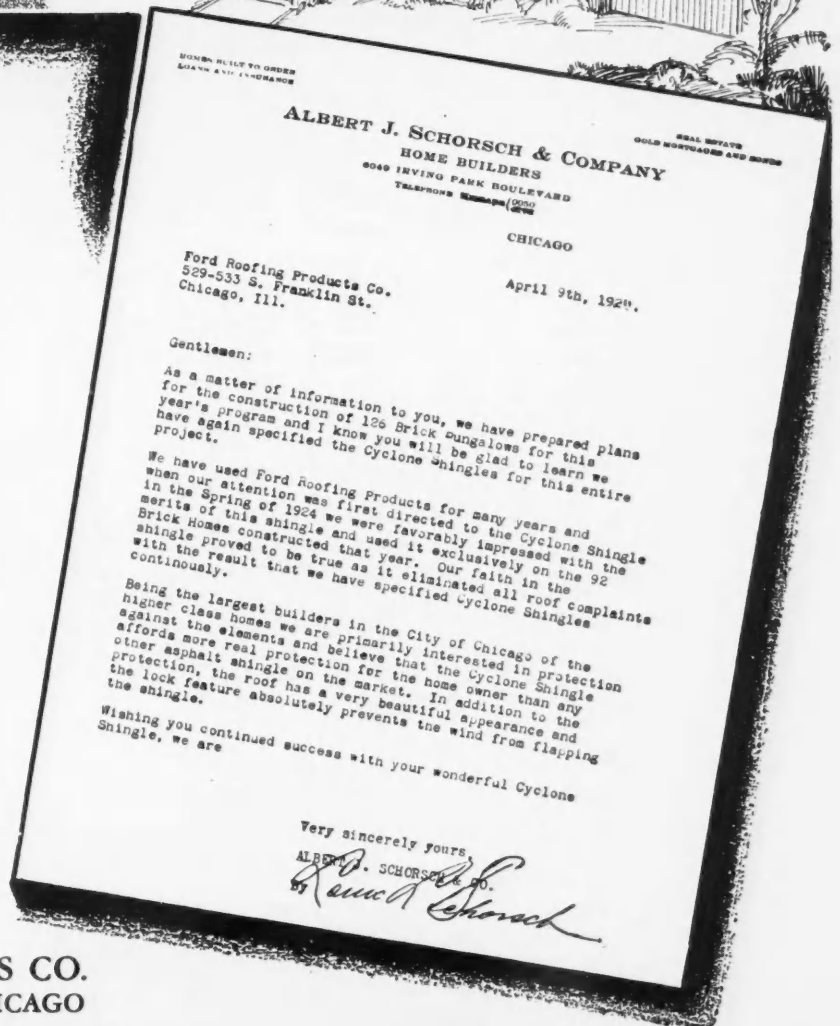
Builders intent on building a reputation as well as homes to sell regard "Cyclones" as the solution to their roofing problem.

Appealing design, appropriate colors, absolute protection and quality unfailing as Gibraltar are the reasons that each year more and more builders are roofing with "Cyclones."

### Specifications

- Nearly 7 inch headlap
- Double locked tabs
- Two and three thick
- FAST LAYING**

FORD ROOFING PRODUCTS CO.  
529 So. Franklin St. - - - CHICAGO



# CYCLONE || SAFETY || SHINGLES

WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN BUILDER

found by consulting this table of 27ths or by dividing the factors given into smaller parts. In Table I we illustrate a table of 27ths.

1/27	.0370	10/27	.3704	19/27	.7037
2/27	.0741	11/27	.4074	20/27	.7407
3/27	.1111	12/27	.4444	21/27	.7777
4/27	.1481	13/27	.4815	22/27	.8148
5/27	.1852	14/27	.5185	23/27	.8519
6/27	.2222	15/27	.5555	24/27	.8888
7/27	.2593	16/27	.5926	25/27	.9259
8/27	.2963	17/27	.6296	26/27	.9630
9/27	.3333	18/27	.6666	27/27	1

1/2 of 1/27 = 1/54 or .0185  
1/4 of 1/27 = 1/108 or .00925

We are also illustrating a problem showing the principle of the 3.7 method. A small table (Table II), which we are sure has been used by a fairly large number of contractors but which has not been thoroughly understood in every case, is also shown.

Thick-ness of wall (inches)	Fraction of cu. yd. per sq. ft.	Decimal Equiv-alents	Thick-ness of wall (feet)	Fraction of cu. yd. per sq. ft.	Decimal Equiv-alent
1	1/324	.0031	1	1/27	.0370
2	1/162	.0062	2	2/27	.0741
3	1/108	.0093	3	1/9	.1111
4	1/81	.0123	4	4/27	.1481
5	5/324	.0154	5	5/27	.1852
6	1/54	.0185	6	2/9	.2222
7	7/324	.0216	7	7/27	.2593
8	2/81	.0247	8	8/27	.2963
9	1/36	.0278	9	1/3	.3333
10	5/162	.0309	10	10/27	.3704
11	11/324	.0340	11	11/27	.4074
12	1/27	.037	12	4/9	.4444

Example—Find the cubic yards of concrete in a wall 1'8" thick, having a superficial area of 720 sq. ft.

$$\begin{aligned} 8'' &= .0247 \\ 1'0'' &= .0370 \end{aligned}$$

$$\hline .0617$$

$$720 \times .0617 = 44.4 \text{ cu. yds.}$$

This Table II can be used in many ways. In particular it is useful for estimating the cubic contents of large walls of uniform thickness. Example: 720 sq. ft. of 6" wall is equal to  $720 \times .0185 = 13.32$  cu. yds. and 720 sq. ft. of 10" wall =  $720 \times .0309 = 22.25$  cu. yds.

The table can also be used to take off trench excavation. In this case we multiply the depth of excavation by the total length, thus finding the sq. ft. in *one side* of the trench. Assume the area so found is 850 sq. ft. and the average width of trench to be 4'. The cubic yards in trench will be equal to  $850 \times .1481 = 125.885$  cu. yds.

As a practical example we shall ask our readers to solve a problem using the ordinary method of multiplying the *length* by the *width* by the *thickness*, and then solve the problem by using the table. The

problem is this: Given a building 24' x 55' requiring a trench wall, the trench excavation to be 4' deep and 3' wide. By using the table and by having a thorough understanding of this particular method, we can almost solve this problem mentally, whereas by the old grammar school rule we must use a pencil and paper and spend several minutes to do it.

Solution by ordinary rules

$$\begin{aligned} 2 \times 24 &= 48 & 158 \times 4 \times 3 &= 1896 \\ 2 \times 55 &= 110 & 1896 \div 27 &= 70.2 \text{ cu. yds.} \end{aligned}$$

$$\hline 158$$

By table

$$\begin{aligned} 158 \times 4 &= 632 \\ 632 \times .111 &= 70.152 \text{ cu. yds.} \end{aligned}$$



### Putting on Big Subdivisions in a Big Way

(Continued from page 79)

gives an important, big air to the whole proposition.

Sixth—Really important facts and figures are given by all the salesmen of this company and in all of the advertising used by the concern, instead of just "hot air."

"Values backed by facts," is the sales slogan of the Ransom corporation," declares Wesley H. Porter, advertising manager and director of publicity. "High pressure sales methods are discouraged. Salesmen, before starting their sales efforts, are put through a regular school of instruction. They are taught to give prospective buyers all available information of a constructive value, backed by official records, engineering reports, etc. We use no 'Let the buyer beware' tactics. We want satisfied clients who will themselves become boosters for our properties and help to build up the communities.

"Real facts, we find, always give more of an air of bigness and good possibilities to the properties than any amount of 'hokey' and hot air. That's why we cram our newspaper advertising with such material. It is the sort of stuff that the people of today are interested in because the present-day real estate buyer wants to get behind the scenes and see for himself just what's behind the property he is contemplating buying. In other words, the average present-day real estate prospect is shrewder and keener than those of a former day and actual facts and figures are correspondingly more effective with such prospects than the old fashioned hot air."

Here are some of the facts used in typical advertising of this concern:

"A check of Whittier boulevard at Indiana—made by the State Highway Department on Sunday, January 13, 1929—showed that 26,438 automobiles passed that point during a 16-hour count. Taking Automobile Club figures of 1.8 persons per car, makes a total of 47,588 persons traveling by a given point in 16 hours. Whittier boulevard—passing through the heart of the new city now building at Montebello Park—is today recognized as an outstanding real estate investment opportunity.

"A block on Whittier boulevard which a year ago had only one or two tenants, today has more than nine chain stores either now operating or who have made leases."

And so on.

Yes, it has paid the Ransom corporation to put on its big subdivisions in a big way. And it is paying big returns to other subdividers and builders to do the same thing with their properties.

Try it and see.

# GABRIEL

## ROLLED STEEL PRODUCTS



Double-leg folding bracket with stucco attachment.

Gabriel Dome Damper with vertical flange and handle control.

The Gabriel Package Receiver. An asset to any home or apartment.

Gabriel Garbage Receiver

Gabriel Rolled Steel Coal Chute

### CAN BE RELIED UPON FOR EVER-LASTING SERVICE

Each of these products illustrated here is designed to give the maximum of service as well as adding to the attractiveness, comfort and salability of the building. Note their advantages listed below.

#### GABRIEL ADVANTAGES

- Heavy copper bearing rolled steel throughout.
- Electrically welded joints.
- All hardware and operating parts parkerized to prevent rust.
- Positive anchorage.
- Unbreakable rolled steel hinges.
- No lintels necessary—specially reinforced boot carries inside masonry.
- Automatic spring latch—positive closing and burglar proof.
- Automatic door opening.
- Removable hopper—easily attached.
- Designed to harmonize with important home details.

#### SEE THESE PRODUCTS AT YOUR DEALERS

An inspection will convince you of their advantages. Gabriel products are a sales asset on your new homes, and insure satisfied customers.

Mail coupon if you prefer.

**GABRIEL STEEL COMPANY**  
13700 Sherwood Ave., Detroit, Mich.

Please send me full information about products listed below

- Gabriel Coal Chutes
- Gabriel Package Receivers
- Gabriel Garbage Receivers
- Gabriel Steel Joists
- Gabriel Dome Dampers
- Gabriel Scaffold Brackets

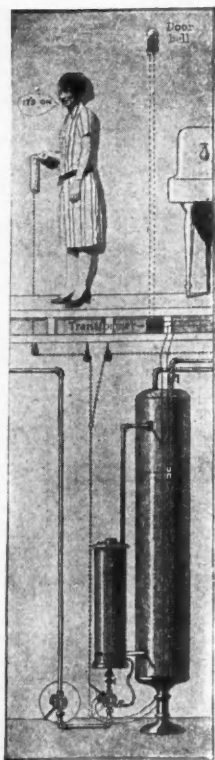
**GABRIEL STEEL COMPANY**  
13700 Sherwood Ave. DETROIT, MICH.

# What's New in Equipment for Buildings

For further information in regard to any item described in the "What's New" Departments address, American Builder Information Exchange, 105 W. Adams St. Chicago

## A Safe Water Heater Control

**R**UNNING to the basement to light the gas and to turn it off when hot water is needed is a real inconvenience which can be done away with by the installation of a gas heater lighter such as illustrated here. The installation of this convenience makes any house more desirable and more readily salable. This device lights and turns off the gas heater in the basement from any floor above.



Complete Control from Any Floor for the Gas Water Heater.

By lifting a control chain mounted on an indicating panel, the gas is turned "ON," and by lifting the chain again, the gas is turned "OFF." The "ON" and "OFF" positions are always positively indicated. Any number of controls may be operated independently of each other as one control is not locked against the other. The heater can be turned "ON" from one floor and turned "OFF" from another.

This device is now equipped with an alarm, attached near the bottom on the tank. If the gas is forgotten and the tank becomes overheated, this alarm sounds and continues until the gas is turned off. Turning the gas off silences the alarm. The device can be attached easily and quickly to any make of side arm gas heater. It is inexpensive and adds much to the value of any home.

## Complete Kitchen in One Unit

**A** NEW and most complete kitchen unit has recently been placed on

the market. The company which manufactures these units has spent considerable time in developing and designing a cabinet which combines every kitchen requirement in a single compact cabinet. The cabinet contains a stove, sink, drain-board, refrigerator, china cabinet, drawer, and ventilator. It should find a ready market, especially for installation in the "efficiency" apartment where the dinette and kitchen are practically one space. Production on these units is already under way and orders are being taken for early delivery.

This cabinet can also be installed in the regular kitchen where it provides, in one convenient spot, all of the kitchen essentials. Again it can be placed in the living room of small, one-room apartments for, when it is closed up, it makes a handsome appearance as a piece of ornamental furniture. It is completely closed by doors. An oval glass in the front of the cooking compartment and an oval mirror in the front of the sink compartment present a useful as well as attractive appearance.

The complete unit measures 45 inches wide, 80 inches high and 21 inches deep. It is constructed on a welded, cold rolled steel channel frame, and is strong and rigid. The 16-inch oven over the four-burner gas stove is thoroughly insulated, as is the refrigerator. The ventilator has

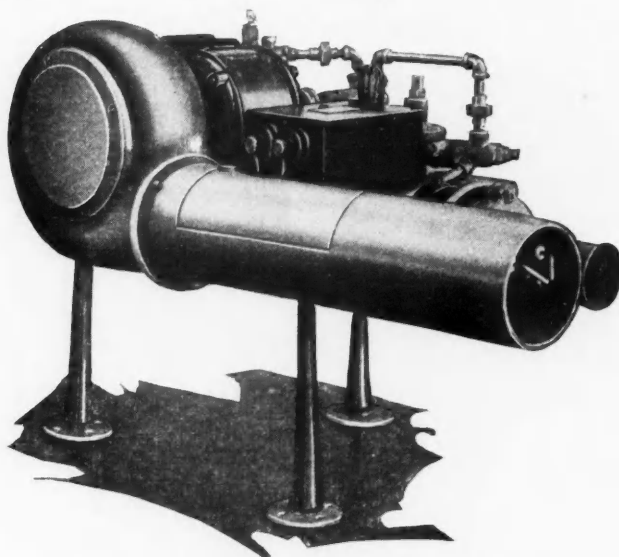
direct connection to a six-inch flue. The cabinet is beautifully lacquered in light ivory, green or Persian red, with trimmings to match. Special colors to match decorations are furnished to order at an extra charge.



## For Economical Oil Heating

**B**UILDERS everywhere are rapidly learning that the installation of an oil burner in a house is a great aid in selling. One thing that has interfered with an even more rapid, general adoption of oil burners has been their cost, both the original cost and operating cost. Now, however, oil burners are being offered at prices which compare favorably with coal burning systems and which can be operated at a favorable cost.

The oil burner here illustrated has been brought out by an old reliable company which makes some very interesting claims for its product. In the first place, this burner is priced at a figure which makes it suitable for installation in the average home. Its operation is economical because it burns the cheaper grades of oil. Instead of the lighter gravity oils it can operate on gas-oil and even on fuel oil, which usually sell for about 10 per cent less than the lighter oils.



Here Is a New Oil Burner Which, Because of Its Economical Use of the Cheaper Grades of Oil, Makes Oil Heating Available for the Average Home.

In order to install this burner, which can be used with any existing heating plant, warm air, hot water or steam, it is only necessary to remove the grates, line the walls or the ash-box with fire brick, set the burner at the ash-box door, make a few simple electrical connections and connect the oil tank. The operation is completely automatic, controlled by a thermostat in the living rooms above. The burner is so compact that it occupies less than a square yard of space.

Not only is the equipment fully automatic, but it is fully protected by safety devices approved by the National Board of Underwriters. A specially constructed fan is used which is designed for silent operation. The combustion is thorough, every bit of oil being burned.

# ONLY ONE MOVING PART



Before the Reid-Way came on the market, it was thought necessary to drive sanding drums through belts, chains or gears. This meant added weight and loss of power. The Reid-Way revolving field motor brought a new conception of a light weight sanding machine. The sanding drum itself is the motor and this high-speed, high-efficiency, sander with remarkably long life has won nation-wide recognition.



The new Reid-Way Whirlwind model brings added power with no increase in weight. It is safe, fast, accurate, dustless. Ball bearing guide rollers insure positive control of cutting. It plugs in any light socket where 110-220 Volt AC is available. A circular describing this remarkable machine and its many uses will be sent on request.

## THE REID-WAY COMPANY

744 North 16th Street - CEDAR RAPIDS, IOWA

The Reid-Way Company,  
744 North 16th Street,  
Cedar Rapids, Iowa.

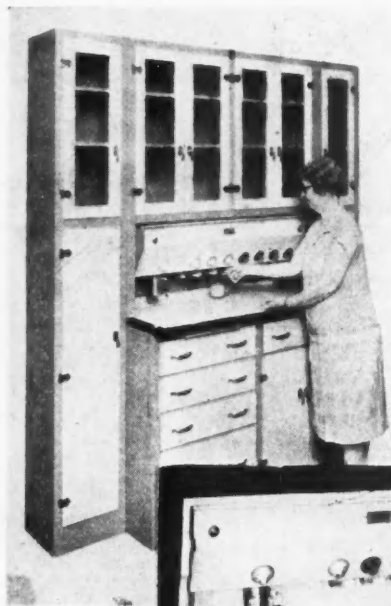
Gentlemen: Please send free circular describing the new Reid-Way Whirlwind Sander.

Name .....

Address .....

### A Kitchen Pantry Unit

**A**N entirely new piece of kitchen equipment made its appearance on the market not long ago and has demonstrated its usefulness in making the kitchen more convenient



This Pantry Unit Can Be Fitted Into Either Wood or Steel Kitchen Cabinets to Increase Their Convenience.

and the homes with which it is equipped more desirable. It is a compact, sanitary, metal container for staple or dry groceries. It serves the purpose as a pantry in the modern small kitchen.

Each unit contains a flour bin and other

bins holding 10 pounds of sugar or the equivalent in other commodities. The unit is finished on the inside with a sanitary lacquer and is practically air-tight.

Glass indicators in the front of each bin permit one to see at a glance the amount of the contents. The contents are quickly released, in the amount desired, by turning the throttle underneath the bin. The outside is finished in baked enamel in the standard colors, ivory, white, apple green, or in a prime coat.

These units are made in eight sizes, from 19½ to 48 inches long. They are separate units fitting into any kitchen cabinet or installed on a shelf, table or wherever most convenient.



### "The Boiler That Makes Its Own Gas"

**T**HE illustration shows a gas heating plant which manufactures and burns its own gas within itself. It is adapted to either hot water, steam or vapor heating. It can be installed in any house or apartment and will furnish clean, dependable, automatically regulated heat at low cost. In suburban or rural homes it will also furnish sufficient gas for cooking, for operating stationary internal combustion engines, and for lighting plants.

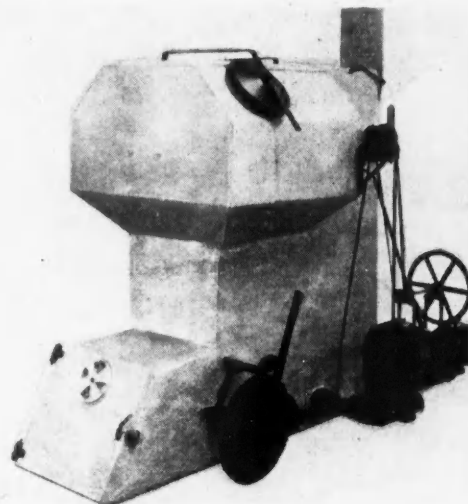
This equipment has been perfected and placed on the market by a company which has, for a number of years, been producing a highly successful gas generating plant for home installation. The generator-boiler heating plant is a combination of this company's gas generating plant built into the center of a specially designed, welded steel, boiler.

The hydrocarbon gas, produced by passing steam over burning coke or coal, is known as uncarbureted water gas. Its cost is very low. It burns without smoke or soot, with a clean flame which does not blacken pans or cause dirt on walls and ceilings.

There is absolutely no storage of gas. The gas is drawn from the generating portion by a suction fan as it is made

and delivered to the combustion chamber. The speed of the fan governs the quantity of gas produced. The boiler is absolutely smokeless and high thermal efficiency is maintained.

The boiler is constructed with a caterpillar or chain grate, mounted on casters as shown in the illustration. The grate is operated by a small electric motor, the power used amounting to approximately 1/20 of a h.p. and the motion being timed so that ash and clinkers do



This Single, Compact Unit Generates Its Own Gas and Burns It to Heat the Home at Low Cost. The insert shows the caterpillar grate.

not have time to accumulate and interfere with combustion.

The hopper holds 500 pounds of coke, sufficient to operate the plant for a week or 10 days. The ash should be removed once a week. The fuel is fed by gravity. The speed of the fan, which is the controlling factor, is governed by a thermostat in the living rooms.

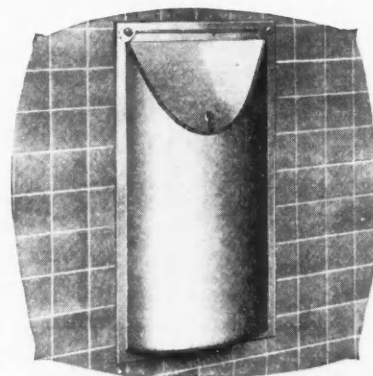


### Built-In Steel Clothes Hampers

**I**N the modern home there is no place for the bulky and unsightly wicker clothes hamper of yesterday. People demand convenience, particularly in the matter of such daily necessities as the storing of soiled clothes and linens. For this reason enterprising architects and contractors have found modern, built into the wall clothes hampers an important factor in pleasing prospective purchasers or tenants.

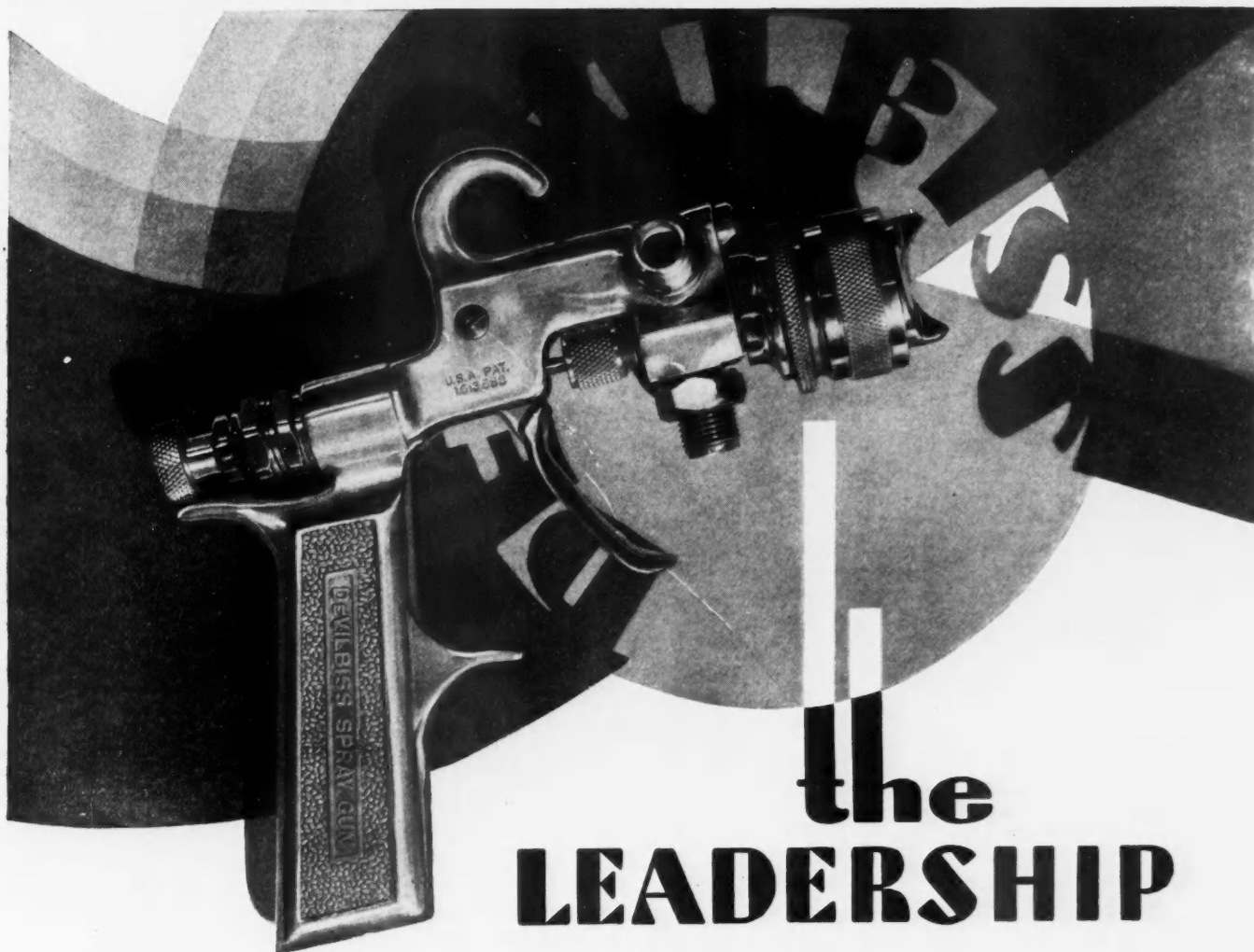
The steel clothes hamper which is built into the wall can be placed anywhere that is convenient, even behind a door, without encroaching on the floor space. This is a point which is of vital interest in the many "efficiency" apartments being built.

This hamper is made of sturdy steel. It is approximately 36 by 18 inches in size. The entire front lifts off, making emptying easy. It is dust and germ proof and is easily cleaned, as there are no sharp corners. It is properly ventilated to prevent mildew.



Built-In Steel Clothes Hampers Are Attractive and Sanitary and Do Not Take Up Valuable Space.





# the LEADERSHIP THAT BUILDS TO THE TASK

## SPECIALIZED OUTFITS FOR YOUR PARTICULAR WORK

- Spray guns of various types and sizes*
- Pressure feed paint tanks and containers*
- Spray booths, exhaust fans, and approved lighting fixtures*
- Air compressing equipment*
- Air transformers and accessories*
- Air and fluid hose and connections*
- Complete outfits from the smallest hand-operated units to the largest industrial installations*

WRITE FOR CATALOG

DEVILBISS has never lost sight of the fact that the spray method was originally brought into the world because of *what it would do*. The whole effort of the DeVilbiss organization is concentrated upon the manufacture of spray outfits which will best do the work for which they are intended, and be available at the lowest possible price.

The cost of spray equipment is sooner or later recognized as a secondary consideration. The vast new economies of labor and material achieved by the spray system inevitably lead the thoughtful purchaser to consider efficiency in use first, *because even a slight inefficiency in the spray outfit may result in the loss of economies and advantages infinitely greater than any price difference.*

DeVilbiss provides spray outfits in a wide range of capacities so that the user can select the equipment exactly suited to his need, and invest only the sum necessary to buy that measure of performance.

# DeVilbiss

## Spray-PAINING FINISHING System

THE DEVILBISS COMPANY / 238 PHILLIPS AVENUE / TOLEDO, OHIO

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WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN BUILDER

# What's New in Construction Materials

For further information in regard to any item described in the "What's New" Departments address, American Builder Information Exchange, 105 W. Adams St., Chicago

## Cold Gluing Is Convenient

CASEIN glue has simplified many of the problems involved in gluing, especially for the small user who cannot install expensive equipment for controlling the gluing operations. It is particularly valuable to the builder in the production of screens and special millwork. This is due to the fact that it is used cold on cold lumber and its effectiveness is not decreased by a moisture content as high as 12 to 15 per cent, which is considerably higher than normal.



Mixed with Cold Water and Used Cold This Glue Is Not Affected by High Moisture Content in Wood.

Casein glue comes in the form of a powder which is simply mixed with cold water and used cold. It does not set before pressure can be applied. When gluing must be done away from the shop, it can

either be mixed in the morning before leaving the shop and carried along ready for use, or it can be mixed right on the job. All that is needed for mixing is a pail, cold water and a stick.

This glue is now being put out in easy mixing grades, which make a mixing machine and exact weighing of powder and water unnecessary. It comes in small packages adapted to the small user.



## Modern Store Fronts

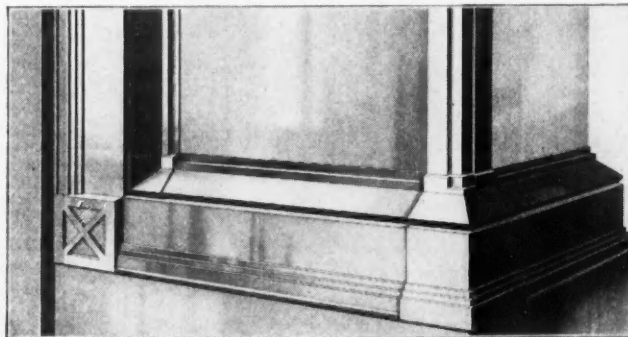
IN addition to its regular line of store front construction, one manufacturer well known in this field, has recently brought out a new development characteristic of the modern trend. This type of store front is both original and distinctive and harmony of line and detail predominate throughout.



A New Locking Device Used on These Store Fronts.

The locking screw is a noteworthy feature of the unique device used in this construction, as is the manner in which it engages the two members of the sash and bars. As the combination is simple and practical, all complications are avoided, thus simplifying

the process of installation. While the principle of construction is a departure from this company's standard line, the resiliency feature, which affords protection to the plate glass, has been maintained. Provision can be made for drainage when desired.



Design Characteristic of the Modern Trend and an Improved Locking Device Are Found in These New Store Fronts.

This new construction will be available in bronze, chromium nickle, aluminum alloy and copper.



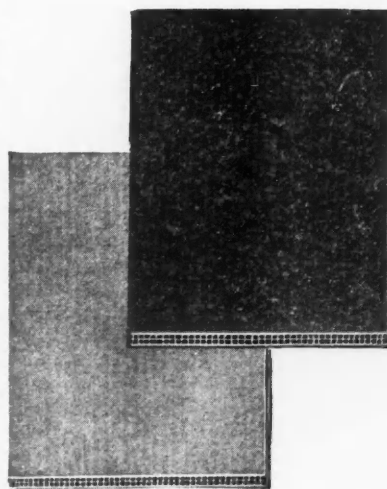
## A New Insulating Board

A NEW insulating material, in the form of both board and lath, has been brought out by a well known manufacturer of roofing materials. Its insulating quality is based on the old principle of dead air space which forms a barrier against heat, cold and sound.

As may be seen from the illustration, this board has a cellular construction, similar in appearance to the corrugated board used for shipping cartons, but double instead of single. The back is waxed, making it moisture and waterproof. The front side forms an excellent bond with plaster, it is stated, or will take either cold water paint or oil paint to form a beautiful finish.

The board comes in sheets 32 inches by eight feet and is packed 12 sheets to a bundle. In the lath form the pieces measure 32 inches by two feet and are packed 18 sheets to the bundle. Each bundle is wrapped and sealed in heavy kraft paper.

The manufacturers recommend this insulating material for use in side walls, between roof sheathing and shingles, under built up roofs on rafters and cellar joists, back of wood siding, shingle, brick or stucco exteriors, as a lath on all interior walls, as a cellar lining and, in fact, wherever insulation is desirable to exclude heat or cold or noise.



This New Insulating Material Comes in the Form of Either Board or Lath.



CUNNINGHAM FLOOR CO.  
SANDING THE BEAUTIFUL CRYSTAL BALLROOM FLOOR  
BOOM-CADILLAC HOTEL DETROIT

# “60 Hours Continuous Running

and still going strong,” with the American High Production Floor Sander, says, Fred Cunningham of the Cunningham Floor Co., Detroit. His letter:



“After meeting with such success with our first American High Production Sander machine, we immediately changed over all of our equipment and now own five American High Production Machines and will add several more.

One test we gave your machine was a 60-hour run, stopping only long enough to change operators, and the machines were still raring to go. We can cut more floors per day leaving them in a better condition than with any other machines that we know of.

We want to congratulate you on the wonderful service which we received from every one connected with your organization, also on the well equipped plant you have to turn out such high class floor machines. A man in the floor business is making a big mistake if he does not own your High Production Machines. Thanking you for all past favors.”

<b>PROVEN</b> —	Production	Durability	Finish	Dustless
	Light weight	Easy handling	Economical	

Don't Risk a Mistake—Investigate now—Try the American High Production on your next contract. There is no obligation.

Make your request on the attached coupon. It will have prompt attention.

-----

The American Floor Surfacing Machine, Co., Toledo, Ohio.

Gentlemen: I want to know more about the American High Production Floor Surfacing Machine and the way it stands up to continuous hard work. My next contract will be (date) ..... This space will be about ..... sq. ft.

Name .....

Address .....

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

**The American  
Floor Surfacing Machine Co.**

515 So. St. Clair St. Toledo, Ohio

Branch service stations in principal cities

Canadian Representatives

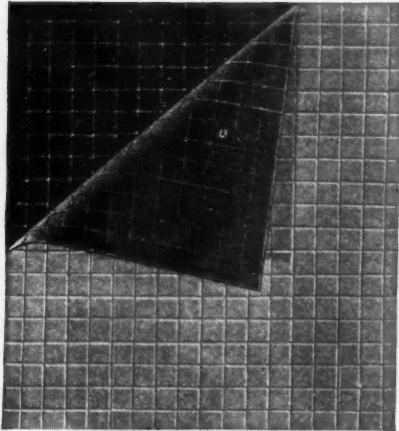
THE A. R. WILLIAMS MACHINERY CO., Ltd., Canada  
Toronto Montreal St. John, N. B. Vancouver  
Winnipeg Calgary

**BUILDER OF DEPENDABLE FLOOR SURFACING MACHINES FOR OVER A QUARTER OF A CENTURY**

WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN BUILDER

## A Permanent Building Paper

USED as a building paper the material shown in the illustration affords a lasting protection against the destructive elements of wind, weather and climate. It consists of two layers of strong kraft paper. Between these is a layer of tough, woven, jute fabric. The three are cemented together with an abundance of asphalt, forming a single sheet of extraordinary strength and weatherproofing value.



**A Tough Jute Fabric Between Sheets of Heavy Kraft Paper, Cemented with Asphalt, Gives Strength and Permanence.**

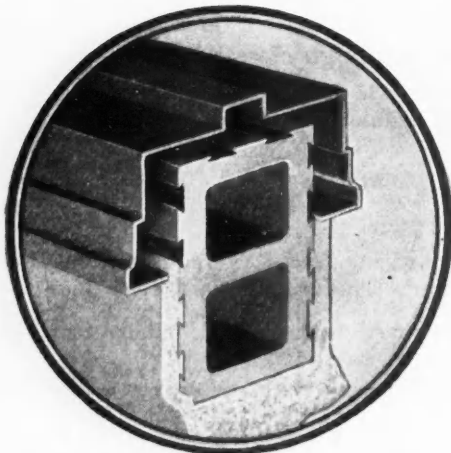
The thick, heavy layer of asphalt, is an outstanding feature of this paper. Because of it this paper will not dry or rot out and disintegrate but will remain permanently intact. The heavy layer of asphalt forms the thorough waterproofing for the walls. It is proof against heat and cold, against every element which attacks or interferes with their efficiency.

One man can handle the application of this paper easily. It requires no cleats to hold it in place. It is so strong that it is almost impossible to tear with the hands, and while it can be punctured or burned, if these are avoided it will always form a covering completely intact.



## Integral Steel Jamb and Trim

ANNOUNCEMENT has recently been made of a new integral steel door jamb and trim which combines the door frame, bucks, lintel, jamb, casing, door stop, transom bar and transom casing in one piece. This forms a unit



**Cross Section of a Unit Which Provides Jamb, Trim, Casing, Bucks, Lintel and Door Stops in One Piece.**

which is quickly erected as an integral part of the wall. The saving in time and labor costs on a large building, and the economy of materials effected, with the use of these units, is considerable.

These units are fabricated from standardized steel parts by the most modern machinery, insuring uniformly

true and rugged frames for both single and double openings. They are securely anchored into the wall and rough floor and become integral parts of the building structure. They eliminate unsightly checking, split casings and plaster cracks

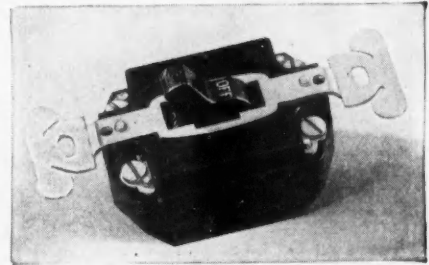
due to shrinking and warping of wood bucks, and provide a smooth finishing edge for plaster.



## An Improved Toggle Switch

HERE is a new type of toggle switch which the manufacturers describe as mechanically and electrically perfect and which incorporates a new form of contact spring which prevents burning of the contacts at the making of contact in circuit with type "C" lamps.

The new contact spring is designed so that two different rates of vibration are set up in the spring, one tending to counteract the other. Thus recoil is practically eliminated in the ends of the contact spring when the solid metal contact blade strikes between them. As a result the burning and pitting of the spring is prevented. An automatic "kick off" prevents sticking of the blades in the contact. A bakelite case completely encloses the mechanism.



**This New Switch Is Designed to Prevent Burning of the Contacts.**



## Fixtures for Better Lighting

IN developing the line of lighting fixtures, one model of which is illustrated, the aim was a perfect effect in lighting. Its principle is a perfection of indirect lighting, by combining it in exactly the correct proportions with direct light. The purposes of these lights are to protect the eyes from both the glare of too much light and the eye strain of too little light; to produce a light tone flattering to individuals and to interior furnishings; to provide an abundance of softly diffused illumination at a reasonable cost.

These lights give 80 per cent indirect illumination, sending these light rays upward toward the ceiling from which they are directed outward, spreading a rich and gentle radiance. Twenty per cent of the light filters down through the fixture, mellowed and softened to provide the same restrained, clear illumination as the reflected rays above.

This diffused illumination creates a perfect dissemination of light throughout the whole room. Even in the corners it is possible to read without eye strain and without fatiguing glare. So gentle is the light reflected that additional lamps used for decorative emphasis do not detract from the suffused indirect lighting overhead. Distorting high-lights and low-lights are entirely avoided.



**Indirect and Direct Lighting Are Combined in the Correct Proportions in These Fixtures.**

# Is the roof as modern as the bath- room?



*Home Buyers Demand  
that the outside of the house  
be as modern as the inside*

**Y**OU give a lot of thought to such features as bathrooms, built-in conveniences and the like. How about the most conspicuous feature of the whole house—its roof?

And in these days it is not enough to have only a good roof—it must be good looking too.

The fresh modern colors of Johns-Manville Asbestos Shingles allow you to offer exactly the effects suitable for each style of architecture, and every possible setting.

The sturdy appearance and obvious quality of Johns-Manville Asbestos Shingles result in

a roof which the home buyer can see at a glance is one that will give years of service—yet always look well.

The fact that the Johns-Manville Asbestos Shingle Roof is fireproof and that it will require no replacements, appeals at once to the prospect's desire for safety and economy.

All this pays in quick sales and better prices for the slightly greater cost of a Johns-Manville Asbestos Shingle Roof. All over the country successful building developers have proved that this modern way of roofing with Johns-Manville Asbestos Shingles pays cash profits to the builder.

Ask us to tell you about building for resale with everlasting Johns-Manville Asbestos Shingles.



**Johns-Manville**  
RIGID ASBESTOS SHINGLES

JOHNS-MANVILLE CORPORATION

New York Chicago Cleveland San Francisco Toronto  
(Branches in all large cities)

I should like to have further information about Johns-Manville Asbestos Shingles for speculatively built houses.

Name \_\_\_\_\_

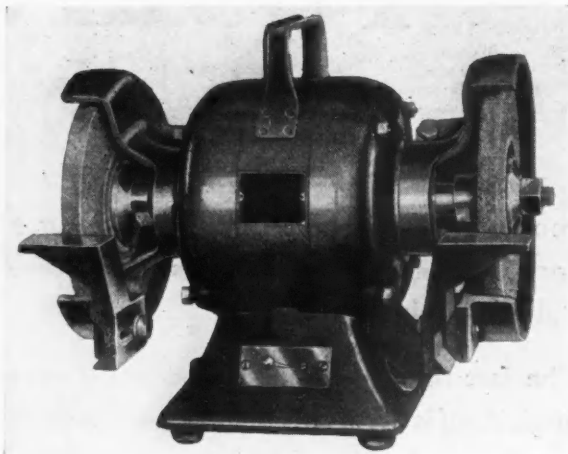
Address \_\_\_\_\_

# What's New in Contractors' Equipment

For further information in regard to any item described in the "What's New" Departments address, American Builder Information Exchange, 105 W. Adams St., Chicago

## New Ball Bearing Grinder

ONE of the leading manufacturers of electric tools has just brought out a new 6-inch, ball bearing, portable, electric bench grinder. The company's engineers have been working for a long time on the perfection of this machine to meet the demand for a quality, ball bearing grinder within the price range of the 6 and 8-inch sleeve bearing machines. The anti-friction bearings make it much easier to maintain wheel speeds under load. This machine is for use on alternating current only, maintaining a 3,600 R. P. M. spindle speed on 60 cycle and 3,000 R. P. M. speed on 50 cycle current.



Here Is a Ball Bearing Grinder Within the Price Range of the 6 and 8-Inch Sleeve Bearing Machines.



## Moderate Priced Paint Spray

THIS new model paint spraying outfit has been developed to round out a well known line of portable, hand spraying equipment. It was designed to meet a growing demand for a moderately priced, portable, hand sprayer with a pressure feed container, suitable for covering wide surfaces quickly and for all types of commercial and production work that can be handled advantageously with a cup gun outfit.



A Portable, Hand Sprayer Suitable for Covering Wide Surfaces Quickly and Selling at a Moderate Price.

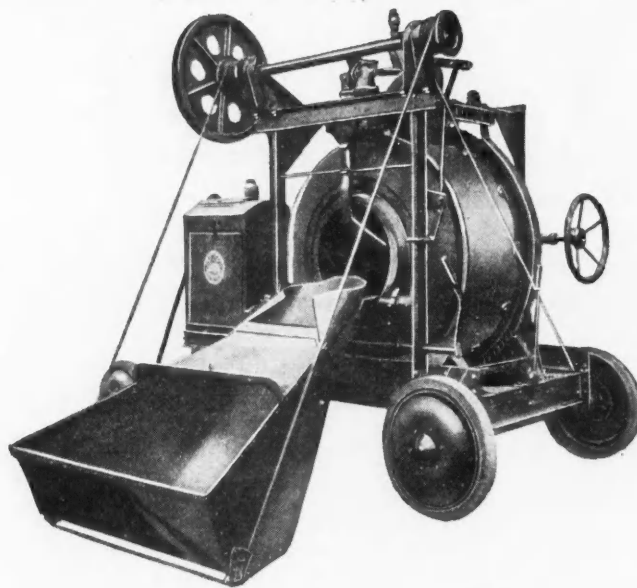
This outfit consists of a sturdy, rotary compressor, operated by a ¼-h. p. motor, which delivers a constant unvarying air volume of five cubic feet per minute. This high air volume does away with the necessity of a cumbersome air storage tank. The pressure feed tank holds approximately two gallons of material, which will cover about 700 square feet of surface. A one-quart container is also furnished and can be connected to the gun quickly for small touch up and trimming jobs. A highly efficient commercial gun completes the equipment.

The complete outfit weighs approximately 50 pounds. Twelve feet of electric cable and 20 feet of rubber hose between the compressor and container makes any job easily accessible. It is also furnished with a gasoline engine for use where electric current is not available.



## Mixer Has Accurate Water Control

A WELL known manufacturer of concrete machinery has recently completed a new model of its 7-S standard building mixer. The new model was designed on the basis of the requirements outlined by contractors to the company engineers. It is light in weight and is easily moved around on the job. Its speed and large capacity make it a large producer specially suited to small and medium sized jobs.



Accurate Water Control Is Provided on This New Model Building Mixer.

Accuracy in water control is rapidly becoming as imperative on small mixers as on large mixers, pavers and central mixing plants. The tank on this new mixer cuts off accurately and quickly without dribble. It has a quick-setting gauge, as well as a gauge glass. The accuracy of the tank is made effective by a positively non-by-passing valve. Capacity, long life, simplicity, portability, speed, low price are listed as features combined in this new model.

# Can You Read Blue Prints?



Now... A 2¢ Stamp Brings

## FREE BOOK

"HOW TO READ BLUE PRINTS"... AND

## FREE BLUE PRINTS!

## Without Cost or Obligation Investigate Chicago Tech's Blue Print Way to Bigger Pay!

**MEN**, here's a liberal offer if ever there was one! By acting at once, every ambitious builder in America who wants to win quick promotion and run big building jobs may now secure a valuable book and real blue prints, together with full details about a wonderful new method of training that teaches you how to read plans and qualify for leadership in Building. Send no money. Simply fill in and mail the coupon below.

### Big Demand for Men Who Can Read Blue Prints

Right now there is an urgent need for practical men with actual-building experience who know how to read plans and are able to supervise construction. This amazing book that is now offered to you free will show you how you can, in surprising short time, qualify for positions that only men with a knowledge of plan reading can fill. It tells how you can in your spare time, right in your own home, put yourself on the "headwork" side of Building and earn the kind of money that you want.

### Easy, Practical Training . . . Mastered in a few Short Weeks

Chicago Tech's Blue Print Method is entirely different from ordinary schooling. You'll be surprised and delighted at the ease with which you will master every basic principle of plan reading, this fascinating blue print way! There are no textbooks to read—no useless theory. Instead you are given actual working blue prints to examine and keep. Twenty famous experts go over these with you, step by step, explaining everything in plain, everyday language you can quickly grasp. No wonder

**If You Live Nearby**  
Visit our big Day and Evening School attended by over 1,000 builders. You get this training at home by mail—same plans, lessons and instructions.

**Chicago Technical School for BUILDERS**



Dept. N-122, Chicago Tech Bldg.  
118 E. 26th St., Chicago, Ill.

builders everywhere proclaim this to be the most practical and the easiest training method they have ever seen!

### Brings Quick Promotion

A few short weeks of practical instruction while you are still on the job, and you are prepared to accept the higher positions that are open only to trained builders. See what this marvelous training has done for others. Baker, Ohio, made \$3,800 clear profit in three months as a contractor. Depke, R. I., increased his salary 700 per cent in twelve months. And Clifford Scholl, a laborer, became assistant superintendent in eight months!

### Don't Delay—Act NOW!

Smart builders will grasp this opportunity immediately and get before them the free book and plans that will show them how quickly the success they want can be realized now as a result of Chicago Tech's Blue Print Way. Remember—there is no risk whatever, no obligation in mailing the coupon. So send it at once.

### SIMPLY MAIL COUPON NOW

It will bring you at once the valuable free book, *How To Read Blue Prints*, the free blue print plans, as well as full information about Chicago Tech's Blue Print Way to Bigger Pay. No obligation whatever, so write immediately!



#### CHICAGO TECHNICAL SCHOOL FOR BUILDERS

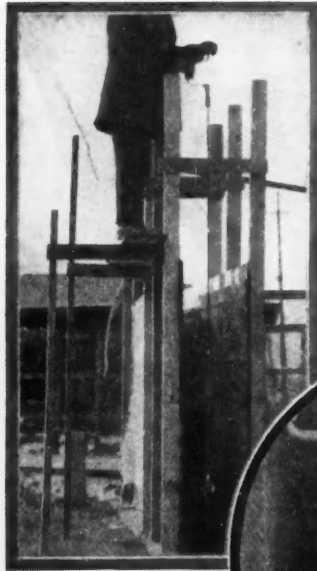
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118 E. 26th St., Chicago, Ill.

Yes, send me at once without cost or obligation your **FREE BOOK** and complete set of blue prints. Also full details about your easy, practical home training. It is understood no salesman will call on me.

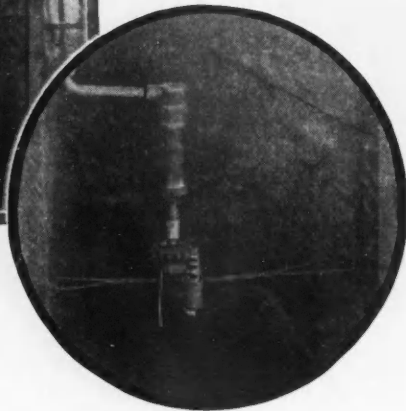
Name.....  
Address.....  
City..... State.....  
Age..... Occupation.....

### Handy Form Wire Twister

PROBABLY the most satisfactory method of tying together the forms for concrete walls is by means of the common twisted wire. The only objection to it has been the inconvenience and expense of twisting the wires. Unless the forms are wide enough for a man to get into them, it is



This Tool Makes It Possible to Twist Wires in a Form After It Is Built. The insert shows how it grips the wire.



necessary to build one side one piece at a time so that the wires can be reached and twisted. That means more expense. All this disadvantage has been overcome, however, by the perfection of a wire twister, the use of which is illustrated here.

Where this twister is used it is possible to build the forms in large units before

they are placed on the footings, build the dumping runway around the forms and twist the wires from this runway. A workman with this tool can twist wires five times as fast as by hand, it is stated, and the danger of torn fingers or hands is eliminated. The proper extensions make it possible to use this tool in forms of almost any depth and the very bottom wires can be twisted with ease and rapidity.



### Efficient Electric Hand Saw

THIS new portable electric hand saw is made without gears, the blade being mounted directly on the motor armature which runs on two precision ball bearings of the unit type, with dust seal. The advantage of this construction is threefold. There are no gears to strip or get out of order. It allows the full power of the motor to be applied direct to the saw blade. The elimination of gears saves weight.

Weighing only 12 pounds, and well balanced, this saw can be operated easily with one hand while the other hand holds the work. It is used in the same manner as the ordinary hand saw but with none of its tedious labor.

The base is made of duralumin. It is fastened to a segment which is dovetailed and gibbed onto the motor housing. Adjusting for depth or angle cutting is a simple matter. Merely turning a thumb screw makes the adjustment, in both cases. These adjustments are independent of each other.

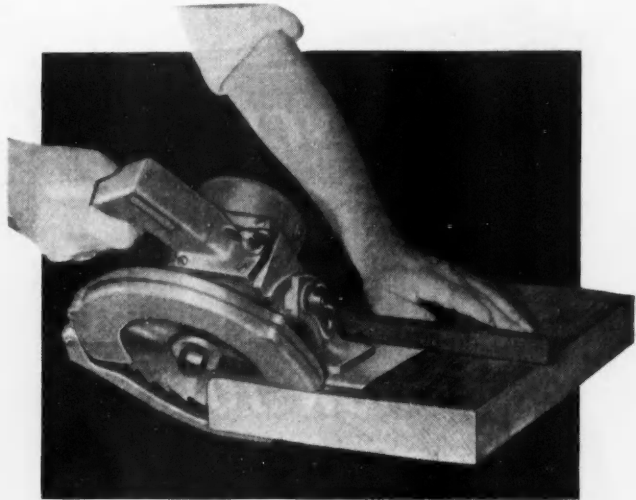
There is a 1¼-inch depth adjustment range. An eight-inch blade cuts from one inch to 2¼ inches deep, thus providing ample range for cutting out flooring, dadoing, slotting, etc.

The guard is cut away at the point where the blade enters the wood. This permits accurate cutting as the blade is easily visible. The saw blade is fully guarded at all times, even when cutting at an angle. The guard consists of two parts, the upper part being fixed to the frame while the guard covering the lower part of the blade is hinged to the fixed

guard and held in position by a small coil spring.

This saw is powered by a ½ h. p. universal motor of well known make. It drives the saw blade at 10,000 r. p. m., free speed, assuring a fast, clean cut, making finish planing hardly necessary.

The handle is a pistol grip easily grasped and the switch is readily controlled by the index finger. This switch must be



Light and Well Balanced, This Saw Makes Possible Economy of Labor Costs on All Construction Work.

held while the saw is in operation and automatically shuts off when released. This is an extra safety feature.

Instead of the motor fan being inside the motor housing, the fan is built onto that part of the armature shaft which is inside the blade guard. Thus the fan cannot get loose and injure the motor windings. Air is drawn in by the fan through the intake, at the commutator end of the motor housing, passes around the motor, and is exhausted inside the saw guard. This blows the sawdust out and away from the operator.



### Improved Set for Circular Saws

ONE of the leading manufacturers of saws is now offering a new and improved saw set for use on all circular saws. The makers point out the following distinctive feature in this saw setting device:

It makes all circular saws smooth cutting, irrespective of fine or coarse teeth; reduces the width of the kerf and, therefore, saves many dollars in the manufacture of valuable lumber and wood products.

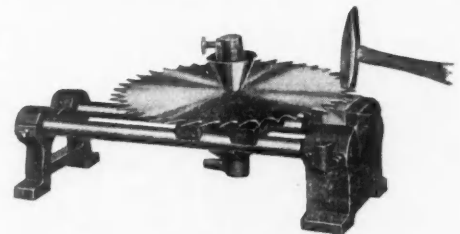
It makes the ends smooth on all kinds of cutting.

It eliminates the more expensive hollow ground saws and the necessity of side filing teeth.

The "double twist" set given to saw teeth with this device converts needle point saw teeth into shear cutting knives, actually providing two sets of knives, right and left.

Material cut with saws that have been set with this device is as smooth as if cut with a knife.

Saws on which this set have been used run at least 50 per cent lighter; it reduces mill-wright and belt expenses. Any angle up to 45 degrees may be cut and at this angle an eight-inch blade cuts 2¾ inches into the wood.



Greatly Improved Results Are Obtained from Circular Saws Set with This New Saw Set.



IF YOU WANT RESULTS



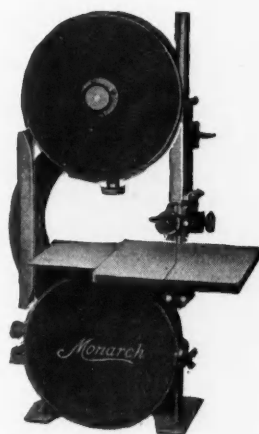
USE MONARCH MACHINES

*Don't Sacrifice Quality  
for Quantity or Quantity for Quality*  
**MONARCHS GIVE YOU BOTH**



No. X-24

Like all Monarch Machines, this tilting arbor saw bench is guaranteed for long, hard service. It will pay you to investigate these special features: Saw may be tilted 45° to the vertical, lowered beneath or raised thru the table when either vertical or tilted. Ripping and cut off gauges may be used either side of saw. Saw guard provides complete protection. No. X-24 is an all-round woodworker . . . a sure way to efficiency, economy and profit! Write for special descriptive bulletin.

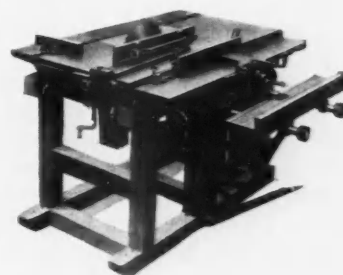


No. X-9

Bench band saw, 12" and 16" sizes. Completely enclosed. Built-in motor. Operates from lighting current or belt. Handy — Husky — Adaptable.

Fig. 690

Four men can use this Variety Woodworker at the same time. Rip and cutoff saw, Mortiser, Jointer and Boring attachment in one. Send for new booklet.



**AMERICAN SAW MILL MACHINERY CO.**

60 Main St., Hackettstown, N. J.



*Place the  
Greatest Part  
of the Load  
Toward the  
Front of the  
Truck Body*

## Cut Excess Truck Costs

*Attention to Proper Loading, Handling and Inspection Will Keep  
Maintenance Expense at the Minimum*

**T**RUCK operators who are troubled by excessive maintenance costs, frequently fail to realize where the trouble lies. Too often they blame the truck which they are using and shift to other makes only to meet the same difficulties. As a matter of fact, the trucks themselves are first class products and would give satisfactory service if they were properly treated.

Carelessness in loading trucks is a frequent source of trouble. Care should be taken to see that the load is evenly distributed on the body. It is often a matter of habit to place the load in one position every time which, of course, causes premature wear on the chassis at that point. It is always best to place the greatest part of the load toward the front of the body.

It is a common experience to discover that most of the trouble with springs, axles, wheels and tires, is on the right side of the truck. This is due to the fact that most roads slope toward the sides and, since it is necessary to keep to the right when driving, the right wheels ride in a lower plane than the left wheels. This causes unequal wear. It is well, for this reason, to take advantage of the full road in open stretches where it can be done with fair consideration for others. Particular attention to adjustments and general care of the right hand side of the chassis will also be helpful.

It is not uncommon for repair bills to be in direct proportion to the number of different people who drive the same truck. Much money can be saved by proper handling of the truck and that is why the beginner and "extra" driver are apt to injure the engine and chassis within a very short time. Driver turnover should be held as closely as possible to the minimum and care should be taken not to let an inexperienced driver have charge of any truck.

Practice at the wheel and, above all, adherence to every rule promoting safety make the good driver. It is characteristic of the good driver that he is careful.

He is likely to drive slowly compared with the beginner; he drives down steep grades in second or first speed; he turns slowly; he starts and stops gradually. All these things are good for the driver, good for other users of the road and good for the mechanism of the truck.

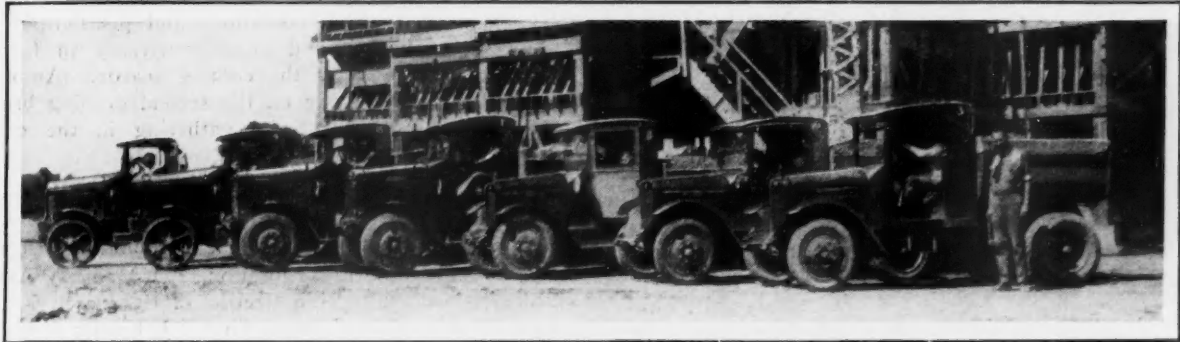
Driving up and down grades is, to the experienced driver, no more trouble than driving along the level. There is no need to burn brake lining when going down grade. As a matter of fact, many grades do not require the use of brakes at all, though most drivers use them. There are two forms of resistance which can be used to retard the motion of the truck, the brakes and the engine when not firing.

The greater the engine speed, when the engine is not firing, the greater the resistance it offers so that, if the gears are in second speed, the car will roll down hill more slowly than if they are in high. In first speed, the car will roll more slowly than in second. The brakes should not be used on long grades unless the truck travels too fast in first speed, in which case the brakes may be called upon merely as auxiliaries.

Truck drivers should be instructed that, when they have occasion to travel down a steep grade, they should shift into first speed, turn the ignition switch to the off position and hold their feet on the brake pedal, but not apply the brakes unless it is necessary. In this way they will have the truck under control and the brakes will not do one-tenth the work they are commonly called upon to do.

Once a month is the interval generally agreed upon by motor truck authorities for careful inspection of the truck whether there is any indication of trouble or not, every detail of the mechanism should be gone over carefully once a month, by an expert mechanic. By means of these inspections any trouble is usually discovered before it has a chance to become bad.

# "We found International Trucks far superior to them all"



## *Fleet increased to 20 on this record . . .*

The Middletown Sand and Gravel Co., Middletown, Ohio, has been added to the roll of International owners who have standardized on Internationals to do their hauling.

R. D. Stevens, president, tells why:—

"That you may have an idea of our volume of business, we delivered to two contractors in our city, in eleven months, 100,000 yards of washed sand and gravel. Most of this was delivered under most difficult conditions. Eighty per cent of this material was delivered, promptly and without delay, by our fleet of 10 International Trucks.

"We also, at various times during the winter months, worked these trucks in mud, muck, and mire under our gas shovels on excavating work, with the same dependable results.

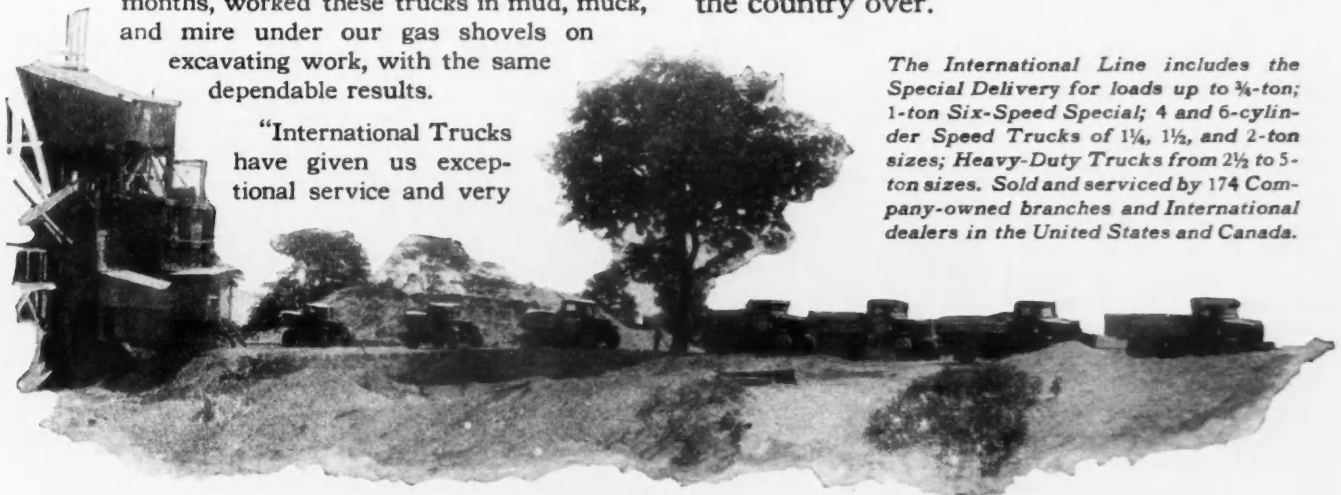
"International Trucks have given us exceptional service and very

low cost of operation. We could not ask for any better service than we are getting. We have had experience with a number of different makes of heavy-duty trucks and have found the International Trucks to be far superior to them all as to maintenance, reliability, etc., and our intention is to make our fleet one hundred per cent International."

The Middletown company now is "100 per cent International." They have replaced all other makes of trucks with eight new Internationals and have two more on order.

This is typical of the International record the country over.

*The International Line includes the Special Delivery for loads up to ¾-ton; 1-ton Six-Speed Special; 4 and 6-cylinder Speed Trucks of 1¼, 1½, and 2-ton sizes; Heavy-Duty Trucks from 2½ to 5-ton sizes. Sold and serviced by 174 Company-owned branches and International dealers in the United States and Canada.*



INTERNATIONAL HARVESTER COMPANY  
606 So. Michigan Ave. of America Chicago, Illinois  
(Incorporated)

# INTERNATIONAL TRUCKS

WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN BUILDER

# News of the Field

## Convention and Show Dates

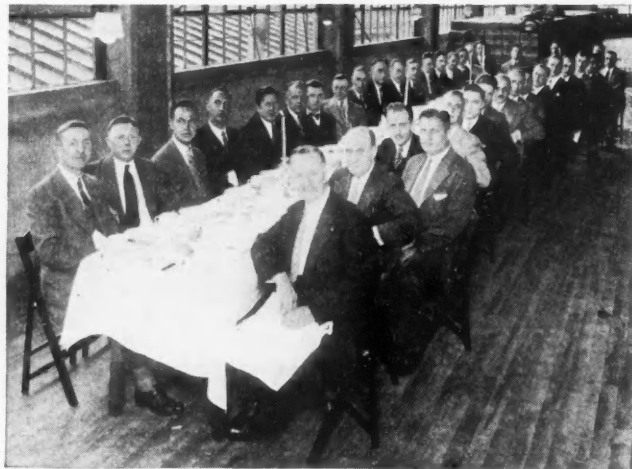
- Oct. 7-12, 1929..... National Electrical Exposition, Grand Central Palace, New York City.
- Oct. 14-18, 1929..... American Gas Association, Eleventh Annual Convention, Municipal Auditorium, Atlantic City, N. J.
- Oct. 21-26, 1929..... Indiana Building Congress and Trade Show, Manufacturers' Building, State Fair Grounds, Indianapolis, Ind.
- Oct. 23-25, 1929..... National Retail Lumber Dealers' Association, Annual Convention, The Palmer House, Chicago.
- Nov. 1-15, 1929..... Philadelphia Chapter of the American Institute of Architects, and the T-Square Club of Philadelphia, Thirty-second Annual Architectural Exhibition, Art Galleries of the Wanamaker Store, Philadelphia, Pa.
- Dec. 4-6, 1929..... National Paving Brick Manufacturers' Association, 24th Annual Convention, The Palmer House, Chicago.
- Jan. 11-18, 1930..... American Road Builders' Association, Annual Convention and Road Show, Atlantic City, N. J.
- Jan. 27-31, 1930..... International Heating and Ventilating Exposition, under the auspices of the American Society of Heating and Ventilating Engineers, Commercial Museum, Philadelphia, Pa.
- Feb. 11-12, 1930..... American Concrete Institute, Annual Convention, Roosevelt Hotel, New Orleans, La.
- Feb. 20-22, 1930..... New England Hardware Convention and Exhibition, Mechanics Bldg., Headquarters Hotel Statler, Boston, Mass.
- March 24-28, 1930.... Building Officials Conference of America, Annual Meeting, Cleveland, Ohio.



## Star Expansion Bolt Convention

MORE than 40 sales representatives, officials and department heads of the Star Expansion Bolt Company gathered at the company's executive offices, 147 Cedar St., New York City, for a two-day sales meeting on August 28 and 29. These men came from all parts of the United States and Canada. Every branch office and warehouse was represented by one or more attendants at the meeting.

Since the purpose of this convention was largely the further education of the sales force in the manufacture of Sebco products, a great part of the time was spent at the factory, located in Bayonne, N. J. Here the men saw every step in the production of the varied lines of expansion bolts made by the company and were given a com-



Every Branch Office and Warehouse Was Represented at the Recent Annual Convention of the Star Expansion Bolt Company.

plete and thorough course in the selection of materials, methods of manufacture and other details of production.

In addition to proving a highly inspirational and educational "get-together," the convention afforded an opportunity to study business conditions and possibilities for the balance of the year and aided materially in formulating definite sales plans for the coming season. An enjoyable dinner and theater party on the second evening brought to a close the most successful gathering in the company's history.



## Personnel Announcements

THE board of directors of the International Combustion Tar & Chemical Corporation, 200 Madison Ave., New York City, announces the election of George E. Leonard as chairman of the board, succeeding F. J. Lewis; of Dr. Walter Runge as president, succeeding W. H. Lewis; and of Grant Thorn as vice-president in charge of sales. The resignations of F. J. Lewis and W. H. Lewis were due to the pressure of other business activities. F. J. Lewis will continue as director of the International Combustion Engineering Corporation, of which the International Combustion Tar & Chemical Corporation is a subsidiary, and W. H. Lewis will be associated with the company in an advisory capacity.

W. S. RUGG, vice-president of the Westinghouse Electric & Manufacturing Company, East Pittsburgh, Pa., has just been appointed on the committee of award, for the next five years, of the Edison Medal, given by the American Institute of Electrical Engineers. L. W. W. Morrow, editor "Electrical World," and R. F. Schuchardt, of the Commonwealth Edison Company, were also appointed. Samuel Insull, of Chicago, is chairman of the award committee.

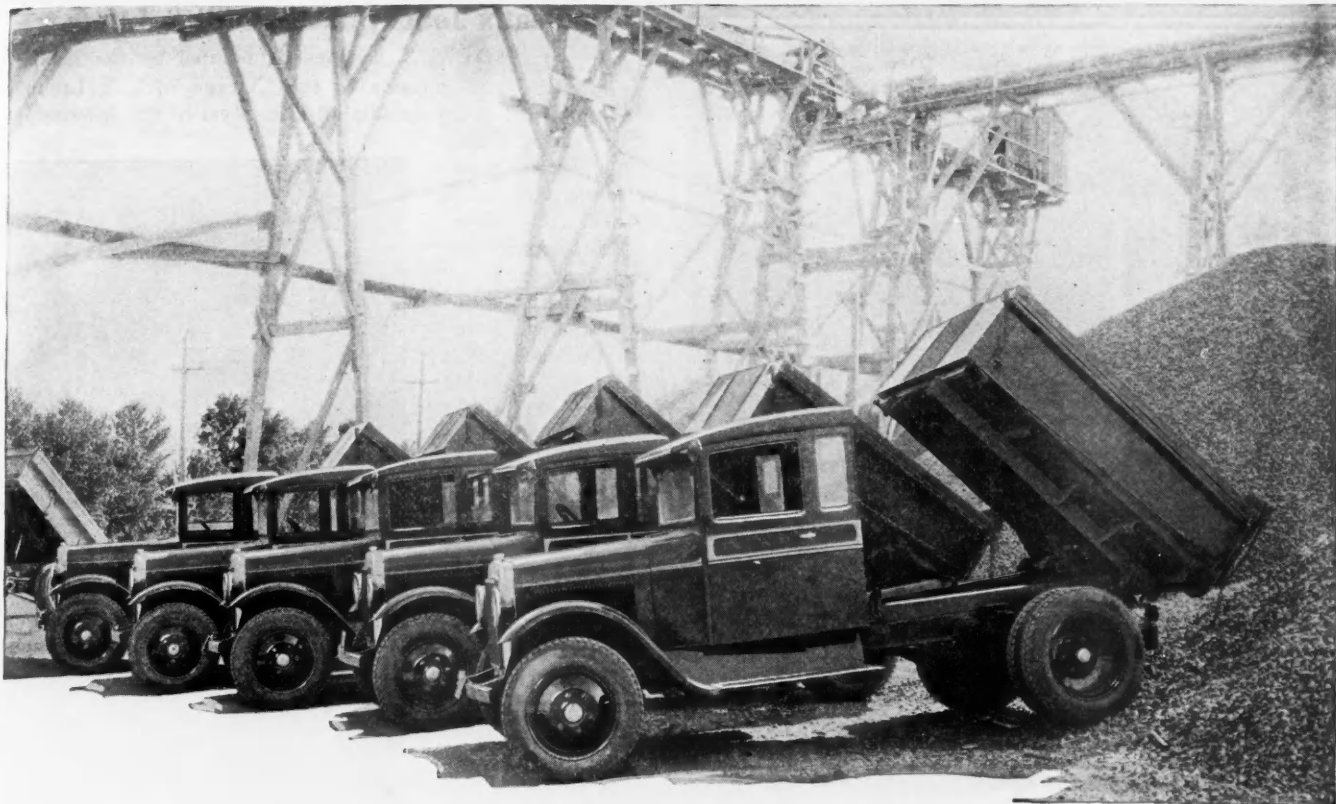
The Edison Medal, established by the American Institute of Electrical Engineers in 1909, is awarded for "meritorious achievements" in electrical science, engineering or arts. The recipients of this medal have included the country's greatest electrical engineers. The medal for 1929 will be awarded by the committee some time in December.



## Representatives Appointed

THE American Floor Surfacing Machine Company, Toledo, Ohio, announces that Don D. Green, 730 West Broadway, Council Bluffs, Iowa, has been selected to act as distributor for its complete line of floor surfacing machines and supplies and will cover a territory including the western parts of Iowa and the east half of Nebraska.

H. D. CONKEY & COMPANY, of Mendota, Ill., announce that the Cleveland Tool & Supply Company, Cleveland, Ohio, will act as its representative, handling overhead traveling crane equipment in the Cleveland district.



# GREATER PROFIT!

per mile, per trip,  
per cubic yard hauled

Dodge Trucks on the job are an assurance of *greater profit*—per mile, per trip and per cubic yard of material hauled. Contractors who operate them profit in two ways: They save time. They save money.

The power, the speed, the dependability, the safety and the handling ease of these long-lived workers insure a saving of time. Add that to the economy in dollars and cents effected through

lowered cost of operation and upkeep. The result: money saved, greater earnings.

For proof of the profit-earning ability of Dodge Trucks, inspect one—with your needs in mind. Drive it. Consult neighbors or other contractors who are owners. Then consider the low price of the type that fits your needs. Buy it complete with body—from your local Dodge Brothers Dealer.

Count on it to cut your hauling costs, earn greater profits for you.

### PRICES

½-TON—109" wheelbase (4-cyl.) . . .	\$ 525
¾-TON—124" wheelbase (4-cyl.) . . .	675
¾-TON—124" wheelbase (6-cyl.) . . .	775
1-TON—133" wheelbase (4-cyl.) . . .	745
1-TON—133" wheelbase (6-cyl.) . . .	845
1-TON—140" wheelbase (6-cyl.) Heavy Duty . . . . .	1065
1½-TON—150" wheelbase (6-cyl.) . . .	1345
1½-TON—165" wheelbase (6-cyl.) . . .	1415
2-TON—150" wheelbase (6-cyl.) . . .	1515
2-TON—165" wheelbase (6-cyl.) . . .	1585
3-TON—135" wheelbase (6-cyl.) . . .	1745
3-TON—165" wheelbase (6-cyl.) . . .	1775
3-TON—185" wheelbase (6-cyl.) . . .	1845

Chassis f. o. b. Detroit

# DODGE TRUCKS



CHRYSLER MOTORS PRODUCT

SOLD BY DODGE BROTHERS DEALERS EVERYWHERE

WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN BUILDER



## Why Nailer Joists In This Fine Apartment?

**A**BRAMHAM ROSEN, far-sighted real estate operator of Rochester, N.Y., expected to pay a premium for the use of Massillon Nailer Joists in his modern \$500,000 Roosevelt Apartments at Utica, N. Y. The Utica Code permitted wood joists, then why a premium for Nailer Joists?

*To eliminate warping and unsightly shrinkage cracks.*

*To secure the strength and permanence of steel.*

*To provide a fire resistance that is firesafe for this occupancy.*

The ease and simplicity of erecting these steel joists—"Put 'em up, nail down the floor"—resulted in savings in labor that made the completed cost approach that of wood.

You will like these steel joists with wood nailing strip attached to the top chord. See the nearest Massillon representative or send us your plans for quotation.

**THE MACOMBER STEEL COMPANY**

909 Belden Avenue,  
Canton, Ohio



# MASSILLON NAILER JOISTS

Massillon Products are manufactured and distributed in Canada by the Sarnia Bridge Co., Ltd., Sarnia, Ont.

## Baudeau Joins Chicago Mill & Lumber

**W**. H. BADEAUX has been appointed by the insulating board division of the Chicago Mill & Lumber Corp., of Chicago, to handle all sales west of the Mississippi River, after October 1. His headquarters will be in Minneapolis, Minn.

Mr. Badeaux has been secretary of the Northwestern Lumbermen's Association since 1922. From 1915 to 1920 he was employed by the U. S. Gypsum Co. in several important capacities. In 1920 he became secretary of the Iowa Builders' Association. While secretary of the lumber association, he was instrumental in establishing more rigid codes of ethics which have since been adopted by other similar organizations.



**W. H. Badeaux, Formerly Secretary of the Northwestern Lumbermen's Association.**

Sales of the new insulating board, of the Chicago Mill & Lumber Corp., will start on a national scale this fall, it was announced a few days ago by General Salesmanager O'Neill Ryan, who is well under way with plans for distributing the product in all parts of the country.



## Asphalt Tile Makers Organize

**A**T a meeting held in the Lord Baltimore Hotel, Baltimore, Md., Sept. 13, 1929, the Asphalt Tile Manufacturers' Association was organized by the asphalt tile manufacturers of the United States. The permanent organization of the new association was perfected at this meeting and a set of by-laws adopted. The purpose of the organization will be to promote a better understanding among manufacturers and to improve the industry as a unit.

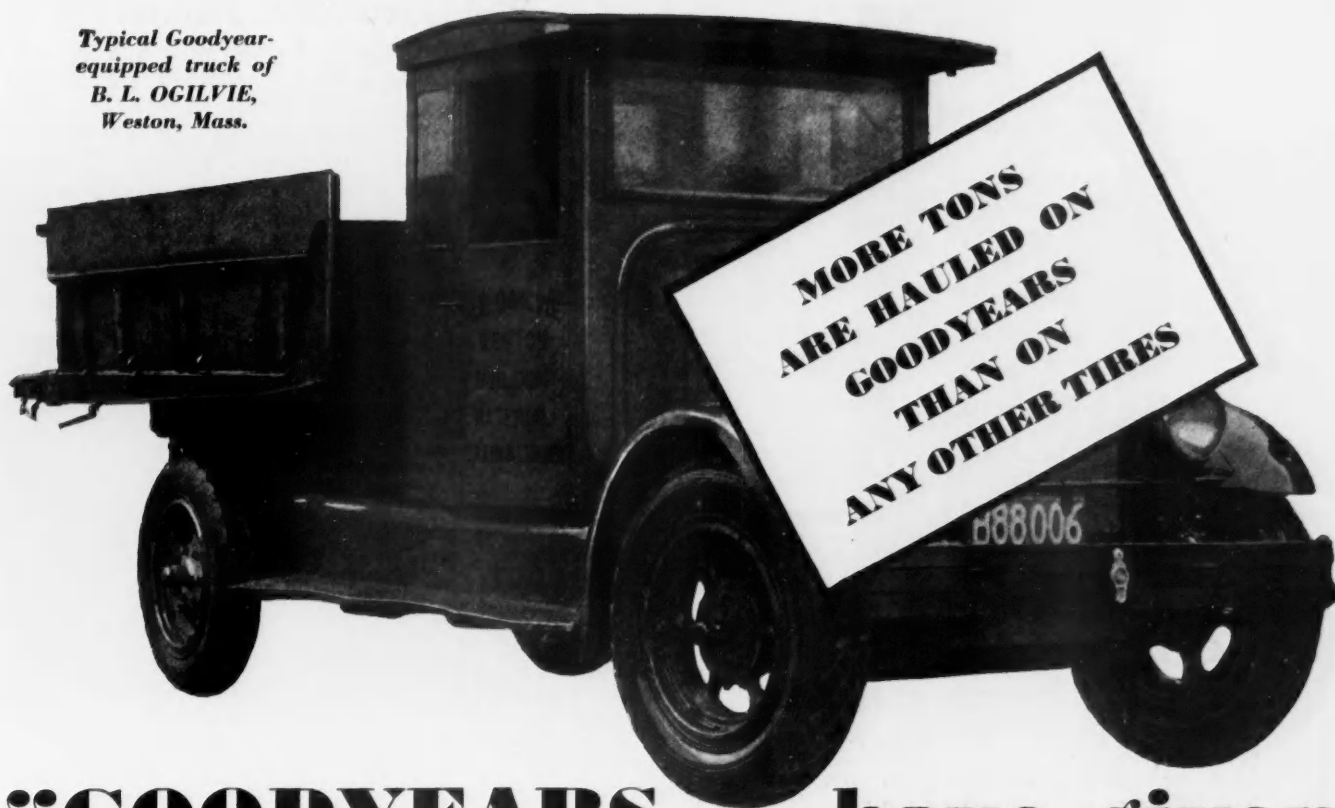
The officers of the association are George C. Hannam, Rubberstone Corp., New York City, president; H. L. Davison, Tile-Tex Co., Chicago Heights, Ill., vice-president; Paul Coste, U. S. Rubber Co., Providence, R. I., secretary-treasurer. W. J. Parker, 7 E. 44th St., New York City, was elected commissioner of the association. Mr. Parker is already well known in trade association work.



## Air-Way Corp. Expands

**A**NNOUNCEMENT has recently been made of the purchase, by the Air-Way Electric Appliance Corporation, of Toledo, Ohio, of the business of Erie Heating Systems, Inc., of Erie, Pa. The Erie industry has been moved to Toledo and housed in extensive additions to the Air-Way plant. Large quantities of new manufacturing equipment have been installed and big volume production will be established on the Air-Way Unit Heater as the former Erie heater is now called.

Typical Goodyear-equipped truck of  
B. L. OGILVIE,  
Weston, Mass.



## "GOODYEARS have given us by far the best service"

**W**HEN a truck starts out with a load of building material, its tires may have to travel any surface, from a boulevard to a plank road or worse, before the load is delivered.

That is why Goodyears are so widely chosen for this type of duty. The powerful traction of the All-Weather Trade grips and pulls through the soft spots — and rolls out remarkable mileage on the hard roads. The extra vitality of Goodyear SUPERTWIST in the body of the tire imparts the stamina and resistance to fatigue which mean long life, even under heavy loads and rough going.

"We prefer Goodyear Tires," writes the firm of B. L. Ogilvie, "because they have given us

by far the best service. One of these pneumatic truck tires was removed after 23,840 miles — a good showing, considering we carry heavy loads over all kinds of roads."

For excavation and similar special work, Goodyear also builds the Dump Truck Pneumatic — a brute of a tire with broad tread and traction flanges reaching far up on the sidewalls.

Put your hauling problem up to the Goodyear Truck Tire Service Station Dealer. From his full line of Goodyear Tires — pneumatic, super cushion and solid—he can equip you with the size and type which will accurately fit your trucking needs in traction, cushion, and economy.

*On your new trucks specify Goodyears*

# GOODYEAR

Copyright 1929, by The Goodyear Tire & Rubber Co., Inc.

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## Sell Homes Easier Rent Them Faster

**C**ARDINAL TOGGERY RACKS give the space of two closets in one. They keep toggery smooth, hats in shape, shoes off floor—all in plain sight, within easy, instant reach. Cardinals lighten women's work. There are thousands in use everywhere. Housewives like Cardinals—because they add a finishing touch to homes and make them really modern.

Cardinals are important selling and renting features. Their cost is small, their benefits great. Beautiful Duco finish. Jade Green, Old Rose and Silver Color Cadmium. All metal. Strong. Easily attached on the inside of any closet door.

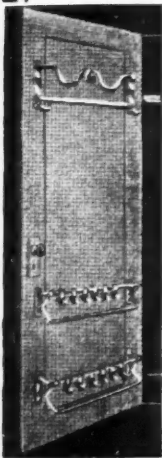
## CARDINAL Toggery Racks

are a necessity in the small apartment, an added convenience in large ones—and in all houses, city and country, they not only save closet-room—but make it. You can see for yourself the appeal in them to every family, large or small.

Write today for prices and quantity discounts. For a very small outlay, you can add a big profit factor. Cardinals have a mighty persuasive force—the instant you swing open the closet door. They are certainly a big talking point.

### CHARLES FISCHER SPRING CO.

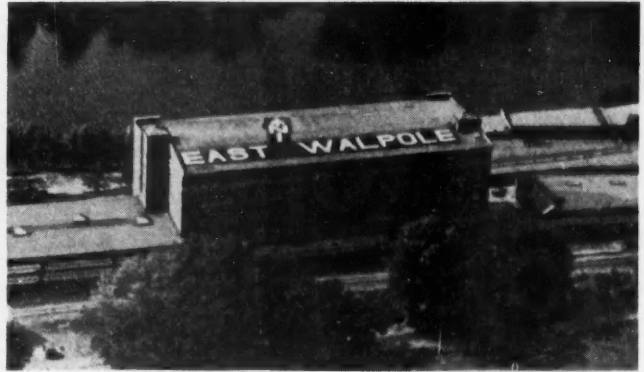
244 Kent Ave. Brooklyn, N. Y.  
Telephone, Greenpoint 10,000



## Bird Erects Aerial Markers

**A**S a result of the rapid development of commercial aviation, the labeling of towns has now become a necessity. In line with this new need, Bird & Son have installed labels on the roofs of their plants at East Walpole and Norwood, Mass. In recognition of this aid to aviation the Daniel Guggenheim Fund for the Promotion of Aeronautics has issued to the company certificates, signed by the president, Harry F. Guggenheim, and by Col. Charles A. Lindbergh.

An interesting feature of the markers provided by Bird & Son is that they were made from this company's own prod-



East Walpole, Mass., Is Marked for the Guidance of Airplanes, by 15-Foot Letters on the Roof of the Bird & Son Plant.

ucts. Letters 15 feet high were cut from Bird's Paroid roofing and cemented to the slate surfaced roof of the building with Bird's Neponset Compound. After the letters were completed the roofs were painted with Bird's Roof Coating and each letter was given a coat of aluminum paint. The result is highly visible from the heights at which airplanes usually fly. The lettering shows the name of the town in each case. There is also an arrow pointing north with a large letter "N" to indicate the direction.



## Notable Steel Contract

**T**HOMPSON-STARRETT COMPANY has announced that the structural steel contract for the New Waldorf has been awarded to the McClintic-Marshall Company. The contract calls for a total tonnage of 27,100 tons of steel. This is one of the largest orders for structural steel which has been placed in recent years, exceeding the tonnage used in the Woolworth Building by 4,759 tons. The cost of steel erected will be in excess of \$2,250,000.

Eight derricks of 30 tons capacity will be used in erection due to the heavy steel to be handled. Over the main ball room are five trusses 90 feet long carrying the loads above. The truss over the proscenium arch will be 35 feet high and 90 feet long and will weigh about 265 tons, which is the largest and heaviest truss ever used in the erection of a building.



## Change of Address Announced

**T**HE Houston, Texas, office of the Chain Belt Company, Milwaukee, manufacturers of Rex deep well oil chains, conveyors, and concrete mixers, has been moved to larger quarters at 1310 Second National Bank Bldg. They were formerly located at 1000 Marine Bank Bldg. Russell G. Davis is manager of the Houston office.



**Donley Brothers**, 13910 Miles Ave., Cleveland, Ohio, has for the past 12 years published the "Donley Book of Successful Fireplaces," in the interest of better fireplaces. The sixth edition is now being issued and is a remarkably handsome booklet, larger and more complete than ever.



# Here are the money-saving *answers* to *questions* you have asked!

**T**HE new Fisk Wheel and Rim Manual is now ready. Filled from cover to cover with the very information that you **MUST** have if you are to operate at lowest cost and greatest efficiency.

The answer to these and thousands of other important questions are in this new Manual. A copy of this expensive book is available, without charge, for all men in charge of truck and bus fleet operations, who write on their own letterhead. No obligation is involved.

Our Engineering Department is at your service, without charge, in making an intensive study of your particular equipment and its special needs. Tell us when we can help.

*Inquiries for the new Wheel and Rim Manual should be addressed to*

**THE FISK TIRE COMPANY, INC.**

*Commercial Tire Dept.*

**CHICOPEE FALLS, MASSACHUSETTS**



Time to Re-tire  
Get a FISK  
TRADE MARK REG. U. S. PAT. OFF.

# FISK

WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN BUILDER



**COMPLETE  
EVERY JOB**

**Screen  
it**

# Wickwire Brothers

*Established 1873*

Make your jobs complete; screen all windows and doors. The added value will more than offset the cost and give greater sales appeal.

Two leading grades of Wickwire Wire Cloth are recommended. Wickwire Bronze Wire Cloth and Wickwire Gray-Wick Wire Cloth. Wickwire Bronze is made from a special alloy of 90% copper and 10% zinc, producing the elasticity of hard steel wire cloth with greater strength and durability than copper cloth. The zinc not only provides the necessary tensile strength, but acts as a corrosion resister as well.

Wickwire Graywick Dull Finish Galvanized is 8% to 10% Electro Zinc Coated and enameled with white transparent varnish—a double protection against corrosion. Like all Wickwire Brothers Steel Screen Cloth, it is made from open Hearth Copper Bearing Steel and full gauge wire.

*A trial will convince you of  
Wickwire value*

*Order through your Hardware  
dealer or Screen Manufacturer*

**Wickwire Brothers**  
Cortland  
New York U. S. A.

We manufacture a complete line of wire cloth, wire, nails, staples, barbed wire, hardware grade wire cloth, special cloth and netting.

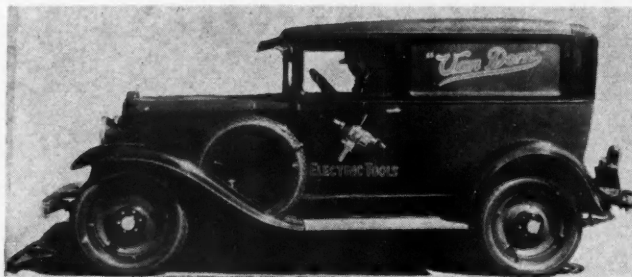


*Write us today  
for our catalog. It  
will be sent you  
free of charge.*

## Van Dorn Demonstrates Tools

THE Van Dorn Electric Tool Co., of Cleveland, Ohio, is using a demonstration car to assist its jobber salesmen in demonstrating Van Dorn tools in operation. This car is being used with great success in Maryland and Virginia, at the present time, and arrangements have been made to send it or similar cars to all parts of the country.

This car consists of a specially designed closed body mounted on a chassis of well known make. The large rear door, when opened, shows the various tools in neatly arranged sections, making them accessible for immediate use. This enables the salesmen to bring the tools to users



The Van Dorn Demonstration Car Makes It Possible to Show Van Dorn Tools in Actual Use.

so that they can prove for themselves the merits of the product.



## J. W. Wentzel Passes Away

JOSEPH W. WENTSEL, sales manager of the Frantz Manufacturing Co., Sterling, Ill., died in Chicago on August 22. Mr. Wentzel has been out of the office for a period of about six weeks prior to his death for a rest and relaxation, but it was not thought that he was seriously ill and his death came as a surprise and shock to his many friends and business associates.



## Beckman-Dawson Expands

THE Beckman-Dawson Roofing Co., 223 W. Jackson Blvd., Chicago, announces that, in line with its program of expansion, it has acquired the business and factory of the Cedar Rock Shingle Corporation, of Winona, Minn., effective August 1, 1929. The present Cedar Rock factory, located at Winona, will be continued as a source of supply to the trade. A complete stock of Ced-A-Roc shingles will be carried at the Argo factory of the Beckman-Dawson company for shipment in mixed cars with asphalt shingles and roll roofing. At an early date a full line of asphalt shingles and prepared roofing will also be supplied at the Winona plant. The new product acquired by this expansion is the Ced-A-Roc shingle, a cedar shingle treated with asphalt and surfaced with slate.



## Establish Plywood Research

AN announcement from the Douglas Fir Plywood Institute, Tacoma, Wash., states that, due to the many new uses of Douglas fir plywood, the manufacturers have concluded that, since their problems are common ones, an exhaustive research work must be carried on by them jointly. To this end, I. F. Laucks, Inc., chemists and manufacturers of Lauxein waterprof glue of Seattle, Wash., have extended their services to the plywood manufacturers and have inaugurated a systematic inspecting and testing service, the result of which is expected to be a continued improvement in the quality of Douglas fir plywood. The various manufacturing operations will be constantly checked and samples periodically secured.

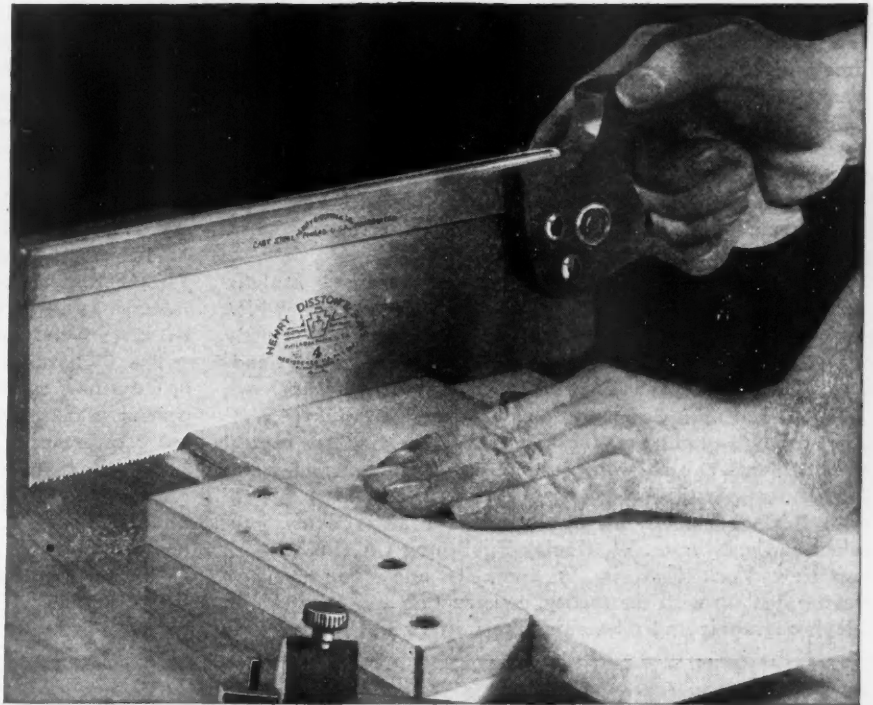
# New and Better Back Saw Introduced by Disston

**N**OW your hardware man has in stock, or can get for you, the new Disston No. 4 Back Saw, the finest tool of its kind!

This new Back Saw has a heavier back, which stiffens the blade, keeps it true in the cut, and holds the saw in contact with the work. This back is of bright Disston steel.

The blade is thin, yet stiff. The teeth are shaped and set to cut smoother and easier. Blade and handle are balanced as you like them. Hand hole is large, with a comfortable grip, and handle has the new Disston weatherproof finish, more beautiful and durable.

Disston Steel and Temper, and Disston work-



## Five Advantages

- 1—Heavier Back  
—*stiffens the blade*
- 2—Faster Cutting  
—*teeth of new shape*
- 3—Large Hand Hole  
—*comfortable grip*
- 4—Disston Steel  
—*stays sharp longer*
- 5—Disston Temper  
—*hard and tough*



manship, make this the finest Back Saw that money can buy. You will want it when you see it.

This new and better Disston Back Saw is available with 8, 10, 12, 14 and 16-inch blades.

HENRY DISSTON & SONS, Inc.  
Philadelphia, U. S. A.  
Canadian Factory: Toronto

# DISSTON

Makers of

## "THE SAW MOST CARPENTERS USE"

WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN BUILDER

**Books, Bulletins and Catalogs for You**

**T**HE literature and publications listed here are available to the readers of American Builder. They may be obtained from the firms mentioned and will be forwarded without cost except where a price is noted.

The Metropolitan Life Insurance Company, 1 Madison Ave., New York City, has published a report, under the title "Economic Services of the Metropolitan," which is intended to present to the public an idea of the activities of its Policyholders Service Bureau.

The International Cement Corporation, 342 Madison Ave., New York City, offers a new bulletin under the title "Incor Concrete Opened in 24 Hours to Heaviest Truck Traffic in Washington, D. C."

The Beardslee Chandelier Manufacturing Co., 216-220 S. Jefferson St., Chicago, has issued a new Catalog D-9, showing its complete Williamson line of lighting fixtures.

The National Steel Fabric Company, Pittsburgh, Pa., offers two new pamphlets, entitled "Steeltex for Plaster" and "Steeltex Specified in All Steel Frame Houses."

"Making Cellars Dry" is the title of Farmers' Bulletin No. 1572, of the U. S. Department of Agriculture which gives complete information on the avoidance and remedy of wet basements. It can be obtained from the Superintendent of Documents, Washington, D. C. Price, five cents.

The T. L. Smith Company, 1125 32nd St., Milwaukee, Wis., offers a new pamphlet on the "Smith Weigh-Mix," for central mixing plants, which weighs stone, sand, cement and water and then mixes them.

"A B C of Television," by Raymond Francis Yates, published by the Norman W. Henley Publishing Co., 2-6 W. 45th St., New York City, is "A complete and comprehensive treatise dealing with the theory, construction and operation of telephotographic and television transmitters and receivers," a

subject which is rapidly assuming a position of importance in industry. Price, \$3.00.

The Binks Manufacturing Company, 3114-26 Carroll Ave., Chicago, has just released a new Bulletin No. 12, which is a catalog covering the uses of its sprayers for water base paints, calsomines, whitewash, insecticides, etc.

The Vento Steel Sash Company, Inc., Muskegon, Mich., has published a new folder telling the story of its new ventilating sections and its patents covering them.

The Tremco Manufacturing Co., 393 E. 131st St., Cleveland, Ohio, has compiled and published architectural specifications for the application of caulking and pointing compounds and glazing compounds.

"Facts About West Coast Woods," by R. T. Titus, Wood Technologist, is a new pamphlet published by the Trade Extension and Field Service Department of the West Coast Lumbermen's Association, 364 Stuart Bldg., Seattle, Wash.

"Wood Floors" is a new booklet in the Construction Information Series, published by the Nation Lumber Manufacturers' Association, Transportation Bldg., Washington, D. C.

The W. B. Connor Co., Inc., 369 Lexington Ave., New York City, has just published a new booklet under the title, "Condensate—Its Dollars and Cents Value and How It Can Be Effectively Conserved."

The Richards-Wilcox Mfg. Co., Aurora, Ill., has just published a new catalog No. A-53, covering its new line of disappearing wardrobes designed to provide for all wardrobe layout requirements.

"Forty Years with General Electric," by John T. Broderick, author of "Pulling Together," published by the Fort Orange Press, Albany, N. Y., is an interesting story of one of America's great corporations told, in the first person, by a man who has seen the things of which he writes from the firing line. It is full of valuable information and biography. Price, \$2.50.

**Hotter than Coal**



**--and no dirt**

Do away forever with the drudgery of wood or coal. The most simple and economical invention on the market is now giving perfect satisfaction to enthusiastic users everywhere.

**Burns 96% Air—4% Cheap Oil**

The International Oil Burner fits in the fire box of your furnace or stove. Installed in a few minutes. No noisy motors or complicated parts.

**Costs only a Few Dollars**

Heats any stove or furnace just as well as a \$400 or \$500 oil burner without electricity or gas. Simply turn one valve and have all the heat you want. Cleaner and better for heating and cooking. Approved by engineers everywhere. Over 100,000 in use.

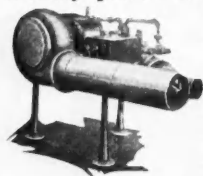
**30 Days FREE Trial Offer**

Try this wonderful International Oil Burner right in your own home at our risk. Act quickly and get our special low introductory price. Sold under absolute money-back guarantee.

Write at once for our free booklet on home heating and free burner offer.

**Contractors—Dealers**

Good reliable contractors are needed for dealers. Exclusive territory and dealer cooperation assure you of good steady profits. Write at once for complete dealer proposition.



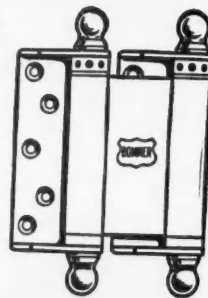
----- Clip This Coupon -----  
**INTERNATIONAL HEATING CO.**  
 Spring and Park Ave., St. Louis, Mo., Dept. O-38  
 Send your free booklet and free details on home heating for stove   
 furnace . Also free burner offer.

Name.....  
 Address.....

Check if interested in making money as an International representative with protected territory.

**Bommer Spring Hinges**

are the best



are the best

**Millions and Millions**

of People are Pushing

**Them**

whenever they open a door

Follow the line of least resistance

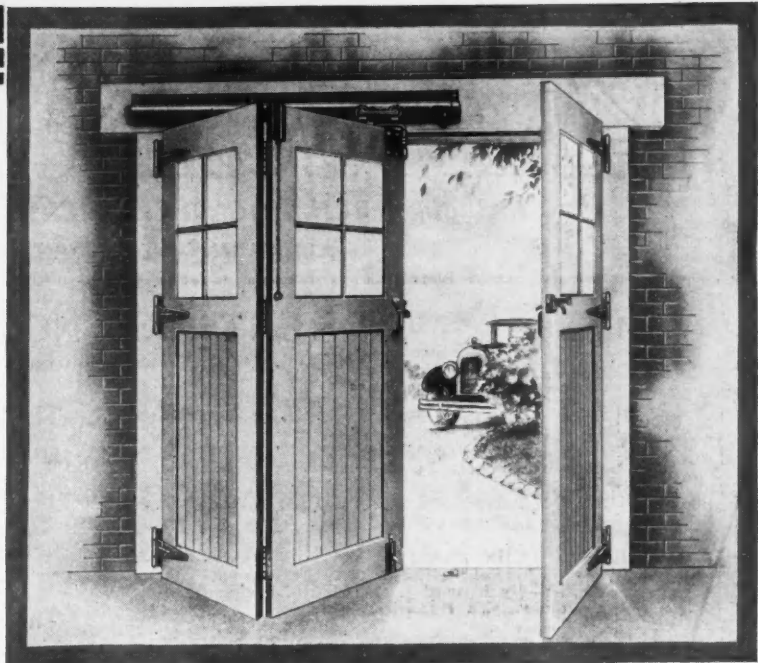
Use **Bommer** Always

They are the best

Bommer Spring Hinge Co., Brooklyn, N.Y.

# 4 Good Reasons Why

## "E-Z" Garage Door Fixtures are Popular



By providing every convenience to be desired without extra equipment or added cost to the user, Frantz "E-Z" Garage Door Fixtures have won the praise of Carpenters and Builders who know from experience that a garage is only as satisfactory as the operation of its doors. These men point out the following outstanding reasons for the popularity of "E-Z" fixtures:

- 1. Installation:** Very simple. The one piece track fastens flat over the opening (no blocking out or brackets required). Hanger, hinges, foot and chain bolts, etc. require no experience or extra work to install.
- 2. Operation:** Easy. Doors slide and fold clear of the opening and, if desired, can be swung around flat against the front of the building where room for so doing is provided.

**3. The Hardware:** Combines time and labor saving conveniences with the high quality materials and expert workmanship put into all Frantz Hardware.



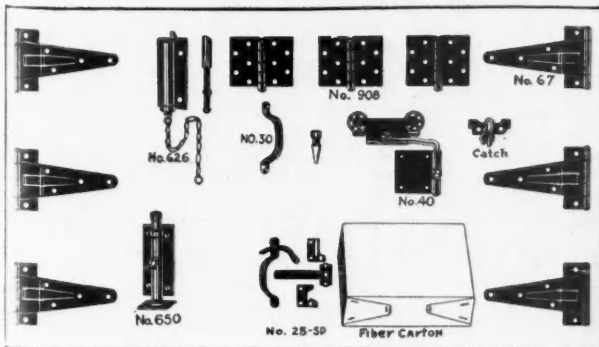
**4. Packing:** The parts of each set—whether for 2, 3, 4, 5 or 6 doors—are snugly packed in strong cartons to assure perfect delivery. All necessary lag screws, bolts, screws and instructions for easy installation are included.

Frantz No. 50 "E-Z" Garage Door Fixtures are designed for average weight doors. No. 40 "E-Z" Garage Door Fixtures are intended for doors of light construction. On large and heavy doors, the No. 60 "E-Z" Fixtures should be used. For complete details about these popular Fixtures, write A-1129, Frantz Manufacturing Co., Sterling, Ill.

# FRANTZ

TRADE MARK

## Guaranteed Builders Hardware



At the left are shown the parts of a No. 50 "E-Z" Garage Door Set. These items, with all necessary bolts, screws and complete instructions for installing, are packed in a strong fibre carton.