# INDUSTRIAL DESIGN

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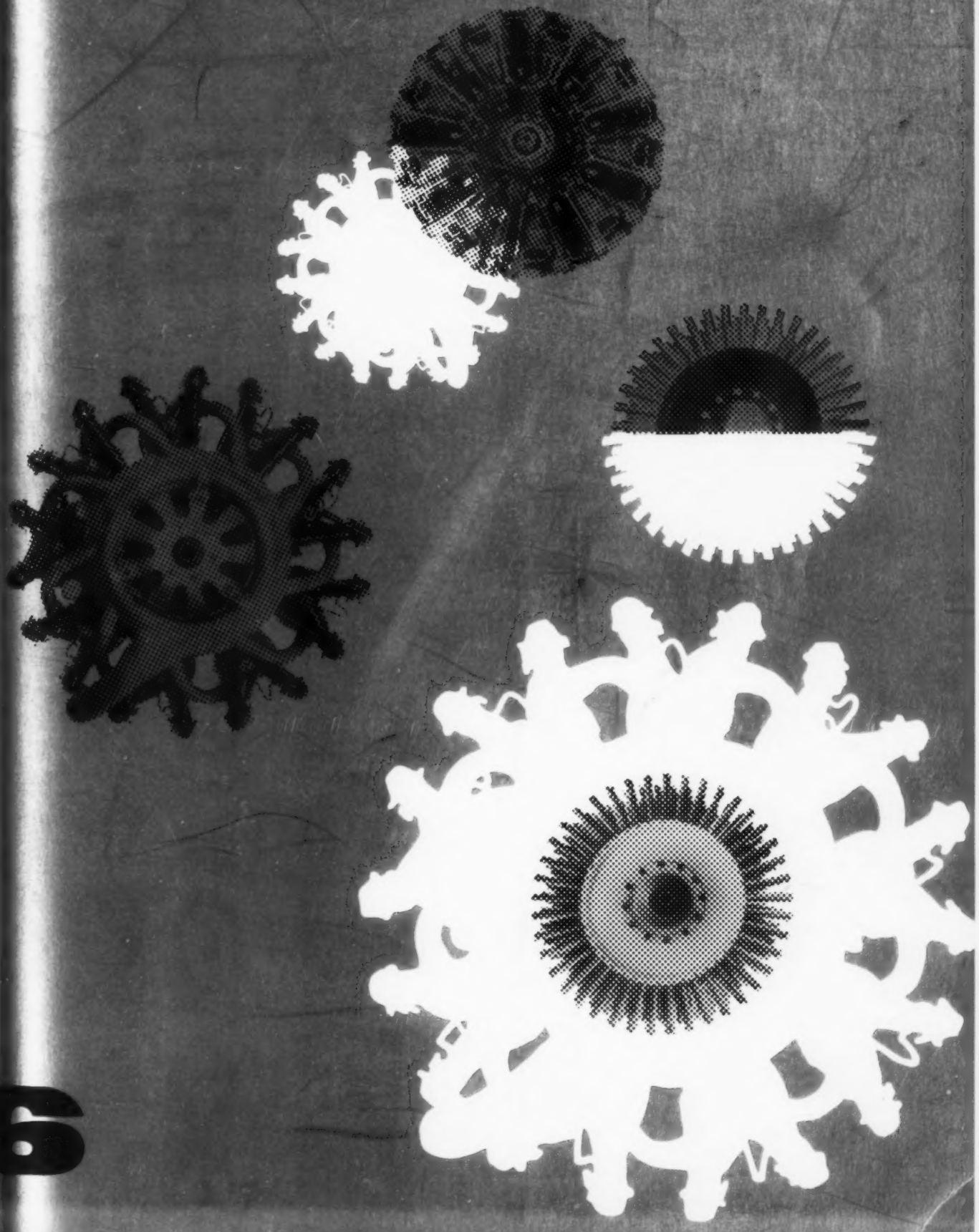

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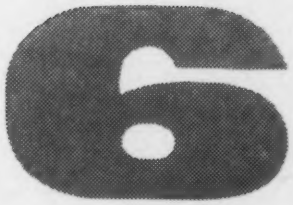
VOLUME 1, NUMBER 6



# INDUSTRIAL DESIGN



*A bi-monthly review of form and technique in designing for industry. Published for active industrial designers and the design executives throughout industry who are concerned with product design, development and marketing.*

CONTENTS FOR DECEMBER, 1954:

*Our cover is frosted with airplane engines made by the Lycoming Division of Avco Manufacturing Company.*

*Our frontispiece comes from "The Engineering and Machinists Drawing-Book, comprising a complete course of instruction for the practical engineer," published in London in 1864. In the volume, handsomely illustrated with steel engravings, lessons in drawing were combined with studies of "details and approved construction."*


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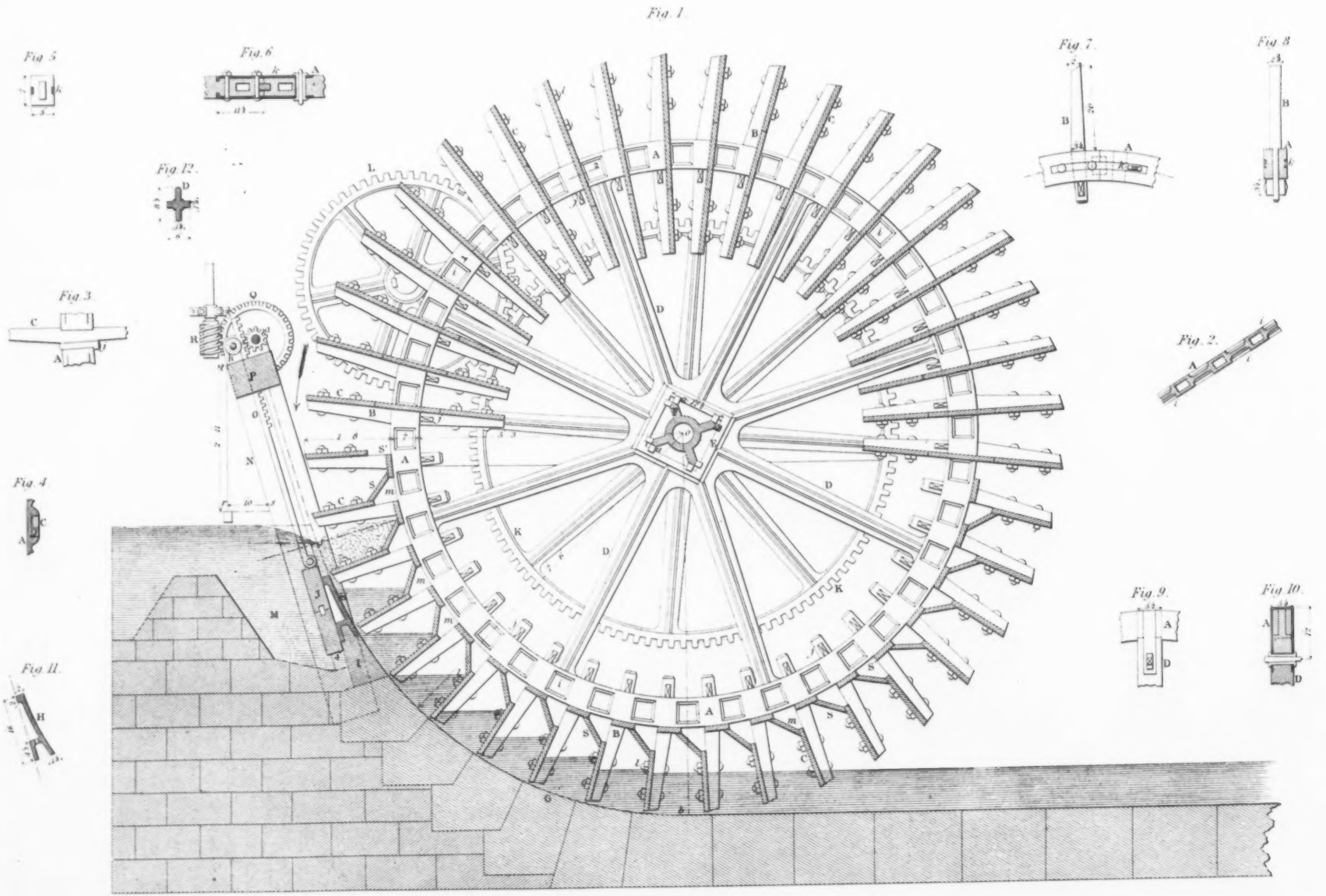
PLATE XLV

UNDERSHOT WATERWHEEL.

# UNDERSHOT WATERWHEEL.






W. A. Beever Sc.

# BOOKS

## The innovating manager

**THE PRACTICE OF MANAGEMENT.** *by Peter Drucker.* 404 *pages.* 6" *x* 8½". *Harper & Brothers, Publishers, New York,* 1954. $5.00.

In order to work with effectiveness in the business community and to get satisfaction from our labors, it is necessary for us to understand the nature of business. This is hard enough when business is standing still. But today business is in a ferment—changing with bewildering swiftness. We are lucky to have a book which documents the change in terms of the men who are causing it. On the first page of his new book, Peter Drucker points out that "the emergence of management as an essential, a distinct and a leading institution is a pivotal event in social history," and with case histories and examples he describes that central individual, the manager, and what he does.

"The Practice of Management" has been preceded by such books as "The End of Economic Man," "The Future of Industrial Man," and "The New Society." Mr. Drucker is Professor of Management in the Graduate School of Business at New York University and a consultant on management to a variety of American Corporations. By reporting on the manager, Mr. Drucker shows how changes in business occur, and why change is the essential factor in the nature of business. His earlier books were concerned with ideas, theories, and ideals of business; his new one is a concrete guide by which the effectiveness and character of an enterprise can be measured. It is particularly valuable to a man who works with a business from the outside, who must be able to size it up quickly.

In an introductory section he outlines the three major jobs of management: managing a business, managing managers, managing work and worker. By telling the story of Sears, Roebuck in the first section of his book, Drucker shows that managing a business depends on innovation for success, that marketing is the unique and central function of the business enterprise, and that creating new customers is management's specific job. The second part, on managing managers, starts with a description of how the Ford Motor Company changed from an empire ruled by one man to an enterprise managed by many. This part deals with giving managers the proper job to do, and what they need to do it with, and is followed by a summarizing section on the structure of a business and how it is simplified by shortening chains of command, and setting up autonomous divisions. There are dozens of detailed examples.

The rest of the book concentrates on ways of giving men responsibility, on techniques of pushing responsibility as far down the line as possible. This, says Drucker, is the best criterion for measuring the effectiveness of a company.

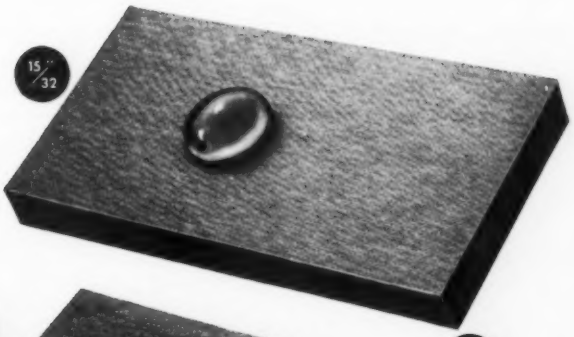
More than that, it shows that men make a business what it is, and that men have gained control of the machine, and of the complex matter of productivity. This is heartening at a time when many people seem to feel that business is a greedy juggernaut, uncontrolled, crushing humans and wrecking their lives.

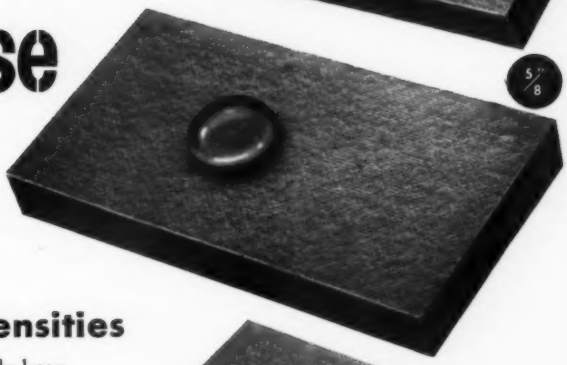
Drucker's use of case histories and examples makes his account come alive, and defines precisely what is happening because of this focus on the manager. In a mail order house, the usual run of questions was answered by form letters. One clerk answered complaints, another inquiries, and so forth. Letters that could not be answered by forms were sent to the supervisor. The system was changed so that each clerk handles all correspondence with a customer — all whose names begin with "A" for instance. Instead of doing the same thing over and over again, the clerk must assume responsibility. "And while the rare letter that requires judgment is still not answered by the completely unskilled clerk, she is supposed to write on it her suggestion on how to deal with it before handing it to her supervisor. As a result productivity has gone up almost 30 percent; turnover of clerks has dropped by two-thirds."

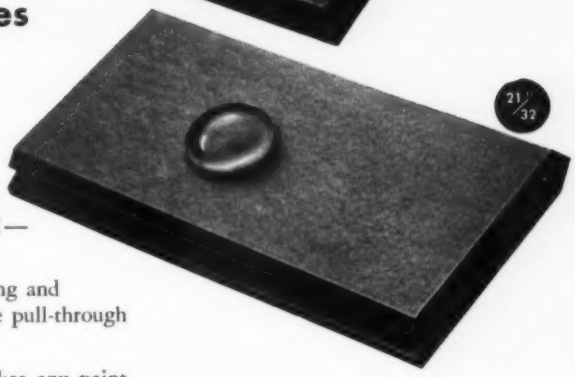
This is good managing of work. In extension, there's an example of workers managing their own work. "In packing chocolate candy, teams of two women, sitting across from each other, work together filling boxes. A candy company . . . introduced incentive pay (at a steeply progressive rate). . . . What happened was totally unexpected. . . . On Monday, for instance, the first group of two were out to beat all production norms to get the benefit of the high premium. The four groups on either side . . . would keep their production at the norm — which was easy to reach — and gave their spare time to the 'shock brigade' to enable them to get . . . the maximum pay." The next day, the second team would be the shock brigade, and so on. Drucker points out that the company got the highest output at the lowest cost, while the packers got the maximum pay for their work. The best managements are those that give individuals the most responsibility. They will take it, anyway.

Innovation becomes the keynote of an enterprise when the manager and workers are functioning at their best, and it is easy to see from Drucker's careful and brilliant book that this is a description, not merely an opinion or a matter of wishful thinking. It is this central condition that makes the book exciting. From this vantage point, the industrial designer emerges as a key figure when the manager is in control, although Drucker does not say so specifically. Innovation means new customers and new markets, and innovation is the designer's basic concern.

"The Practice of Management" does more than give an insight into the functioning of an enterprise, and it is more than a check list with which one can analyze the effectiveness of a business. It is a heartening report on a basic change for the better in the business community. It is a humanizing change, and it is one that holds satisfactions for people who are involved with business. This includes us all. Drucker's book not only shows a brighter world to come, but a better world around us. It is only necessary to be aware of it—*w.e.m.*

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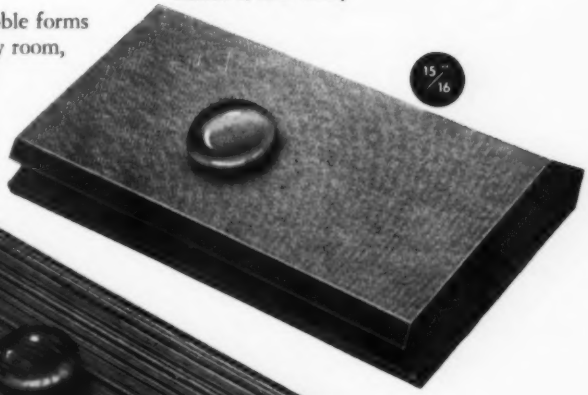



## This designing society

**INDUSTRIAL DESIGN IN AMERICA. 1954.** *Editorial consultant, Gardner Soule; book designed by Alvin Lustig. 224 pages, with photographs. 8½" x 11". Farrar, Strauss & Young, Inc., New York,* 1954. $12.50.

Marking their tenth anniversary, the Society of Industrial Designers has produced a survey in pictures and text of work done in 1954. Examples from the work of each one of its 153 members are included. The book is handsomely designed by Alvin Lustig in an easy, straightforward manner that does well by the material. Gardner Soule acted as editorial consultant. The objects shown range from household appliances and business machines to filling stations and breweries; there are many examples of package designs and industrial tools and machines in the varied collection. Since it is not the place of the Society to be critical or philosophical about the work of its members, the S.I.D. has invited representatives of industry to give perspective to the collection by writing introductions to each of the ten chapters.

Arthur Houghton of Steuben Glass introduces the book by speculating whether exuberance, richness and luxurious decoration may not be disappearing from the mass product, leaving the reader to find the answer in the book's pages. For the chapter on appearance design, Crane Company's J. L. Holloway notes that better looks mean greater satisfaction with the product, and for the chapter on better use of materials, Dow Chemical's L. I. Doan is excited by the satisfactions that are possible with the use of appropriate materials. The chapter on visual selling aids prompts R. Preston of S. S. Pierce to talk of the relentless design logic that makes products look right because they are right.

"Me-too" design is condemned by B. E. Bensinger of Brunswick-Balke-Collender preceding the chapter on new approaches. Other chapters on lowering manufacturing cost, health factors, color, product character and convenience of use are introduced with apt statements. A section on foreign designs, and indexes, conclude the book.—*w.e.m.*

## Place to put things

**STORAGE.** *edited and with an introduction by George Nelson. Interiors Library 4. Whitney Publications, New York.* $12.50.

*Reviewed by Ada Louise Huxtable*

This is a book of practical and occasionally inspiring solutions to one of today's most pressing problems: storage space. It is also a book of paradoxes. As the editor, George Nelson, points out at the very beginning, modern architecture is moving simultaneously toward simplicity and complexity. We have spent half a century reducing our design for living to essentials, and to meet these needs we devise complex storage systems. The aim of the designer concerned with storage is in itself paradoxical, since he seeks a sensitive esthetic solution to the most drably functional of problems: a place to keep the depressing number of "things" that we all seem to own. This excellent study — the fourth volume in the series on house design and furnishings edited by George Nelson for the Interiors Library — presents some of the best storage arrangements developed both here and abroad.

The subject is divided into four categories: shelving, unit cases, special purpose storage and architectural storage. The complexity of many of the storage systems seems to be largely due to the user's need for flexibility and the designer's desire to work with elements that can be prefabricated or mass-produced. This presents another paradox for, except in the field of furniture, the conditions aren't being met. In the shelving section, there are a few simple, cheap, commercially adaptable examples — Unistrut, Garcy brackets, standard steel shelf units — used in great quantity in stores, offices and warehouses as well as in houses, which are generally available. The other items are all in the category of the special, custom solution, with so little potential mass market that the machine basis of their concept becomes an anachronism. Some are so playfully novel that we seem to have eliminated the hatrack only to install the super-whatnot. The subject of architectural storage — the prefabricated storage wall and the built-in — will be significant for the future, since it is part of the contemporary philosophy of house design. In the furniture field, a great variety of sectional units that can be expanded into complete, flexible storage systems represent revolutions already accomplished.

As helpful as this compilation will be as a reference source for manufacturers, designers and consumers, it is much more than a picture book. In organization and analysis it is a remarkable essay on the development of storage furniture and facilities in terms of 20th century requirements and esthetics. The villain of the piece is the old fashioned closet, mentioned only as being totally unsuitable for present storage needs. This is undoubtedly so, but we have always had a favorite storage dream: a closet-room with its walls adorned with shelves and hooks. The next step would probably be the storage-house, of which the best known, if not the tidiest, belonged to the Collyer brothers, while the most valid examples have been built in Japan as adjuncts to the living-house, for the storage of seasonal and superfluous objects. In the West, since storage must necessarily be incorporated in the dwelling, we would do well to settle for one or more of the ingenious and handsome systems illustrated in Mr. Nelson's book.

## How the designer works

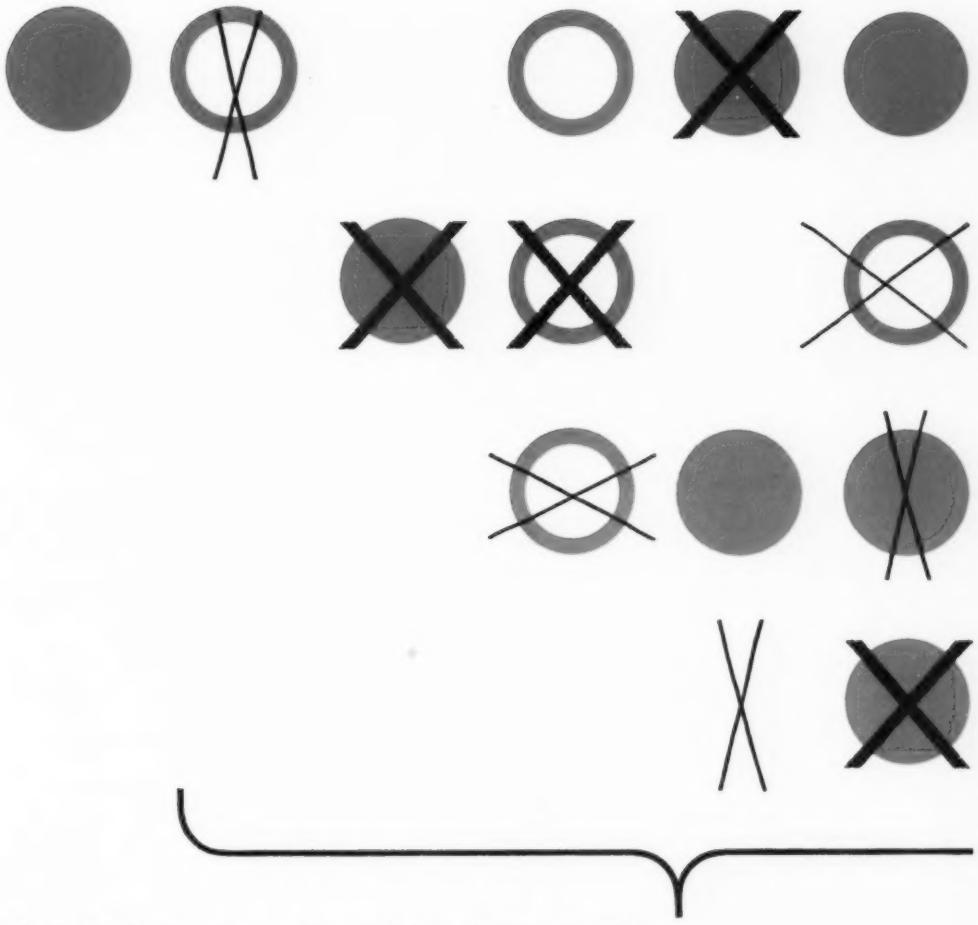
**INDUSTRIAL DESIGN.** *by Harold Van Doren. 379 pages, with photographs. 7" x 10". Second edition, revised. McGraw-Hill Book Company. New York,* 1954. $6.50.

Harold Van Doren, one of the pioneering members of the industrial design profession, has had more than two decades of practical experience to draw on for the new edition of his book "Industrial Design," which was first published in 1940. It is written as a text book, and from it the design student can see how one of the major design offices goes about its work. Mr. Van Doren begins his book by saying, "The job of the designer is to develop products for manufacture which will serve men better than their predecessors and to create in the consumer the desire to possess. Its ultimate goal, of course, is sales—at a profit." This thesis is developed by offering "a method for attacking a problem" of design. There are sections on how to prepare for making a design, the execution of the design itself, and how the finished design may be presented to the client. A postscript takes up the question of designer's fees (this section was first published in August ID) and some of Mr. Van Doren's ideas on the future of the profession.

In his section on preparation for design, Mr. Van Doren has included nearly fifty pages on present-day approaches to consumer research and its analysis. There is a chapter on materials and processes, another on merchandising requirements. The information is illustrated with case histories and examples that show some of the problems involved in designing for mass production and how Mr. Van Doren approaches their solution.

In the section on design, his chapters on clay studies, renderings and models are helpful in showing how a design idea can be made visual for the client. When it comes to design theory itself, however, designers and even students may take exception to the author's approach. He has tried, in the same systematic way that he has tackled research and marketing, to introduce the vast field of esthetics to the student with some "five-finger exercises," which are quite elementary. They also carry the unfortunate implication that all design is based on these particular rules. At best, all that can be learned from them is a particular style or technique, and these are not substitutes for a creative approach.

Mr. Van Doren's book is an interesting documentation of how a prominent designer approaches his work. Other approaches may be equally valid and successful, but Mr. Van Doren is properly concerned with presenting design as he knows it. It is a good picture of the independent designer's place in industry.—*w.e.m.*



## *the great lost opportunity for sales*

▪ Everybody wants more sales. And every company spends money for catalogs. But not all companies realize how important their catalogs can be in getting business that otherwise gets X'd out of their sales picture. ——▪ Those who specify in industry almost always use catalogs to sift suppliers before calling in salesmen. And *your* catalogs can be planned specifically to induce more of them to call your men. They can be placed strategically in the offices of all good potential customers and kept there ready for instant use.——▪ Helping manufacturers get more invitations for their men to call, through better catalog procedure, has been the whole business of Sweet's for nearly 50 years. A helpful new booklet, "Your catalogs— key to more orders," is yours for the asking. Sweet's Catalog Service, division of F. W. Dodge Corp., Dept. 26, 119 W. 40th St., New York 18. Offices in all principal cities. "The easier you make it for people to *buy* your products, the easier they are to *sell*."

# LETTERS

## Groans for communication

*Following our story of the Georgia Experiment in art education, by designers Eames, Girard and Nelson, which appeared in October ID, one reader was enthused enough to send along an account of what happened when the sample lesson was presented at UCLA.—Ed.*

Sirs:

I can't begin to convey to you all the things that went on that evening, or how it was put together, and you'll just have to extend your imagination to encompass something really wonderful. About the subject, Communication, Mr. Eames explained that he would have reached his goal if, after the "lesson" people ceased to think of "communication" as a telephone call or a smoke signal, etc., and thought, instead, of its being all kinds of people making themselves known to one another in any manner or fashion.

The actual physical set-up involved a huge display across the front of the building, set up on easels and making a solid slanting wall of interesting things on it, like the British flag, the big numeral 1, about 25 or 30 heads, mostly cut from *Life*, circus posters, an Air Raid warden's insignia, a blow-up of a magazine photo so you could see the screen, Chinese writings, a couple of scratch sheets, an abacus, a series of IBM cards all punched out—and so on. Across one side of the room there were two giant kites, Chinese, in the shape of fish. Above them were three giant screens, sort of banked, with the outside two slanted slightly inward. With three simultaneous images on the screens, it was a multi-visual experience. At various times throughout the lesson, one or all of them would turn into a moving picture, sometimes flanked by two stills; sometimes the moving one would be projected on the end screen, with the middle one blank, and a transparency at the other end. All three were operated simultaneously, along with a splendid narrative, a marvelous sound track — and smell! The first time the smell went into effect we were inside a series of churches in Europe, looking at stained glass windows. There was a Bach fugue in the background — organ — and before you knew it the whole place *smelled* like a church — that delicate, musty, candle-lit, faint incense at the altar smell. Fantastic! And transitions between thoughts were interesting. The first time I saw the lesson I was sort of swept away, but the second time I could be more technically aware of how they achieved the effects they did. In the beginning all three screens were black, and there was music. Then a light began to flicker, and then another one, then some more, till the whole screen was shining and flickering and you were aware that you were in Times Square at night looking at the lights, seeing the Kleenex pop out of the box, seeing the Planter's sign, and the Astor Hotel sign. Then the narrator came on and told us that we weren't here to look at the lights but to listen to the opening number of a Broadway show. *There follows a description of the sequence on page 49, October ID.*

When the communication lesson was over, the narrator said we would now see a trailer on Bread, which, he explained, was not merely something to eat, but was a symbol of a way of life, a work of craftsmanship, a complete fruition of our natural resources, a standard of measure, and about nine other things I'd never thought of before. The opening scene showed one of Breughel's paintings of a wheat field with some workers cutting down the grain. The camera closed in on the painting to show you the grain; then it shifted to a photograph of some golden grain just like the painting. Hands come into it, pick out a handful and put it through a grinder till it comes out white and fairly fluffy, which miraculously becomes dough, with the hands kneading the dough. When it's done, the loaf goes into an old-fashioned oven. When the baker opens the oven, —zounds!—out comes this rich, wonderful, all-permeating smell of hot, freshly-baked bread. This happened just long enough after dinner for everyone to be rendered prone in the aisles by it all. Then the film went on to show simple views of breads of all kinds — dark rich pumpernickel, raisin bread with the raisins sort of juicy and popping as the loaf was taken right out of the oven, bagels, French crescents. It was too much to bear, and the audience went wild with groans and active saliva glands.

Barbara Jeanne Wilson
Los Angeles, California

## The Art X Film

Sirs:

We would appreciate additional information on the 16mm color film "A Communications Primer" mentioned in the October 1954 issue of Industrial Design.

Leslie Baird, Promotion Manager
Cannon Electric Company
Los Angeles, California

*The film is available for rent to educational groups from the Film Library of the Museum of Modern Art, 11 West 53rd Street, New York.—Ed.*

## Nostra Culpa

Sirs:

I was gratified to find my design of a Bourbon Supreme whiskey decanter illustrated on page 71 of your October issue. However I feel it should be called to your attention that this whiskey is a product of American Distilling Company and not Glenmore as credited.

W. H. Baird, designer
Hazel-Atlas Glass Company
Wheeling, West Virginia

*It must have been all that whiskey.—Ed.*

## Apologia

Sirs:

Even though Olivetti has proved that adding machines can be handsome, I refuse to believe that there is an Italian magazine named *Cash Beautiful.*

John Maass
N. W. Ayer & Son
Philadelphia, Pennsylvania

*There isn't. Apologies to Editor Rogers of* Casabella, *for the printer's sloppy Italian. —Ed.*

## Abroad, too

Sirs:

You will be interested to know that Industrial Design has met with considerable enthusiasm and praise here amongst designers and architects, and deservedly so.

Particularly worthy of note is the high level of critical comment. I hope this standard can be maintained as it has been with *Interiors.*

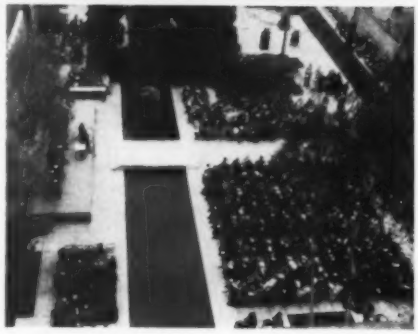
Grant Featherston
Melbourne, Australia

## MMA has 25 years

Twenty-five years is an anniversary in anybody's life. On October 19, in a moving ceremony in the Sculpture Garden, the Museum of Modern Art celebrated its twenty-fifth birthday with some 7000 guests. The occasion was moving because it pointed up just how quickly the museum had grown from a handful of pioneers in a hostile climate to a respected cultural authority. This small museum has really come of age, as Mayor Wagner said in his address, as the core of a cultural center for New York City and, in a way, the country. The Museum's shows, its educational program, its sponsorship of good design, of the film library, its sometimes criticized exploration into the fringe arts —all these have had an enormous influence on the appearance and acceptance of our man-made surroundings. Sometimes, to quote August Heckscher, Jr., chief editorial writer of the New York *Herald Tribune*, this influence is misinterpreted, and one sees walls that looks like Mondrians, and "mobiles that have become the ad-man's vehicle for selling soap." But the Museum keeps trying, without compromise, to present and preserve what it truly believes to be the best of our contemporary expression. This may be confusing to some, but its value is that in trying to understand it, we sharpen our own perception of the world around us.

The ceremony opened with an address by William Burden, President of the Board of Trustees, followed somewhat startlingly, by the voice of President Eisenhower, recorded on tape. Paul Sachs, professor emeritus at Harvard University, and Life Trustee of the Museum, paid tribute to the courage of the founders, and finally Dag Hammarskjold, Secretary-General of the United Nations, spoke of modern art which has "forged keys to a perfection which it has not itself reached. Modern art teaches us to see by forcing us to use our senses, our intellect and our sensibility to follow it on its road of exploration." Like the other speakers, he pointed out that this is a museum for the art which reflects the inner problems of our generation, and cited two qualities which link modern art with the scientific sphere: the courage of an unprejudiced search for the basic elements of experience, and perseverance in the fight for mastery of those elements.

The Museum is celebrating its anniversary with a series of special events and exhibitions. The first is a museum-wide show of its collections, including some new acquisitions never before shown. This will be amplified in a publication, *Masters of Modern Art*, edited by Alfred Barr, Jr., which will survey all departments of the Museum's activity — from industrial design to posters, sculpture and movies, with some 415 reproductions. Other exhibitions will include a traveling one on *Structure and Space* in contemporary architecture, another on ancient and contemporary Indian fabrics and jewelry.



*Secretary-General of the United Nations, Dag Hammarskjold (l.) and New York's Mayor Robert Wagner, Jr., flank the Museum of Modern Art's William Burden on the dais at the Museum's garden celebration (bird's-eye view faces East).*

## Welcome Whitney

Backing onto the Museum of Modern Art's Sculpture Garden to form the second arm of New York's midtown cultural trilogy (third will be the new Donnelly library across the street), the Whitney Museum of American Art opened its new doors on October 6. The move from Eighth Street, where the Museum first opened in 1931, has taken two years; the new five-story, air-conditioned building, with its main façade on West 54th Street, is the work of August L. Noel, with interior by Bruce Buttfield. This flexible interior is formed of free-standing panels, as solid-looking on their flanged bases as a structural wall, but movable on detachable wheels. Lighting is provided by a complex system diffused through a paneled translucent glass ceiling; floors are made of a fatigue-lessening resilient wood-composition laid down in large brass-banded tiles. To this department the color scheme is a little disturbing —one moves in a pink-hazed space defined by green floor and pale terra-cotta, green, and blue walls with leather benches to match. In de-museumizing the museum the designer has made it a little like a California luxury hotel, especially with the Lurexed turquoise chairs of the Gertrude Vanderbilt Whitney lounge — a memorial to the Museum's founder and contemporary American art's earliest and most ardent champion. The Whitney will no doubt mellow with age. It is nice to have it on 54th Street.

*Behind the new Whitney's façade (top), movable partitions make galleries flexible.*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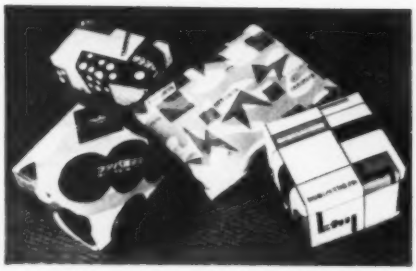
## Hiroshi Ohchi

The precision, economy, and airy playing with space and shapes that we have come to know in Japanese art forms, together with a humor that we all too often forget, are displayed in a delightful exhibition of the posters and graphic work of Japan's leading graphic artist, Hiroshi Ohchi, at New York's Kogei Gallery. Professor Ohchi seems to take the essence of his subject — whether it be a tv set, a sewing machine, or an abstract topic like "form through function" — and turn on it a pixie humor and impeccable sense of design and color. Perhaps the most striking and unexpected freshness in these posters, books and wrapping paper is their color: the combinations are subtle and unexpected, sometimes with a watercolor-like technique. The top house in the Aria tv poster, for instance, is white, peacock blue and leaf green; the second one is purple, magenta and lime. Odd as they sound, the colors work marvelously well.




*Posters and packages by Hiroshi Ohchi show his wit and sense of design, but not his color: The Mondrian-ish package (above), for a plastics manufacturer, is black, tan and white; the flat one, dove-grey and tan. The boy in the shoe poster (r.) is white, his leg outlined in purple-black wash, shoe black, background violet. Children and rooster are chrome yellow and orange, yellow and sky-blue. The television houses on a chrome yellow ground combine peacock, purple, magenta, vermilion, lime, leaf green, white, cherry, black; exhibition poster frog is purple.*



## Plastics Competition

A new competition, first of its kind in the industry, is being sponsored by the Koppers Company, Inc., suppliers of thermoplastic resins. The design competition is for molders of polystyrene housewares. All molders are eligible, regardless of whose material they use. Products, which may be molded or extruded of any regular or modified polystyrene, may be entered under three classes: Utilitarian products with operative construction features; utilitarian products with non-operative construction features; and decorative products with or without operative construction features. A product sample of each entry must be received by Koppers, Pittsburgh 19, Penna., not later than January 30, 1955. Many of the entries will be shown at the Chicago Housewares Show, January 13-20. Winners will be announced at the plastics industry banquet in Pittsburgh on March 21, 1955.

Ariosto Nardozzi

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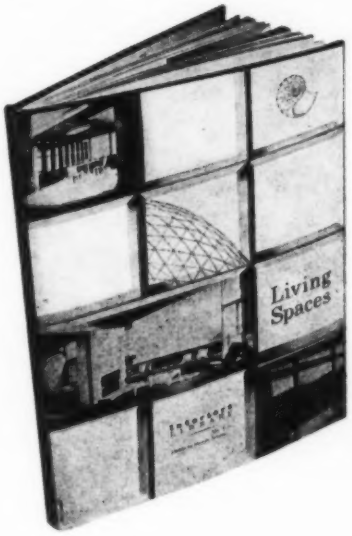


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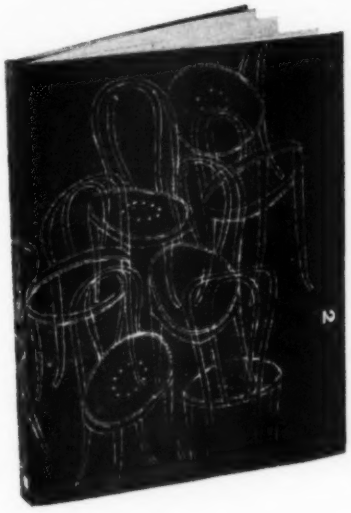

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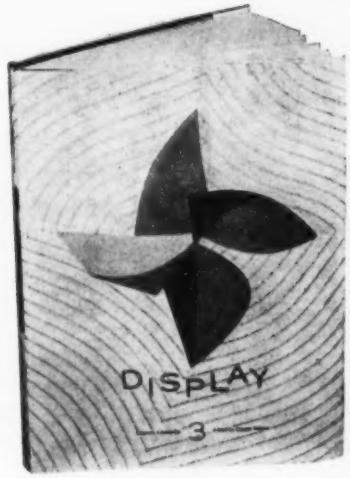


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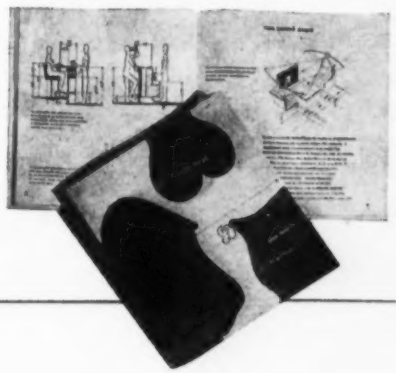

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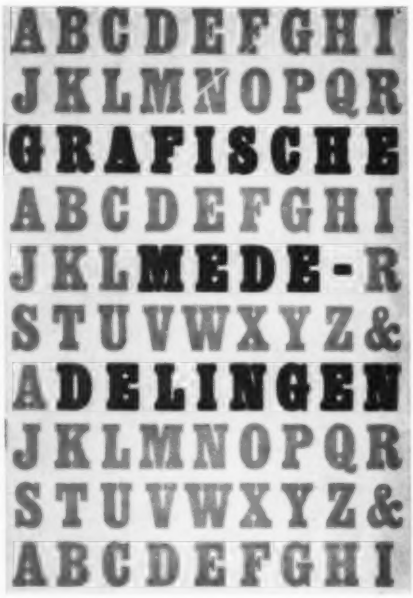
## Dutch Graphics

The graphic work of the GKF — Gebonden Kunsten Federatie, or Netherlands Graphic Design Group — was shown this fall at Illinois Institute of Technology's Institute of Design. The exhibition, first in this country, records the development of the contemporary graphic idiom as it sprang from the clean, angular forms of *De Stijl* in the 1920's and, freed from static forms, grew able to communicate its message directly. The work of the GKF developed parallel to that of the Bauhaus group. This country's successor to the Bauhaus, IIT revealed the continuity of this International Style in a display as lucid, as restrained and as clean as the individual pieces and the reforms from which they spring. The exhibition, arranged by Misch Kohn and Richard Koppe, visual design instructors at the Institute, showed posters, typography, advertising and package designs dating from the 1920's to 1954 by Piet Zwart, Otto Treumann, Dick Elffers, J. W. Sandberg and others of the GKF. It will travel around the country early in 1955; dates and places will be released later.


*Packages and typography (above) were included in IIT's show of Dutch Graphic Design.*




## Basic Materials Show

The Third Basic Materials Exposition and Design Engineering Conference will be held in Philadelphia's Convention Hall from May 31 to June 3. The purpose of this show and conference is to bring together a select audience of design and engineering executives with the manufacturers of basic materials. The theme of this year's show will be the solving of problems to do with design engineering; the conference will feature many case histories where materials and component selection solved specific problems. Space and time are planned to give attention to individual product development needs of the visitors. Inquiries may be addressed to Clapp and Poliak, Inc., 341 Madison Avenue, New York.

*Associate professor Richard Koppe and student hanging the GKF exhibition at IIT.*

## Good Design in Chicago

The good design show is coming up again. 440 objects will go on display at Chicago's Merchandise Mart on January 4, to coincide with the Home Furnishings Market. Out of more than 5,000 entries submitted, the judges—Edgar Kaufmann, Jr., of the Museum of Modern Art, Arthur N. Bec-Var, of General Electric, and Just Lunning of Georg Jensen, Inc. — have chosen "an unusually large number of items, indicating that many modern designers are working on a level we consider very high." Advance news has it that warmth of color is the common denominator and general trend in this year's selections.

## IIT again

More than 20,000 people visited the first annual Chicago Area Industrial Design exhibition held at IIT in October (see October ID), according to reports. This has been considered remarkable in view of the lack of advance publicity, and a good omen for more and better regional industrial design exhibits. IIT's building program goes on apace; groundbreaking ceremonies were set for December 2, for the new all-design-departments building designed by Mies Van der Rohe. Scheduled among the speakers were William M. Stuart, president of the Martin Senour Company and chairman of the building fund campaign. and Dr. John T. Rettaliata, president of Illinois Institute of Technology.

*At the opening day ceremonies for IIT's Chicago design exhibit (top): William M. Stuart (l.), and IIT president John T. Rettaliata, flanking ID's publisher Charles E. Whitney.*

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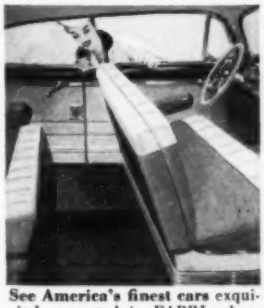

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## Dutch arts and crafts

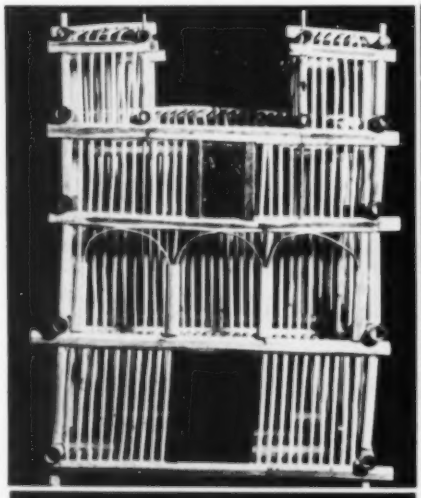
Nowhere is the square, honest look more worthily propounded than in Holland. A traveling exhibition of "Dutch Arts and Crafts," circulated by the Smithsonian Institution, is currently exhibiting to the American public some 350 objects of daily use demonstrating the simple straightforwardness of production in Holland today. This seems to pay off particularly well in work with metal (the exhibition also includes work in wood, ceramics, fabrics, glass, wallpaper, lamps and toys.) Clear thinking is evident, for example, in steel tube furniture by Coen de Vries (above). The canvas seat of a chair is held tautly in place, while allowing for bounce, by five metal springs which run from a bar sewn into the angle of the seat, to a cross-bar below. A coat hanger makes a pattern of thin crossbars and plastic-coated hooks. The exhibition will be until January 3 at the J. B. Speed Art Museum, Louisville, Kentucky, and from January 16 to February 6 at the Currier Gallery of Art in Manchester, N. H. Later in the year it will travel elsewhere.

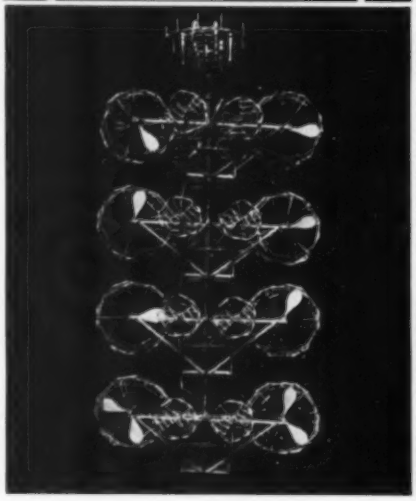
## Design at Aspen

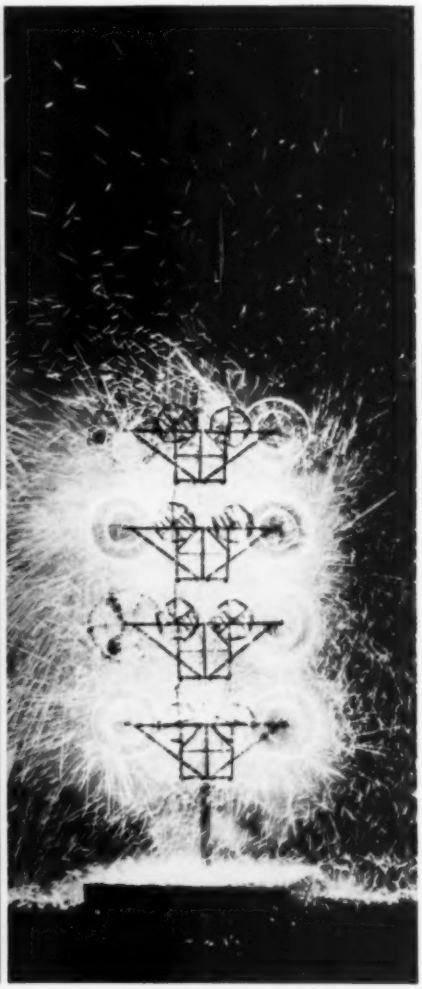
The Fifth International Design Conference, to be held next June 13-18 at Aspen, Colorado, will for the first time be sponsored by an independent and permanent organization. A central executive committee for the International Design Conference has been formed, with R. Hunter Middleton as Chairman, and with contributing regional groups, to develop the program for the 1955 Conference, interim meetings and a publications program. The latter, under the direction of Mildred Constantine of the Museum of Modern Art, will be a flexible program without a fixed schedule, expected to publish papers and other works of high caliber.

## Mexican arts and crafts

Not because it is particularly industrial, but because it was obviously assembled with such loving care and understanding, we salute the exhibition of Mexican Popular Arts at the Taylor Museum of the Colorado Springs Fine Art Center. The objects themselves (see below) are delightful and ingenious, like an architectural birdcage of wicker and bamboo, complete with twin towers and a non-functioning loggia; and a wonderful fireworks *castillo*. This last is a peculiarly Mexican device which looks somewhat like a super flying machine. 11 feet, 4 inches high, it was assembled by the noted pyrotechnist Don Joaquin Reyes of Mexico City. The framework, of split reed and bamboo, is cantilevered and braced from a central pole; it is dyed bright pink, with paper-skinned propellors of many colors. The strapped-on cartridges are connected by a continuous fuse. Once lit, the *castillo* gives a dramatically paced twenty-minute show, swishing and spitting, changing color, sending off rockets and stars, rising to a climax, pausing and then starting all over again, as the intricately timed system of fuses sets off the wheels. The exhibition, which presented a cross-section of the Mexican arts, was accompanied by a delightful catalogue (whence come these illustrations), amiably written by Assistant Curator Richard Grove.







# CORNING GLASS BULLETIN

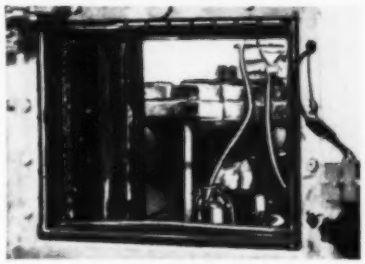
FOR PEOPLE WHO MAKE THINGS

***Gamma guardians for protection and perception.*** Gamma rays are one of the dangers you encounter in taming atomic energy. Those who delve into molecular manifestations often face the double problem of how to *see* what they're doing while keeping out of reach of lethal radiations. Happily, glass can extricate you from both horns of this dilemma.

Our Harrodsburg plant recently cast and assembled what're undoubtedly the heaviest glass windows in the world, designed for the protection of employees working on an atomic power development program. Some of these windows are 5½ x 8 feet in area and weigh 12 tons.

Glasses for such windows come in three different densities—one has a density of 3.3, which has very high light transmission and doesn't brown when gamma rays hit it; the second a density of 6.2—about the densest glass ever made; almost as dense as steel and six times heavier than water. And the third has a density of 2.7 to match that of concrete.

By using those remarkable remote-control manipulators you've seen pictures of, scientists are able to perform their experiments by looking through these windows without fear of radiation injury.



▶ Maybe you're not in the market for a 12-ton, gamma-absorbent window, but if you have any kind of problem calling for the selective absorption and/or transmission of *rays*—cosmic, atomic, X-, ultraviolet, visible, infrared, micro-, radio, what have you, we might be able to help you find a solution. Leastwise, we'd be delighted to hear from you as a starter.

***Laboratory ⇄ ?***

Some years ago an enterprising designer came into possession of a simple piece of PYREX brand laboratory ware—a standard flask. With a certain ingenuity and imagination, and the aid of some material to wind around the neck, he transformed this laboratory flask into a beautiful (and salable) coffee carafe.

Since that time, other equally sales-minded designers have designed everything from flower vases to sugar bowls from laboratory glassware. The sales appeal of such items is built in with clean simple lines, heat resistance, functional design and the glistening attractiveness of glass.

Thus, such as humble laboratory flasks travel the oft-unyielding distance from lab to home on the wings of men's creative imagination.

The reverse happened to a bowl we make for manufacturers of kitchen blenders. This time the creative wings carried our product from home kitchen to laboratory. It came about when some fellows in a laboratory hit upon the idea of adapting these kitchen blender bowls to laboratory blending purposes. Simple, huh?

▶ The starting point for other potentially rewarding ventures could well lie hidden among the more than 40,000 standard items on the Corning product shelves. Could be you're next in line to put the magic of imagination to work projecting one of these into a new area of utility. The first step on this "maybe road" to fame and fortune is simple: Just drop us a note requesting same and we'll let loose a deluge of data on standard items.

***How to engineer a platypus.*** A happy combination of purposeful practicality is the furry platypus with its webbed feet, beaver's tail, and duck's bill.

A lot of our customers, to their continuing delight and profit (we hope), have discovered that glass is sort of platypus-like in that it, too, can be made to combine many useful characteristics.

Take, for example, PYREX brand pipe. Here you see a man using a piece of it to drive one-inch nails in a pine plank. This is essentially an extra-curricular activity for glass pipe, which is more at home conveying metal-eating acids around chemical plants, but it's a way of showing just how tough glass can be when it's *made* that way.

All of which may serve to illustrate for you how we can arrange the optical, chemical, thermal, mechanical, and electrical properties of glass in different combinations to match a considerable variety of end-use requirements. In fact, we've worked up some 50,000 different formulas for glass in our years of helping customers solve specific design and processing problems.

▶ If platypus-like glass is a novel idea to you, if you've never given glass a second thought as a highly adaptable design and construction material, we suggest your reading a pocket-size volume entitled "Glass and You." It tells in a few words and many pictures how glass contributes to profit and pleasure and we'd be delighted to send you a copy. Or, if you're more concerned with putting glass to work for you than in learning what it's doing for others, there's a slightly more technical bulletin called, "Glass—its increasing importance in product design." We'll be glad to send you either—or both.

**In all fairness to you—and to glass, too, we must admit that this is not the whole story. Fact is, experience indicates that it's *customer* ideas and problems that really bring out the best in glass. So, even if what's on your mind seems unrelated to any item this page discusses, glass may still be its fulfillment. We'd like to hear from you.**

*Corning means research in Glass*

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## Anniversary Snapshots

Against a chilly Williamsburg backdrop, 69 members, 49 wives and 17 guests celebrated the Society of Industrial Designers' Tenth Anniversary in late October. A sampling of names, faces and quotes indicates the scope of the busy conference: ↟ *Peter Muller-Munk* took over SID reins from retiring president *Robert Hose* with these words: "We represent a creative profession. . . . We must reject the pressures of conformity, the cult of the mediocre with which our profession and society are being tempted. . . . We must not only educate others, but must be educated ourselves."

↟ *Albert Christ-Janer*, who is in charge of organizing a new National Arts Center for N.Y.U., examined the economics and ethics of design in his Friday night keynote talk. "Can we disregard the kind of production we have, as long as we produce goods? Are we riding for a fall if we believe blindly in production-consumption: consumption-production? In brief, what is plenty, and when is plenty waste? . . . This relates to the 'beauty' we all seek. You, form-makers for your society, try to attain it as you style your objects for the market, and in doing this you are a marketing expert. Here is an ever-present point of conflict. What is plenty? When do you gild the lily? When do you overdo in a quest for beauty? Answers lie in a balance between utilitarian and esthetic standards; there are no fast rules, which is why you must be artists *and* teachers."

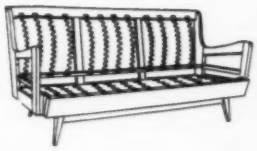
During the first of three informal seminars, designers Dave Chapman (holding the desk) and Dick Reinemann described their work in the development of a new line of modern school furniture for Brunswick-Balke-Collender (See April ID). → Arthur N. BecVar, newly-elected S.I.D. Vice-President, showed and discussed an advance model of a 1955 G.E. refrigerator-freezer. The following morning, a unique informal group of executives which calls itself Design Directors in Industry assembled to talk about the organization of design in their respective companies, and the growth of their design departments. ↟ Below, left to right, Design Directors are:

George Kress, I.B.M.; Herbert Zeller, Motorola; James Bernie, Reynolds Metals; Theodore Clement, Eastman Kodak; Arthur N. BecVar, G.E.; H. Creston Doner, Libbey-Owens-Ford. After Saturday luncheon addresses by Charles E. Whitney, publisher of INDUSTRIAL DESIGN, and Fred Bollman of F.A.O., Paul Hollister, Publicity Consultant of R. H. Macy offered some advice at the final banquet: → "About all Daniel Retailer can suggest to you lions is a degree of closer contact with the principal retail outlets of the products of your drawing boards. . . . You know darn well there are already more different models of toasters than there are different slices of bread, or degrees of preference for toast. . . . Look at the head-end of any current automobile and tell me (in 25 words) just what the hell that shapeshell has to do with the delicate cracking plant underneath. To me, the front end of most cars sold in the last decade has never said anything except, 'Look out for my big new tin teeth.'. . . I have tried to indicate that the consumer has had, and will continue to have, a controlling hand in management. I hope I have also implied that management is the mere creature of the consumer. If I have, we will get that bunch of tin teeth off the fronts of all automobiles."

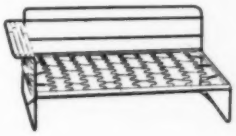
*Paul McCobb discusses with T. H. Koeber at S.I.D. Williamsburg exhibit.*

## Bird's eye view of design

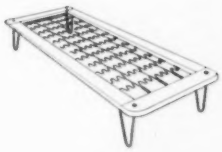
After a quarter of a century of conferences, the Institute of Contemporary Art of Boston knows how to hold an audience. Its 26th Annual Conference on Design was held this October at Arden House, Harriman, New York, a palatial eyrie that kept participants happy through two full days of talking and hiking. For the most part, discussion centered inconclusively on familiar working problems, but it was spiced with the thoughts of two outsiders. John Arnold, whose course in creative engineering at MIT has attracted wide attention, remarked at the outset that although the so-called industrial designer has a certain special talent that equips








# TOP DESIGNERS CHOOSE NO-SAG





It is agreed. Utility and beauty must share the responsibility of meeting the exacting demands of discriminating furniture buyers. Leading designers, faced with striking this balance, each bring to the designing problem his unique solution.

But in one thing they concur—their choice of No-Sag Springs.

With No-Sag they achieve desired lightness of line and weight with complete assurance of comfort, permanence and economy.

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him to apply art to industry, the engineer is the real designer in industry. The creative engineer that Arnold hopes to produce will be both analytical and imaginative, equipped to perform a real service to society. "We don't have combined brains," he said. "The individual mind is the only creative power in the world." Our advanced technology demands that the creative engineer be a "global thinker," a man of comprehensive training and outstanding ability. W. J. J. Gordon gave the conference another shot in the arm with a description of the design department at Arthur D. Little, Inc. This group believes aesthetic originality goes hand in hand with functional innovation and works in anonymous concert to *invent* whatever it must design.

### Automation and Machine Tools

A new industrial exposition, the Product Engineering Show, will be launched in Chicago to coincide with the Machine Tool Show from September 6-17, 1955. The new show, which will cover the expanding field of automation, is expected to fill 200,000 square feet of display space with the products of 225 exhibitors. Automatic mechanisms and techniques for manufacturing and processing industries will be demonstrated. Principal categories will include monitoring equipment, inspecting and gauging equipment, communications, materials handling and drive mechanisms. The Product Engineering Show will be held at Navy Pier and the Machine Tool Show, last held in 1947, at the International Amphitheater, with buses shuttling visitors between the two. Advance registration cards may be had from Clapp & Poliak, Inc., 341 Madison Avenue, New York 17.

### Liberty's father retires

The "father of American aviation engines," Col. Jesse G. Vincent, is retiring as vice-president after 42 years with the Packard Motor Co. Among designs to issue from his board were the Packard "Twin Six," the first American 12-cylinder automobile engine; the "905," from which grew the World War I Liberty aircraft motor; and the first diesel engine to fly an airplane. Devoted in recent years to developing younger engineers, Col. Vincent will remain at Packard as engine consultant.

### Package judges

Judges have been announced for the Package Designers Council Packaging Competition, the results of which will be announced at a gala lunch at New York's Hotel Plaza on February 9. Designers among the judges will be Egmont Arens, of the S.I.D.; Robert Gruen, I.D.I. president; Jim Nash, past president of the PDC, and Alan Berni, chairman of the Awards Committee. Winners will be displayed in a special exhibition at the AMA Packaging Exposition in Chicago in April.

### More new awards: ASTE

Four new annual awards have been announced by the American Society of Tool Engineers for outstanding achievement in the field of tool engineering. First recipients of these honors will be recognized at the annual meeting of the 30,000-member ASTE in Los Angeles, March 14-18, 1955. (The meeting will coincide with the first ASTE Western Industrial Exposition in the Shrine Auditorium and Exposition Hall.) The four awards will honor achievement in published literature, technical articles or papers; manufacturing technique; leadership; and engineering.

*Some of the exploratory articles in the coming February 1955 issue of*

**INDUSTRIAL DESIGN**

[redacted]

**MATERIALS:** "Polyethylene"
A material that bends to your needs: study of a flexible plastic, polyethylene, and detailed case histories of eight products which have utilized the material for new and original results.

**COMPANY POLICY:** "Rubbermaid"
Wooster Rubber Company lets its customers serve as designers-in-chief: they have turned in enough ideas to build a national line of rubber housewares.

**PROFILE:** "How a Big Design Office Works"
A pictorial essay on one of the oldest established design offices. The variety of work it handles and the way it keeps its house in order suggests a new definition of industrial design.

**REVIEW:** "Cars '55"
A critical analysis of the shapes and details of the new automobiles.

**DESIGN PRACTICE:** "Perspective, Part II"
The second of five installments on a new system of perspective drawing, by Jay Doblin.

# ID

*Each issue of* **INDUSTRIAL DESIGN** *delivers to the desks of designers and management executives a definitive review of contemporary design ideas and technics.*

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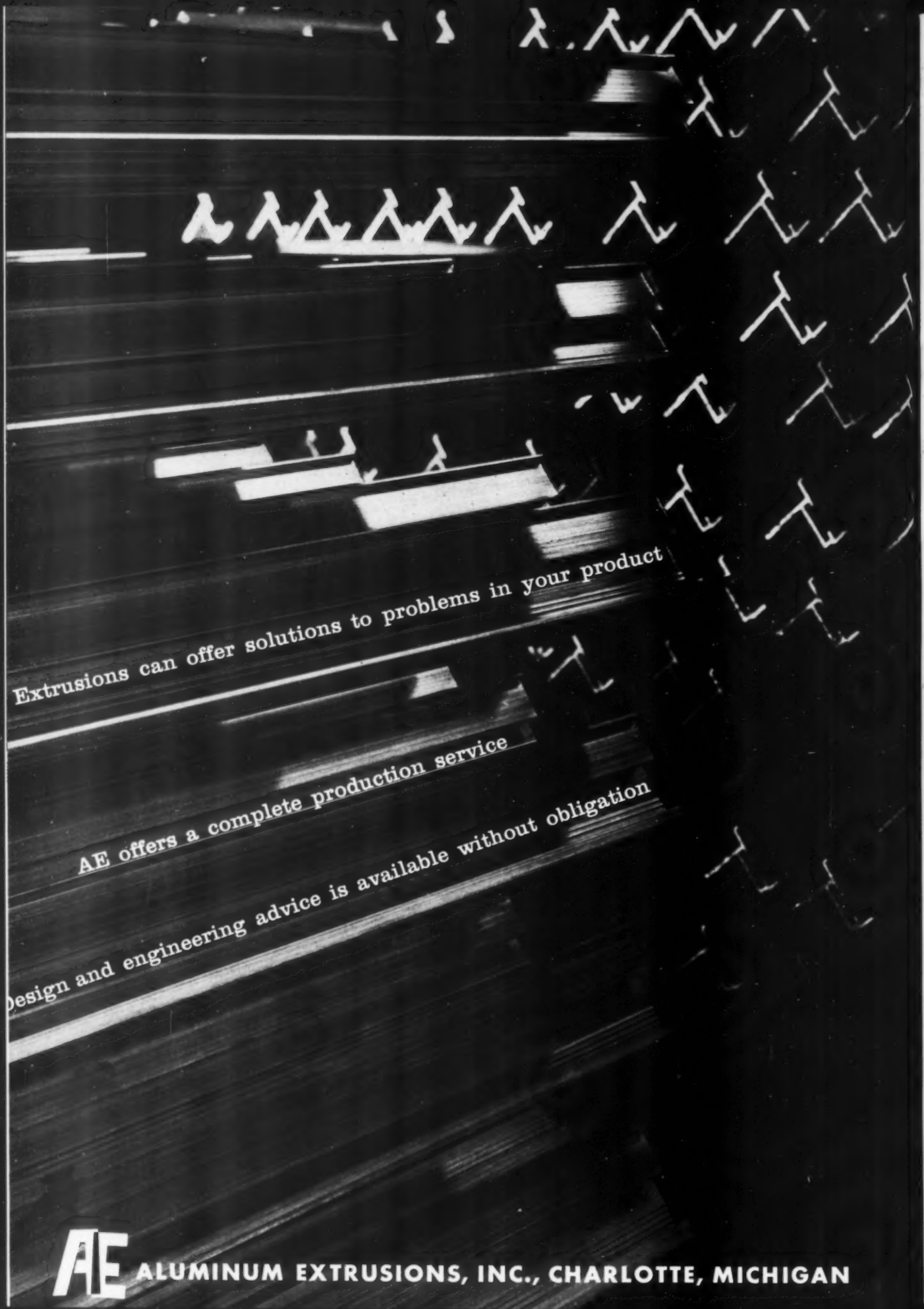
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*This is our first*

# ANNUAL DESIGN REVIEW

***For five issues out of six, we use these pages to discuss design in the most business-like terms — sales problems, manufacturing problems, new materials, market trends. This issue is devoted to design and design alone, because we assume that our readers, and anyone concerned with the manufacture of products, is interested in the subject for its own sake.***

## *What is it?*

***This review is not, by a long shot, a complete coverage of every good product put on the American market in 1954. If we could have found them all, they would have filled the pages of an encyclopedia. Nor is it a collection of immortal designs — they would have made a pretty skimpy issue. It is simply a group of several hundred products, selected from material submitted or sleuthed, that the editors feel have real design merit.***

***They are finished products. Fully aware that other kinds of products — components and materials — are often the basis of a successful design, we have acknowledged as many of the products-behind-the-products as space would permit.***

### *How did we make the selections?*

Obviously, an industrial designer's job is to serve his client well — in other words, to design a product that sells. But since sales figures are influenced by many factors beside design, they are a difficult criterion at best. We are assuming that a designer's best work will sell if his client is prepared to make it well and give it the backing it deserves. Sales figures are not at issue here.

This leaves the problem of trying to evaluate the vaguest of qualities — pure design. Though it is difficult, we shall try to indicate how these judgments were made. Our first rule was that arbitrary do's and dont's are useless, or worse. It is easy to say, for example, that chrome decorations are naturally bad, or that streamlining is a vestige of a corrupt vocabulary. But as soon as you proclaim that dogs can't talk, someone comes along to prove the opposite. Because sales or technical or cost limitations are so often used to excuse poor designing, we are happy to have a collection that proves it needn't be so. Many of the products here are dressed for the showroom floor, but they are nicely dressed. Many of them rely on idioms that are tiresome, but in every case designers have managed to give the idioms new meaning.

The only criterion that really applies is the criterion that belongs to each product. As we go along, we shall try to point out what is successful about each design; to make our standards explicit, we have organized the issue by problems. The aptness of a solution is one good explanation of the quality of a design.

### *What does the collection prove?*

After months of pawing through this collection in an effort to cut it to manageable proportions, we have reached a few conclusions about the state of design in 1954. Ten years ago, if we had done the same, we might have commented that products of all sorts reflected "streamlining;" five years ago, the catchword could have been "softly contoured." In 1954 there are traces of earlier fads, and a few new ones too. There has been much talk about "the bold new look," which may suggest a belated boredom with the softness of yore, or which may, like all cliches, become a crutch in designing everything from scooters to sports cars. But if there is one consistent thing about the designs herein, it is their variety. Each one is distinguishable for what it is, and no universal style has blanketed them all.

To get down to cases, appliances are a good clue to 1954. They are more reticent, more refined, and less embarrassed about being what they should be — boxes for building into a room full of boxes. The fine supply of tabletop cookers indicates a widespread talent for composing untraditional materials with dignity enough for a traditionally gracious place.

Good home furnishings have been common since the war. Our selection seems lopsided with rudimentary designs, but it must be remembered that the new items go into showrooms filled with good pieces designed over thirty years. There should be more lighting fixtures and small accessories, but many of the best are imported or handmade, and thus beyond our scope. Well-designed professional equipment is easier to find than space in which to show it. The total absence of automobiles is neither accidental nor happy.

But in sum, our conclusions are sanguine. It would be rash to say that the state of design is improving, but designers *have* proved that there is a way to handle almost any set of limitations industry can pose. In other words the choosiest buyers — whether they want typewriters, tools or casseroles — can somehow (with stamina and a sound second-hand car) find some good design for almost every occasion.

*—The editors*

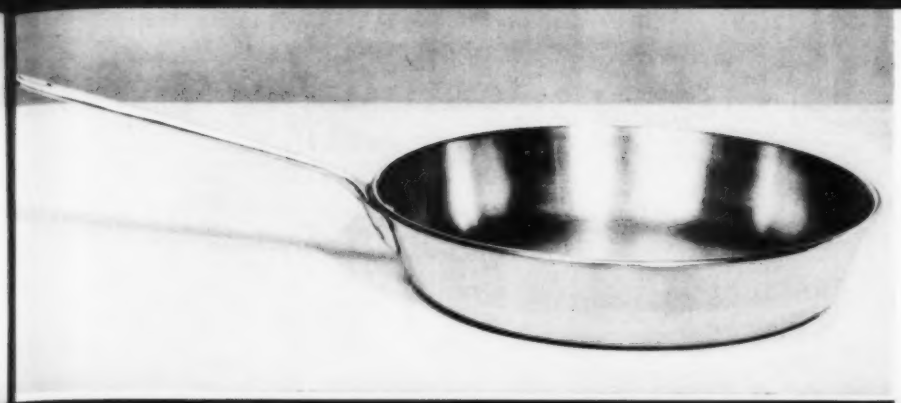
paul weller

# *Familiar problems*

1 Cup and saucer, Texasware
Plastics Manufacturing Company
Sundberg-Ferar, designers

Compression-molded melamine; 2-tone mottled coloring for scratch-resistance and depth effect.

*For a market which constantly demands change, the lion's share of a designer's work is finding new ways to do the same old thing, only better. This section presents a number of designs in which refinement of a familiar object was the major task.*



2 Williamsburg Ware skillet
Olympic Metals Corp., Chicago
Jack Sarsfield, staff designer;
Jack Morgan, consultant designer

.032" copper pan with .008" stainless steel interior facing; bronze handles.

3 Florence dinnerware
Pro-phy-lac-tic Brush Co., Florence, Mass.
George Nelson and Associates, designers

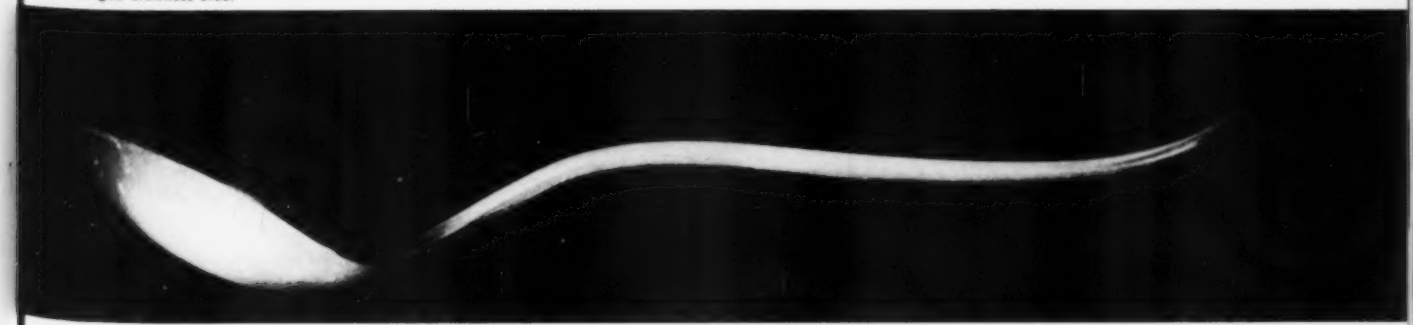
Compression-molded melamine (American Cyanamid); black, gray, mustard, Chinese red, gloss finish.

The oldest job of the designer — as opposed to the inventor or engineer — is the re-creation of familiar things. Before mass production, his typical work was refining the object which he himself often made by hand; with slight variations in each successive piece of pottery or furniture, he gradually developed perfection in a very limited area. Even today, the product designer cannot fall back on clever ideas when he is confronted with an object which has been designed many times before. If he agrees that the precedent for his work — whether a cup or fork or washing machine — is soundly based, he accepts many limitations. Yet he knows that within these limitations, there is infinite room for new refinements and insights.

Plastic is an interesting material in this respect. While some designers have regarded its plasticity as a demand for new forms, others have looked at it simply as a means to new refinement. The two plastic dinnerware designs here (1,3) do not depart from our traditional ideas of what dinnerware should be, except to the extent that the material is exploited for unusually crisp and delicate shapes. The stainless steel flatware (4) is a complete reinterpretation of form, nonetheless worked out entirely within familiar ideas of how we hold and maneuver utensils at the table. The skillet (2) combines copper with a new material for better heating and easier cleaning, but the improved product is presented as a refinement of the classic skillet.

4 Design One flatware
H. Lauffer & Co., New York
Don Wallance, designer

Forged stainless steel



5 Color Clad cookware
Moore Enameling Co., West Lafayette, Ohio

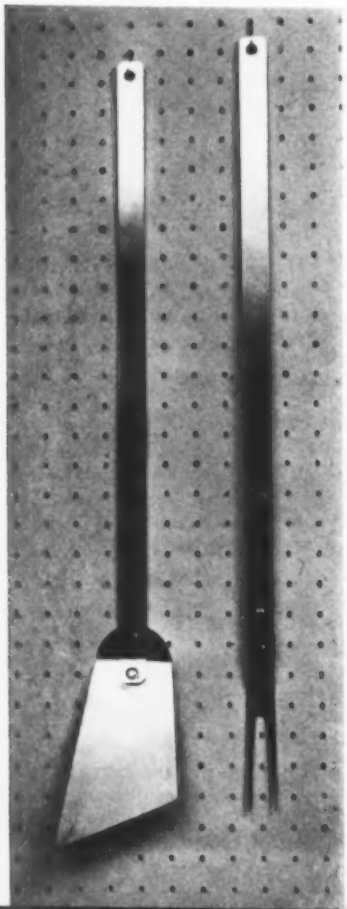
Steel base, porcelain enamel finish in yellow, orange, green, and lime; white interiors.

6 Commercial Cooking Center
Hotpoint Company, Chicago
Raymond Sandin, manager, Visual Design

Porcelain-enameled steel; cold rolled steel top and backsplash (Inland Steel), brushed nickel-chrome finish; molded urea knobs (G.E.); aluminum griddle (Monarch Aluminum).

7 Barbecue tools
Designed and manufactured by Fernand Associates, New York

Copper handles and rivets; stainless steel prongs and spatula. 26" overall.



8 8-cup Teakoe teamaker
Teamakers, Inc., Chicago
James L. Hvale, designer

Pyrex bowl (Corning Glass); phenolic handles (Kurz-Kasch); stainless guard, mounted by tension assembly in handle, stainless basket.

Pots, pans and cooking utensils have been around almost as long as the cook, and from the time she first devised primitive clay pots there has not been much reason to change the rather archetypical forms which suit the job to be done. Nonetheless, designers do find ways to treat these conservative forms with reverence and still come up with products that are new and specifically suited to today's kitchen (5,7,10).

Glass pots are of a somewhat more recent vintage, but in both cases here (8,9) their look of classic perfection suggests that a prototype has already been found which is unmistakably modern without any superficial signposts of "modernity."

The modern stove, unfortunately, has not been treated to continuing refinement. So much effort goes into making each model distinctive that we scarcely remember what a plain stove looks like. The annual headache of new models might indeed be relieved if designers fell back on fundamentals, as the designer of this commercial range has done (6). Produced with domestic range tooling, it shows how distinguished any stove might be if the effort now spent on glitter and texture went into composition: a good combination of materials, clear organization of coils, knobs and top surface, and good balance between the weight of the whole and the important details.

9 Vaculator coffee decanter
Hill-Shaw Company, Chicago
Banka-Mango Design, designers

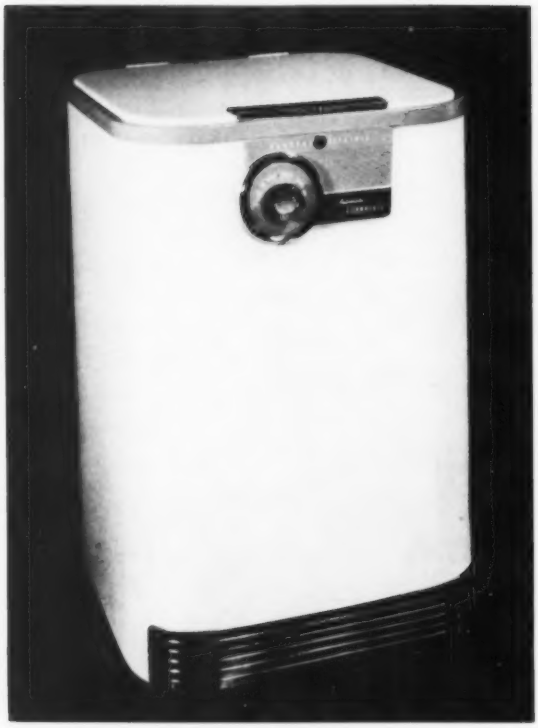
Pyrex bowl (Corning); brass and chrome shields; phenolic handle.

10 Food chopper
Landers, Frary & Clark, New Britain, Conn.
Sundberg-Ferar, consultants

Die-cast aluminum base (Mount Vernon); sand-cast iron hopper, nickel-plated. Suction-cup feet.

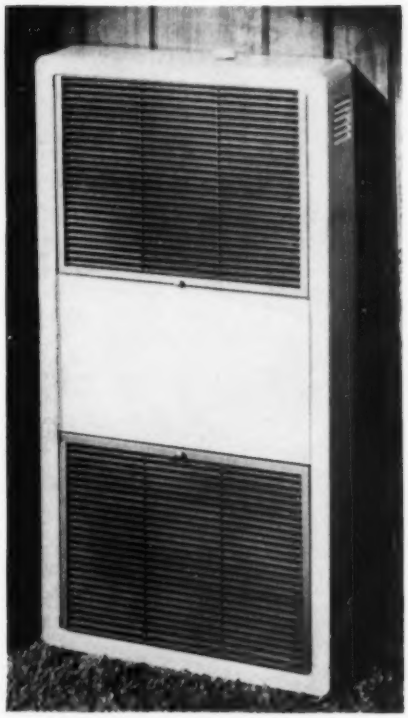
11 Mobile Maid dishwasher
General Electric Company, Louisville
Appearance Design staff, A. N. BecVar, Manager

Tangent-bent steel cabinet; porcelain tub and cover; vinyl gaskets; stamped stainless steel escutcheon.



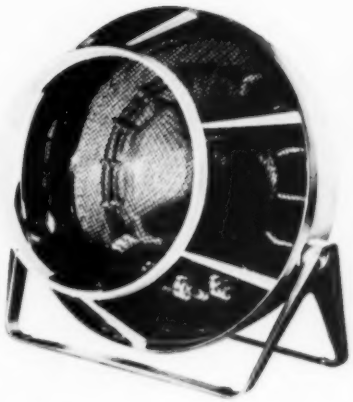
12 Space heater
Saf-Aire Division, Stewart-Warner, Chicago
Dave Chapman, consultant designer

Stamped metal case, tan and brown baked enamel finish. Grills fit small and large units.



13 Airflyte Cosmopolitan 16" fan
W. W. Welch Co., Cincinnati
Read Viemeister, J. B. Steinhilber, designers

Injection molded high impact Dow styrene grille and louvers, (Cambridge-Panelyte Molded Plastics); green matte finish. 360° rotation.



14 Aireryte radiant heater
Nesco, Inc., Milwaukee
Raymond Loewy Associates, consultants

Drawn and formed steel and aluminum, white and bronze baked enamel finish.

15 Mobile Dishwasher
Hotpoint Company, Chicago
Raymond Sandin, Manager, Visual Design

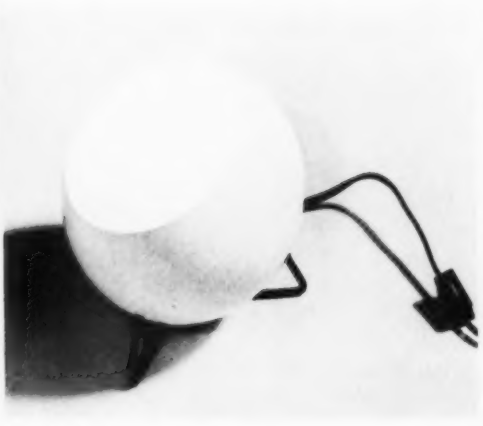
Cold-rolled steel (Inland Steel) and enameling iron (U.S. Steel); synthetic enamel (Glidden) and Plastisol finish (Michigan Chrome and Chemical); urea (G.E.), acrylic (Erie Resistor) and aluminum trim (Reynolds); maple top (Munising Wood Products); removable casters (Bossick).

When it comes to refining appliances, the small GE dishwasher (11) is particularly interesting. It uses the kind of glitter that is usually so carelessly arranged with real attention to composition; by balancing light and dark areas, and joining the circle and rectangle as part of an asymmetrical unit, the designers turned the control panel into a compact, forceful and easily recognized emblem. To achieve some of the same distinction, the Hotpoint dishwasher uses contrasting materials, each perfectly in place. This makes both a decorative and a useful feature of dead surface area. The radiant heater (14) is notable for the unabashed way it emphasizes the coil element with a mesh cover and round guard. Room heaters are such dull problems that few designers have the patience to do a straightforward job on them. This example (12) comes through with unaccustomed elegance, largely through careful proportioning of the face. Its very simplicity makes you feel you've never known what a heater was like before.

Of the millions of toasters on the market, most keep up with a current vocabulary of lushness, which tends to confuse the body and base in an indistinct mass. The Toastmaster's return to a clear, plain solution (16) gives it elegant individuality.

16 Toastmaster Super Deluxe toaster
McGraw Electric Company, Elgin, Illinois
Philip E. Willman, Director of Design

Stamped cold rolled steel, chrome finish; brown phenolic handles (Bakelite).



17 Table lamp
Stamford Lighting Company, New York
Harry Gitlin, designer

Deep drawn sheet steel (Bethlehem Steel), bulge-formed; baked enamel finish.

18 4-cup Tea Ket
Downs & Company, Evanston, Ill.

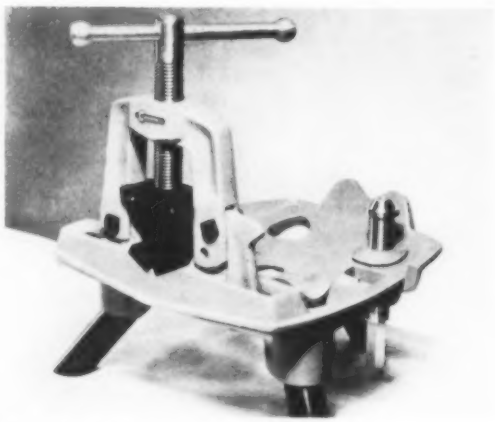
Copper; brass fittings (Colonial Copper & Brass).

19 Tin snip shears
Midwest Tool & Cutlery Company,
for Sears, Roebuck & Company
Banka-Mango, designers

Stamped metal handles, acid or rubber dipped; tempered blades. Automatic action.

20 Keyhole saw
Millers Falls Co., Greenfield, Mass.
L. Garth Huxtable, consultant designer

Sand-cast gray iron handle, enamel finish; steel blades, position adjustable.

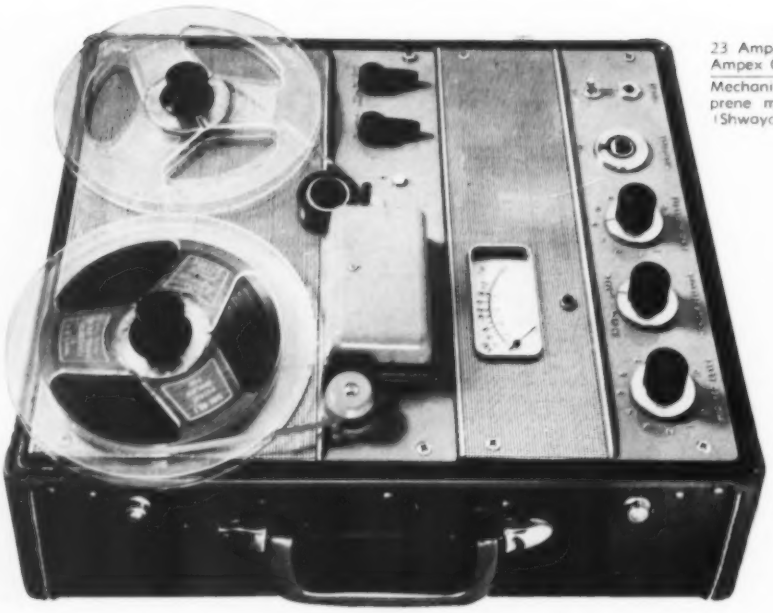


21 Plumber's vise
Capewell Manufacturing Co., Hartford
Raymond Spilman, consultant designer

Malleable cast iron (Newark Malleable Iron Works); sprayed orange and blue enamel

22 Movie camera lenses
Bell & Howell Company, Chicago
Peter Muller-Munk Associates, consultants

Aluminum, with special vapor-blast finish



23 Ampex portable tape recorder #600
Ampex Corp., Redwood City, Cal.

Mechanism redesigned to utilize single Neoprene motor belt (DuPont); Samsonite case (Shwayder Brothers). 27 pounds.


24 Pipemaster pipe cutter
Erie Tool Works, Erie, Pa.
Wilbur Henry Adams, consultant designer

Shaft and handle of formed steel, welded together inside; shaft red. Spring steel pin permits rapid change of size.

25 150-pound fire extinguisher
Ansul Chemical Co., Marinette, Wisc.
Raymond Loewy Associates, consultants

Rolled and formed steel (Bell & Gossett, Harrison Steel) enameled red and white; bronze and aluminum castings (Bastien & Blessing).

26 Cab-over-engine truck
Diamond T Motor Car Co., Chicago
Jon W. Hauser, consultant designer

Stamped sheet metal body (McLaughlin Body Co.); die-cast aluminum grille (Acme Aluminum); Solex glass (Pittsburgh Plate Glass).

Even in a completely primitive form, a tool's ruggedness and mechanical look is inclined to be pleasing, and a designer who must make a tool more appealing may well wonder how it can be dressed up without being messed up. Tools, after all, are for work; for the man who is tightening bolts, styling won't make the job easier. The year's market has been surfeited with glamorized tools for the amateur or semi-professional market, but by definition none of these could be as well designed as the tools here, which have been made handsome in keeping with their masculine character. These muscle-flexing expressions follow improvements in construction (19,21) or in convenience of use (20,24).

An equal dose of design integrity was demanded by the lenses (22) and fire extinguisher (25). Both were designed not so much because of any practical shortcomings, but to achieve consistency with a line of products. In these tight quarters, visual refinement and mechanical refinement are practically the same thing. Design is not an applique, but an inherent virtue.

Anyone who has worked on truck design knows that it is almost design by negation; when the commercial regulations get through telling you what you *can't* do, the only permissible vehicle is all but designed. Despite the library of limitations, the new Diamond T truck manages to look as though the designer wanted it to be exactly that way. Through massing and detailing, it has a trademark appearance which was its goal.

27 Modular classroom cabinets
Brunswick-Balke-Collender Co., Chicago
Richard Reineman, Director of Design

Plyron end panels (Cascade Plywood), plastic moldings; hardboard doors and back (U.S. Gypsum); hardboard, honeycomb and Panelyte (St. Regis) top.

28 Steelcase storage units
The Herman Miller Company, Zeeland, Michigan
George Nelson Associates, designers

Steel angle frame (Holland Welding); Micarta top (Westinghouse, U.S. Plywood); Masonite panels.

29 Table television set
CBS-Columbia, New York
Paul McCobb, consultant designer

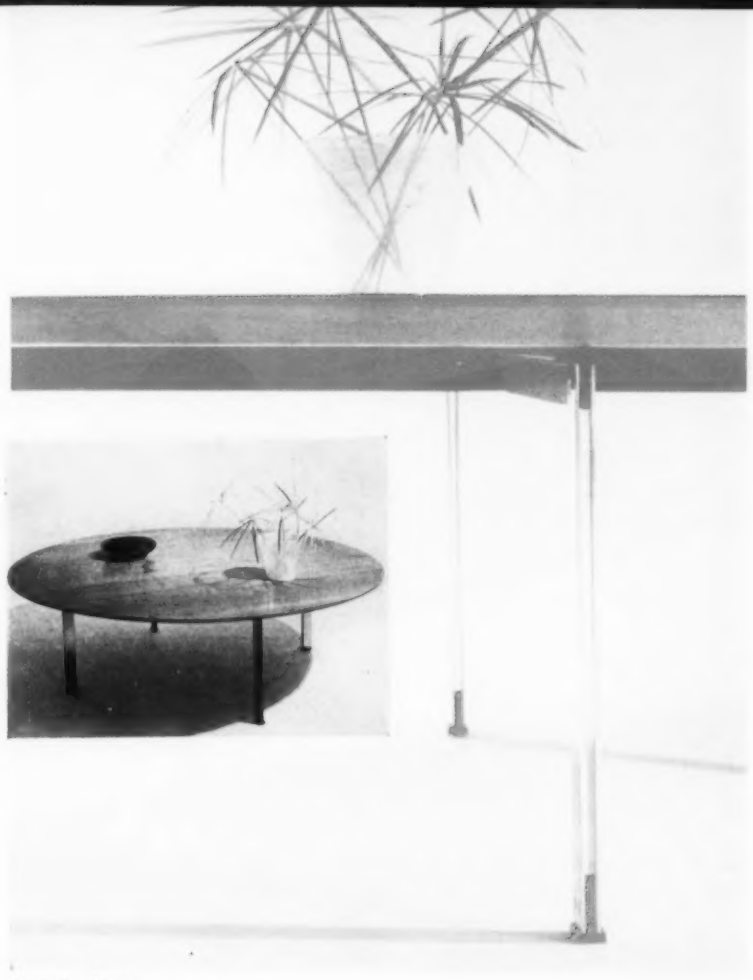
Duraclad vinyl (O'Sullivan) laminated to steel, prefinished, formed into cabinet; Tenite knobs (Eastman Chemical Products).

30 Cigarette table
Calvin Furniture Co., Grand Rapids
Paul McCobb, designer

Brass pedestal (Chase Brass), dipped and brushed; screwed to white carrara glass (Pittsburgh Plate Glass). Ships knocked-down.

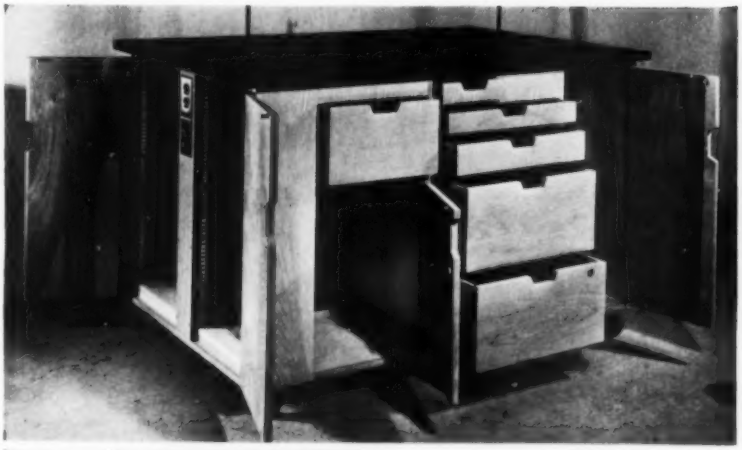
31 Double pedestal desk #8
Jens Risom Designs, Inc., New York
Jens Risom, designer

Walnut-veneer top and pedestal; solid walnut drawer fronts; birch base.



32 Coffee table
Knoll Associates, New York
Florence Knoll, designer

Steel base (U.S. Steel), brushed chrome and black oxide finish; special rivet connections; black plastic feet (Dow).



33 Multi-discipline laboratory units
Variety Cabinet Company, Cleveland
Leon Gordon Miller, designer

Oak plywood body; carbonized maple tops for acid resistance and resilience; recessed brass flanges for clamping; Colsen casters.

This group of products emphasizes one approach to design: an architectural approach. It might be defined as an acute sensitivity to the strength of materials and fitness of joints. It implies doing the most with the least, using the lightest structural members and most suitable materials in the most effective way. These principles have been turned into an esthetic by modern architects, and the approach is often found in furniture, which is naturally related to the architecture around it and which, like buildings, has to hold something or somebody up. All of the furniture on these pages turns a clear explanation of structure into a visual asset. The use of light wood makes very explicit the fact that the desk frame (31) is a separate piece, holding up a top and carrying pedestals. The storage units (27, 28) use a supporting frame and inserted panels in a way which suggests the curtain-wall construction of modern office buildings.

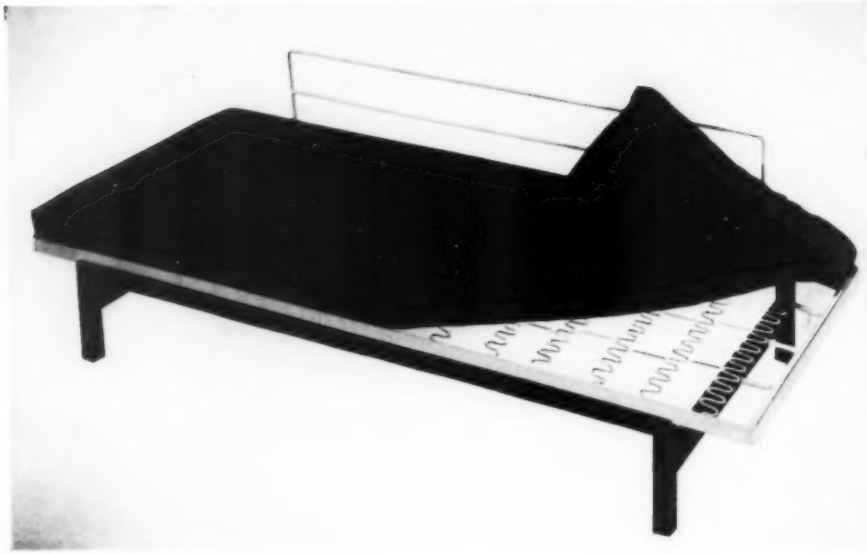
The small cigarette table (30) acquires a certain importance by presenting its glass surface on a narrow column which transfers the load to girder-like feet. The coffee table (32) is another example of pure structure as design: spacers between steel strips eliminate material where it is not needed. Though this may not be economically important in a table, it makes the structural concept clear and meaningful.

Design is not structure alone, but the approach has a good deal to contribute to all kinds of product problems. Simple cabinetwork (33) can be done with an architectural awareness of the juxtaposition of materials, and even the sheet metal tv cabinet (29) was designed to explain the joints and transitions of a box shape more clearly than many of its wood counterparts.

man Chemical Products).

34 C/F Fountain pen
Waterman Pen Company, Seymour, Conn.
Harley Earl, Inc., consultant designers

Injection molded acrylic barrel (Bakelite); 14 K gold nib (Handy & Harman); gold-plated brass cap, Teflon-coated spring insert; polyethylene cartridge, heat-sealed after filling.



35 Flat top bed
No-Sag Spring Company, Detroit

Black steel frame; M. B. grade steel flat wire springs, hooked into holes in frame.

36 Garden chair
Suncraft of California, Fresno
Greta M. Grossman, designer

Redwood frame; canvas seat and back; 6-bolt assembly.

38 Chair #151
Allan Gould Designs, New York
Allan Gould, Designer

Maple or walnut glue-joint frame; cane seat, attached mechanically.

37 Chair #650
Allan Gould Designs, Inc., New York
Allan Gould, designer

Ash frame; molded plywood seat (Grant Plywood); foam cushion (Schwab Latex).

39 Catalina folding chair
Hemet Sales Co., Los Angeles
Merendino-Greene, designers

Anodized aluminum frame (American Pipe & Steel); duck fabric. Weighs 3½ pounds.

It has been said that people can sit on virtually anything, and in our day they have, in fact, willingly lowered themselves onto such diverse supports as air-filled tubes, canvas slings, taut string, and wicker cones. But at the same time that invention has been forcing the human body into new postures, many designers have perceived that the possibilities of the old ones are by no means exhausted, and many of the best designs of the past year have concentrated on simple structural ideas for various seating needs (36, 37, 38, 39). The leather sling chair (40) has a suspension seat, and by spreading its wings a little permits the sitter to do what she might prefer to be doing anyway. The daybed (35) shows what can happen when the architectural approach overtakes comfort. Instead of the amorphous bulk usually associated with very deep comfort the designer wanted a neat slab on supports. He got it by using a modern invention — a simple flat tension spring hooked into a frame, topped by a thin foam mattress.

The architectural approach obviously does not belong to architecture, or furniture, alone. It is a fitting part of all design thinking, and even when structure is a subordinate concern, attention to the joining of materials can give elegance to an object so simple that it is often meaningless without this kind of sensitive treatment (4)

40 Sling chair
Kolb Associates, Hudson Heights, N. J.
Otto and Ridi Kolb, designers

Wrought iron frame, baked enamel or chrome finish; dyed or natural cowhide.

41 Geomet jewelry
Geomet, Inc., New York
Patricia Smith, Willa Percival, designers

Aluminum rivets, wing nuts, spacers, washers, bolt and machine screw nuts (Whitehead Metals); pipe filters (L. & H. Stern); cotter pins (Hinchley). Anodized bright colors.

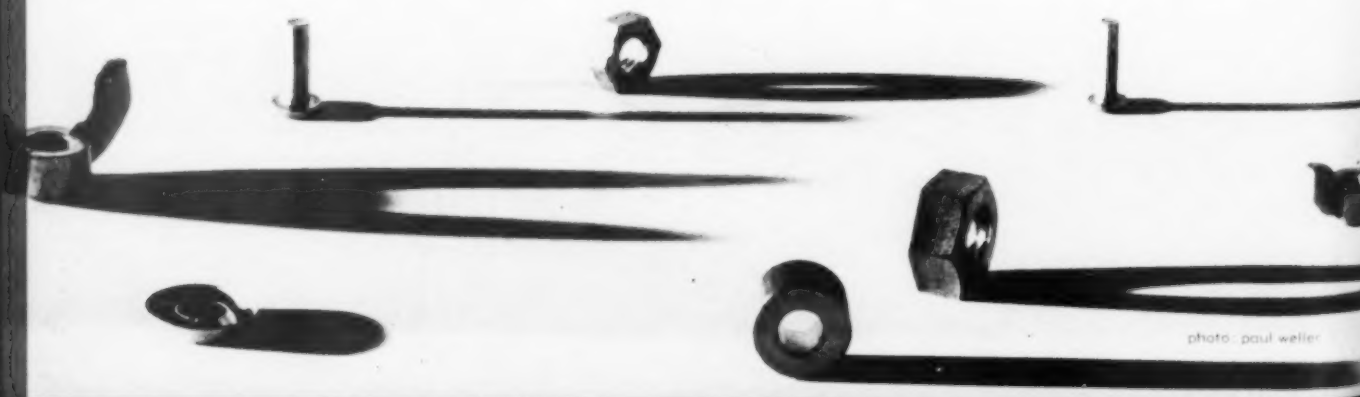
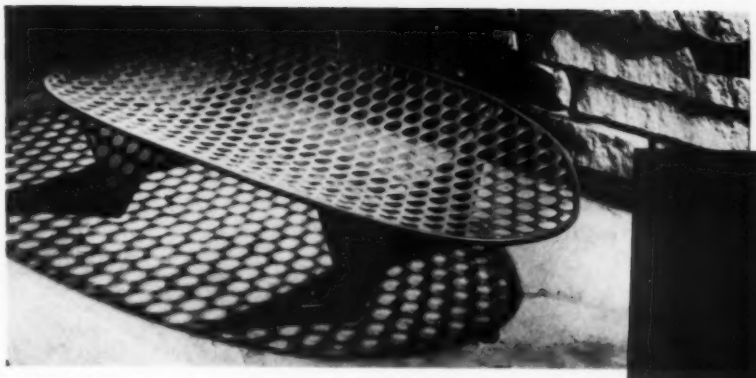


photo: paul weller

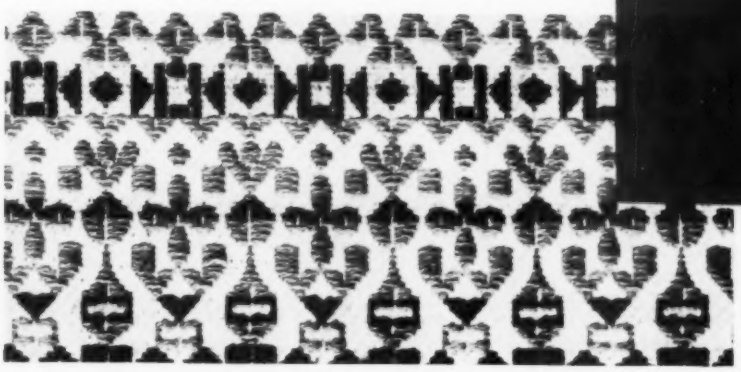


42 Oval fire grate
Charles Piper, Pasadena, designer and manufacturer

Perforated iron and boiler plate, parker-ized

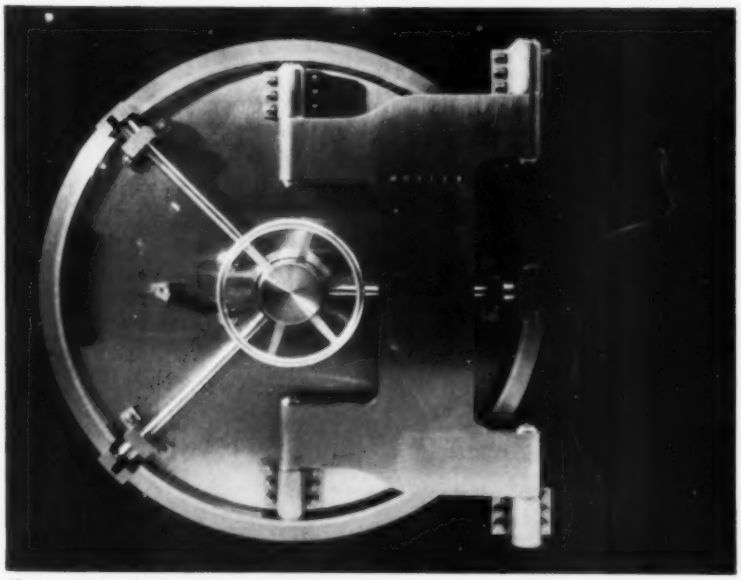
43 Wrist Watch
Gruen Watch Company
Henry Covington, designer

Gold case, hands, and markers.



44 Brocade #135
The Herman Miller Company, Zeeland
Alexander Girard, designer

Spun rayon, cotton, and Lurex (Dobeckmun Company). Woven on jacquard power-loom

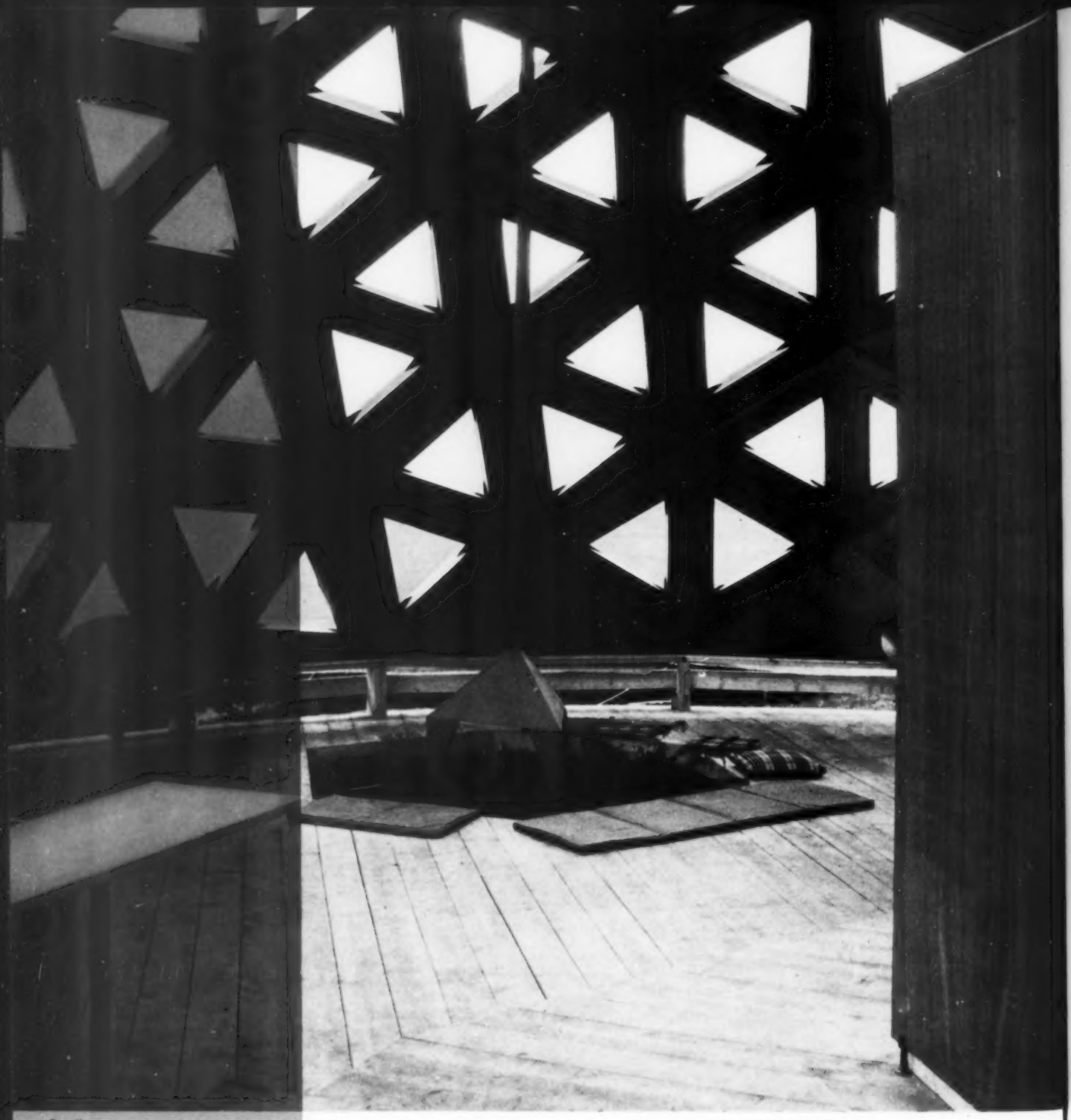


45 Circular vault door
Mosler Safe Company, New York
Henry Dreyfuss, designer; Skidmore, Owings & Merrill, architects

Flange: quality carbon steel; stainless and chrome-laminated steel; architectural bronze

**In this final group of familiar problems, decorative value is the thing. Sometimes this happens as a matter of choice — a grate can be perfectly matter-of-fact, or it can be turned into a decorative accessory (42). A fabric may be constructed in the most straightforward way, or it may be intricately woven, like traditional jacquard fabrics, with the decorative richness of tapestry. Alexander Girard has used the latter technique to produce a series of brocades for modern use (44).**

**Contemporary jewelry, oddly enough, is a tough decorative problem: it has to adorn the feminine form and modern dress as precious jewels once did, and still be suited to modern production methods and stringent modern taste. Geomet (41) has found, among industrial parts turned out by the million, a number of shapes which lend themselves to decorative combinations and brilliant finishes. Wristwatches, though they serve a definite purpose, are often worn as jewelry. The means of pointing up this value are seldom as simple, and decorative, as the well organized minute and hour markers on this watch face (43). To follow jewelry with discussion of a bank door may smack of the frivolous, but it can be seriously said that the imposing Mosler safe in the new Manufacturer's Trust is to the bank what a beautiful broach is to a dress. Designed to symbolize the bank and its storage facilities, the vault was placed by the architects in a key spot before the street floor window. And there it stands, invulnerably bolted by night (45), open by day to show off the door's magnificent interior of spokes and gears. But it is not the entrance to the vault; customers have been provided with a standard vault door conveniently and inconspicuously placed in the center of the bank.**



Casali

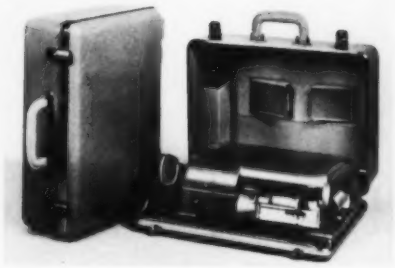
46 Geodesic dome
R. Buckminster Fuller, designer
Roberto Mango, interiors

Die-scored heavy kraft paper (Container Corporation); plastic cover (Bakelite); assembled on site with Bostitch staples.

***The designer has a stimulating chance to pioneer when he is confronted with new materials, new processes, and the unprecedented demands of a changing world.***

48 Plastic-hulled "Rumour" sloop
Cape Cod Shipbuilding Co., Wareham, Mass.
Starling Burgess, original designer

Molded polyester (American Cyanamid) reinforced with Fiberglas mat (Owens-Corning); integral white finish, gray deck.



47 Dictating machine
Dictaphone Corporation, New York
William O'Neil, consultant designer

Die-cast magnesium housing and parts; molded nylon actuators, slides, coil forms; cellulose acetate recording belt. Carrying case (made by Regal Plastic): outer shells and inner tray draw-formed of Royalite sheet (U.S. Rubber); tan grain finish; aluminum closure.

49 Tri-Taper luggage
American Tourister Luggage, West Warwick, R. I.
Jon W. Hauser, designer

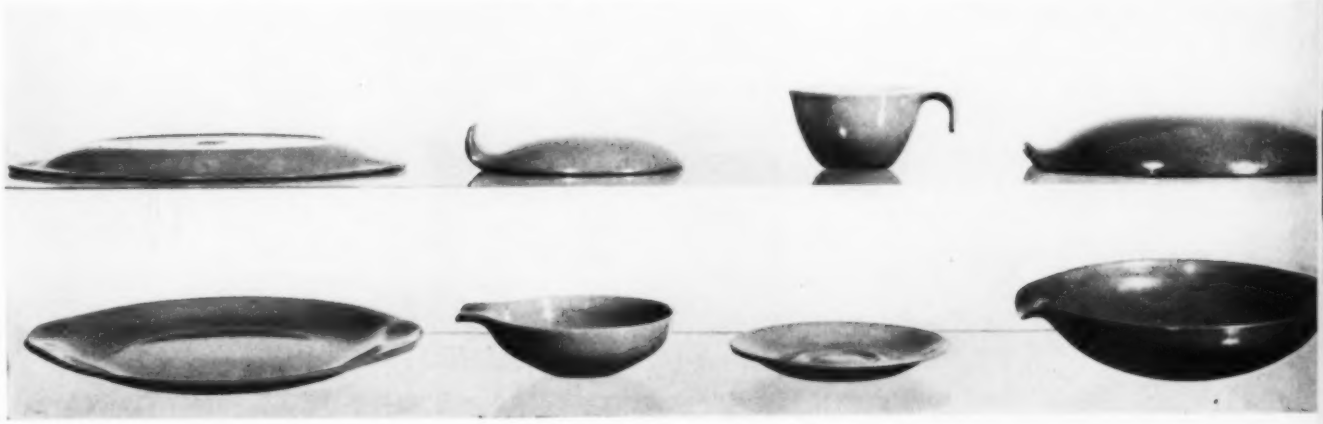
Melamine-impregnated fiber glass forms; vinyl and phenolic shells (Hawley Molded Products); stainless edging (Pyramid Molding); vinyl-coated fabric (Plastic Film Co.).

50 Plastic dinnerware
Northern Industrial Chemical Co., Boston
Russel Wright, designer

Molded melamine (American Cyanamid), integrally colored.

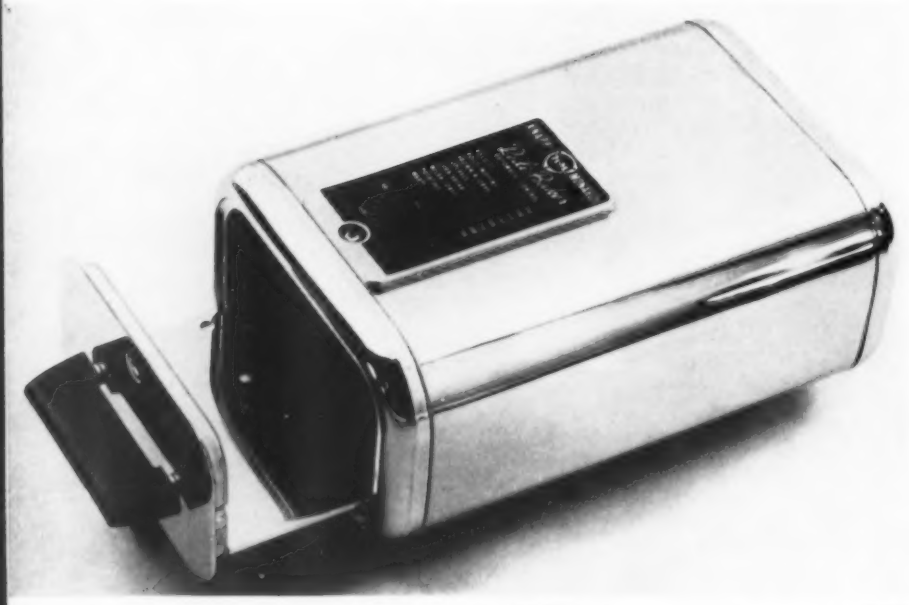
Like all the titles used in this issue, "new problem" is an arbitrary term. To illustrate our meaning we offer the photograph across the page (46). The dome itself belongs in the next chapter because it is really an invention —the designer started with nothing more specific than a lively interest in the human race and wound up with a preposterous structure of cardboard and staples. The men who had to cultivate this strange new area were faced with the "new problem"—how to furnish a known but unprecedented space. They could have done a million things; they chose to produce an unprecedented interior. Admitting it was not designed for habitation, it is a pleasing place — a floor laid out in hexagons to complement the fantastic encircling walls, a fireplace dropped onto the earth itself, a place to sit, a place to set a glass of wine.

New problems are not the most taxing problems. The designer is not bound by prototypes, but he can search for prototypes, or he can claim that the situation demands a new set of rules. The boat (48) is an old boat; the designer's problem was to reinterpret a wooden structure in plastic. The monolithic hull is stronger and simpler, but its form is classic. The dictaphone case (47) and the luggage (49) show a similar conservatism. The designers took note of the inherently sculptural quality of a new material, and used it to build an interesting variation on traditional luggage shapes. The dinnerware shows the opposite approach: the designer assumed that the new material carried its own formal requirements; the flowing, amorphous shapes he discovered are something quite new.



52 Waffle baker and grill
Sunbeam Corporation, Chicago
Staff design

Polished chromium exterior, Bakelite legs and fittings; aluminum grill and waffle grids; Nichrome element.



53 Redi-baker table oven
Knapp-Monarch Co., St. Louis
Staff design

Formed steel body and drawn ends, chrome plated; porcelain enamel interior; anodized aluminum nameplate; Bakelite trim.

51 Electric skillet
Presto Industries, Eau Claire, Wisc.
Mel Boldt Associates, designers

Cast and machined aluminum body; stamped aluminum cover, base; black phenolic fittings (Stevens Mfg.).

54 Deep fryer
West Bend Aluminum, West Bend, Wisc.
Painter, Teague & Petertil, designers

Drawn steel outer shell, chrome plated; HiChrome stainless steel cover; aluminum inner shell; phenolic handles (Barber Coleman).

55 Coffee brewer
Tricolator Company, Newark
Cushing & Nevill, designers

Drawn and spun aluminum body; wood handle; Calrod heating element (Stillman Manufacturing) brazed to phenolic base.

The new problems on the previous page were posed by new materials; those on this page are based on a new way of life. One of the phenomena of our time, and particularly of the postwar period, has been the marriage between gracious living and the good life — the company parlor and the family kitchen. One result has been a new design problem: How do you make cooking socially acceptable? Manufacturers have specified a variety of portable cooking units and dressed-up pots and pans. For the designer it's a tough proposition. The best utensils are already such pure forms that one wonders how they can be made more acceptable. The usual solution, a lush modern classicism in shiny chrome or stainless steel, seems self-conscious and pretentious in most cases, but a few designers have achieved the required elegance with restraint (51, 52, 54, 56, 57). Fewer still have maintained that elegance is inherent in a nice functional solution. The table oven (53) is unusual for the ingenuousness of its boxy shape and the undisguised label of directions. An equally unpretentious, somewhat more sophisticated solution is found in the carafe (55), which carries the happy suggestion that what is good enough for the kitchen is good enough for anyone. Its shape is not classic but humble and familiar; it is relieved by the lively articulation of the handle.

The vacuum cleaner is another social climber. The tank types give the designer new forms to play with; this one (58), suave and shiny, is nicely put together.

56 Copperware skillet
Bridgeport Brass Co., Bridgeport
Staff design

Drawn from copper permanently bonded between sheets of stainless steel.

57 Chefster tabletop cooker
Knapp Monarch Co., St. Louis
Staff design

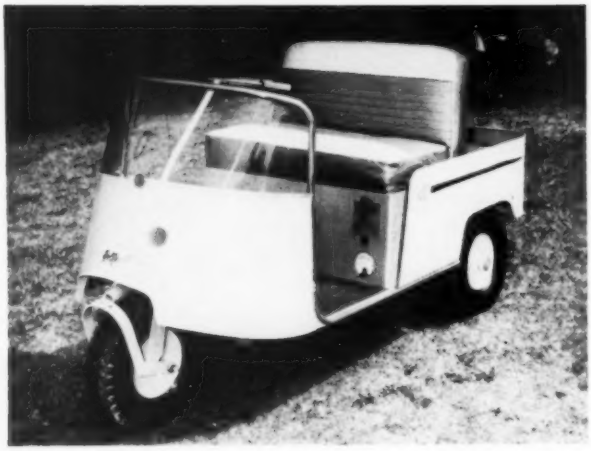
Deep drawn heavy-gauge aluminum base and removable Thermo-pan, polished.

58 Vacuum cleaner
Kingston Products Corp., Bronson, Mich.
W. B. Ford, consultant designer

Stamped steel; stamped and die-cast aluminum; molded plastic; "See-deep" nameplate. Bright hammertone blue baked enamel finish.

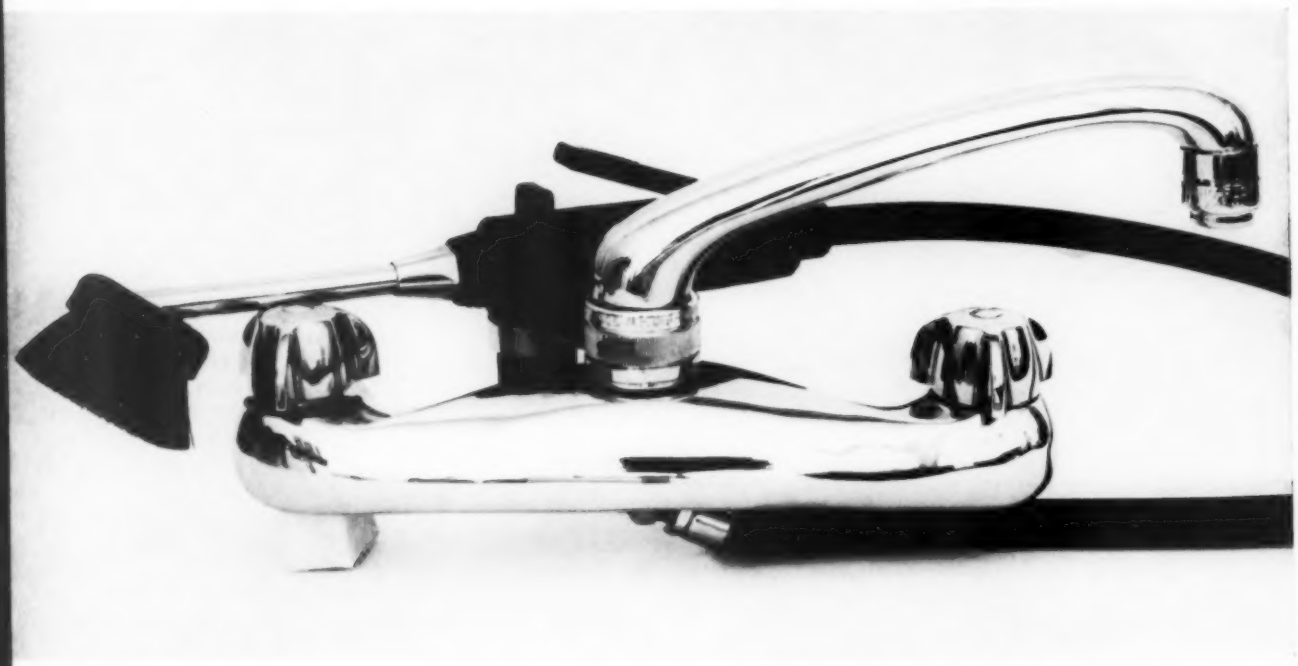
59 Digital readout machine
Clary Corporation, Los Angeles
Newton Leichter, consultant designer

One-piece injection molded high impact styrene case (Plastex) in two-tone gray.



60 Golfmobile
Autoette, Inc., Long Beach, Cal.
Channing Wallace Gilson, designer

Embossed aluminum sheet (Reynolds Metals); slotted aluminum tubing (Alcoa), lacquered in colors; Naugahyde covers (U.S. Rubber).



61 Faucet
Price-Pfister Brass, Los Angeles
Channing Wallace Gilson, consultant designer

Chrome-plated die-cast zinc alloy.

62 Built-in refrigerator and freezer
Revco, Deerfield, Mich.
Staff design

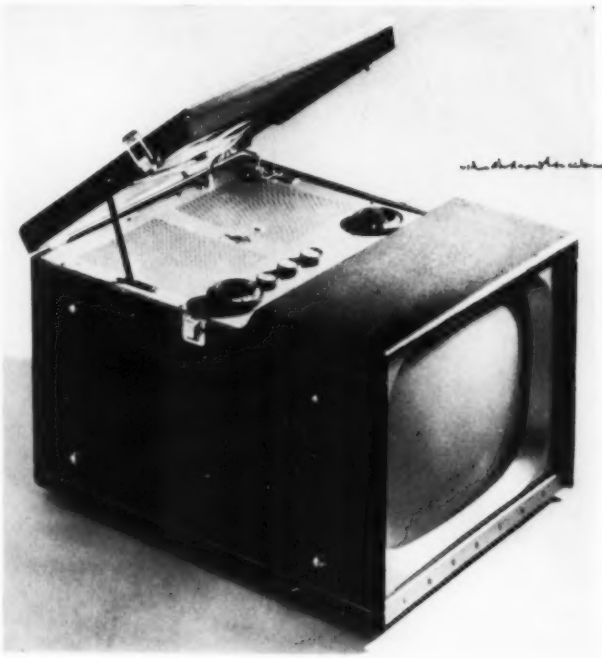
Stainless steel or DuPont enamel exterior finish; porcelain and stippled aluminum interiors; Fiberglas Laminar insulation.

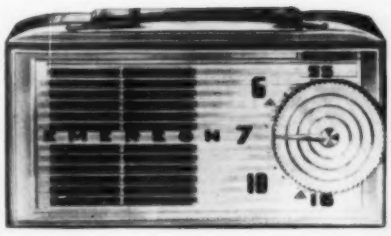
63 Lytescape outdoor fixtures
Lightolier, Inc., New York
Maurizio Tempestini, Joseph Weiss, designers

Aluminum sheet and tube, alabake or forest green enamel finish; self-draining plug (Add-A-Unit), Neoprene cord (DuPont).

64 Portable television set
Emerson Radio, New York
Staff design

Injection-molded phenolic knobs (Durez); wood cabinet (N.Y. Case Co.), Pyroxylin cover (DuPont) or rawhide (Roucheback).





65 Portable radio
Emerson Radio, New York
Staff design

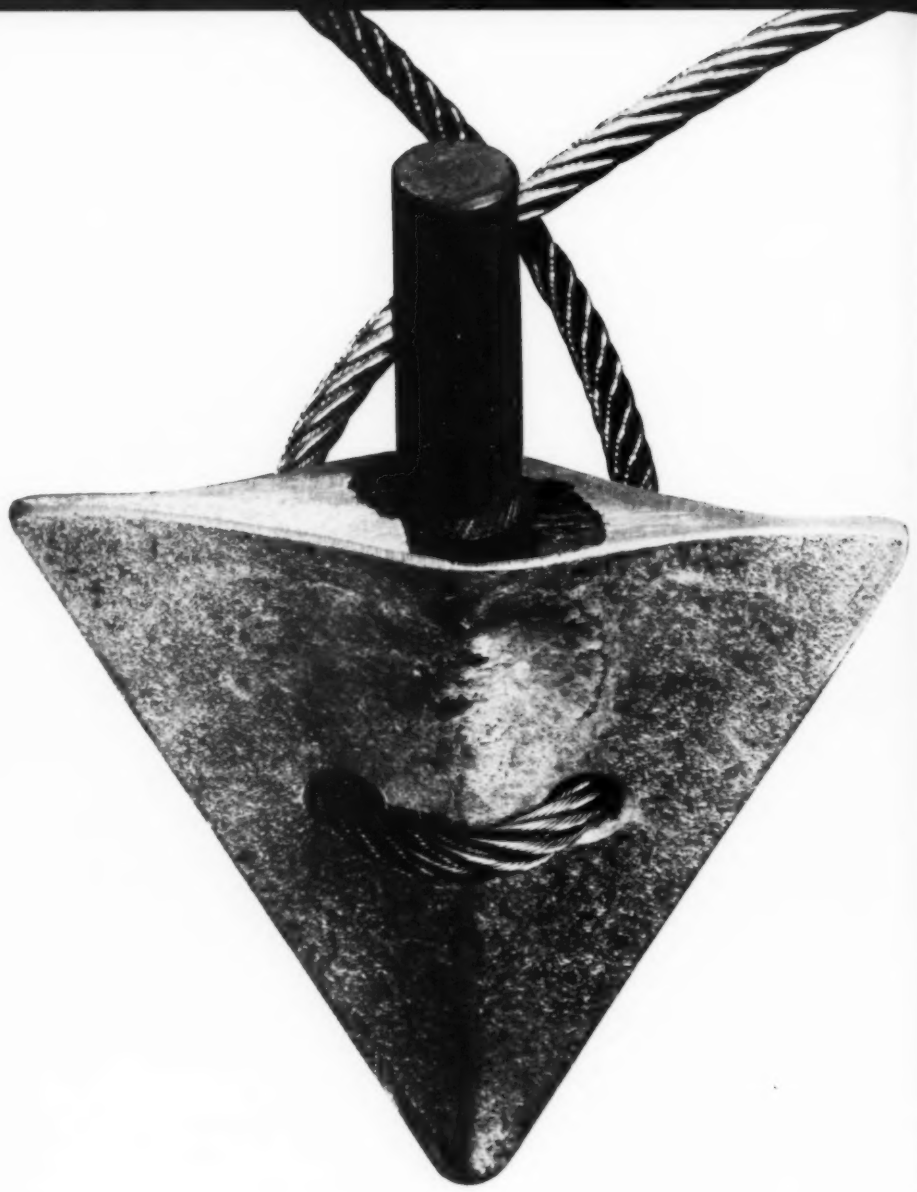
Molded styrene case and dial (Ideal Plastics), front in contrasting color. Aluminum pointer.

66 Portable radio
CBS-Columbia, New York
Paul McCobb, consultant designer

Injection molded styrene case (Dow), contrasting dial; metal handle (Hurley Mfg.); paint and epoxy finish (Horne Paint).

Unfortunately it is usually true that the first solutions to a new problem are the most exciting ones, possibly because the designer is still simply solving the problem and not yet concerned with new *ways* of solving it. The adding machine (59) is an ordinary model adapted for readout from a digital computer; this meant stacking a new keyboard over the standard one, which the designer did neatly and with utter simplicity. The golfer's run-about (60) suggests what the classic automobile might have looked like if it had been fathered by a tricycle instead of a horse-drawn carriage. Thanks to the novelty of the product, the designer could design it as he saw fit, without worrying whether windshields would be curved and sweep spears lowered in 1955. The unfamiliar suavity of the faucets (61) may have developed from a search for new form, but the search was made easier by the fact that the designer had two practical aims: to hide the nut (so it doesn't have to be chrome plated) and to develop a shape that needed only one trip through the automatic polisher. The refrigerator is unique because it was designed to be built in; the direct solution has such trade mark value that oversized handles and nameplates could add nothing (62). A novel lighting fixture designed for the garden is simply a cane and two shades (63). The tv set, a pioneering portable, is a suitcase with a screen in the front (64).
Emerson's miniature radio was designed like a small instrument, which it is (65). The CBS miniature — purer still — is not designed to look like anything that ever was; it is a neat solution to a collection of problems (66). Now that it has been done it may never be done again: every improvement will tend to blur the simple outlines.

# *Invention*



***Invention is the traditional domain of engineers,***
***but frequently designers function as inventors in the process of finding their answer to the practical and esthetic demands of a new product.***

67 Arrowhead universal ground anchor
Laconia Malleable Iron Co., Laconia, N. H.
M. L. Clevett, Jr., designer

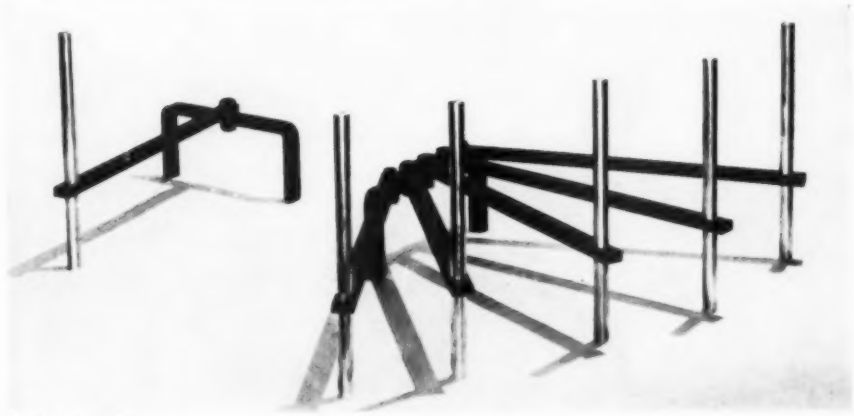
Sand-cast aluminum alloy (Alcoa); steel rod reinforcement; steel cable (American Steel & Wire). Winged shape is self-aligning; holds 10,000 lbs. pressure in any soil type.

68 Unbreakable snack bottle
Falcon Plastic Co., Culver City, Cal.
Merendino-Greene, designers

One-piece double wall injection-molded styrene lower body; polyethylene upper body; styrene cap. Wide mouth accommodates food.

69 Never-leak box
Hinde & Dauch Co., Sandusky, Ohio
Charles D. Welshenbach, designer

One-piece die-cut corrugated paper sheet, glassine laminated, paraffin coated; self-locking ends form tote handles.

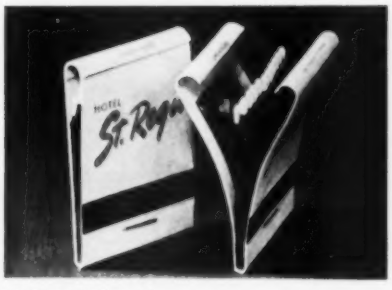


70 5-spoke andiron
Betty Cooke, Baltimore
designer and manufacturer

Stock iron; polished lacquered brass. Movable spokes on fixed member adjust to log size.

71 Diffuser shade
Lam Workshop, Brookline, Mass.
Bill Lam, designer

One-piece vacuum molded laminated Polyflex (Plax); matte finish. Center mounting hole.




72 Click Bookmatches
Click Bookmatch Corp., New York
Giuseppe Russo, designer

Plastic impregnated cardboard, molded into curve at top to form patented snap-fastener.

There seem to be two distinct types of invention in products. When originality of form is the by-product of an innovation in concept — whether the change is in mechanics, construction or performance — we call the result an *invention*. The ground anchor (67), designed with a form which will hold heavy loads in any kind of soil, and the matchbook (72), designed to be self-closing, are basically inventions. Many product designs have a quality best called *inventiveness*. This implies an ingenious approach to old problems in order to achieve a functional or visual improvement, or preferably both. The way the spokes of the expandable andiron (70) are hinged to a single base is both useful and decorative; the lampshade (71) becomes a shade *and* a diffuser by the ingenious molding of one sheet of plastic. The inventive approach may be the result of locating some unsolved problem, or it may come from redefining a problem which has often been solved. How do you make a thermos bottle unbreakable, or a box waterproof (68, 69)? Many designers find that an inventive approach is a short cut to fresh new designs; actually, it is inherent to some degree in all good design. Of the selections shown here, some are more startling departures than others, but all are marked by an originality which is well described by the adjective *invention*.

73 High Fidelity pick-up arm
Ferranti Electric, Inc., New York
D. T. N. Williamson, designer

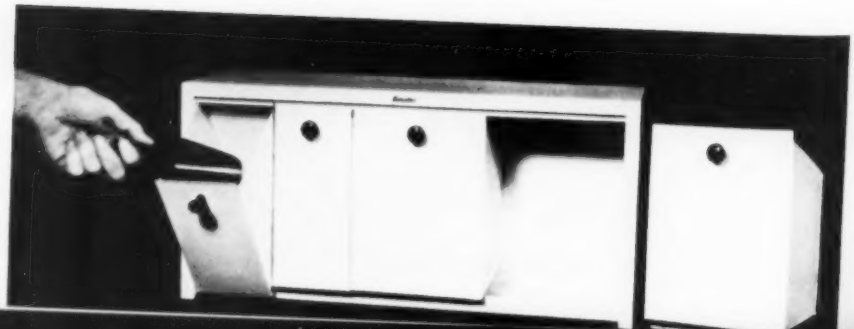
Black anodized aluminum arm and head casing, drawn and punched; die-cut zinc alloy bearing housing; molded styrene handle on head.

74 Sofa Compact
The Herman Miller Co., Zeeland, Mich.
Charles Eames, designer

Chrome-plated steel base (Fanner Metal Co.); black-finished metal frame; foam rubber upholstery (American Latex Products, Goodyear Rubber). Folds into shipping box 73" x 30" x 12".


75 Binister
Emco Porcelain Enamel Co., Port Chester, New York
Don Wallance, designer

Press-formed sheet steel (Bethlehem Steel, U. S. Steel); baked enamel finish, white or with colored bins; grey phenolic handles (Dimco).

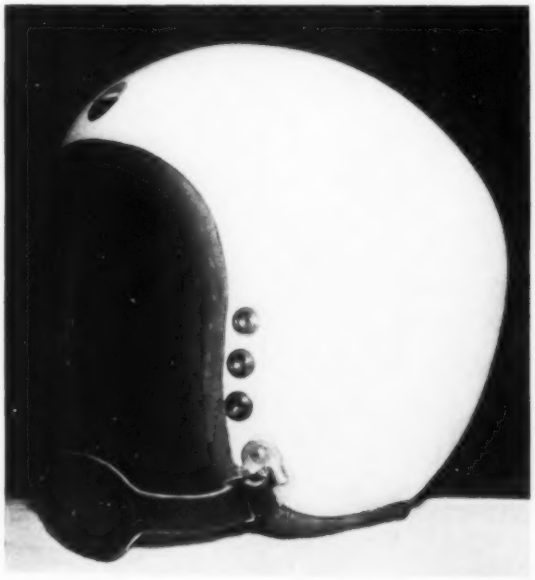


76 Double boiler
Bazar Francais, New York
Charles O. Ruegger, Jr., designer

Copper pan supports white porcelain basin; handle attached by copper band.

77 Ohmlette
The Chemex Corporation, New York
Dr. Peter Schlumbohm, inventor

Tempered Pyrex bowl (Corning Glass) and lid; electrodes molded into nylon (Driver-Harris). Stainless steel coil heats quart of water in 5 minutes; if water evaporates, coil melts like a fuse.

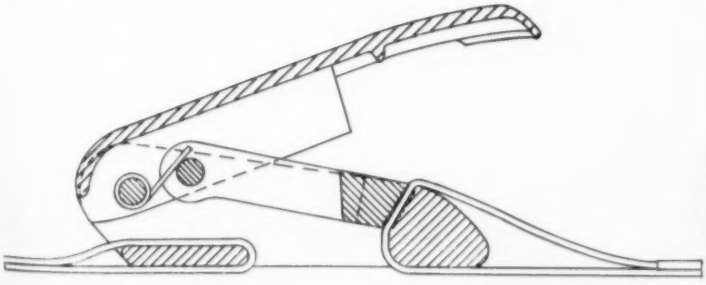


78 "Sound-asorb" helmet
Bill-Jack Scientific Instrument Co., Solana Beach, California
R. L. Miller, designer and engineer

Polyester and fiber glass shell (Narmco); foam-in-place molded plastic interior (B.J.S.I. Company); molded latex edging (Naugatuck); epoxy finish.

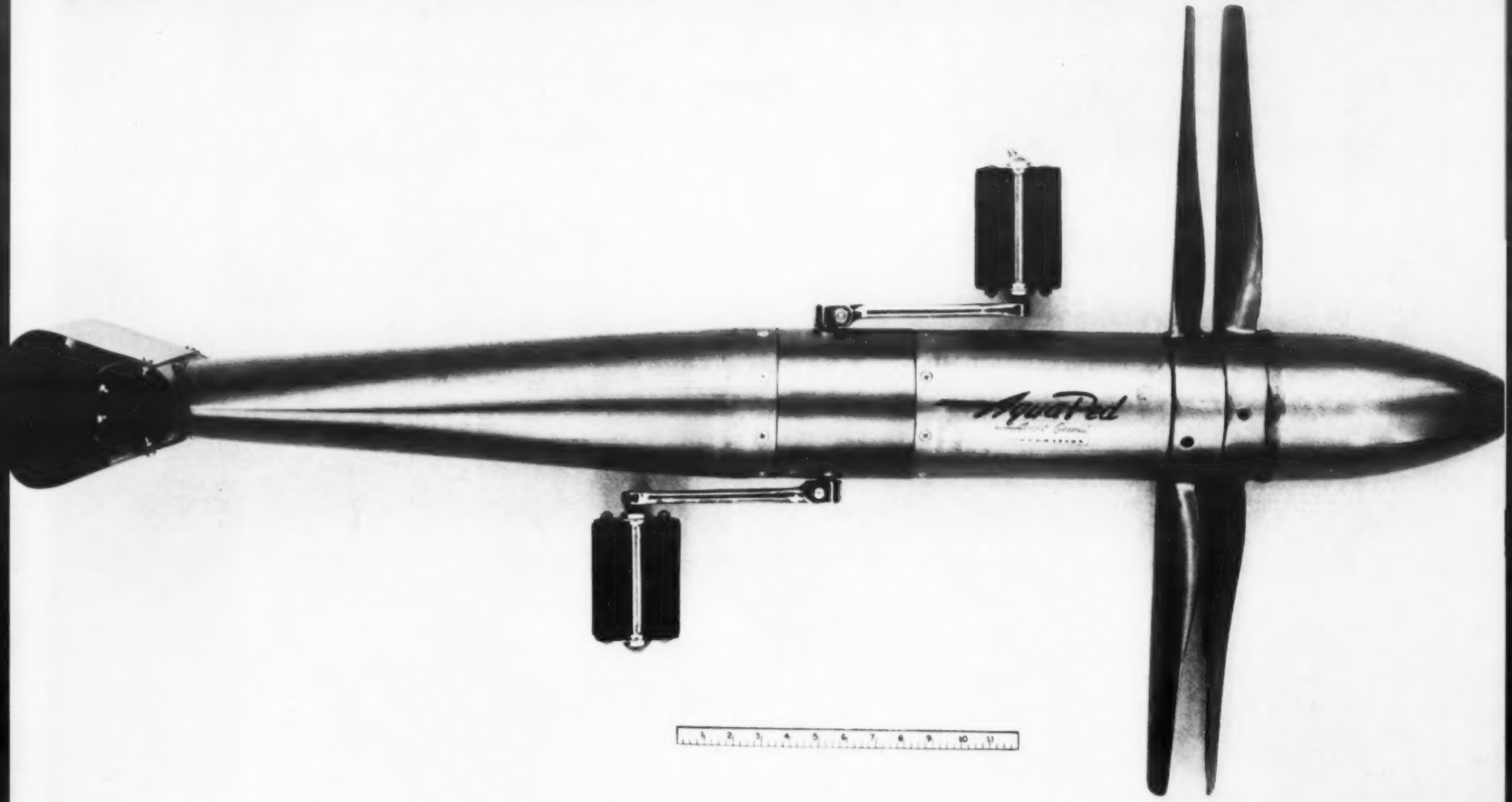
Some designers cannot help but be inventors, just as some inventors cannot work without designing. Charles Eames and Dr. Peter Schlumbohm, from the opposite stations of architect and engineer, indicate the differences and similarities of the two approaches. In designing his sofa (74), Eames picked one objective as the best way to improve a large piece of furniture—ease of shipping—then tried many approaches in designing his sofa which, by the removal of two back screws and two legs, could be packed in a box 12" deep. The Ohmlette (77), by contrast, started with the mechanical idea that water is most efficiently heated when a coil is immersed in it; in a globe sealed except for a spout, the immersed coil would be entirely safe. This allowed the designer to replace a complex double-wall container with a simple glass carafe.

The low sleek shape of the tone arm and matching head is the result of an attempt to reduce weight and torsional friction (73). The suspension, hidden beneath the motor board, incorporates a device for supporting the tone arm when it is at rest. A way to combine two beautiful materials for cooking is the double boiler's invention; the Binister redefines the kitchen cannister, what it does and how it can be made accessible (75). A new clamping device made the safety belt more secure and more smoothly housed, so that psychologically, closing the buckle means comfort, not safety. The complex sound helmet (78) relieves work fatigue from intense ambient noise, yet allows interphone and normal conversations to be heard. It also keeps the head cool by evaporation of perspiration and adapts to various head shapes and sizes.



79 Passenger safety belt
Associated Suppliers Co., Los Angeles
Ross L. Edgell, Jr., designer

Aluminum, centrifugally cast (Aluminum Foundry) and die-cast (Coast Die Casting).



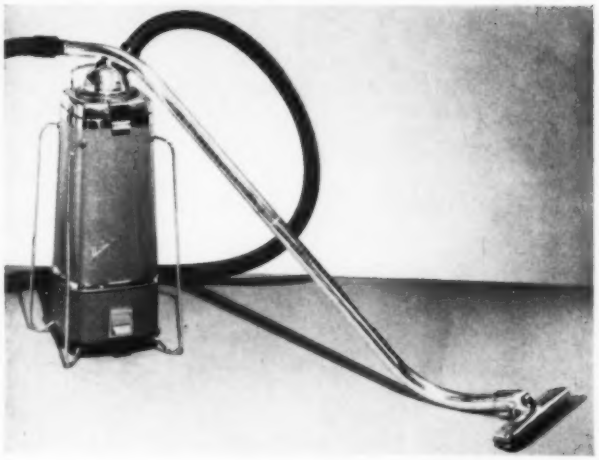

80 Aqua-Ped
Aerojet General Corp., Los Angeles
G. M. McRoberts and C. A. Gongwer, designers

Red anodized aluminum body (City Terrace Foundry castings, Kaiser Corp. tubing); Bond gears; Nice bearings.

Bizarre problems not only tend to be the most intriguing, but frequently give the designer a helping hand from an esthetic point of view. How do you transform a bicycle into a submarine, for example? The essence of the matter is making the vehicle work, and there is a good chance that the mechanical essentials — propellers, pedals, shaft and tail will fall into place to make an expressive and challenging design (80). The commonplace problems, like those on this page, may demand more exercise of the imagination. Henry Kann turned a simple engineering device into a point of character in his art director's viewing table (83), which uses the lever and gear principle for maximum adjustability, and manages to look as simple to work as it really is. A standard vacuum cleaner was given what salesmen call a "plus value" — an extra set of runners which make it easy to store the tank upright (81). The serving table (82) is a seemingly simple cure for a raft of entertaining headaches.

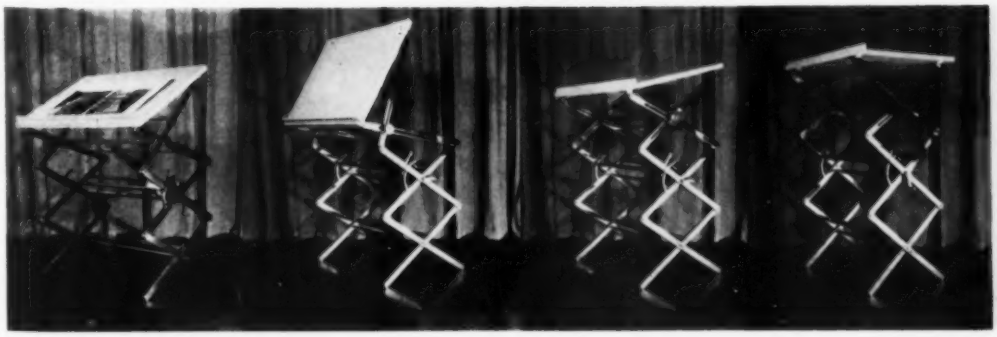
81 Sanitizor 77
Air-Way Electric Appliances, Toledo
Gordon Florian, consultant designer

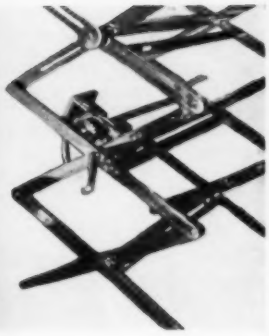
Lift cover, handle, foot switch of die-cast aluminum (Precision Die Casting, Globe Manufacturing, Doehler Jarvis, Tool & Die Engineering); steel wrap-around body. Decorative band connects shells and supports motor.



82 Hostess Cart
Glenn of California, Arcadia
Greta Magnusson Grossman, designer

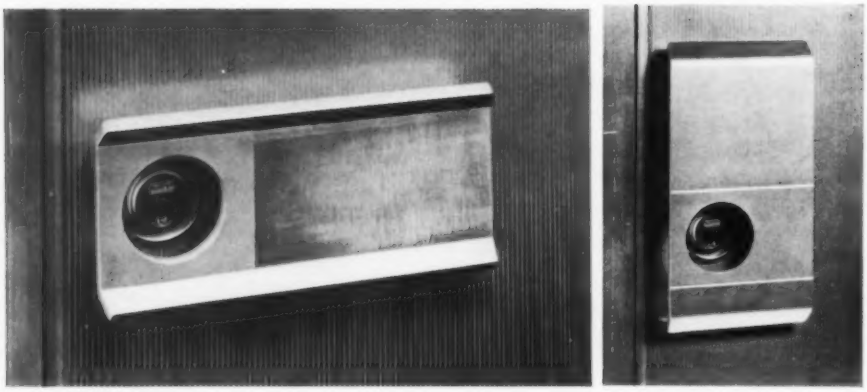
White Formica pull-out shelves (Arnold Banfield); walnut frame; stainless steel bracket; hooded brass casters, from Italy.





83 Adjustable art director's table
Designed and manufactured by Henry R. Kann for J. Walter Thompson Company
Fabricated by Treitel-Gratz, New York

Bolted chrome-plated steel frame; holly top, natural lacquer finish; Olite bearings (Amplex Co.) on moving parts.



84 Flush door hardware
The Kawneer Company, Niles, Michigan
Robert R. Fink, Manager of Design

Die-formed aluminum push-plate; extruded aluminum pull-plate and mounting brackets; polished and anodized; one panel painted blue green (Glidden).

85 Card file
Acme Visible Records, Inc., Crozet, Virginia
Lippincott & Margulies, consultant designers

Steel cabinet and shelves; die-cast steel tray front; grey-tan finish electrostatically applied; nylon rollers; cork silencers. 5" x 3" tray holds 212 cards.

86 Featherlite spotlight No. 546
Century Lighting Inc., New York
Century engineering department, designers

Sheet aluminum, corrugated for strength and heat dissipation; matte black finish.

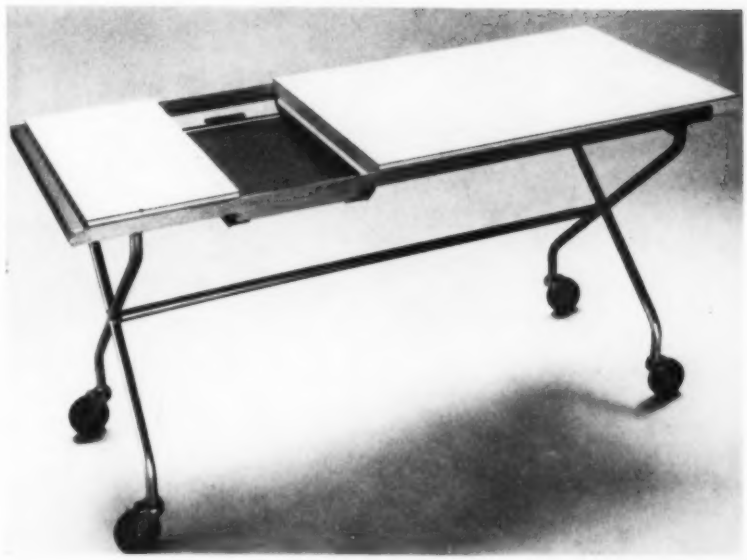
87 Sunflower chair
Roberto Mango, designer and manufacturer

Handwoven wicker basket; black wrought iron base.

Invention in the strict sense is sometimes possible even when mechanical considerations are apparently absent. Roberto Mango's simple Sunflower chair invents several things: a comfortable new way to support a sitter, in a conical container on a tri-ped base; a way to carry a heavy weight in a light wicker basket, by exploiting a circular form which distributes weight all around the rim; a way to make an easy chair instantly demountable and stackable for shipping; and a way to combine craft and mass production (87).

Door hardware is about as work-a-day a proposition as you will find, and refinement is a more usual route to improvement than invention. But the Kawneer Company, by integrating a separate lock into the design, and varying one basic shape for two uses, achieves an entirely new expression for door plates. Century Lighting was inventive with a material. Taking the old 100-pound Fresnelite, a movie and television workhorse, they designed away the deadweight with the help of a new aluminum housing, bringing it to 22 pounds; the smaller 40-pound model was whittled to 20 pounds (86). Corrugation adds strength to the shell and helps dissipate heat. The light weight shell also opened the way for a hinged half-shell, which flips back for easy access to the bulb. Robert McKean found a way to make a handsome piece of furniture out of a cooking utensil in the T-Veeter television table. The hotplate, skillfully worked into the arrangement of the table top, is covered by a sliding panel when not in use (88).

In redesigning Acme modular card file boxes, Lippincott and Margulies finessed separate handles by giving each tray a one-piece front which combines label and pull, and gives the whole box a handsome sculptured profile.



88 T-Veeter
Inverness Ltd., New York
Robert McKean, designer
Steel frame (U. S. Steel); steel tube legs (Consolidated Tube Corp.); Formica top (Arnold Banfield) with sliding panel to conceal Hotray (Salton Mfg. Co.); 24" high.

89 Hi-Shear bolt assembly gun, power unit
Hi-Shear Rivet Tool Company, Los Angeles
G. S. Wing and V. A. Tauscher, designers
Alloy steel sleeve, stainless steel expander and bolt. Cadmium-plated finish.

Putting together airframes, truck bodies and the like is a slow and ticklish job because it frequently happens that only one side of a structure is accessible and certain stages of an assembly must be done in cramped quarters. The blind fasteners used for such one-side assemblies are usually weak, and it is difficult to make them fit snugly. George S. Wing, General Manager of the Hi-Shear Rivet Tool Company, set out to solve the problem by designing a strong, tight-fitting blind fastener, then finding a tool to fasten it into place. The result is the fastener, gun and power unit whose operation is described in the photographs.

The KW bolt assembly has three parts; an alloy steel sleeve, a stainless steel expander nut, and a bolt. They can be used where high shear and tension strengths are needed, and are cadmium-plated to resist high temperatures.

Mr. Wing had V. A. Tauscher, Chief Engineer of Tauscher Engineering and Manufacturing Company, work out the power unit and gun. Mark E. Cessna was project engineer. Weighing only 5¾ pounds and slightly less than 3" wide, the gun needs only 8" clearance. Because it was designed for use by unskilled workers, the control buttons which start and reverse the motor are designed so that pushing the wrong button will not damage either the work, the bolt assembly, or the gun.

To insure lightness and mobility, the power unit is designed into an 18" cube and weighs only 90 pounds. An air cooling system permits continuous motor operation. Two power storage accumulators raise output of the 1½ h.p. motor to 2½ h.p. for intermittent periods. A special pump and relief valve for pressure output are provided for smooth and silent operation.

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1. *(opposite page); The sleeve is slipped over the gun mandrel; then the expander nut is screwed onto the mandrel tip. Pushing top button spins mandrel clockwise, into inner threads of the expander.*

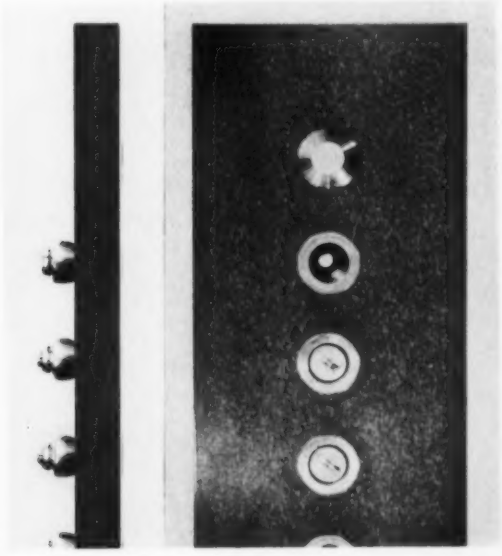
2. *Gun anvil is screwed tight against the sleeve and expander.*

3. *Gun mandrel, with sleeve and expander, is slipped into hole.*

4. *When bottom button is pressed, expander is pulled back against sleeve, squeezing the sleeve tight against walls of the hole and around expander.*

5. *Gun anvil backs automatically off the countersunk head of the sleeve after "pull-up" is completed.*

6. *When center button is pressed, gun mandrel spins counterclockwise, off the expander threads. Without core bolt, this two-piece assembly serves as an anchor nut for a later assembly or as a conventional hollow blind rivet.*



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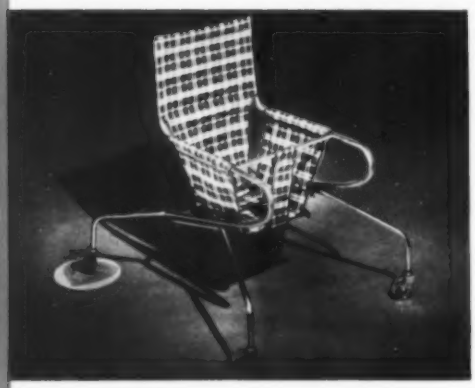
7. *Core bolt is screwed into the two-piece assembly with a specially designed screw driver that grips the bolt head slot with increasing pressure as the bolt is tightened.*

8. *Views of the bolt assembly: the nut is formed by the sleeve and expander in the second hole. Complete bolt assembly is shown in bottom holes.*

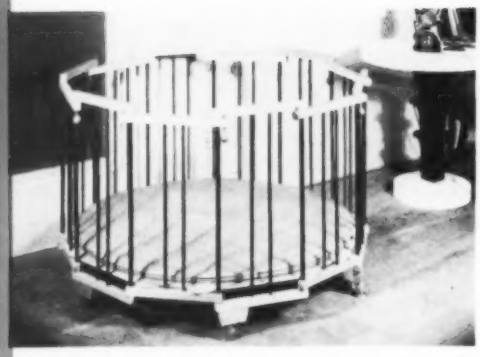
90 Automobile compass
Dinsmore Instrument Company, Flint, Mich.
Peter Muller-Munk Associates, consultant designers

Painted aluminum body (Kaiser); brass indicator and bracket (Revere, American Brass), chrome-plated. Lucite window (DuPont).

91 Ricky Jr. walker
Hemet Aircraft Corp., Alhambra, Cal.
Merendino-Greene, designers

Polished aluminum tube frame, (Revere Copper & Brass); Lucite casters (Du Pont); denim seat. Foam rubber anchoring disc.



92 Circular play yard
Nagele Furniture Co., Cleveland
Designed and patented by Lawrence Blazey

Aluminum tube frame (R. D. Werner) anodized blue; soft maple rails; Tuflex pad (Harn Co.); plywood floor. Folds for transport.


93 Champ hand tool
Aircraft-Marine Products, Inc., Harrisburg

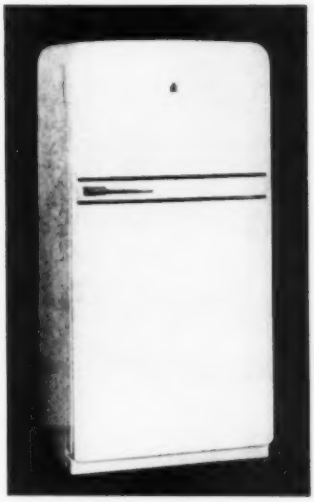
Steel body; yellow Tenite butyrate handles (Eastman Chemical Products). Shears bolts and screws, crimps solderless terminals, cuts and strips wire.

94 Hand layout saw
Joy Tool Co., Forest Grove, Oregon

Silver steel blade; spirit level and plumb vials mounted in Tenite butyrate handle (Eastman Chemical Products); ruler on back of blade.

95 Two-way refrigerator door
Philco Corporation, Philadelphia
Philco and Stanley Works, engineers
Harold Van Doren, consultant designer

Stamped steel door contains actuating mechanism (Stanley Works); Die-cast zinc handle (Grand Rapids Brass).



96 Refrigerator
International Harvester Co., Chicago
Benton Dales, Theodore Koeber, staff designers;
Dave Chapman, consultant designer

Tangent bent steel cabinet; polystyrene inner door (Dow Chemical), molded by General Machine Co., General American Transportation Co.; Dulux finish (DuPont); 1/8" sheet fits in front panels.

97 Skan exposure meter case
G-M Laboratories, Chicago
Palma-Knapp Associates, designers

One-piece molded polyethylene (Elmer Mills Div., Continental Can); Flap bent back 90° in molding to eliminate undercut.


98 Anscoflex camera
Ansco Division, General Aniline & Film Corp., Binghamton, N. Y.
Raymond Loewy Associates, designers

Stamped aluminum body (Alcoa); injection molded high impact styrene fittings (Consolidated Molding Co.); Lens, American Optical; enamel, chrome finish.

Inventiveness may be found in simple forms and in unexpected places: it may be a new twist on an old product, or the basis of a new and more economical article. A compass re-arranged to operate vertically for automobile use (90) is certainly a new twist, while a saw with conveniences built in (94) and a four-purpose hand tool (93) demonstrate the additive approach. The bright idea of the baby walker (91) consists of an anchor which can be added to a rear caster to serve as a pivot, around which the baby walks in harmless circles. Both refrigerators here show inventive ways to beat the stocking problem. The Harvester (96) accommodates the demand for kitchen color with its decorator door, into which the consumer strips her own colored panels. The Philco (95), with its double-hinge door, does away with the need to stock right- and left-hand models. The prominent emblem is actually a handle which opens the door to either side. Palma-Knapp made excellent use of polyethylene's flexural qualities for exposure meter cases, which are molded in one piece, without undercuts (97). The extremely low-cost Anscoflex camera (98) makes some clever combinations: the front of the viewing box turns into a lens cover when the camera is closed, while the notched collar around the screw base becomes a tightening disc for the flash attachment.

# *Housings*

99 Automatic clothes dryer
The Maytag Company, Newton, Iowa
Staff design

Formed zinc-coated steel cabinet, high-baked enamel finish; porcelain enamel top; die-cast control panel, polished chrome and steel finish; molded cellulose acetate butyrate dials (Eastman Chemical Products).

100 Automatic washer and dryer
Whirlpool Corporation, St. Joseph, Michigan
Sundberg-Ferar, consultant designers

Stamped steel top, porcelain enamel finish; Tangent bent cabinet, painted finish; ceramic-fired glass indicator panel.

103 Automatic water softener
Culligan, Inc., Northbrook, Illinois
Jean Otis Reinecke, consultant designer

Formed steel cabinet (Schneider Metals), stainless steel molding (Serrick); panel, textured methacrylate sheet (Rohm & Haas); baked enamel white and grey-blue finish.

101 Teleprinter
Kleinschmidt, Inc., Deerfield, Illinois
Morton Goldsholl, consultant designer

Drawn magnesium shell (Brooks & Perkins); grey wrinkle finish (Pratt & Lambert).

102 Portable record changer
Zenith Radio Corporation, Chicago
Robert Davol Budlong, consultant designer

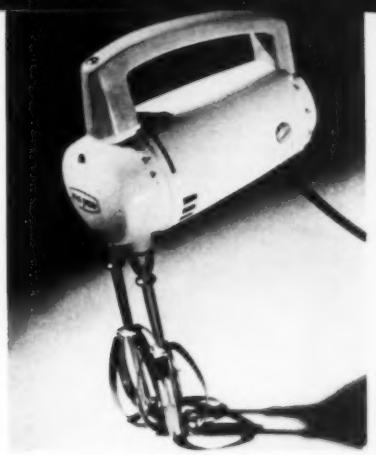
Laminated wood case covered in vinyl-coated fabric (Abel & Bach); ivory plastic handles and trim; entire cabinet designed as acoustic chamber.

Wrapping an intricate mechanism in a simple, expressive cover is the industrial designer's typical, and usually his most difficult, problem. Sometimes the mechanism suggests interesting shapes or details, but before discussing these happy cases we present the bleakest problem in housings — boxy shapes.

The fact that appliances are permanent major investments for the consumer dictates practical, conservative design, and tooling costs are inhibiting, yet sales appeal is a primary function of the package. The natural result is a white box with softened edges and glittering trim. Attempts to break the mold by developing new *types* of appliances are inevitable, yet among the interesting designs of the year are several that turn the familiar specifications into a well-balanced design (99, 100, 103). The simple logic that gives these products dignity in the home makes them outstanding on the showroom floor.

Office machines often allow more latitude in color, shape, and detail (following pages), yet in the teleprinter (101) Morton Goldsholl renounces these possibilities to give further proof that a housing can be expressive without being anatomical.

Luggage makers have a traditional competence in the neat detailing of simple box shapes. It is not surprising that some of the nicest radio and television sets of the year are portables that borrow the conservative luggage idiom (102).

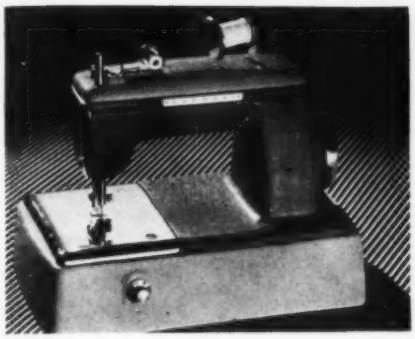


105 Portable food mixer
West Bend Aluminum Co., West Bend, Wisc.
Painter, Teague & Petertil, consultant designers

Die-cast aluminum body (Electro Auto-Lite), enameled citron yellow; gray urea handle (Dickten & Masch). Rubber bumper on underside.

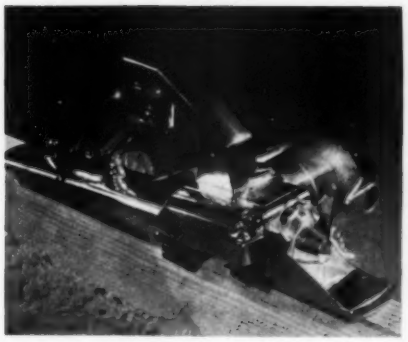
104 Flyride helicopter
Glenview Metal Products Co., Delanco, N. J.
William E. Hunt, engineer

Two-seat, single stick helicopter, all aluminum; 35 x 8½ feet, 140 h.p. Lycoming engine, 505 lb. load.



106 Kenmore Sewing Machine
Sew-Easy Corporation, for Sears, Roebuck
Waltman Associates, consultant designers

Cast-iron body; two-tone gray wrinkle finish; 11 inches high, 13 inches long.



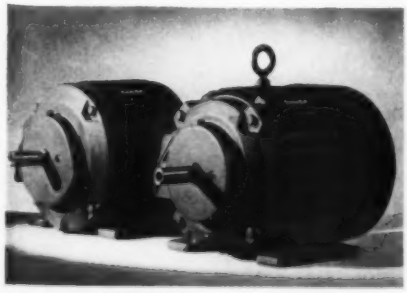
107 Electric plane
Porter-Cable Machine Co., Syracuse
Peter Muller-Munk Associates, consultant designers

Highly polished die cast aluminum (Mount Vernon Die Casting); plastic fittings (Durez Plastics), molded by Auburn Button Works.

As far as appearance goes, aircraft are fortunate problems, for function requires that they assume interesting and beautiful forms. Helicopters, though, are still usually contrived of bits and pieces; the one shown here, a simplified "family" craft, is unusual for its sleek, aerodynamic skin. Although the housings for other products seldom have such stringent functional requirements, many have a characteristic outline that can be developed unpretentiously to achieve a pleasing identity. In the beater, the simple rocket shape that belongs to a motor is appropriately elaborated with trim blades and a sturdy handle. Sewing machines have been housed with great elegance; this one, a small, economical model, has a properly rugged character. In the plane, the handle, the body, and every essential detail are sharply outlined and highly polished to suggest efficiency and power. Both the tractor shovel and the sickle-bar mower are housed in the most economical sheet metal forms; the working parts that cannot be concealed—wheels, blades, etc. — are carefully organized as elements in a purposeful design. In the motors, where ruggedness is more appropriate than grace, a practical feature introduces a family resemblance: the beveled end brackets under the bolts are easier to assemble and to clean.


108 Michigan tractor shovel
Clark Equipment Co., Benton Harbor, Mich.
Harley Earl, Inc., consultant designers

Formed sheet steel; yellow baked enamel finish; sand-cast steel counterweight.

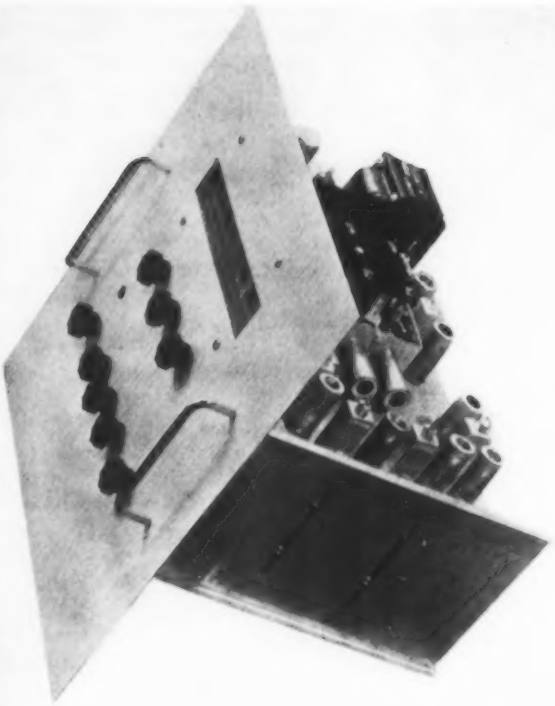


109 Fan-cooled motors
Reliance Electric Co., Cleveland
Dave Chapman Associates, consultant designers

Sand-cast iron; blue-green spray enamel finish.


110 Champion sickle bar mower
Jari Products Co., Minneapolis
Roger O. Wales, Project Engineer
Clayton Laughlin, styling

Foundry-cast iron; formed welded steel (U.S. Steel); adjustable handles; self-leveling swivel sickle; snow plow attachment.

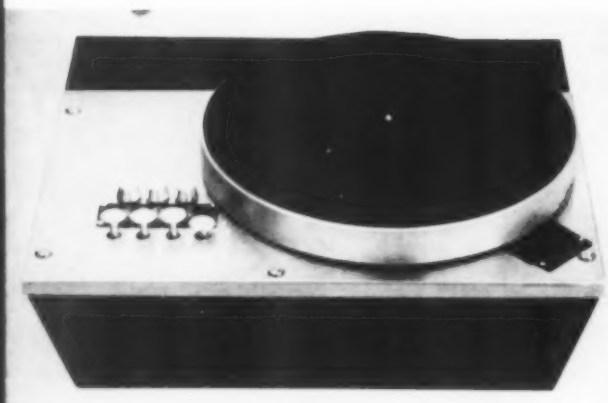


111 Radio chassis and control panel
Design Research, Inc., Cambridge
William Barton, designer

Control panel (for Brooks tuner and McIntosh preamplifier) of gray porcelain enamel, fired-in lettering (Bettinger Corp.); cadmium-plated steel runners and supports, brass and chrome handles (Antique & Modern Iron Works).

112 Quad II Amplifier Control Unit
Beam Instrument Corp., New York
Acoustical Manufacturing Co., Huntingdon, England

Control unit for 15-watt amplifier 10½" x 3½" x 6½"; Die-cast aluminum face, tan stove finish; flush knobs, brown aluminum; pushbuttons, black and red.



113 Stroboscopic turntable
Hermon Hosmer Scott, Inc., Cambridge
D. R. von Recklinghausen (Electronics), V. H. Pomper (cabinet), designers

Aluminum turntable; stainless clad motor board (Edgcomb Steel) with pushbutton speed selection, built-in stroboscope; mahogany mounting board for rigid joint to pick-up arm.

114 210-C amplifier
Hermon Hosmer Scott, Inc., Cambridge
D. R. von Recklinghausen (Electronics), V. H. Pomper (cabinet), designers

Amplifier and control unit fully enclosed in aluminum case, maroon wrinkle finish; gold etched bronze panel.

115 Facta adding machine
Atvidabergs, Stockholm
Waltman Associates, consultant designers

Deep-drawn steel, baked hammerloid green finish; cast recessed base; hidden finger lifts and rollers; recessed paper roll.

116 Director adding machine
Burroughs Adding Machine Co., Detroit
George W. Walker, consultant designer

Die-cast aluminum case (New Products Corp.); hard dull baked enamel finish, amber gray; brown motor bars; ivory and brown keys.

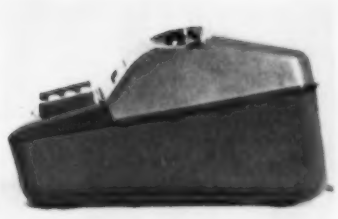
117 Cash Register #21
National Cash Register Co., Dayton
Paul Koons, Director of Design
Walter Dorwin Teague Associates, consultant designers

Pressed steel case, gray enamel top, brown base; yellow and gray keys; Lucite window (DuPont) allows notation on sales slip.

Office machines and electronic devices are frequently participants in what the human engineer calls a "man-machine system." In outline, they may be as uneventful as refrigerators and washing machines, but the necessity of cooperating with people gives them a special character. In various ways, they incorporate knobs and buttons for the operator to manipulate and calligraphy to tell him what he is doing, or supposed to be doing.

The custom hi-fi set (111) recalls professional equipment with its shiny handles and rosette knobs; it combines these against the smooth porcelain surface of an appliance. The small amplifier control (112) is unusual for the imaginative way it differentiates various control functions, with push-buttons, camera-like dials, and one tuning knob combined in a well-balanced design. The larger Scott amplifier (114) is an unusually restrained example of a new trend to shiny anodized knobs and fronts and stylized lettering.

On the ten-key adding machine (115) the keys and bars are arranged in a decorative diagram on a light ground; on the cash register (117), three kinds of information are ably displayed against a neat version of a characteristic housing. Although a pretty keyboard is a commonplace on an office machine, the sleek case is too often the over-conventionalized image of a penciled design. The Johnston adding machine (118) is a rare example of a housing that was conceived in three dimensions to take creative advantage of the forming process.

118 Automatic adding machine
Johnston Adding Machine Co., North Hollywood

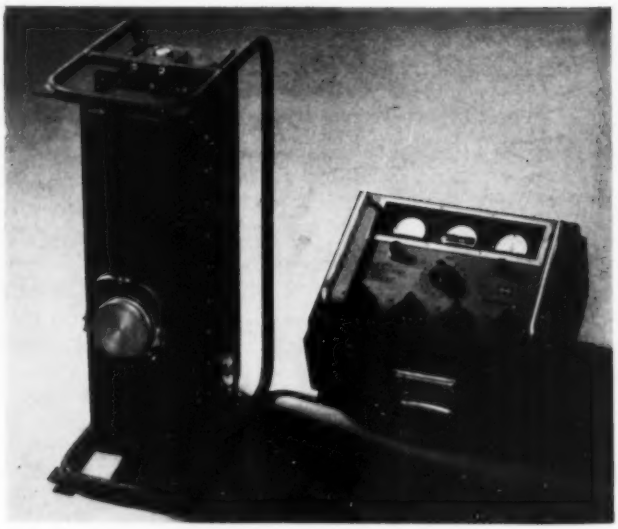
Die-cast aluminum top; drawn steel base, with light gray enamel; dark gray keyboard panel; feature keys and platen knob, red plastic; others black and white. Automatic credit balancing.

120 Microwave telephone link
Raytheon Manufacturing Co., Waltham, Mass.
Carl L. Anderson, designer

Rack-type aluminum chassis mounted in formed anodyzed aluminum cases; watertight plastic antenna cover; thermostatic control of fan and heating elements for microwave oven.

119 Color tv microwave relay
Raytheon Manufacturing Co., Waltham, Mass.
Carl L. Anderson, H. Rounsefell, designers

Waterproof luggage-type housings of cast aluminum with formed covers; head unit and parabola assembled on "L" bracket for tripod or pedestal mounting.

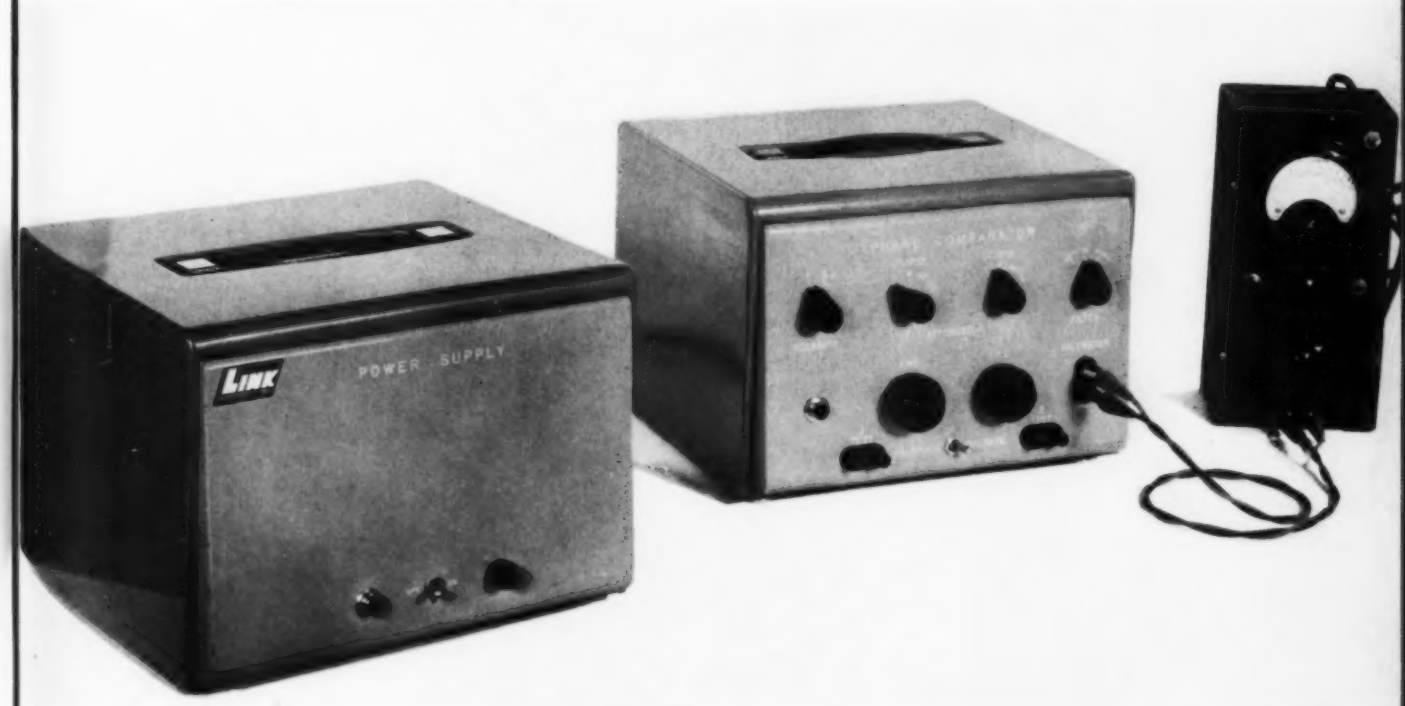


121 Baltograph industrial X-ray
Balteau Electric Corporation, Stamford, Conn.

Head unit in formed steel; control unit in punched and stamped steel; green paint sprayed over leather-grain primer (Voltax); cadmium-plated aluminum panel finished in Iridite (Begg Co.); Marion instruments.

The strange new instruments that pour out of the research laboratories are usually expediently housed in boxes; sometimes they carry symbols and counters that relate them to the human world, but just as often they are faceless and autonomous. In either case it seems impossible that sheet metal can express the magic of the workings. Yet for the designer they are not so much a problem as an inspiration. They take their own strange forms, and while their unfamiliar dignity can be ruined by capricious stylization, a sympathetic designer finds that an apt solution is marvelously new and expressive. The microwave equipment (119 and 120) is eccentric *despite* the designer, not because of him. The Baltograph control unit (121) allows a designer's attack on a familiar question of organization and legibility, but the result is unique. The Link components (122) present the problem at its most uncompromising: the engineer has worked out the intricacies of the mechanism and left the designer with a collection of boxes. Through careful proportioning and elegant detailing the plainest of these was made eloquent.

The objects on this page and thousands like them represent a frontier of design, where man-made forms are as inexorable and often as provocative as the forms of nature. Yet they also represent the typical problem of wrapping an intricate mechanism in a simple, expressive cover. If the designer could face the washing machine with the awe that he feels before these newer marvels, perhaps the effect would be as magical.


122 Electronic components
Link Aviation Corp., Binghamton, New York
Henry Dreyfuss, consultant designer

Cabinets formed of sheet steel; two-tone gray baked enamel finish; white letters; recessed handle; cable and test lead storage combined with ventilator grill.

# *Details*

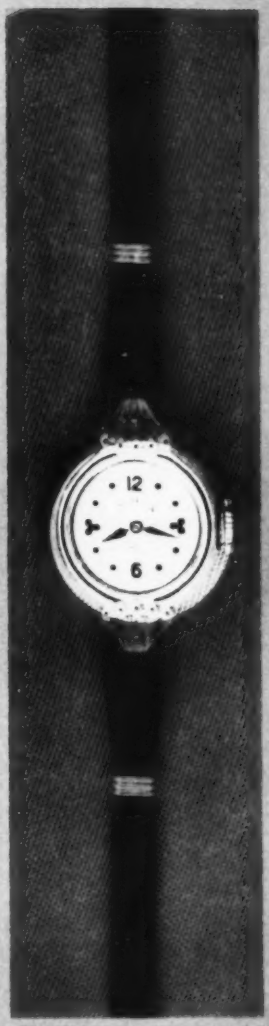
124 Wall lamp
Kolb Associates, Hudson Heights, N. Y.
Otto and Ridi Kolb, designers

Assembly of polished brass tubing; spun aluminum plaque and shades, baked enamel finish in black, white, blue, red, yellow.

*Good designs frequently stand or fall on the working out of the less conspicuous problems — joining, lettering, supports, trims. Here is a closer look at some interesting details.*


125 Thermostat
Iron Fireman Manufacturing, Portland, Ore.
C. W. Gilson, consultant designer

Styrene (Falcon Plastics), and high-impact styrene (Monsanto); gold lacquer finish (General Chemical).



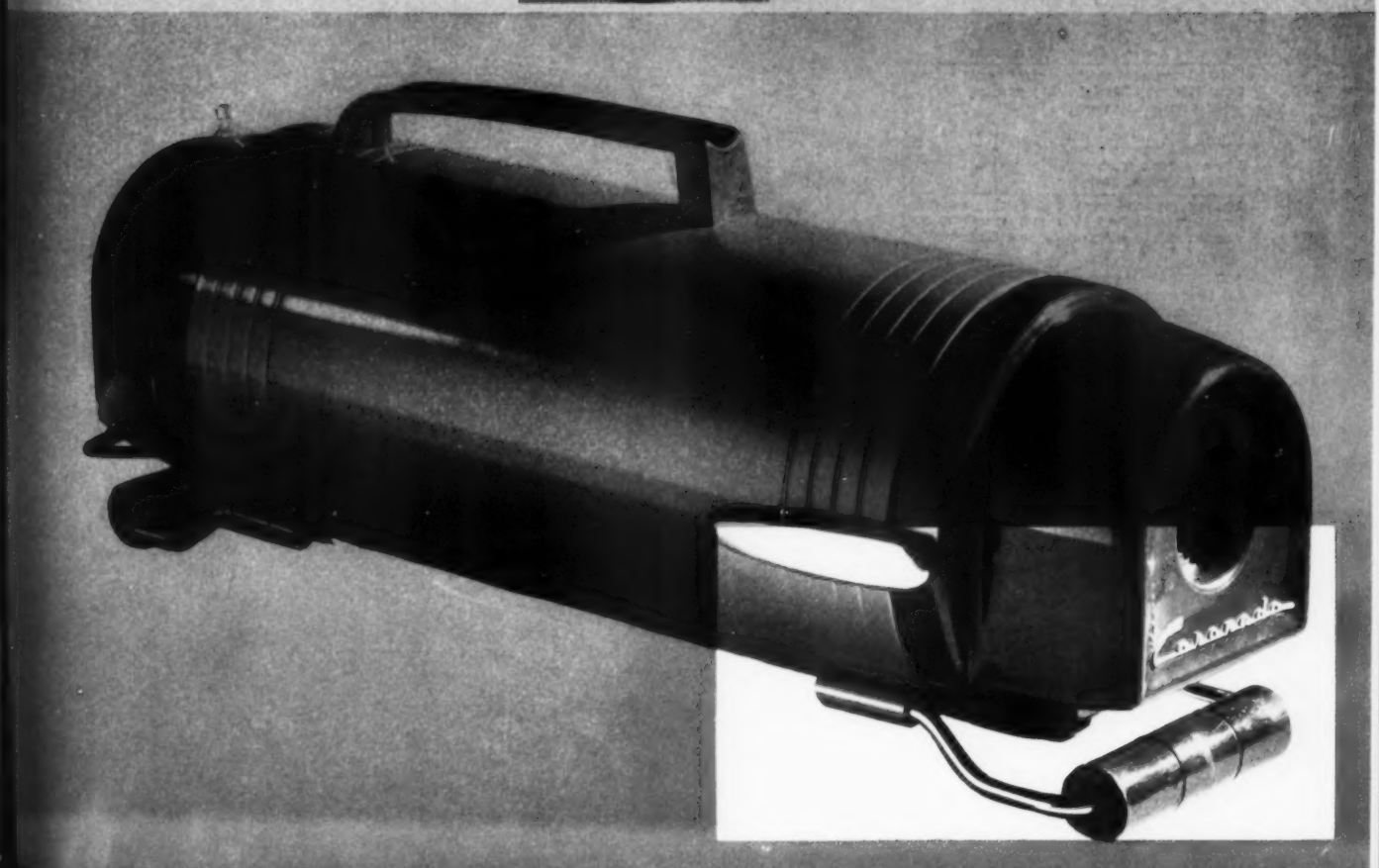

126 Wrist watch
Elgin National Watch Co., Elgin, Illinois
Staff design

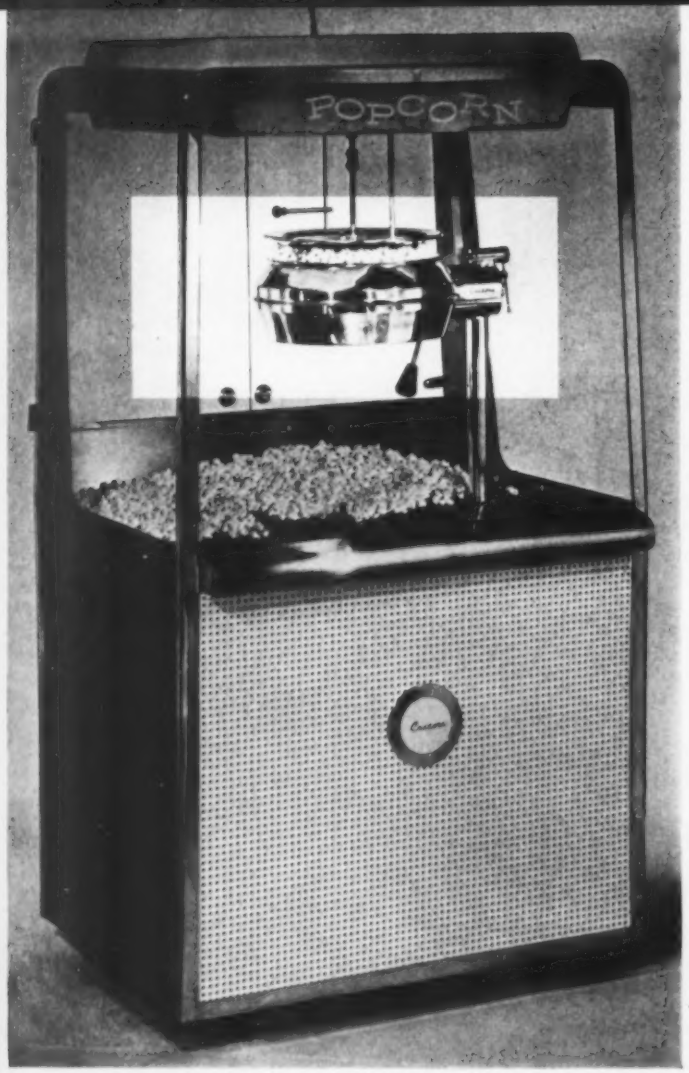
Drawn, pressed, and polished case; bleached silver dial background; 18 K gold applied ornaments; embossed numerals.

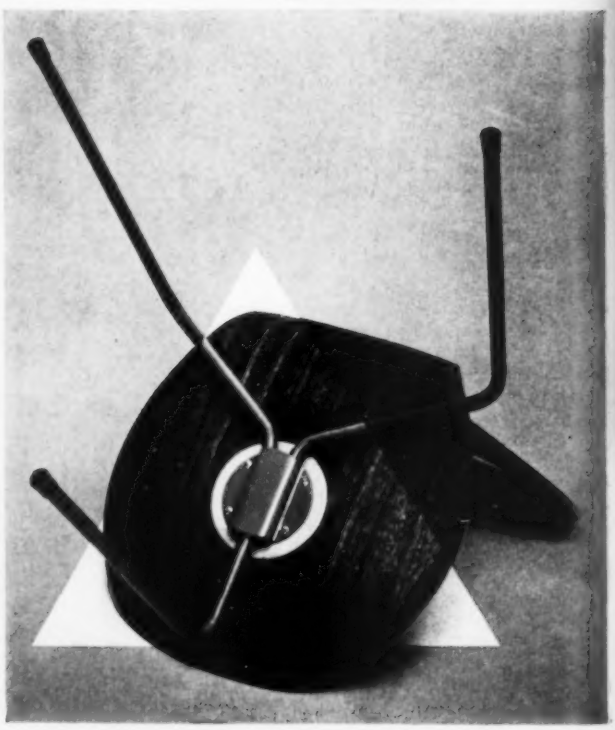
127 Coronado tank vacuum cleaner
Apex Electrical Manufacturing, Cleveland
Dave Chapman, consultant designer

Molded plastic rollers and end bells (Zenith Plastic).

Good detailing is essential to good design, and may be a design's distinction. On these four pages we show details that seem to have a particular merit, either as ideas or as visual expression. The lighting fixture, for instance, uses familiar heads, but the neat joining of the round stems to a central disc is handsome and as simple as the joining of a child's Tinkertoy (124). The legible organization of elements on the thermostat face stands out despite the conventionally modern outline of the case (125). Though watches cited for good design are usually strictly functional, few have the nice balance of detail found in this decorative, impractical dial (126). Though the sideways maneuverability of the rollers on the vacuum cleaner might be limited, they provide more mobility than the usual skid (127); they can also be used as auxiliary handles when the machine is stored on end, and provide a simple way of wrapping the cord.





128 Corn popper
Cretors & Co., Chicago
Raymond Loewy, Chicago, designers

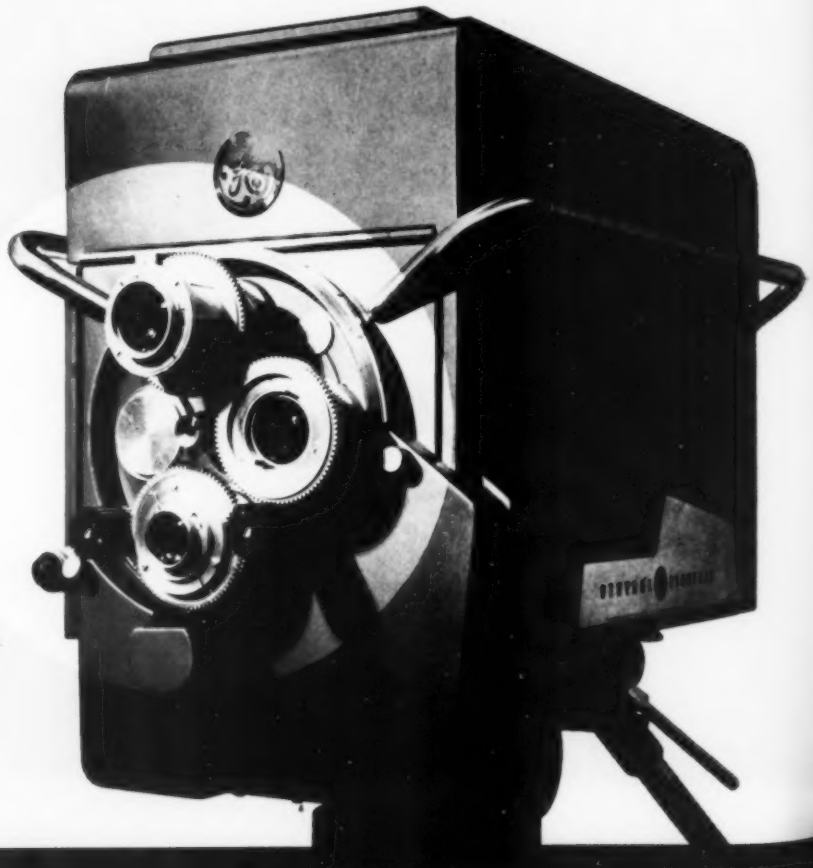
Formed and bent stainless steel angle members (Chicago Steel Sales); painted Presdwood panels (Masonite).

129 Stacking chair
Raymor, New York
Arne Jacobsen, designer

Molded plywood seat and back; wrought iron legs attached by metal stamping to wooden disc laminated to seat bottom.

120 TV color camera
GE Electronics Division, Syracuse
G. A. Beck, Manager, Industrial Design
R. L. Ryder, Supervisor & designer
E. H. Lederer, Engineering

Sheet aluminum cabinet, inert arc-welded; machined cast aluminum turret and hardware; grey metallic lacquer on cabinet.

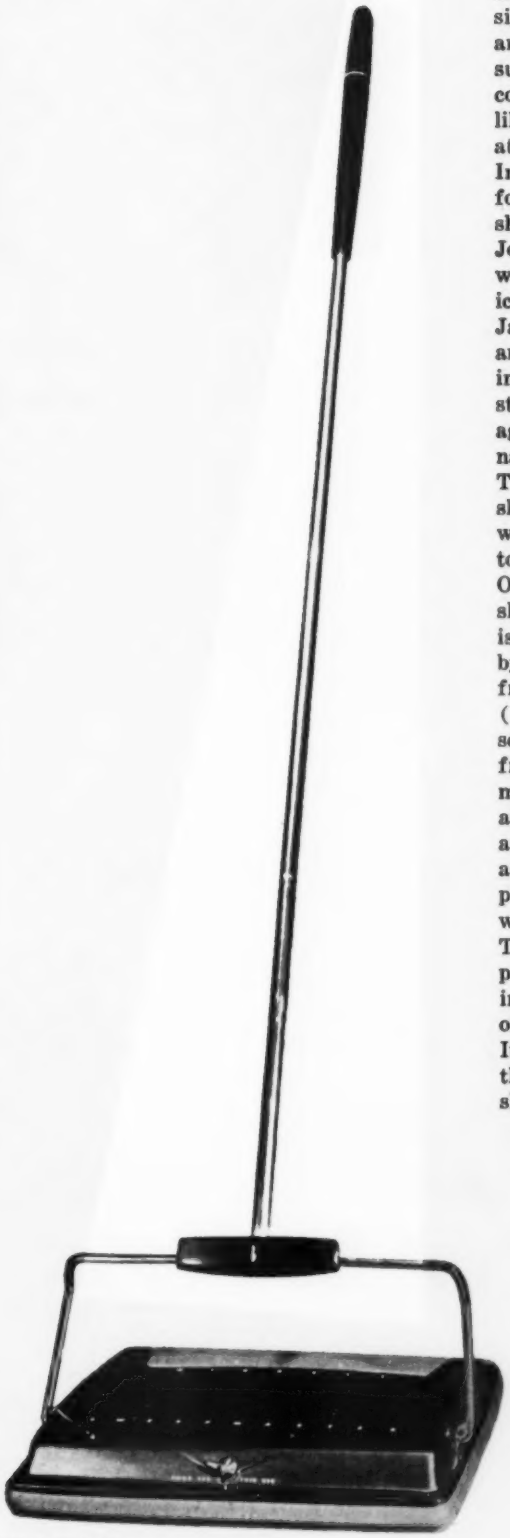


131 Stor-Mor Freezer door
Amana Refrigeration, Inc., Amana, Iowa
Robert Budlong, consultant designer

Deep-drawn enameled steel pan; green high impact styrene dividers; extruded aluminum shelves, basket (Kawneer), gold anodized.

132 Speedweigh scale
Toledo Scale Co., Toledo, Ohio
J. M. Little, consultant designer

Die-cast aluminum body (Doehler-Jarvis); molded methacrylate chart housing (Chicago Molded Products).

133 Carpet Sweeper
Bissell Carpet Sweeper Co., Grand Rapids
Henry Lathrop and staff engineers,
Harley Earl, Inc., consultant designers

Chrome-plated steel tube; injection-molded grip and bale socket housing, high-impact styrene (Dow 475); stamped dust bin lid (Rigid-Tex, Metals).

**The details shown on this page appear to be minor ones, yet they are central elements of the design in every case. Many designs are raised above the ordinary by such delicate attentions. A popcorn machine, for example, is like a juke-box — its bulk defies attempts at graceful decoration. In this example, the designer focused his best efforts on the shiny chrome popper (128). Joining metal rod to molded plywood is difficult not only mechanically but aesthetically; Arne Jacobson has done it carefully and well. Wrought iron legs are inserted into the ports of a metal stamping, which is then screwed against a flat wooden disc laminated to the chair bottom (129). The lens turret of the TV camera shows precise elements balanced with a restraint that is suitable to professional equipment (130). Organizing freezer storage should be a simple matter, and it is simply done in this example by the use of racks borrowed from a candy vending machine (131). The plastic cover on the scale chart allows light to enter from several directions and makes the clearly marked graduations easy to read from almost any angle (132). Sporting goods are habitually well designed, partly because they are carefully weighted to feel right in use. The graceful handle of this carpet sweeper suggests that cleaning can have some of the charm of a swift game of polo (133). It is designed in four sections so that the whole sweeper can be shipped in a compact box.**

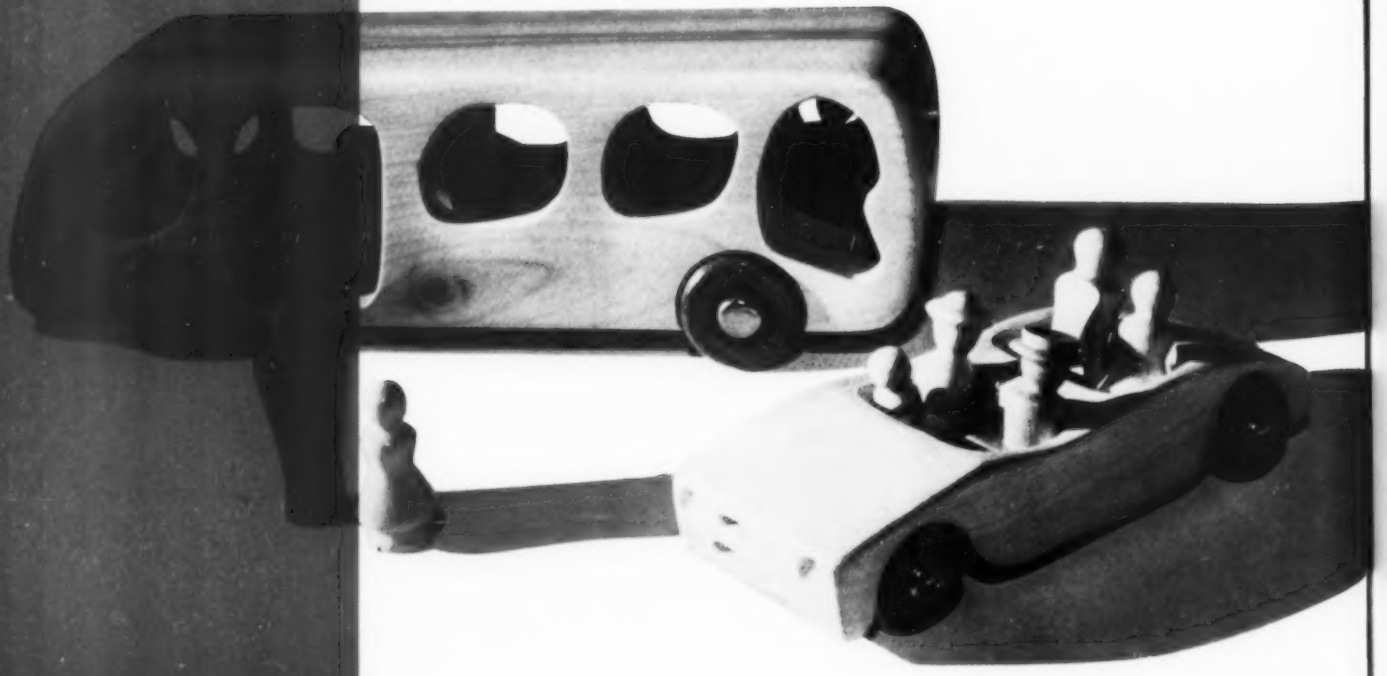
# *Toys*


134 Stereo starviewer
Dixie Cup Company, Easton, Pa.
Nowland & Schladermundt, designers

Printed by Burton Packaging Co.; Polystyrene lens, American Optical Co.; 3-D Dixie Cup lids, printed by Daniel Murphy.

135 Overland bus and open sportster
Creative Playthings, Inc., New York
Angelino Vitali, designer

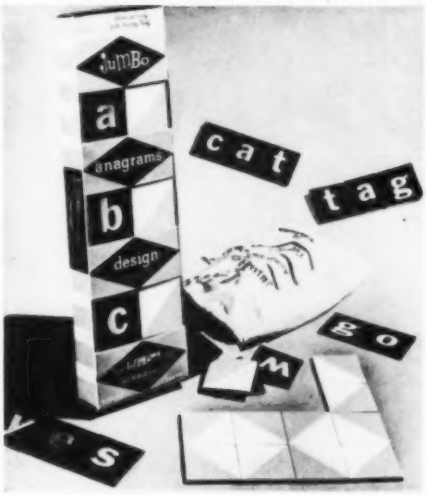
Carved from solid poplar blocks, with walnut wheels; lacquer and wax finish.



*From refinement to pure invention, toys run the gamut of design problems*

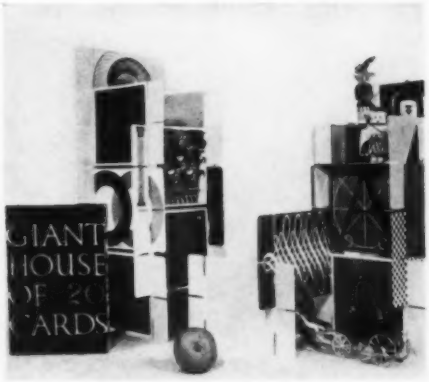
136 Tricycle
Evans Products, Plymouth, Michigan
Harley Earl, Inc., designers

Brazed steel double tube frame; stamped sheet steel platform; flamboyant blue enamel finish baked over aluminum primer.




137 Jumbo Anagrams
Ed-U-Cards, New York
Leon Jason, designer

Printed cards (Milton Paper Company), mounted and die-cut, coated with Super-Lac plastic (Superior Varnishing Company); cotton bag (Bemis Bag Company).




138 Giant House of Cards
Tigrett Enterprises, Chicago
Charles Eames, designer

Paper and printing, Regensteiner Press; mounted and die-cut by Tigrett Enterprises.

140 Rocking horse
NuTone, Inc., Los Angeles
E. W. Poyser, designer

Duron plastic hardboard (U. S. Gypsum) pre-cut, punched, and hot-wet rolled to form back and sides; lacquer finish, red cream and black; 9 pounds.

139 Row car
A. O. Schwartz, New York

Tubular steel frame; disc wheels; white enamel finish; leatherette seat. Chain action; propelled by rowing with handlebars.

Toys may be conceived by sculptors, engineers, psychologists or even ad men; they may be realistic, symbolic or even non-objective and vary as their users' fancy varies from age to age. The only unifying theme in toy design is imagination: they would be useless if they did not encourage imagination, which is all play is; at their best they are often imaginative in themselves. A tricycle, for instance, is a unique form of locomotion, and adaptable, because it easily becomes a truck, fire engine or helicopter (136). A more specific form of locomotion, a rocking horse (140), is interesting here because it makes its point with the simplified, almost abstract forms appropriate to simple construction. The sculptured bus (135) represents the kind of abstraction which lets the child fill in details with his own kind of reality. The jumbo anagrams (137) are designed with patterned backs so the child doesn't have to spell something to enjoy them. With the Giant House of Cards (138) he can compose brilliant shapes without building anything in particular. At the other end of the scale from psychological playthings, the promotional stereo viewer (134) offers the young Martian an otherworldly mien, but ends up giving him a realistic view of famous faces from Dixie Cup tops.


After several months of scouring the market to find products for this Annual Design Review, the editors began to wonder what other people might choose under the same circumstances. The only way to find out, we decided, was to ask a few people to do a similar job. Raymond Loewy, Paul Rand, Eliot Noyes, Milton Immermann and Saul Steinberg agreed to play the game. Obviously, such busy men couldn't be expected to devote months to market research, so we made some easy rules: each one was given $5.00 and 24 hours in which to assemble a good design show.

How four of our guest editors looked when the shopping tour was over is shown on this page; the fifth, Saul Steinberg, sent us a proxy — a portrait by his friend Charles Eames. How each of them performed as consumers is recorded in the collections on the following pages. Ground rules permitted the participants to keep any change over 95c; deficits were incurred at their own risk.

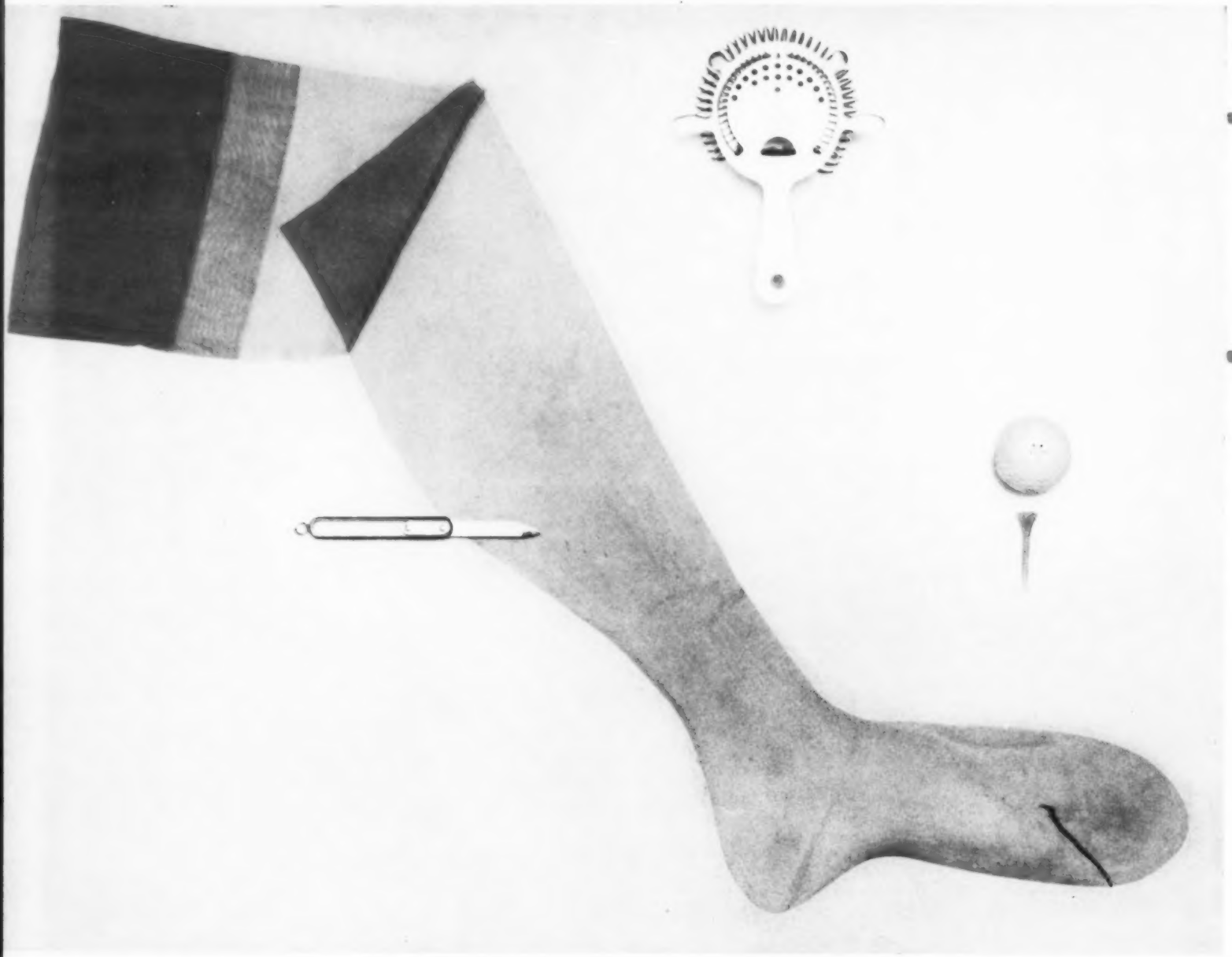
# 5 *designers for under five dollars*


## Raymond Loewy

*Raymond Loewy Associates, New York*

| | |
|---|---|
| 4 domes | $ .05 |
| whisk broom | .59 |
| twine | .25 |
| lipstick | .43 |
| Christmas ball | .05 |
| nail polish | .10 |
| two mirrors | .29 |
| U. S. flag | .30 |
| Steinberg card | .10 |
| Lucky Strikes | .24 |
| two bullets | .48 |
| Canada Dry bottle | .10 |
| drafting pencil | .10 |
| colored pencil | .18 |
| golf ball | .75 |
| one dollar bill | 1.00 |
| Life Savers | .05 |

*"With the five dollars so graciously provided by the editors, I chose objects because they were neat, cleanly-designed, not over styled, and because they all conveyed a feeling for economy of materials."*



## Eliot Noyes

*Architect and designer*
*New Canaan*

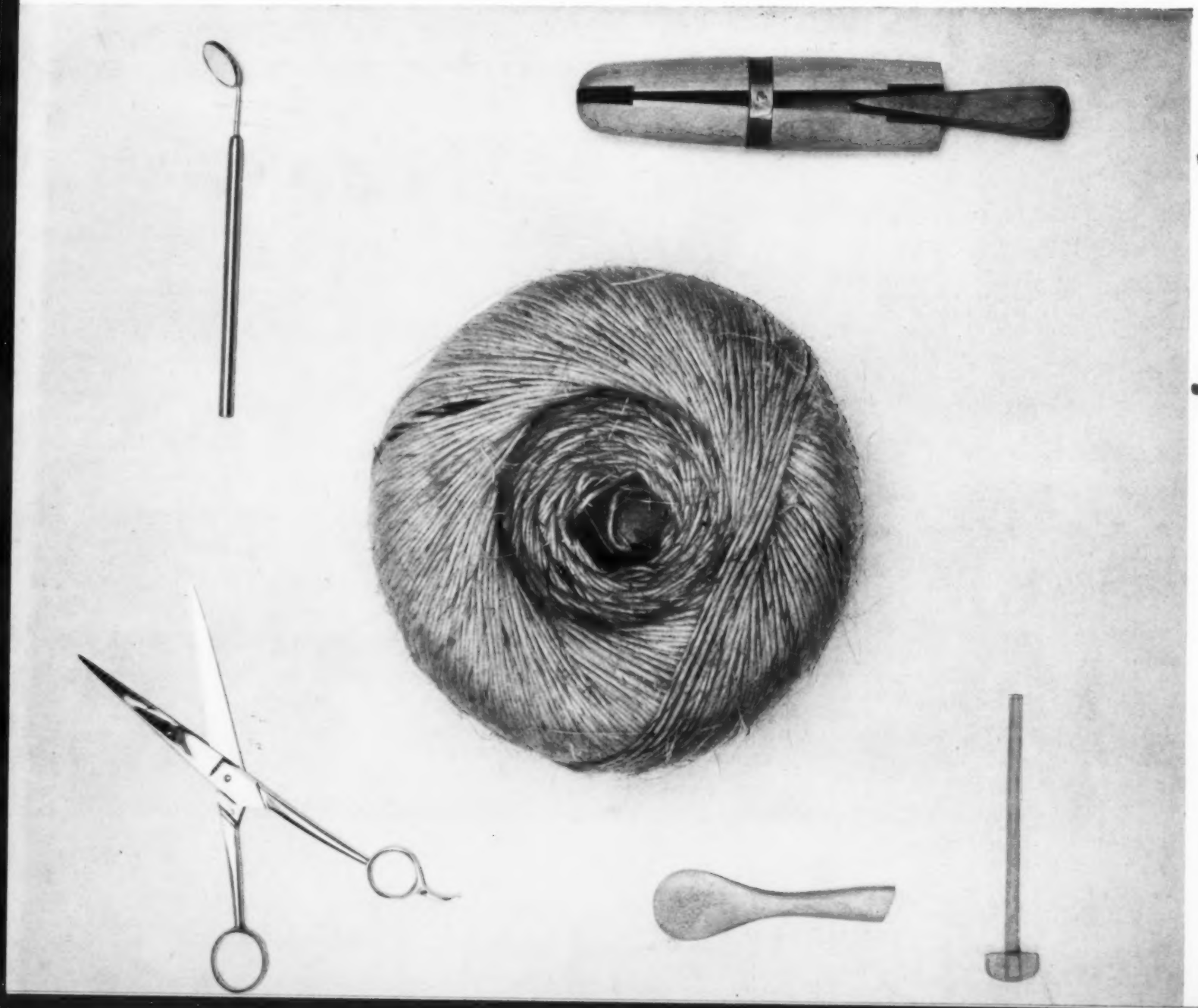
**seamless, unreinforced nylons** **$1.95**
*"Delicate fabric, astounding structure . . . fascinated with limpness when empty as opposed to form when worn."*

**golf ball** **.75**
*"Complete perfect shape . . . contained power . . . beautiful surface. The fascination of a new ball is enhanced by remembering a used one."*

**iridescent plastic tee** **.05**
*"Useful. Small. Nice to carry"*

**cocktail strainer** **1.25**
*"Interesting combination of coiled wire and flat perforated plate, all determined by use. Reminds me of African sculpture."*

**pocket knife** **1.25**
*"Ingenious mechanical object, handsome but not self-conscious. Good to fiddle with."*

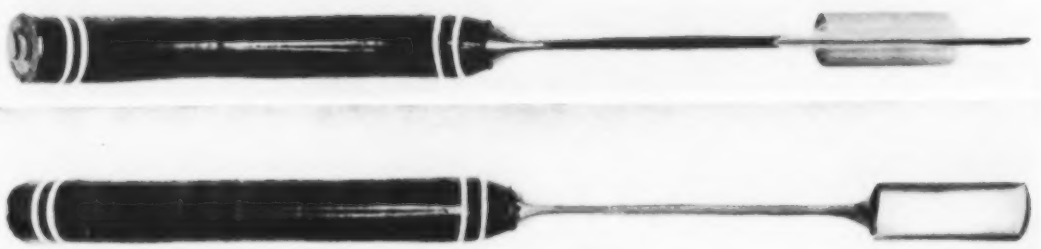


## Paul Rand

*Art Director, Wm. Weintraub, New York*

| | |
|---|---|
| **roll of twine** | **$1.35** |
| **jeweler's clamp** | **1.25** |
| **dentist's mirror** | **.50** |
| **Barber's shears** | **1.50** |
| **spreader** | **.25** |
| **champagne twirler** | **.05** |

*"a/ I like them;*
*b/ I find them, like the bicycle and the violin, forms that have been perfected through the years and are virtually impossible to improve;*
*c/ for the most part they are not only useful and beautiful, but indispensable;*
*d/ they have a naturalness that defies a designer's imagination."*

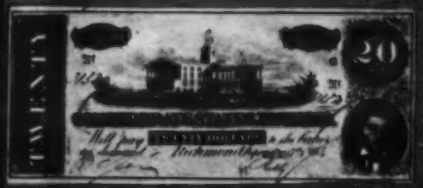


## Milton Immermann

*Partner, Walter Dorwin Teague Associates, New York.*

**hunting axe** **$4.64**

*"A good grade of tempered steel maintains its cutting edge, and a polished finish makes it easy to maintain. . . . One-piece forged head and shaft eliminates the usual hazard of accidental separation. . . . The contour of the tool, and durable resilient handle should eliminate fatigue. . . . It is designed with every technical assurance that it will do its job well, and looks it."*






## Saul Steinberg

*Artist, New York*

**postcard** **$.05**
***"This is a photograph, but it is entirely retouched. It goes with the cheapness of the card. Modern ones are just effects of light."***

**confederate bills** **.35**
***"It amuses me to spend money to buy money. This is very well done. It looks like money."***

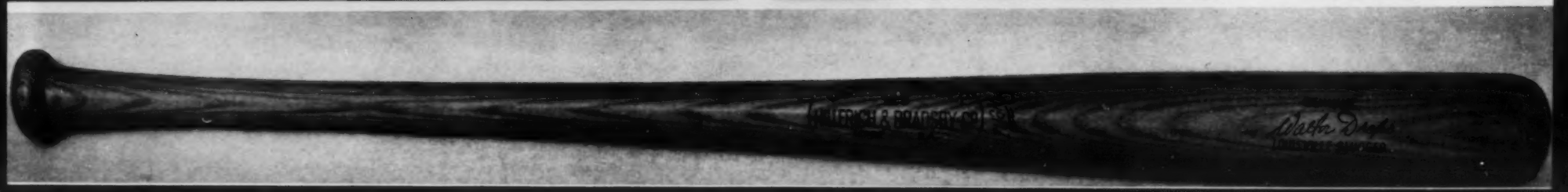
**envelope** **.03**

**English lettering pen** **.60**
***"This is the pen I use. The quill fits outside, which is much better. It was made after years of investigation."***

**shop hat** **.50**
***"You always find good design in work things. This is very light. I buy twenty at a time."***

**quilted hat** **.75**

**baseball bat** **2.95**
***"This is the best bat."***



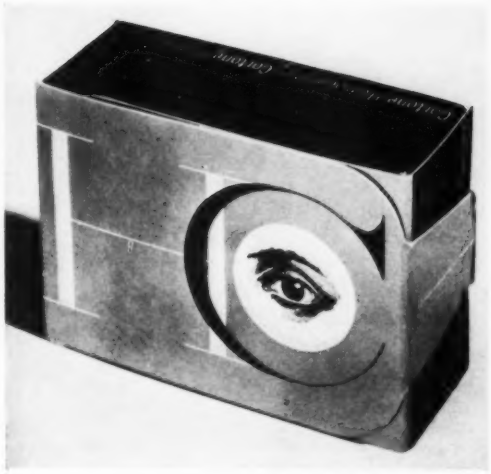
# *Selling*



141 Taper-Discs package and label
E. W. Arnold, designer and manufacturer, Baltimore, Maryland

Green spiral tube, black caps; label offset printed alternately yellow-on-white, white-on-blue; small label black and white.

*In a sense all design is design for selling,*
*but at some point emphasis shifts from design of the product itself*
*to designs on the customer.*



142 Eye ointment sample box
Sharp & Dohme, Philadelphia
Matthew Leibowitz, designer

Two-side litho-lined board, letterpress printed in black and facsimile gold (Benson Bros. & Deeney) by the Sparks Corp. Varnish finish; integral cushion liner.

143 Trak-Pak aspirin dispenser
E. R. Squibb & Co., New York
Neil S. Waterman (Atlantic Plastics), designer

Polystyrene body (Monsanto) and polyethylene slide closure (Bakelite) injection molded by Atlantic Plastics.

144 Ethicon sutures bottle and label
Ethicon Inc., Chicago
Lippincott & Margulies, designers

Gray label, white lid and "spotlight" on black type; red tradename.



145 Quinac Hand Pak
Canada Dry, Inc., New York
Raymond Loewy Associates, designers

Pre-coated, printed, and die-cut in one operation by Julian B. Slevin Co. Board (Kieckhefer Container) laminated with waterproof adhesive; Beck Engraving; Commercial Ink & Lacquer.


146 Ac'cent package
Amino Products Div., International Minerals and Chemical Corp., Chicago
Walter Darwin Teague Associates, designers

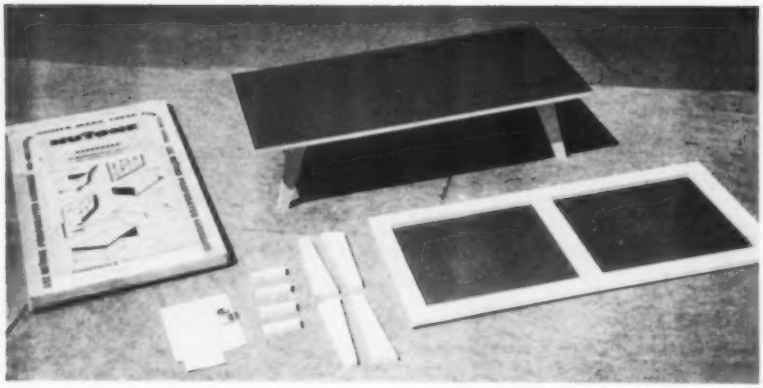
Paperboard container (W. C. Ritchie) with acetate cap; polystyrene shaker disc (Korris Products); hygroscopic lacquer-coated label (Photopress); Martin Driscoll red ink.

147 Crown & Anchor label
Molson Brewery, Ltd., Montreal
Lippincott & Margulies, designers

Red, gold, and black on white chrome-coat paper (Gazette Printing Co., Ltd.).

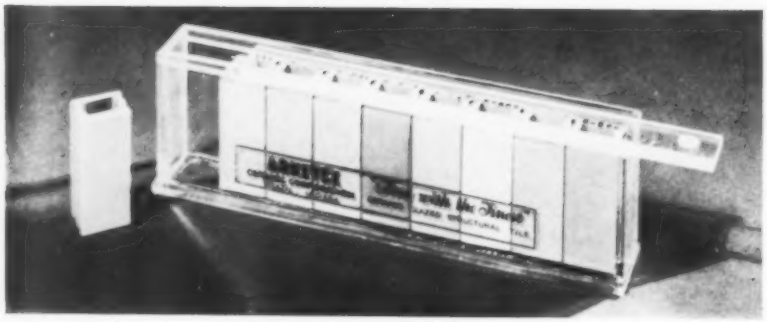

**Design - for - selling takes many forms. We have avoided separating them into their usual categories of packaging, display, merchandising, advertising and the design of letterheads because each product, designed or not, brings its own selling problems and, in the happiest situations, its own galaxy of integrated, attractive and ingenious satellite designs — some of which, as we see on these pages, must take over the entire selling job.**

**In its simplest, most reticent form, as in professional pharmaceutical containers (144), the package's first duty is to present its contents clearly and straightforwardly. Sometimes this takes more graphic form, as in the eye ointment sample box (142). Sometimes the task is to make the product more memorable for the customer and handy for the retailer, like the redesigned Ac'cent package (146). One of the most difficult jobs is to develop a design from familiar elements which will nevertheless stand alone in the company's line (147). Perhaps the most enjoyable is a designer's package for his own product (141). Here he has created a symbol for the product — a multi-position candelabra — and integrated it on the label with a stylized design which is also an instruction sheet. A package may simply be inventive in its use of conventional techniques like die-cutting and folding (145). Sometimes the position is reversed, and a packaged created expressly as a selling device (143) is so ingenious that it stands alone as a well-designed product.**




149 Parker Jotter counter display
Parker Pen Co., Janesville, Wisc.
Dave Chapman Associates, designers

Made by Commercial Display Co. Magnolia frame, 3-coat lacquer (Cudner & O'Connor); brass plated steel coil trim (American Nickeloid); Plexiglas separators (Rohm & Haas); weatherproof silk-screen enamel (Naz-Dar).



148 NuTone Do-it-Yourself Kit
NuTone, Incorporated, Los Angeles
E. W. Poyser, technical director

Natural brown "Duron" plastic hardboard (U. S. Gypsum) and non-splinter lumber (pre-cut and semi-assembled) for making a coffee table.

150 Tile sample box
Arketex Ceramic Corp., Brazil, Indiana
Staff design

Fabricated of clear acrylic plastic by Dacon Products.

151 Hold-E-Zee screwdriver display
Upson Bros., Inc., Rochester, N. Y.
R. J. Velepec, designer

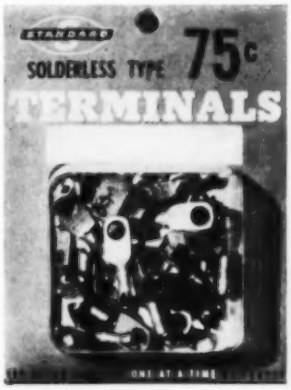
Injection molded of clear Tenite II (Tennessee Eastman) by R. J. Velepec Co., Inc.


152 Promotion piece for food advertisers
Columbia Broadcasting System, New York
Louis Dorfsman, designer; Jerome Snyder, artist

Metal can (George B. Ellis Co.); label offset printed by Crafton Graphic.

Selling is sometimes a question of a bright idea — a convenience to the consumer, a fancy-catching display, or a particularly apt use of a material. What makes these examples good design, though, is the fitness of the final result. There have been counter display trays before, but the Parker tray (149) seems particularly pleasing in its proportions and its use of translucent plastic to exploit a single light source. Do-it-yourself is nothing new, but this kit (148) assembles furniture components into a universal 24" x 2" x 48" cardboard package for dealer convenience. The architectural tile sample box (150) and the screwdriver display (151) use transparent plastic well to enhance utilitarian products. Cardboard simply folded around a plastic bubble to make a see-through display and one-at-a-time dispenser turns just another hardware item into a standout (153). A combination of plastics compactly assembled sells an electric vibrator (154), while transparent plastic again reveals a merry-go-round of flashbulbs (155).

Good packaging can even sell intangibles. CBS amusingly seals its effectiveness as a food-advertising medium into the most tangible of containers: a tin can full of confetti, and information.




153 Solderless Terminals dispenser pack
Standard Motor Products, Inc., Long Island City
Ernest Ehrman, designer

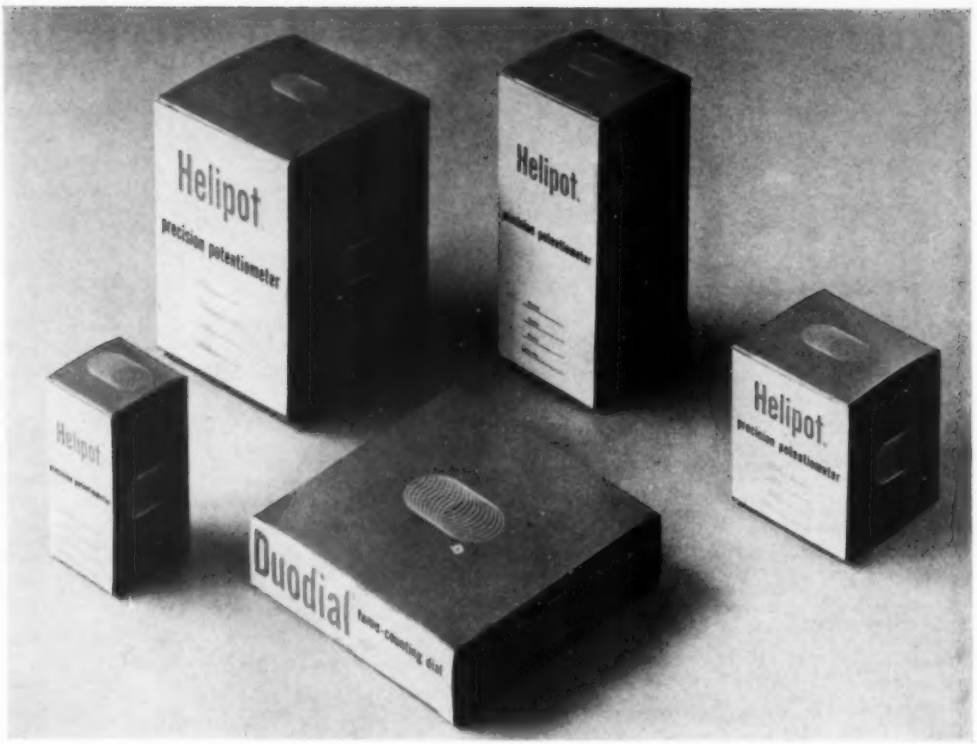
Rag stock die-cut and printed in red, white and black (Display Printing); vacuum-drawn acetate bubble (Plaxall Co.).

154 Manning-Bowman Vibrator Set
McGraw Electric Co., Elgin, Illinois
Philip E. Willman, Director of Design

Injection-molded Plexiglas cover (Rohm & Haas); cream vibrator shell and powder blue box compression molded of Plaskon urea (Barrett Div., Allied Chemical & Dye).

155 Gift Pak
Sylvania Electric Products Inc., New York
Case-Hoyt Corporation, designer and manufacturer

Kodapak sleeve (Eastman Kodak), snap-out yellow and black cardboard top, silver cardboard platform.




156 Packages for precision instruments
Helipot Corporation, South Pasadena, Cal.
Patrick Fitzgerald & Lou Frimkess, designers

Black, blue, and white (Gans Ink); varnish finish (Sinclair and Valentine).

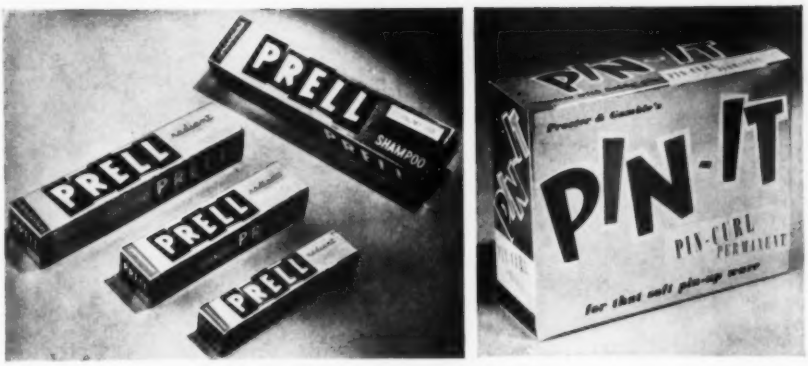

157 Band-Aid packages
Johnson & Johnson, New Brunswick, N. J.
Nowland & Schladermundt, designers, with Johnson & Johnson

Tins (J. L. Clark) lithographed red, white, flesh, blue (IPI). Die-cut cardboard elevator (Empire Box) raises contents for selection.

158 Rubberset paintbrushes
Rubberset Co., Newark, N. J.
Lippincott & Margulies, designers

Paper wrap (Charles W. Williams Co.) yellow on blue; brush handles (consumer line) yellow, black, gold; (professional) natural, black, metallic blue.

We have graduated designs for selling from single packages and devices to related designs, to families, and later on to complete graphic series and an entire company that is one large, integrated design. Relating packages is usually a question of re-design and is often done through a unifying trademark (160). Another trademark, in a formal, precise arrangement with type and color (156) shields a family of delicate precision instruments. The packages differ only in the product identification information which can be stamped in a square on the front. A newly-designed trademark is used most decoratively, with color, to unite and identify a his-and-hers line of paintbrushes (158). Redesign made a family out of a group of bandages (157) with an already well-known trademark. Clarity for self-service was the aim of this clean-up job; unity is achieved through the repeated diagonals. The designers of two home-hairdressing packages for the same manufacturer (159) did not intend a family resemblance, but it came through anyway in the syncopated block letters and use of foil (the Prell package is boasted to be the same pale green as the shampoo inside). The designers of the toy balloon packaging (161) had the amusing task of integrating not only package and product but display and shipping label. They created a jolly character for an otherwise indistinguishable product and made maximum use of three colors by using transparent inks and Benday screen.






159 Prell and Pin-It cartons
Procter & Gamble, Cincinnati, O.
Donald Deskey Associates, designers

Prell carton (Robert Gair Co.) white, medium and dark green on pale metallic green foil; Pin-It (Richardson-Taylor-Globe), black, white, vermilion, light green on gold.

160 Milk packages
Foremost Dairies, Inc., Jacksonville, Fla.
Robert Neubauer, designer

Pure-Pak cartons (Kieckhefer Container); red trademark on blue, red, green, brown, yellow (Vapo-Set Inks).

161 Qualatex balloon display
Pioneer Rubber Co., Willard, Ohio
Raymond Loewy Associates, designers

Shipping label, counter display and shelf carton letterpress printed in black, transparent red and blue on white.




162 Labatt's beer labels and cartons
John Labatt Limited, London, Ontario
Lester Beall, designer

Extra Stock label, white and red on gold foil; carton, yellow, white, green, red. Other labels offset black and gold on white with red, green, blue or yellow; cartons printed in black and corresponding color. Dominion Glass, Consumers Glass.

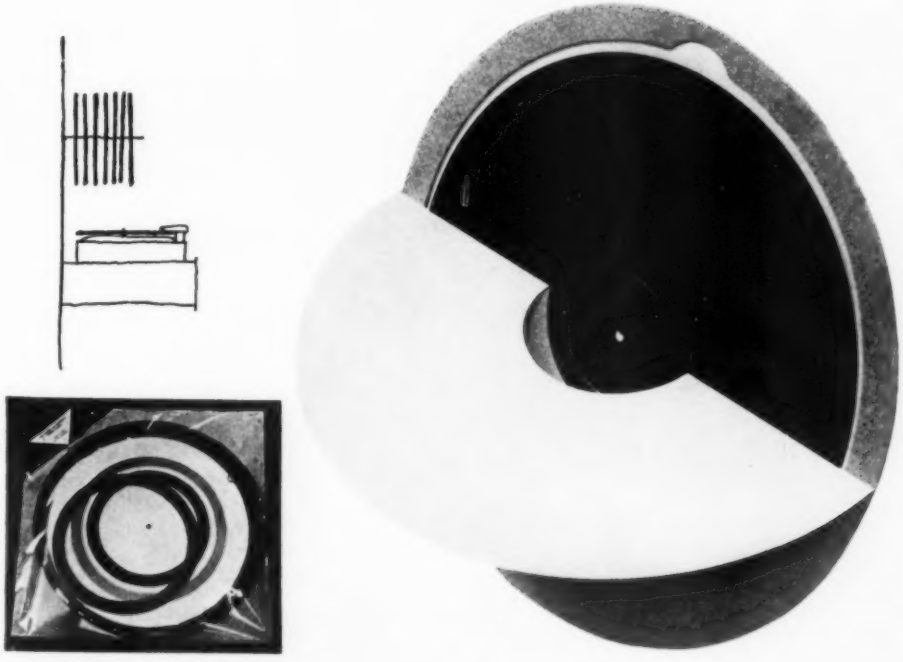
163 El Producto cigar packages
G.H.P. Cigar Co., New York
Paul Rand, designer

Folding boxes (Rochester Folding Box), redwood boxes (Autokraft), lithographed labels (Schlegel).


164 Containers and labels
Simoniz Company, Chicago
Lester Beall, designer

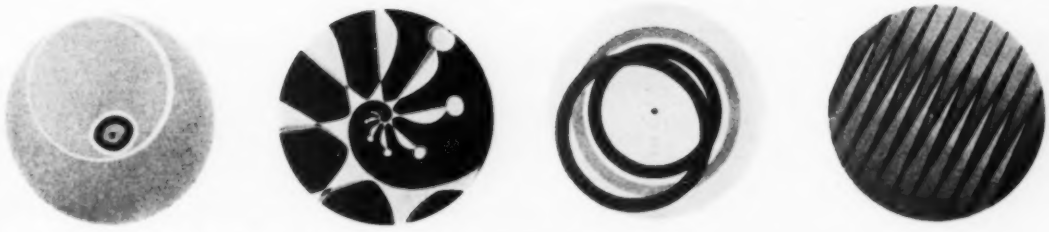
White Side: amber bottle (Foster Forbes); label offset yellow, brown, red, white. Bodysheen: Litho red and (Owens-Illinois); offset label (Cadillac Printing), yellow, brown, red, white. Bodysheen: Litho red and black on yellow coat. Caps litho yellow on black (Anchor Hocking).

Family designs offer a challenge because of the integration involved; most jobs, like families, are composed of quite different elements, sometimes only subtly related. One seemingly effortless example is the group of beer and ale bottles, labels, and cartons (162). The gold rings on the label, which *look* like the delightful last gulps being swilled from a crystalline bottle, are repeated in black on the cartons. Individuality comes through a change of primary color on the neckband and "crown." The premium Extra Stock is more costly but reminiscent of the other designs; note the smooth bottles for ale, indented for beer. The cigar box designs (163) are additive: starting in 1952 (bottom and left), they have kept their character through whimsical use of a symbol, color, and organization of the surface as a continuous cube. The Simoniz job (164) was a group of products related only by their polishing function and a well-known manufacturer's name-*cum*-trademark. This and the yellow-and-black remain constant, with a style of easily-read block letters. Otherwise the packages seem quite distinct in form and design, each label with its symbol indicating the function of the liquid inside. Family resemblance was easy for the inventor of a new kind of record jacket (165). The disc derives logically from the shape of the record, whose own label is revealed as identification. But beyond the functional aspect (hi-fi fans who find they roll off shelves are enjoined to consider a new spike-storage system), these covers are purely graphic designs, made to look pretty when hung on the wall or spun for fun on a turntable.



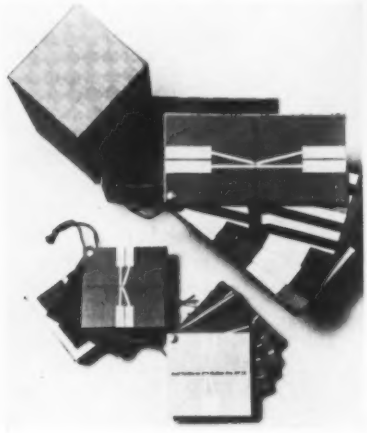
165 Disc-Kit
Pine Tree Cards, New York
William H. Riecker, designer; Alex Williams, Suzanne Smith, artists

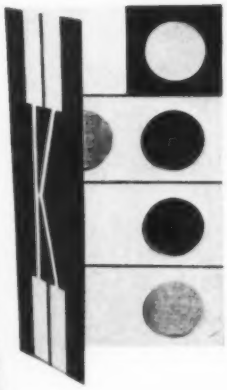
Letterpress printed (Lenz & Riecker) from photoengravings (Collier) on 6-ply double-lined paper (Willmann). Interchemical Corp. inks.



166 Textile Kit; Laminates Kit
Knoll Associates, Inc., New York
Eszter Haraszty, Ladislav Sutnar, designers

Textile Kit printed by Palette Sample Card Co.; Laminates card, Sterlip Press.






169 Steelframe tag
Herman Miller Furniture Co., Zeeland, Mich.
George Tscherny of George Nelson & Associates, designer

Basso Printing Corp.

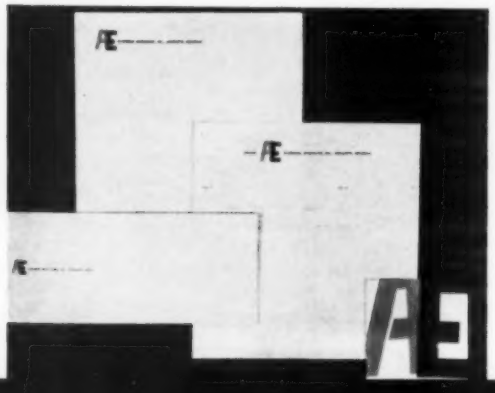
167 Magazine advertisement
Olivetti Corp. of America
Leo Lionni, designer


170 Advertisement for Executive Office Group in Businessweek
Herman Miller Furniture Co., Zeeland
Tobias O'Mara of George Nelson & Associates, designer; John Stewart, photographer


168 Magazine advertisement
Olivetti Corporation
Paul Rand, designer

171 Stationery
Aluminum Extrusions, Inc., Charlotte, Mich.
George Tscherny of George Nelson & Associates, designer

The John Henry Corp., printer



Scarcely tangible as "industrial design" are the purely graphic constellations which expand the identity of a well-designed product, like the edges of an ink blot, into the prospective customer's consciousness. From a wealth of examples we show these because each represents a company's design policy and personality. An industrial firm with a seemingly unappealing product found specific identity through a spare and striking monogram which appears on everything from billing forms to ads (171). Knoll's sample kits (166) preserve the character of the custom-finished furniture they help to sell. Olivetti has so firmly established its personality through good design that it shines through many designers' interpretations (167, 168). The Herman Miller Company chooses another approach: the designer of their furniture creates all the related tags, promotion and advertisements (169, 170). Graphic design does not have to be peripheral to a single product. One group of merchants has seen good graphic design, become a 3-D adjunct to an architechtural landscape, give a whole shopping area an aura of desirability (172).

172 Signs for Northland Shopping Center, Detroit
Victor Gruen, architect; Alvin Lustig, designer

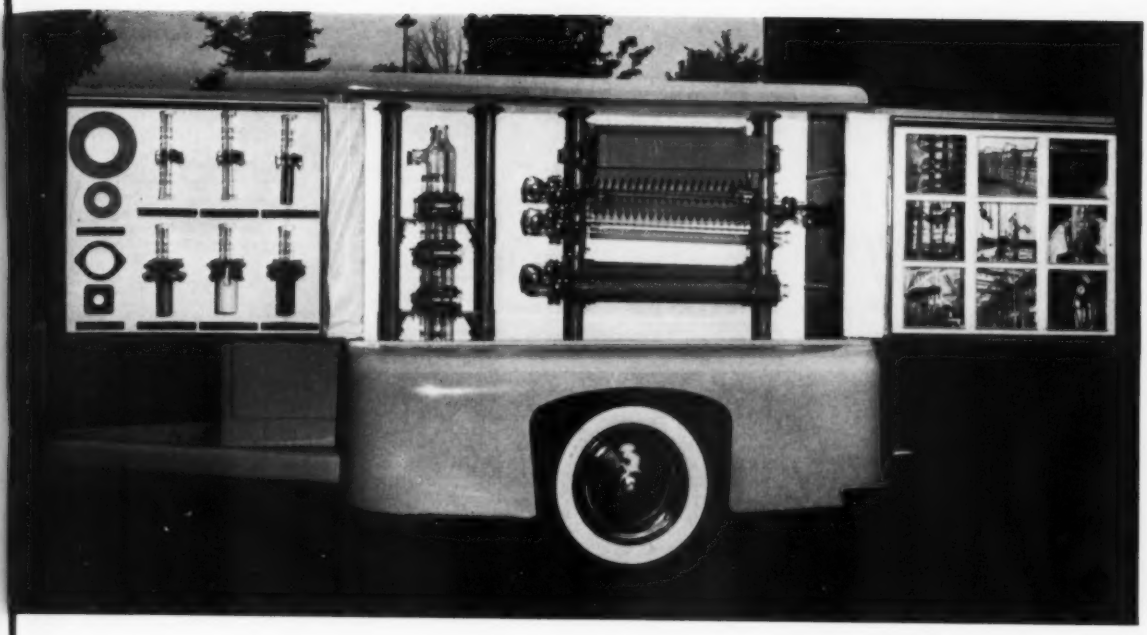
Parking lot sign pole, silver metal; letters, white on blue, black on white plywood. Entrance sign, 8" grey-blue steel H-beams; black applied Masonite letters on white; white-on-blue cross-sign; black and white sun symbol.

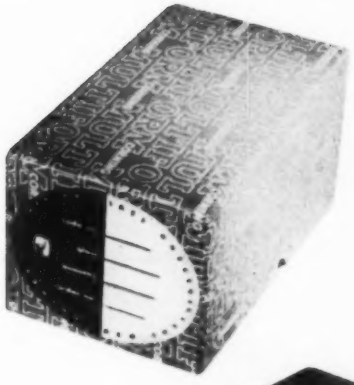


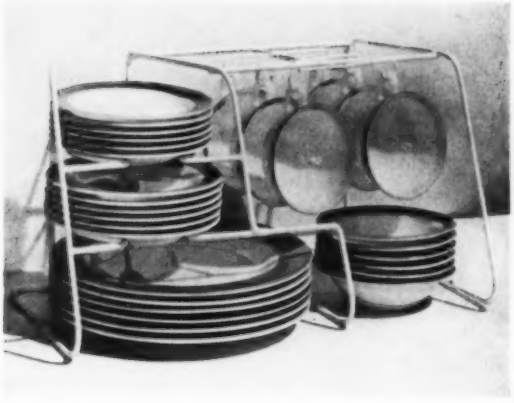
*The many facets of Corning Glass:*

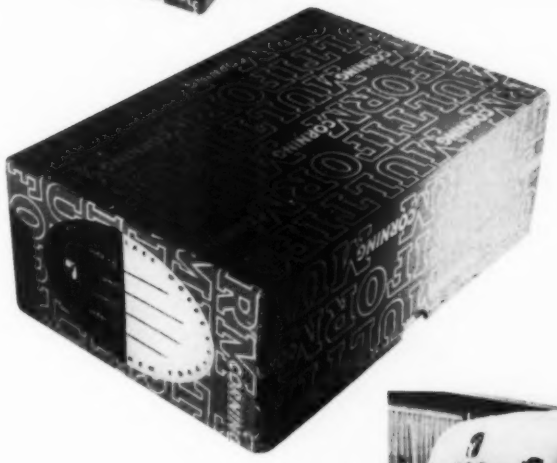
*design for selling summed up*

It would be hard to find a more fitting summary of design for selling than this varied collection by the Design Department of Corning Glass Works. It embraces product design: not only consumer products like the Pyrex dinnerware, but the rack which displays the complete set on the counter, and later stores them on the customer's shelf. It covers graphics: glass packing boxes and a report to stockholders get equal attention. Design also tells an industrial story: a 34′ van is fitted out with a complete demonstration of glass pipe in operation, fittings, and technical data; it travels to engineers and designers across the country. Design helps the company's agents: a portable exhibition, devised for purchase by authorized dealers, compresses the sales talk into a 9′ fold-out trailer with a dropdown work table for field demonstrations — a handsome piece of automotive design in itself. All of these products are part of a coordinated design program of a high order, in which kinship comes from something deeper than the simple repetition of a trademark or motif on different surfaces. When a company is convinced that everything it does sells the company name, everything it does is worth doing well.










PYREX

*Old P & G ads for the purest of soaps*
*pleased popular taste*
*with artistic fashion.*

**by Aline B. Saarinen**


# Soapmaker's art

When the first shipment of Ivory Soap—not only white and pure but also, by happy accident, able to float—was sent out in 1879, modern art had reached the threshhold. Manet, Monet, Degas and Renoir were active; in five years Seurat would paint "La Grande Jatte" and Cézanne would immortalize the landscape around L'Estaque.

Procter & Gamble, in launching its campaign for Ivory soap, was involved with art at a different level: it was pioneering art-in-advertising. As the series of ads resurrected for Ivory Soap's 75th anniversary entertainingly suggest, the purity of that art was hardly a match for the 99 44/100% purity of the product, yet they are interesting as the documents of a company which saw a way to cater to public taste in a spirit of cultural uplift. On the one hand, it was calling on the best popular illustrators of the day to supply

*IVORY BABIES, 1879 and 1954: Something of the awkward charm and strength of nineteenth century American primitive portraits remains in the "first baby" (opposite), a striking contrast to the "cute and adorable" soap opera baby of 1954.*


the naturalistic genre which is always in public demand. On the other, it was offering all kinds of "fine art" in the watered-down versions which make it palatable.

You could even get reproductions of this "fine art" in exchange for a number of wrappers. Many a nursery in which a Mary Cassatt print would have been too avant-garde was graced with somewhat gentler versions in Jessie Willcox Smith's childhood scenes. And what matter if a cake of Ivory Soap was discreetly tucked in the hand of a Michelangelesque figure, or if the halo of a bather-turned-saint in a Fra Angelico scene was conveniently formed by the "O" in the trade name? If cleanliness was next to Godliness it was O.K. if it was next to fine artiness, too.

It is too bad that around 1920 Procter & Gamble washed out on its art program. We might have had Cubistic soap cakes, or a 99 44/100% pure Mondrian, or a surrealist scene where the soap is still floating though bathers Dali in the tub.

Since the 1920's, the Ivory Soap ads have followed that current in American advertising, in both paint and photograph, which might be called visual soap opera-ism, images saturated with sweet sentimentalism. Not even staunch Norman Rockwell genre. And yet, perhaps, the sales-getting, national-outdoor-poster-award winning Ivory Babies of today have "fine art" antecedents in the soap opera-ism of another time. Are they not heirs of the curly-haired, pink-cheeked tots in English nineteenth-century portraits, for whose inevitable melancholy collies or little pony or gently tossed ball, the towel or suds or cake of soap is the contemporary substitute?

**1880's**

WHEN cheerful light of day has fled,
When people have retired to bed,
And on the clothes-line may be seen
The weekly washing hanging clean
And white beyond our greatest hope,
Through using famous IVORY SOAP—

Then comes the cunning Brownie Band,
From every quarter of the land,
And takes possession of the hall,
The tub, the kitchen, pump, and all;
With busy hands they work and play
And use the IVORY SOAP till day.

THE BROWNIES, 1883: Are the beguilingly mischievous elves created by popular illustrator Palmer Cox ancestors of Walt Disney dwarfs or genteel descendants of Bosch's 16th-century busy monsters?

GENRE SCENE, 1894: This grinning pickanniny (in an ad which first used the famous slogan) was drawn by E. W. Kemble, first illustrator of Huckleberry Finn. He was a Norman Rockwell of his day.

THE GIBSON GIRL, 1899: "Miss Blossom," opposite, is a calendar-art version of the glamor-girl of the Gay Nineties. She could be had in 14" x 17" size (without printing) in exchange for ten wrappers.


THE SULTAN.

A SULTAN sat by Danube's tide,
And sore distressed aloud he cried;
While like the waters to the sea
His tears ran down both fast and free.
A passing stranger said: "My friend,
Why do those tears so fast descend?"
"Alas!" he sobbed, "I've lost all hope;
I've lost my cake of IVORY SOAP.
No more in pride through town I'll go,
With garments clean and white as snow;
But in disgrace must move about,
By scornful fingers pointed out."
"Not so," the noble stranger cried,
"I have a piece and will divide";
And from his coat-tail pocket drew
A cake and broke it fair in two.
Then rose in joy the Sultan gray,
And made that man a Turkish Bey,
With servants kind and Viziers sage,
And fifty wives to cheer his age.

THE SULTAN, 1883: Little did Delacroix and the other Romantic painters of the 1830's suspect their taste for exotic scenes and turbaned Turks would carry on into soap ads, as they did in this Cox series.

PROPRIETARY ARTICLES 88

Drawn for THE CANTON CO.

Ivory Soap. It Floats

Miss Blossom.


Pure Ivory, (so painters knew,)
Brought out the beauties, when they drew
The fine-arched brow and dainty dress
That marked the style of loveliness
Which seems so quaint to me and you.

Now, altered fashions quite eschew
The empire waist and high-heeled shoe;
Yet modern beauties need, no less,
Pure Ivory.

For May, whose skin is like the hue
Of orchard sprays when Spring steals through—
Her hand, and hair, and summer dress
So soft, their touch seems a caress—
Finds Ivory her dependence, too—
Pure Ivory Soap.

Any person wishing an enlarged copy of this picture may mail us to Ivory Soap Wrappers, on receipt of which we will send a copy (without printing) on enamel plate paper, 14 x 17 inches, a suitable size for framing.

IT FLOATS.

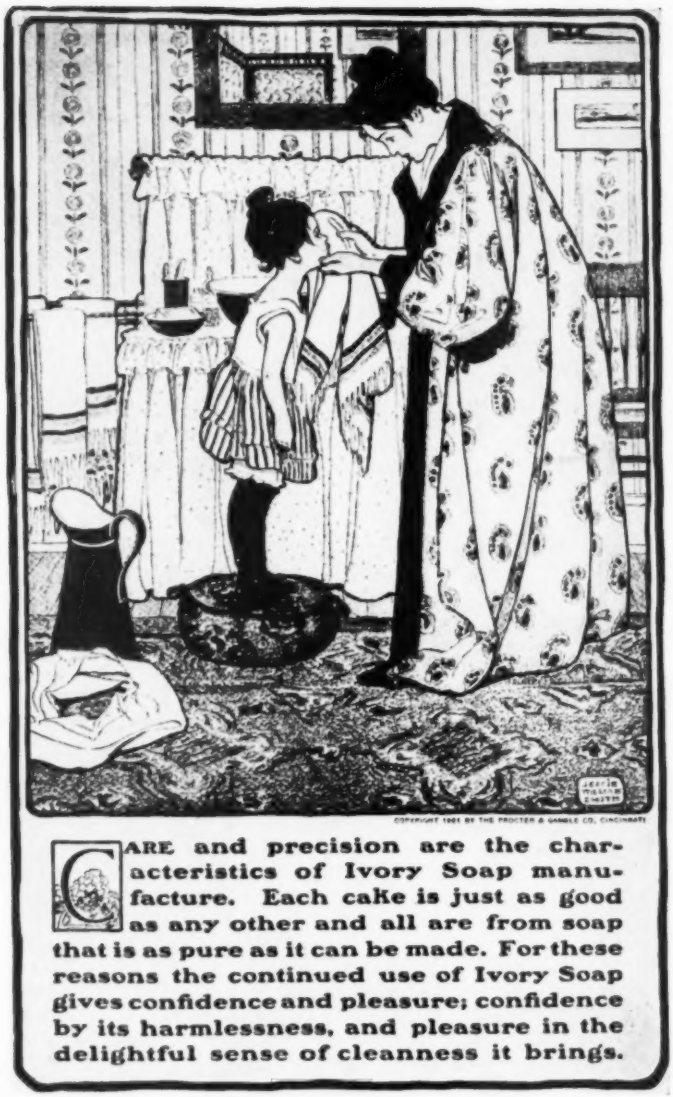
**1900's**

CASSATT-TYPE, 1901: Out of the old designs of Kate Greenaway illustrations and Mary Cassatt's prints came the fabulously popular childhood scenes by Jessie Willcox Smith (right).

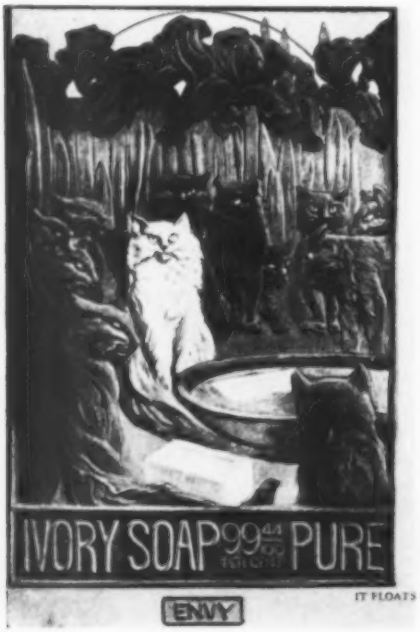
BEARDSLEY-TYPE, 1909: Shades of Aubrey Beardsley's hauntingly macabre illustrations in the "Yellow Book" appear in a daringly indirect piece of advertising.

FRA ANGELICO-TYPE, 1900: How subtle can ads get? The saint is really a bather, the Classical sarcophagus is a bath-tub and the halo is formed by the trade name!

IMPRESSIONIST-TYPE, 1909: The text says the price of Ivory is unchanged in 10, 15, yes, 20 years. So, as a matter of fact, is the style of the Childe-Hassam-like scene.



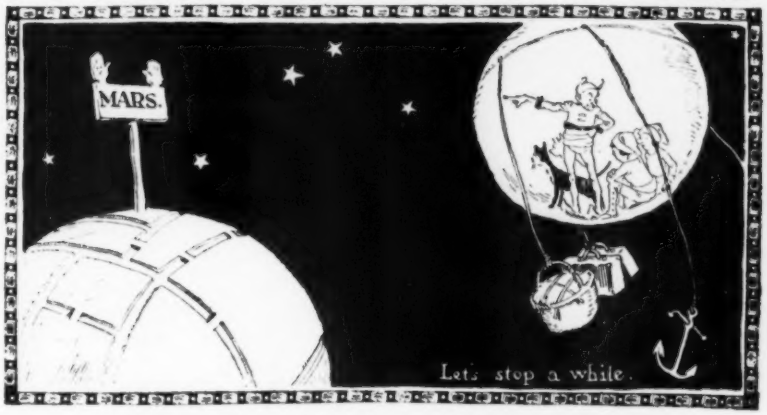
CARE and precision are the characteristics of Ivory Soap manufacture. Each cake is just as good as any other and all are from soap that is as pure as it can be made. For these reasons the continued use of Ivory Soap gives confidence and pleasure; confidence by its harmlessness, and pleasure in the delightful sense of cleanness it brings.




IVORY SOAP known no season. It is used winter, summer, spring and fall with equal satisfaction. Whether the skin is cold and chapped or hot and tanned, Ivory feels mild and soothing. It contains nothing that can irritate at any time. It is made of the highest grade materials. It is so perfectly made that it has no "free" alkali or unsaponified oil. It is mild, pure soap—nothing else.

IVORY SOAP..... IT FLOATS .....99 44/100% PURE

# IVORY ADVENTURES



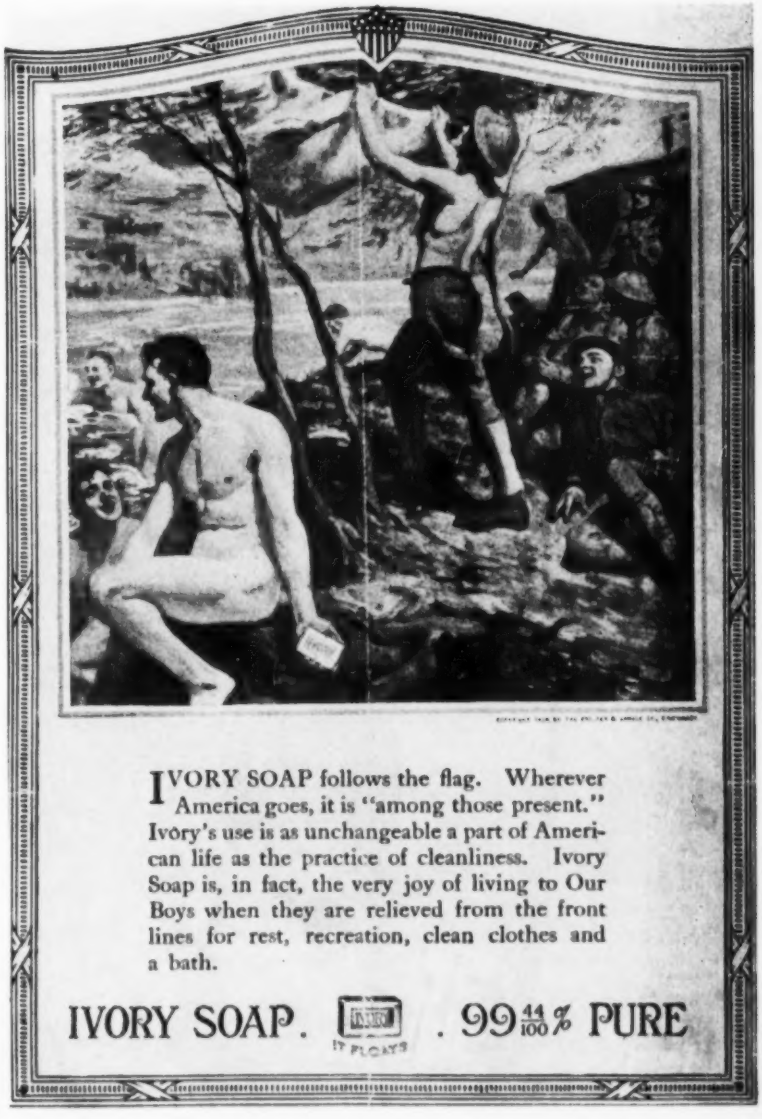

·: MUDDY MARS CHILDREN :·

**1910's**

DAILY LIFE, 1914: Like the steel engravings which were popular in book and magazine illustrations, this genre scene also has some of the sweet piety of a Millet.

SCIENCE-FICTION, 1916: The canals on Mars are the one concession to scientific fact in the John Martin's Book interplanetary trip of these pre-jet, pre-atomic days.

RENAISSANCE RECALL, 1918: Michelangelo would be surprised to see a composite of two of the Sistine Ceiling figures in the soap-holding doughboy at the left.



IVORY SOAP follows the flag. Wherever America goes, it is "among those present." Ivory's use is as unchangeable a part of American life as the practice of cleanliness. Ivory Soap is, in fact, the very joy of living to Our Boys when they are relieved from the front lines for rest, recreation, clean clothes and a bath.

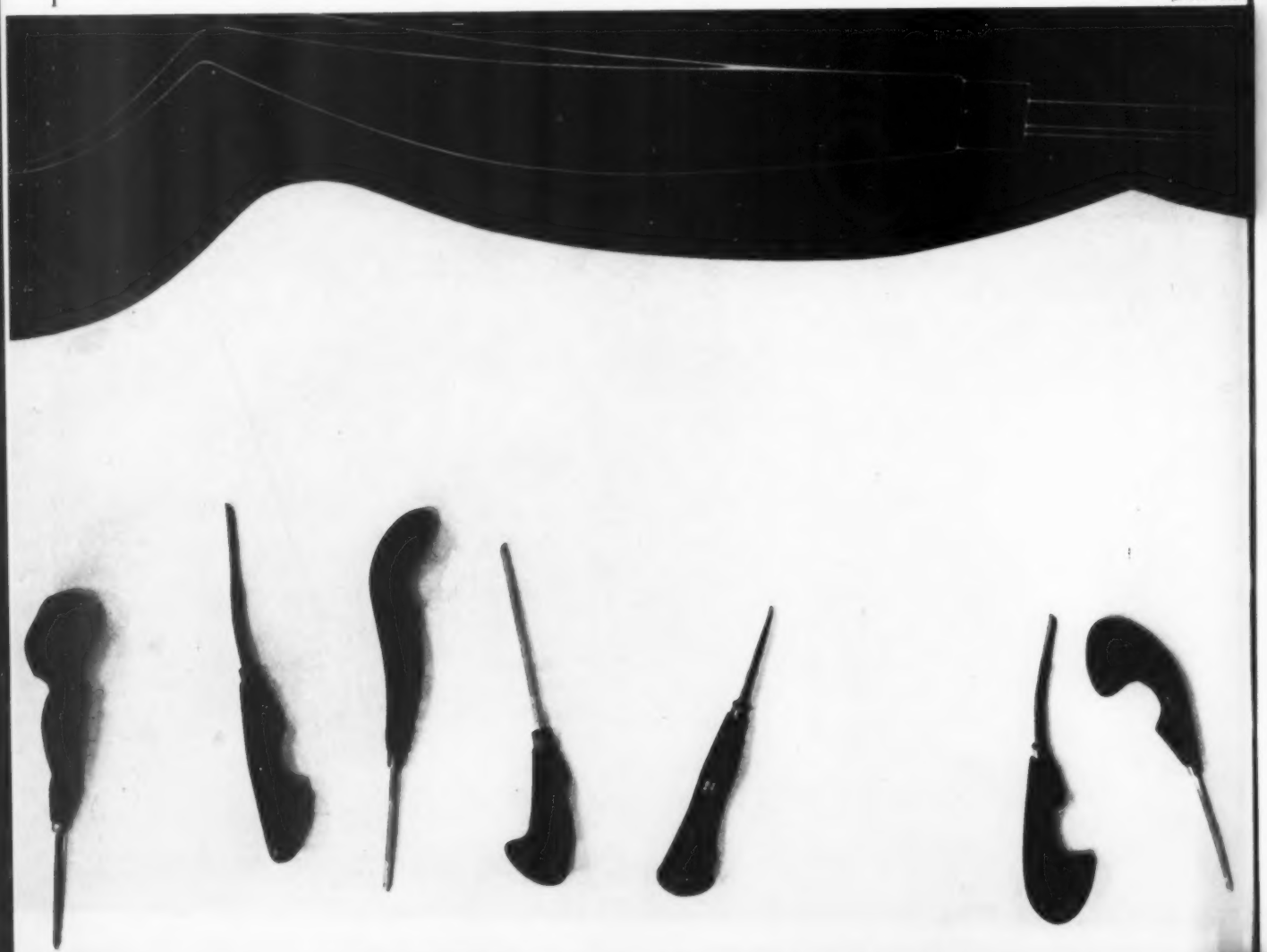
IVORY SOAP. IT FLOATS . 99 44/100% PURE

dunbar

**MILAN CLOSE-UP** *American designers were major contributors to the international industrial design section at the Tenth Triennale*

1

photo: Casali

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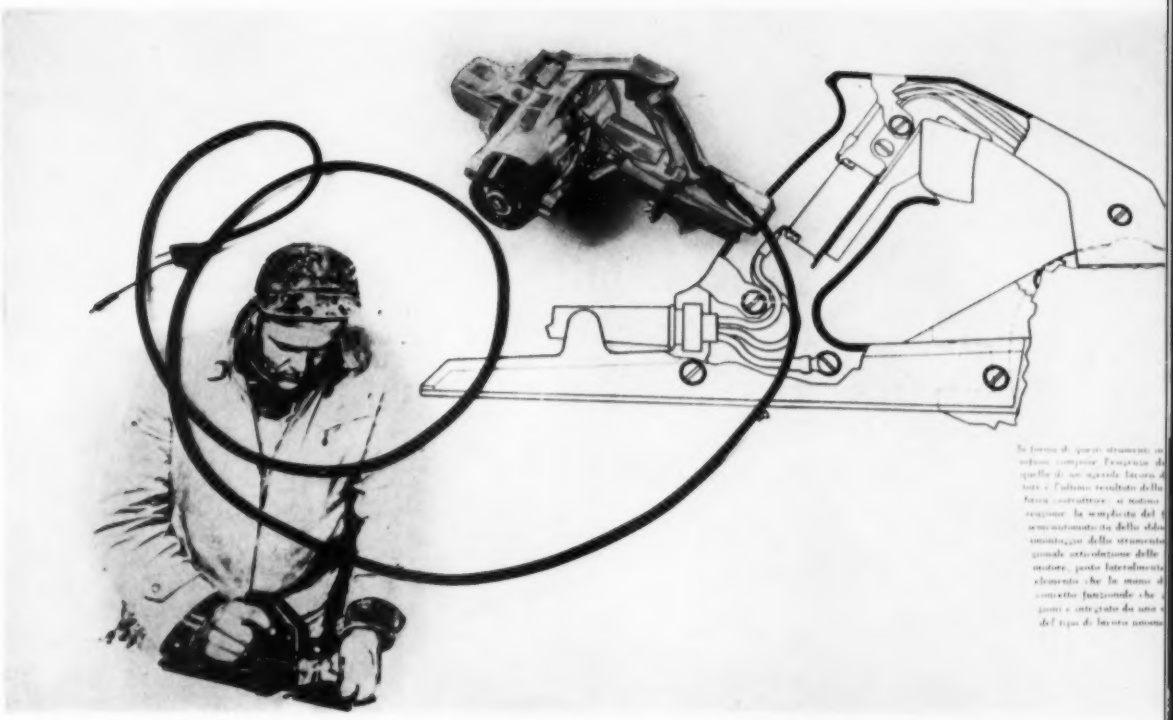
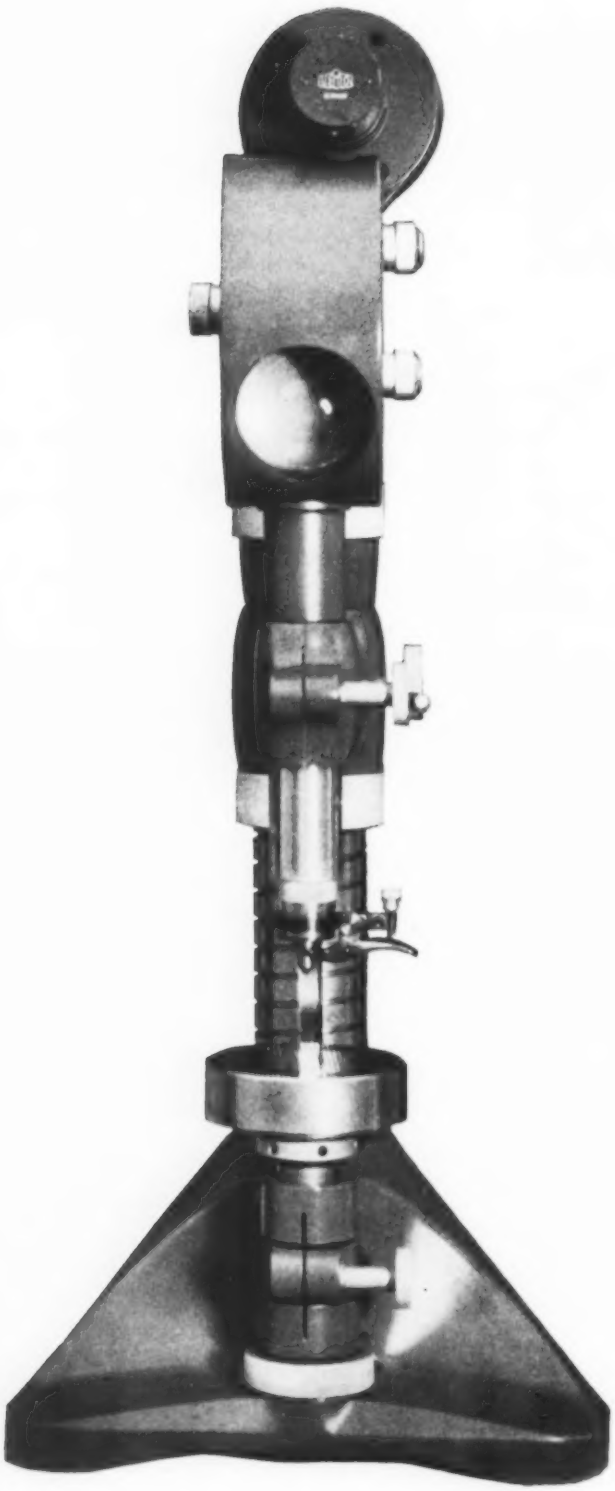


fotogramma

Milan's Tenth Triennale, surveyed in October ID, featured designs from 17 countries; one of its major exhibits, the industrial design section, warrants a closer look. Of the 150 mass-produced objects displayed on low white tables lighted by giant canvas shades, 40 were American designs, submitted by the Society of Industrial Designers; they included a Johnson outboard motor, Brooks Stevens, consultant designer; Millers Falls electric hand drill, L. Garth Huxtable, consultant designer; Porter Cable electric plane, Peter Muller-Munk, consultant designer; IBM electric typewriter, Eliot Noyes, consultant designer (2-5). Italian products included hand tools (1).



6

Some of the mass-produced objects shown in the foreign pavilions at the Tenth Triennale:

6 Leitz toolmaker's microscope for checking gauges and precision parts, with accuracies to one micron. Germany.

7 Krups' baby scale for the Italian market is easy to read, and can be adjusted quickly. Germany.

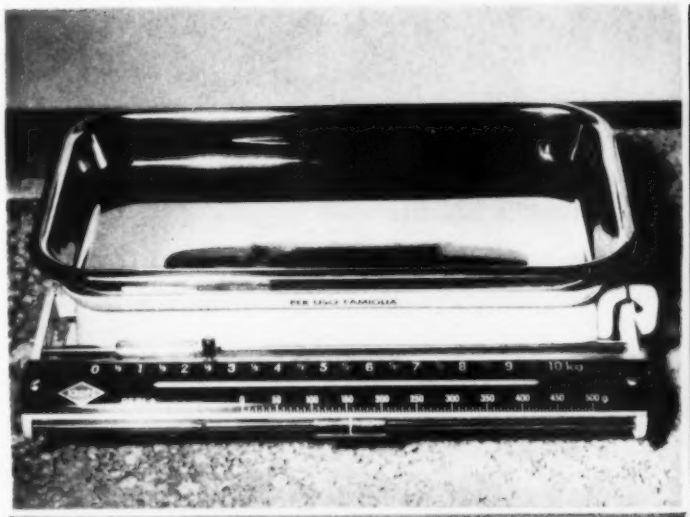
8 Japy coffee pot has extra knobs on the top section for easy removal without burning the fingers. France.

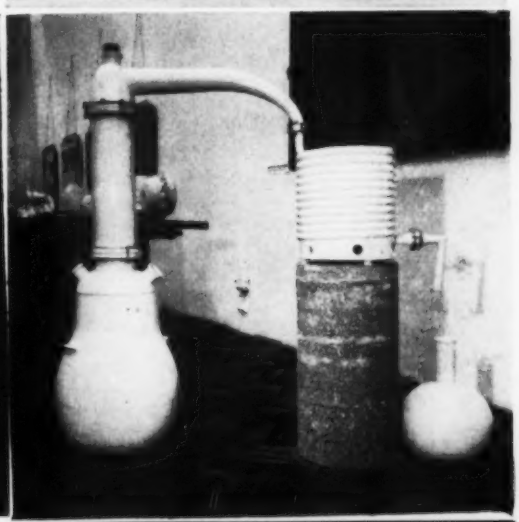
9 Two rounded dial treatments for molded plastic telephones. Germany.

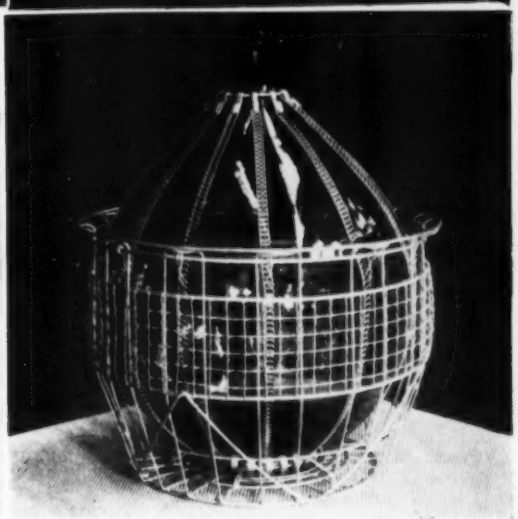
10 Porcelain containers and equipment for industrial use. Germany.

11 Cast iron skillet with ribbed surface and integral grease drain-off. France.

12 Expandable wire mesh holder for commercial wine jugs. Italy.







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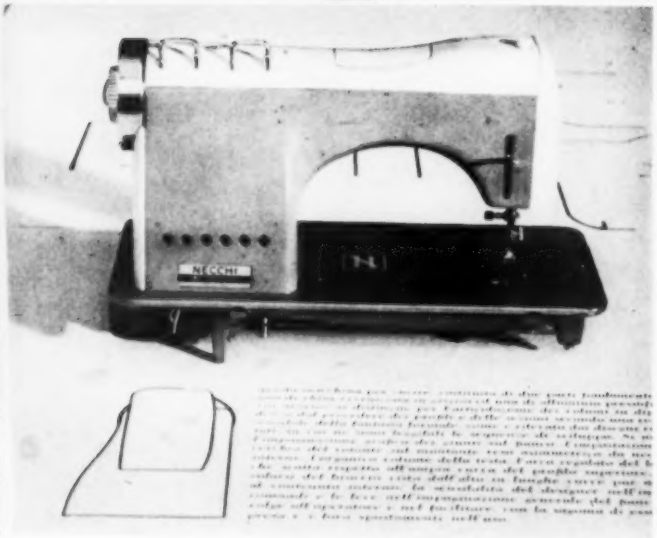
**These three Italian designs, shown at the Triennale, will be sold on the American market. Gio Ponti designed for American Standard the slim washbowl and the sleek toilet, whose form suggests that of the Winged Victory of Samothrace. The Necchi sewing machine with two-tone body is a factory design.**

casali

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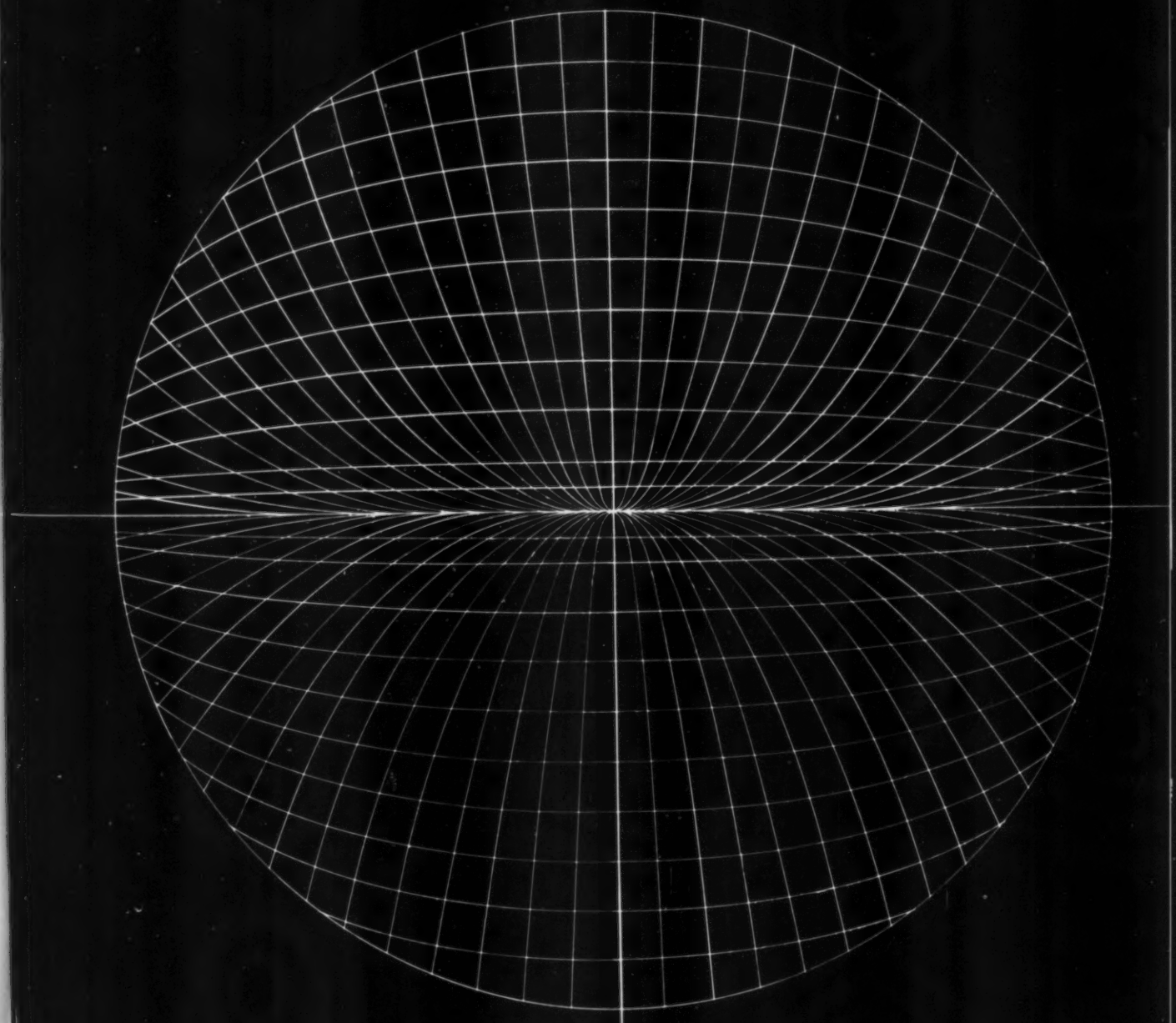
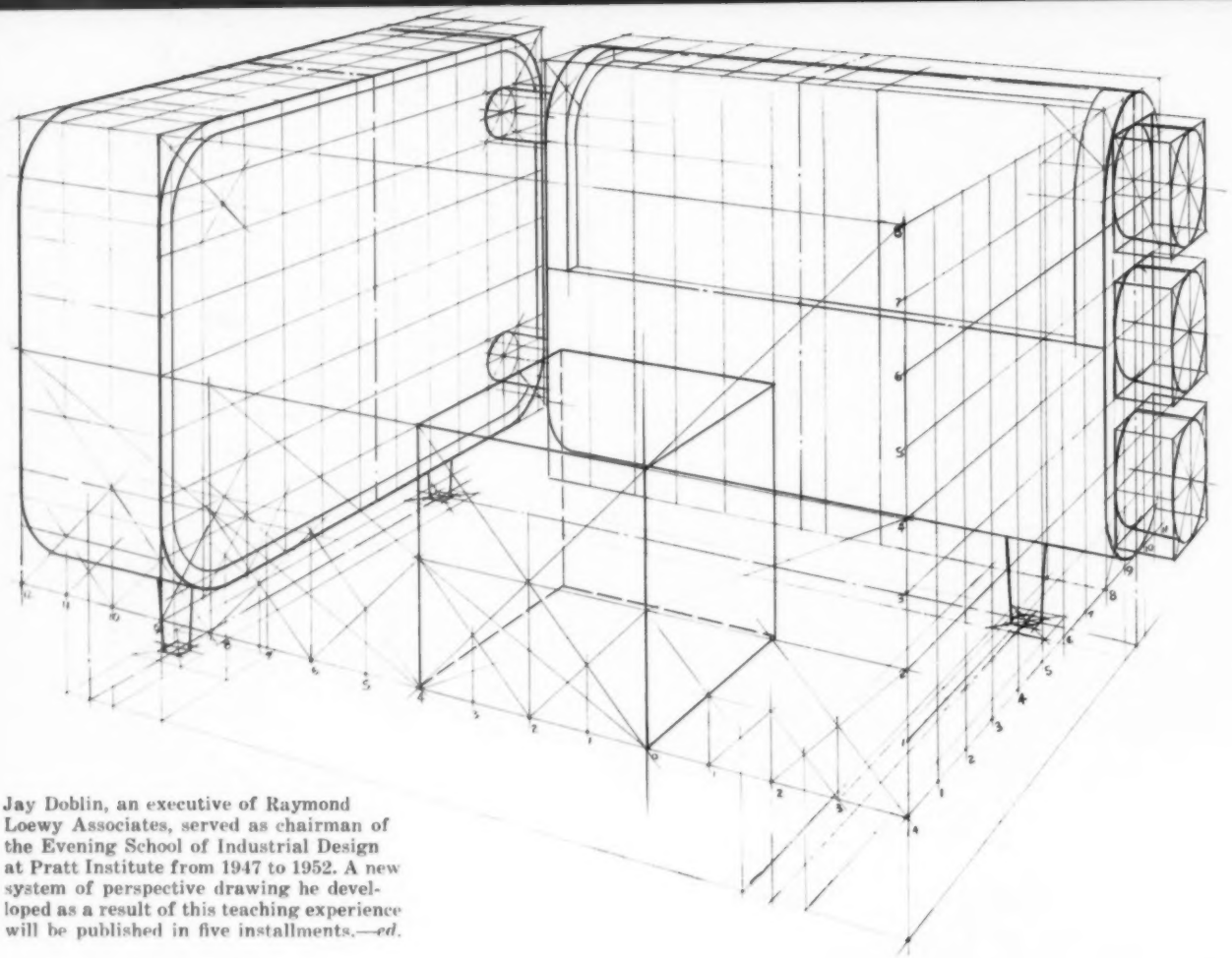
# PERSPECTIVE

*a new system for designers*



*by Jay Doblin*



Jay Doblin, an executive of Raymond Loewy Associates, served as chairman of the Evening School of Industrial Design at Pratt Institute from 1947 to 1952. A new system of perspective drawing he developed as a result of this teaching experience will be published in five installments.—*ed.*

*The serious designer, faced with the problem of solidifying and transmitting design ideas, finds no single tool more effective—or more economical—than skill in perspective drawing. But it is an unwieldy tool, for the traditional methods of drawing in perspective are complicated and time-consuming. What is more important, they often result in inaccurate drawings.*

*These traditional systems were developed largely from the needs of the architect, who generally develops his ideas in plan, projecting drawings from the plan when his design is completed. A plan view of a tumbler or a juke box is obviously not very informative, however. The industrial designer must work out his ideas in the round, and although he can work with models or mock-ups, this is slow and costly. For him, perspective is not simply a means of communication but a working tool as indispensable as the architect's plans. He wants a simple method of creating on a two dimensional surface an accurate illusion of a three-dimensional object—a system that does not depend on plan views or elaborate constructions.*

*Generally speaking, there are two ways of drawing in perspective. One depends on the trained eye to judge convergence, depth, etc., and is usually called free-hand drawing, although drafting instruments may be used. The other involves the use of one of the constructional systems, and is commonly referred to as mechanical perspective.*

*During the four years that I served as chairman of the Evening School of Industrial Design at Pratt Institute I became increasingly dissatisfied with the two methods in general and the mechanical systems in particular. Both are important, and both were taught in the Evening School, but we began with the free-hand system because the over-all training was intended to sharpen the students' vision in preparation for design work.*

*We found that the free-hand system served the gifted students well but that their temperaments, when exposed to the tedium of the mechanical systems, often prevented them from making accurate drawings. The less talented students, who were unable to draw perspectives by eye, made poor mechanical perspectives because the systems themselves were deficient. Moreover, the mechanical systems did nothing to encourage their free-hand skill. This is not, unfortunately, just a student problem; similar difficulties arise in professional offices.*

*Badly drawn perspectives are almost without exception the result of three fundamental errors, all of which are inherent in the traditional perspective systems:*

*1. The angle of vision may exceed the limits of accurate drawing.*

*2. Because the systems are complex and tedious, the margin of error in the final drawing is multiplied.*

*3. The designer often fails to predict accurately the view, size, or scale of the drawing.*

*The number of perspective views that can be drawn of a single object is, of course, infinite, varying with each position of the observer. Most perspective systems are based on unlimited cases of perspective, but the one I will present is based on just three technical relationships of the observer and the object. It has unlimited applications, however: by using these three situations with their few clear rules, it is possible to draw any perspective view with the basic drafting instruments. The system has these important advantages:*

*1. It results in photographic accuracy.*

*2. It allows easy predetermination of the view, scale, and size of the drawing.*

*3. It encourages free-hand skill.*

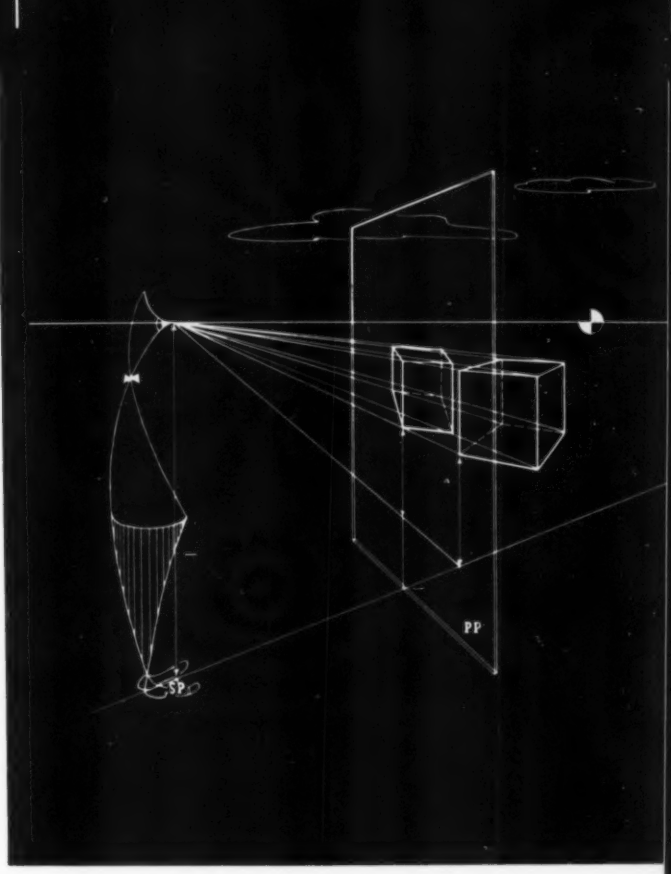
*Any perspective system looks complicated in print. I suggest that you try this new system at your drafting board to see how simple it is.*

**The basic principles of linear perspective**

We are all aware of the way objects appear to diminish and converge as their distance from us increases. Stated simply, perspective drawing is a way of reproducing this appearance of reality on a flat plane. Since we know that objects do not really diminish and can readily understand drawings in which they maintain their true proportions, practical perspective might be described as a way of introducing systematic distortions into drawings.

There are various methods of drawing in perspective, but all of them are based on the same underlying principles:

1. A perspective drawing creates the illusion of reality by relating the *observer*, the *object*, and the *picture plane*.
2. The observer stands in a fixed position and sees with one eye, like a camera. This fixed position is called the *station point*.
3. The surface on which the drawing is made is called the *picture plane*, and is assumed to be a plane placed perpendicularly between the observer and the object. Lines drawn between the object and the observer's eye will intersect the picture plane at various points. A perspective drawing is made by plotting these points and connecting them. This is easy to do if the picture plane is a piece of glass; then the lines between the observer and the object are rays of light; the image on the glass is a perspective view and can be traced directly. Usually, however, the picture plane is a piece of paper on a drafting board, and the perspective drawing must be projected on it by one of the perspective systems or visualized and sketched free hand.
4. The horizon is assumed to be at an infinite distance from the observer, so that objects on the horizon appear to be points. These points are called *vanishing points*.
5. Although in perspective drawing we are concerned with the diminishing of objects, for convenience we break these objects into lines and planes and study the way the lines and planes diminish. Horizontal planes are generally more informative than vertical planes because they usually involve two vanishing points. Vertical planes usually have their vertical edges parallel to the picture plane and therefore involve just one vanishing point.
6. The *cube* is the basic form in perspective, and will be used as the object in the initial part of the text, because it can be used as a perspective unit to measure height, width, and depth concurrently. Theoretically, the perspective cube can be multiplied and divided into any combination of height, width, and depth to provide a basis for drawing any object.




Current texts set forth three basic working methods for constructing perspective drawings. Before proceeding to the new system, it will be helpful to review these three traditional systems. I shall not present a complete description of them, but simply show how they are used to erect a basic perspective cube. These systems are all accurate for drawing the cube; they admit inaccuracies as the scope of the drawing increases.

**The two elevation system**

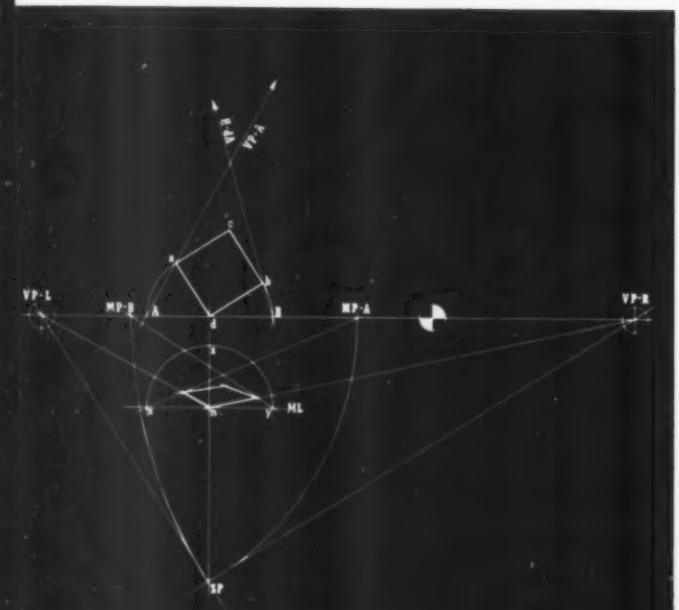
The perspective drawing is derived from two orthographic drawings, a top view and a side view, which must be projected through two picture planes toward two observers.
*Advantage*: The system is useful if top and side views have already been made.
*Disadvantages*: The amount of drawing is time-consuming and conducive to error and confusion. If the station points are remote the construction will be unwieldy. The vanishing points cannot be located until the drawing is completed. Size, view, and scale are difficult to foresee.
When orthographic drawings exist, the side view must usually be redrawn at the proper rotation. If drawings do not exist, the labor required is prohibitive.

**The top plan system**

The top plan system is easier to understand and faster because it requires only a top view and vanishing points.
*Advantages*: The system is useful if a plan view has already been made. It is less complex than the two elevation system and easier to visualize. It uses an actual-scale height measurement. It provides the vanishing points immediately.
*Disadvantages*: The location of a station point and long parallels can be cumbersome.

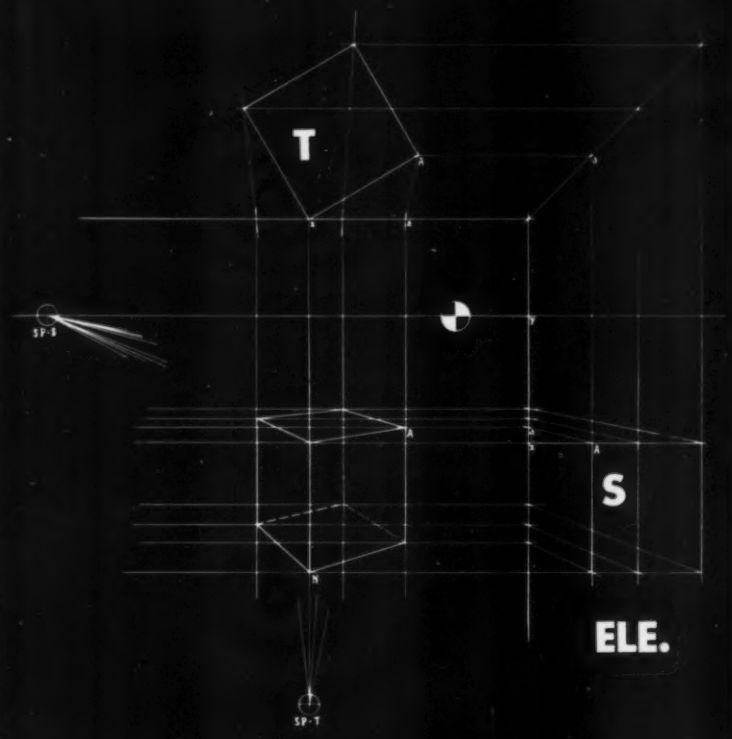
**The measuring point system**

The sides of the cube are derived from vanishing points; the depth of the cube is established by the use of measuring points, which are actually the vanishing points of lines relative to the cube.
*Advantages*: No plans or elevations are necessary. The cube is easily multiplied directly from the basic construction.
*Disadvantages*: The theory is complex (below). Construction of the station points and large right angle is cumbersome.



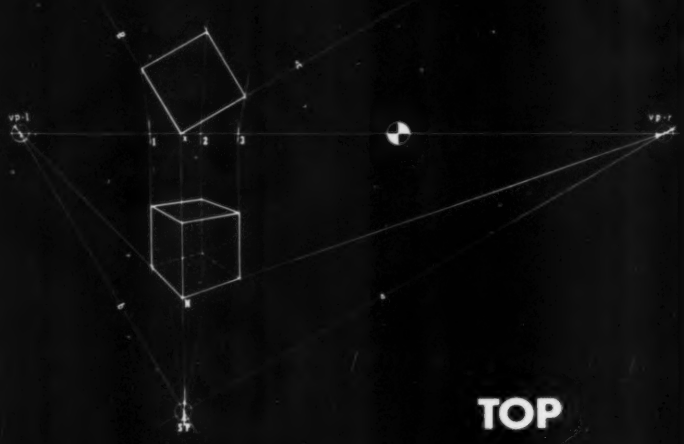

**To locate the measuring points of a cube.**

1. Draw a top view *abcd* of the cube and place it against the horizon at *d*.
2. Drop a vertical at *d* and locate *SP*.
3. Draw parallels to the sides of the cube from *SP* to locate *VP-L* and *VP-R*.
4. Measuring points *MP-A* and *MP-B* can be located as follows: Rotate point *a* from *d* to the horizon, locating point *A*; draw a line from *A* through *a*; draw a parallel to *Aa* from *SP* to the horizon, locating *MP-A*; this is the vanishing point of line *Aa*. Repeat for point *b*, locating *MP-B*. Since *d* and *VP-L* are equal angles because their sides are parallel, we can find *MP-A* and *MP-B* simply by rotating *SP* from *VP-L* and *VP-R*.
5. Find the nearest angle *n* of the cube by measuring any desired distance from *d*.
6. Draw perspective lines from *n* to construct the nearest angle.
7. Draw a measuring line horizontally through *n*.
8. Mark the length of the cube side on either side of *n*, locating *x*, and *y*.
9. Draw the line *Aa* in perspective by connecting *x* with *MP-A*. Where this line intersects the line from *n* a corner of the cube will appear. Repeat for *Bb*. We now have all the points necessary to complete the cube.



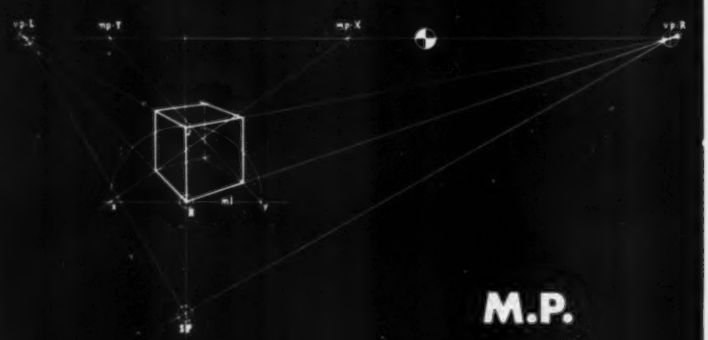

**To draw a cube using the two elevation system:**

1. Draw a top view *T* of the cube and place it against the picture plane at *x*.
2. Locate a station point *SP-T* by dropping a perpendicular at *x* and scaling off any desired distance in relation to the cube size.
3. Connect *SP-T* to all important points on *T* and note their intersections with the picture plane.
4. Draw a side view *S* of the cube and place it against a side view of the picture plane.
5. Locate eye level *y* by measuring any desired distance along the side view picture plane from the top (*x*) of *S*.
6. Locate the side view station point *SP-S* by drawing a line horizontally from *y* equal to the distance between *SP-T* and the top view picture plane.
7. Connect *SP-S* to all important points on *S* and note their intersections with the picture plane.
8. Drop all points on the top view picture plane.
9. Extend all points on the side view picture plane horizontally.
10. Cross-reference all points on the grid formed between the top and side views of the cube (note cross-referencing of points *A* to locate *A* in perspective) and connect them properly to form cube.



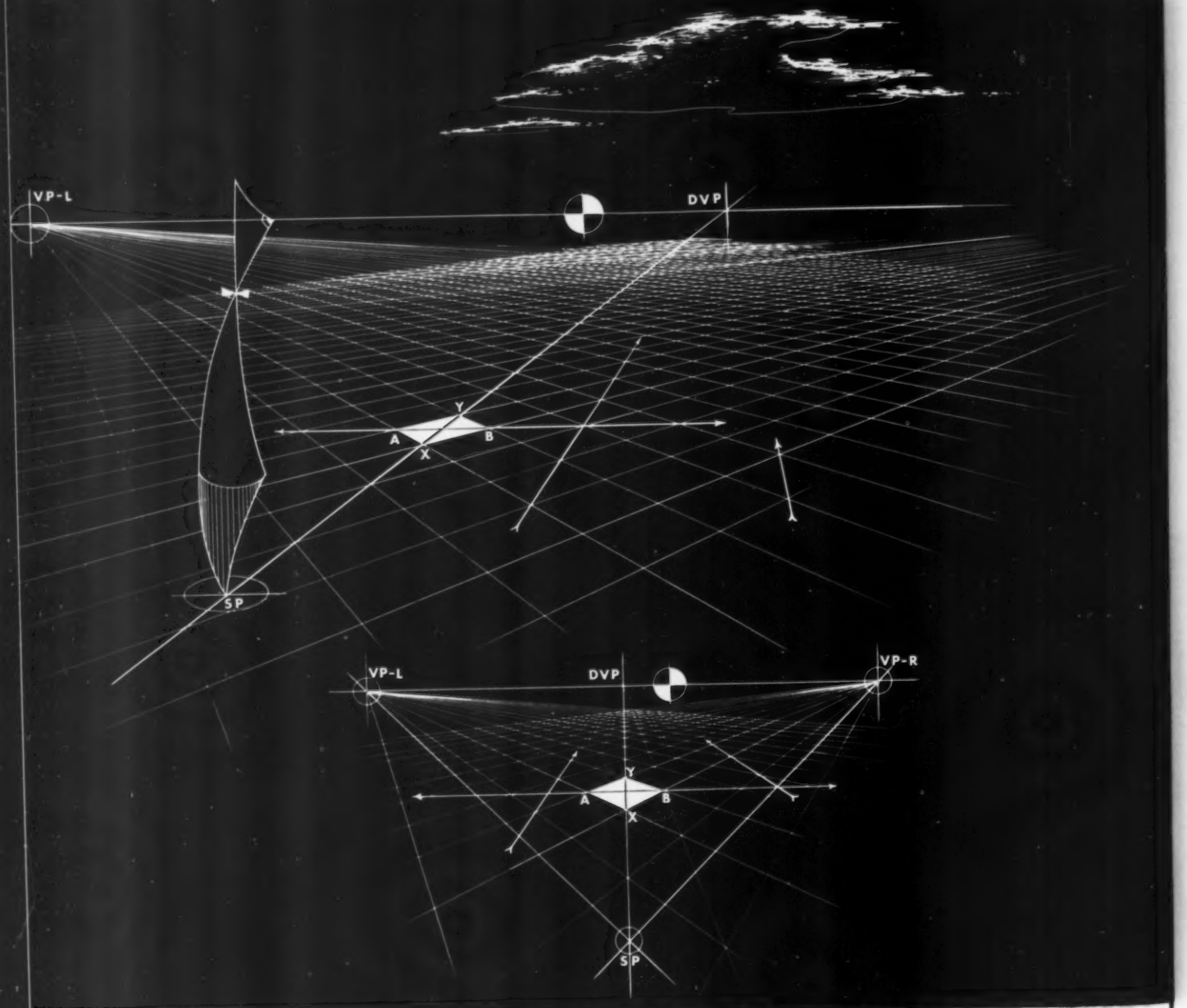

**To draw a cube using the top plan system:**

1. Draw a horizontal line to serve dually as horizon and picture plane.
2. Draw a top view of the cube at any angle with nearest corner touching the picture plane at *x*.
3. Locate the station point *SP* by dropping a perpendicular from the horizon at *x* and scaling off any desired distance in relation to cube size.
4. From *SP* draw lines *a* and *b* parallel to sides *A* and *B* to intersect the horizon at *vp-l* and *vp-r*. These points are the vanishing points.
5. Connect *SP* with all important points of the cube and note the intersections at the picture plane (*1*, *2*, and *3*).
6. Drop verticals from *1*, *2*, and *3*.
7. The distance of the perspective cube from eye level is laid off on *SP-x*, locating the nearest angle *N* of the cube. *xN* cannot exceed *x-SP*.
8. Lay off the height of the cube from *N* toward *x*.
9. Draw perspective lines from the bottom and top of the cube height to *vp-l* and *vp-r*.
10. At the intersections of the perspective lines and the verticals draw the remaining perspective lines to complete the cube.




**To draw a cube using the measuring point system:**

1. Draw a horizon.
2. Set up two vanishing points *vp-L* and *vp-R*.
3. Drop a vertical from any point on the horizon, depending on the view desired.
4. Construct a right triangle with the distance between *vp-L* and *vp-R* as its hypotenuse and its apex on the vertical locating station point *SP*.
5. Divide the vertical to any scale according to the distance of the observer from the object and place the nearest angle *N* at any desired distance from eye level.
6. Draw measuring line *ml* horizontally through *N*.
7. Lay off the true height of the cube from *N* to *z* and rotate it to the measuring line, locating *x* and *y*.
8. Draw perspective lines to *N*, forming the nearest angle of the cube.
9. Locate measuring points *mp-Y* and *mp-X* by rotating *SP* from *vp-L* and *vp-R*.
10. Connect *mp-X* to *x* and note its intersection with the perspective line from *N*.
11. Repeat for *mp-Y* and *y*.
12. Draw verticals at the intersections and complete cube by drawing the remaining perspective lines.


VP-L
DVP
Y
A
B
X
SP
VP-L
DVP
VP-R
Y
A
B
X
SP

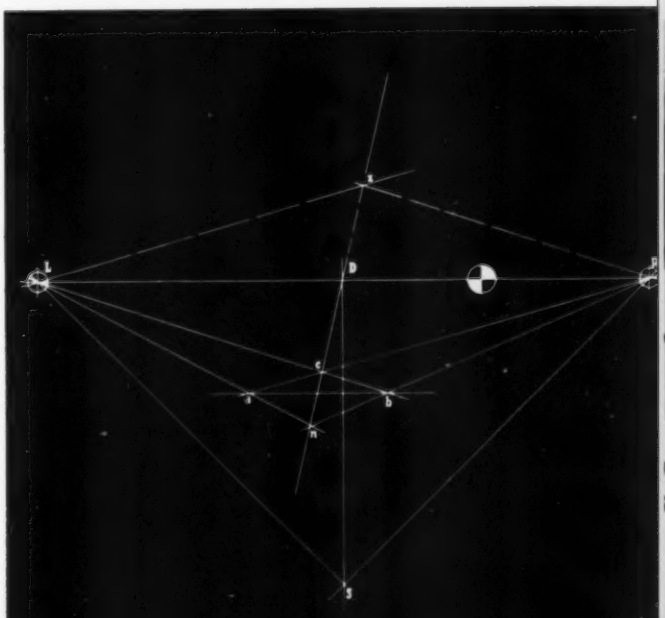
The traditional systems we have just reviewed give general rules that can be used to develop any perspective view. However, in the opening section it was mentioned that an accurately constructed cube can theoretically be multiplied and divided indefinitely. This means that if we can find any views of the cube that are particularly easy to draw, we should be able to multiply these basic cubes to provide cubes at every angle to the observer.
The simplest view of the cube is the 45° oblique view. Because this view is easy to construct and lends itself to the development of additional information, it will be used as a starting point for our discussion.

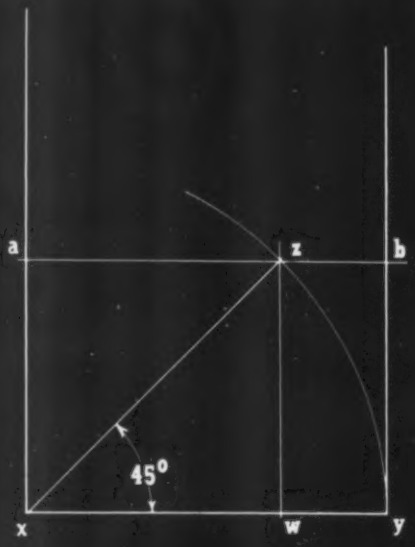
### 45° oblique perspective

To understand 45° oblique perspective, examine the case of an observer standing on a tile floor that extends to the horizon in every direction. He cannot see all of this vista at once. If he turns so that his line of sight is at an angle of 45° to the sides of the tiles, he will notice several things:
1. The diagonals of all the tiles within his range of vision seem to meet at a single point on the horizon directly in front of him. This point will be called the *diagonal vanishing point* or *DVP*.
2. The sides of the tiles converge at equal angles to the right and left toward their respective vanishing points (*VP-L* and *VP-R*).
3. If he examines one tile directly in his line of sight (*ABXY*) he notices that the back corner of the tile is directly behind the front corner (*Y* is behind *X*).
4. On further examination, he sees that the side to side diagonal (*AB*) is horizontal and parallel to the horizon. This fact is extremely important to our system. Proof of it is given below.

### Proof that the diagonal of the square in 45° oblique perspective is horizontal

Given the triangle *LnR*, in which RL is bisected at *D* by *nD*; *nL* is intersected at *a* by *Ra*; *Rn* is intersected at *b* by *Lb*; *Ra* and *Lb* intersect each other at *c* on *nD*;
To prove that *ab* is parallel to *LR*:
1. Extend *nD* and mark off *DZ* equal to *Dc*.
2. Since *RD* equals *LD* and *DZ* equals *Dc* and we know that the diagonals of a parallelogram bisect each other, *RLcZ* is a parallelogram.
3. Since *bc* and *RZ* are parallel, they divide the angle *RnZ* in the same ratio and *nb*/*bR* equals *nc*/*cZ*.
4. Similarly, since *ac* and *LZ* are parallel lines, they divide angle *LnZ* in the same ratio, and *nc*/*cZ* equals *na*/*aL*.
5. Therefore *nb*/*bR* equals *na*/*aL*, and since lines *nR* and *nL* are divided in the same ratio, the segments mark off parallel lines.






Since the diagonal of the square in 45° oblique perspective is horizontal and parallel to the picture plane, it provides a constant measure which can be used to erect a cube.

**Construction of the diagonal plane of a cube in 45° oblique perspective**

To construct the diagonal plane of a cube, given a horizontal diagonal *xy*:
1. Erect the verticals at *x* and *y*.
2. Draw a diagonal line at 45° from *x*.
3. Rotate point *y* from *x* until it intersects the diagonal, locating point *z*.
4. Draw a horizontal though *z*.
Since *xz* equals *xy*, *axzw* is a square using length *xy*, and *axby* is the diagonal plane of that square.

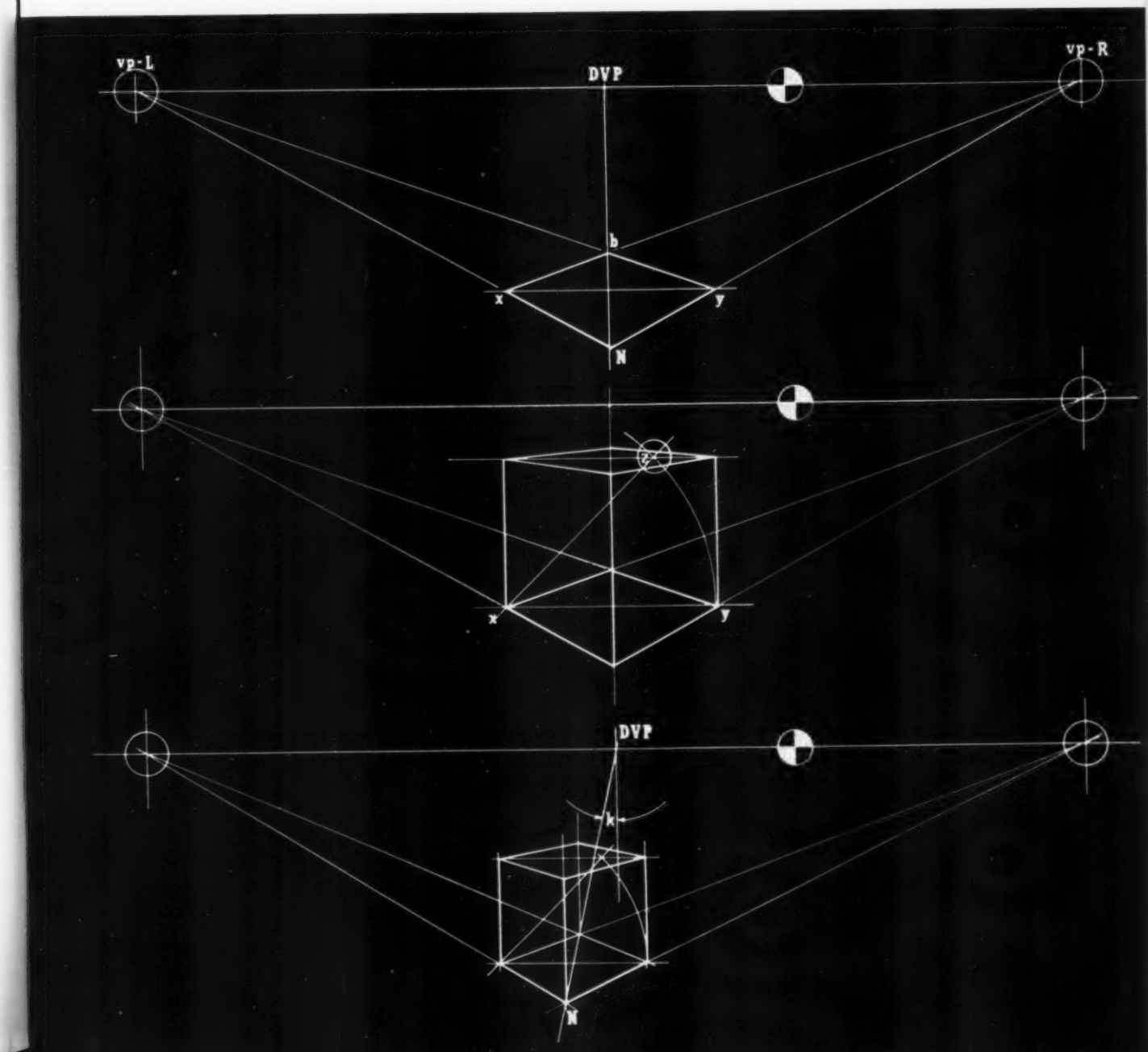
**Construction of a square in 45° oblique perspective**

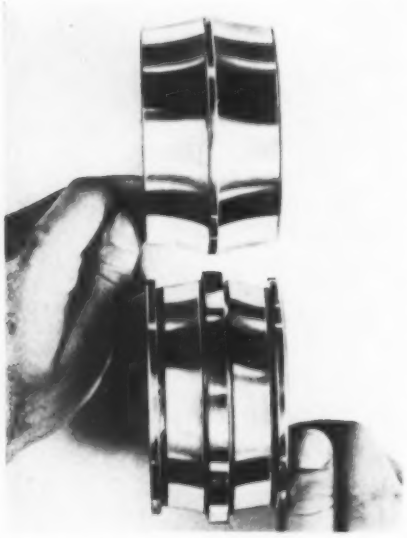
To create a horizontal square in 45° oblique perspective, we need only apply the conditions observed in the diagram on the preceding page.
1. Draw a horizon and place two vanishing points *vp-L* and *vp-R* on it.
2. Bisect the distance between vanishing points to locate diagonal vanishing point *DVP*.
3. Drop a perpendicular from *DVP*. This line is a diagonal of the horizontal square.
4. Draw two lines from *vp-L* and *vp-R* to intersect at the desired angle on the diagonal. This gives the nearest angle *N* of the square.
5. Draw two more perspective lines to intersect on the diagonal at the desired distance above *N*, enclosing the figure *xybN*.
*xybN* is a horizontal square because it fulfills the visual conditions given earlier:
1. The diagonal goes to *DVP*, which is half way between *vp-R* and *vp-L*.
2. Front and rear corners lie on the diagonal.
3. The side to side diagonal is truly horizontal (proof on previous page).
4. The four sides converge to their respective vanishing points.

**Construction of a cube in 45° oblique perspective**

We can easily complete the cube by erecting a diagonal plane on this square:
1. Erect verticals at all four corners of the square.
2. Construct the diagonal plane of the cube by rotating point *y* 45° upward to point *z* and drawing a horizontal through point *z* to intersect the side verticals (proof above).
3. Construct the upper square of the cube by drawing perspective lines through intersections.

This cube is absolutely accurate and can be checked against any constructional system. It is constructed directly from the horizon, without station points, elevations, long parallels or angles, measuring points, etc. Since the front to back diagonal need not be vertical so long as it goes to the *DVP* (previous page), we have established a simple method of drawing an accurate cube in a variety of positions.
However, distortion will occur if the diagonal is too far from the vertical. On the basis of traditional perspective theory, there is no explanation for this distortion. This will be the subject of the next chapter.


vp-L
DVP
vp-R
b
x
y
N
z
x
y
DVP
k
N



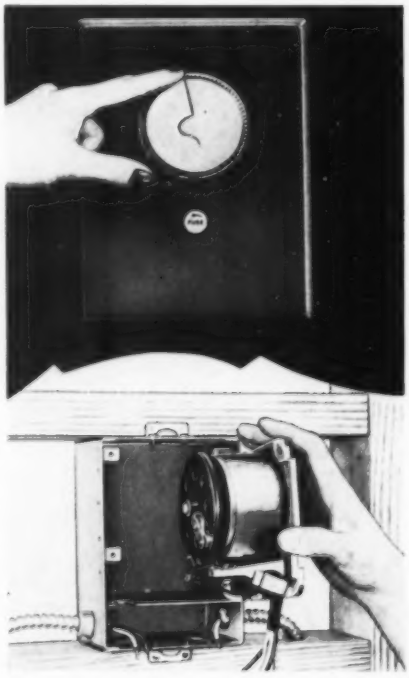
*Comparison of inner race of new "C" type SKF bearing (top) with older conventional bearing inner race.*

### Improved roller bearing

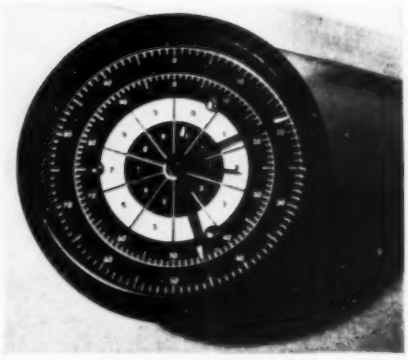
A device as simple as the roller bearing hardly seems to allow for improvement. But the new design of SKF's standard spherical roller bearing permits load increases of 25 to 50 percent and increases its service life 2 to 3½ times without change in size or weight, so that the new bearing can be substituted for an old one. The basic change in the new "C" type bearing is in design of the inner race, where simple, spherical surfaces have been substituted for the flanges and undercuts used in previous bearings. The change makes possible a longer roller and a larger bearing area. The rollers are held in a cage-type guide ring which permits them to take positions demanded by uneven loading. These bearings are used where wear and replacement are major problems; in railroad car journal boxes, steel mill machinery, rock and stone crushers, and similar heavy duty equipment. The increased durability of the new bearing means lower maintenance costs, while higher speeds now made possible will be of help to designers of mechanical equipment, enabling them to lighten and simplify their designs.
Source: SKF Industries
Front Street and Erie Avenue
Philadelphia 32, Pa.

### Dimmer for the home

Householders can now stage-manage home lighting with the "Luxtrol" dimmer, a compact unit which offers a continuous control range from full brightness to "off," yet exposes to view a switch plate and dial only slightly larger and just as inconspicuous as the conventional switch plate. A single dimmer can take the place of several separate switches, and insures better lighting control. Early dimmers were of the resistance type, but they were bulky, had a tendency to heat up, and were wasteful of current. They were superseded by the autotransformer, which dimmed lighting by change in voltage, instead of wasting current in a resistance. These dimmers were still bulky, however, and expensive. The "Luxtrol" has been simplified and reduced in size so that it will fit between wall studs. It can handle 360 watts of loading, and is equipped with its own fuse, as well as a bimetallic thermal overload protector. It acts as its own switch when turned to the "off" position.
Source: Superior Electric Company
Bristol, Conn.



*Autotransformer type lighting dimmer for home installation.*



*High-speed mechanical counter*

### Quick Counter

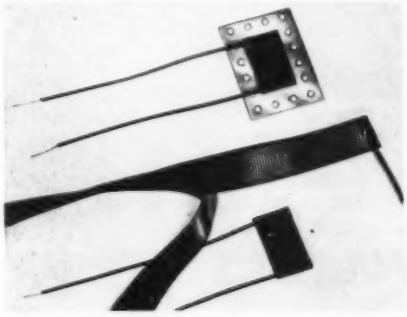
A new mechanical counter, designed for production control, is able to deal with rates up to 3,000 per minute and to accumulate totals just one short of a million. Four pointers register totals on concentric scales. The dial is 3½" across, and the case is two inches deep. The case is arranged for flush-panel or projected mounting. The actuating lever is brought out the side of the case through a rubber boot sealed against dust. Successful operation depends on a new low-inertia mechanism that minimizes carry-over errors. Accuracy has been checked against electronic counters to within a few units per million.
Source: Raycon Corporation
816 Willow Street
Redwood City, Calif.

### Spray paint remover

A new chemical spray, "Zip Strip," is now being marketed in spray cans, and promises to make paint removal an easier chore. Its chemical action causes the oil and resin film in paint to bubble up from the surface to which it is attached, so that the finish can be wiped off with a rag or scraped off with a knife. The manufacturer states that a single application will work through as many as a dozen coats of paint. The spray does not raise wood grain, nor affect wood filler or stain. It will remove baked enamels like those used on appliances or automobiles. Less toxic than turpentine, Zip Strip is completely non-flammable. It has the consistency of an enamel, so it will not run easily on vertical surfaces.
Source: Star Bronze Company
PO Box 568
Alliance, Ohio

## Flexible heating elements

A complete line of standard, flexible electrical heating elements is now on the market. Blankets of silicone rubber less than 1/10" thick are available in stock sizes ranging from 1" x 1½" to 24" x 42", and larger sizes are available on order. For use where flexibility is not needed, or where easy mounting is desired, there are units backed with perforated stainless steel. Operating temperatures range to 450°F in continuous service, and pneumatic pressures can go as high as 100 pounds psi. Previously, heat elements for equipment made to operate at low temperatures had to be custom-made. They were used in the curing of thermosetting resins and plastic laminates, and for aircraft de-icing. With stock units available, the cost for this type of heating installation will be greatly reduced.



*Stock size flexible electric heating elements*

Source: Electro Flex-Heat, Inc.
516 Asylum Street
Hartford 5, Conn.

## Foam-backed fabrics

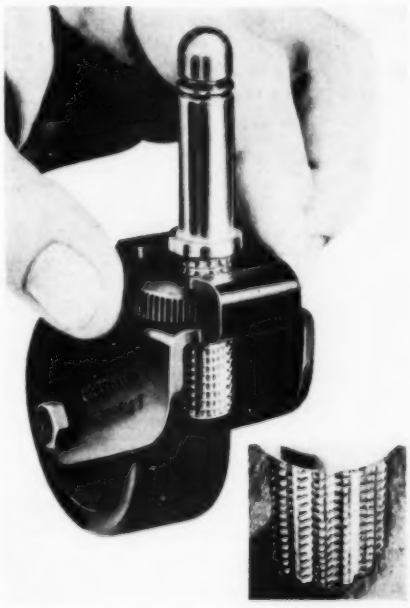
A process for binding fabrics to foam rubber backing without the use of adhesives has been patented under the name of "FABRIcushion." Since no cement is used in the binding, the fabric remains cool and porous. The rubber foam may be any thickness over .025 inch. The fabric-foam combination can be used in carpeting, for drapery, or wherever some backing or cushioning is needed behind a fabric, including many applications where unbacked fabric is now used. In upholstering, for instance, the rubber backing prevents slipping and wrinkling, thereby reducing wear and improving looks. It can be washed, cut, sewn or stapled like an ordinary fabric. A variety of stock fabrics are available, but any material can be bonded to the rubber base on order.

Source: Andrews-Alderfer Company
Akron, Ohio

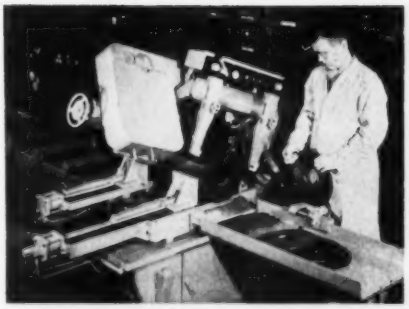
## Caster that's adjustable

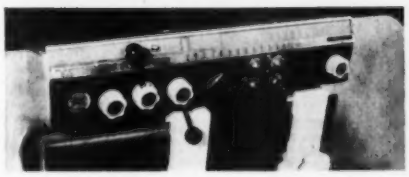
A whole line of adjustable casters for use on uneven floors is marketed in a variety of sizes under the name of "Scruswiv." Height is manually adjusted by turning a large screw nut to jack up the pintle of the caster. Vibration and the normal movement of the caster will not upset this height adjustment, because once an adjustment has been made, the pintle is held in position by a special radially-grooved thread. Threads and grooves are rolled together in manufacture of the pintle, which is produced as quickly as the conventional type. The grooves mesh with serrations in the horn of the caster, so that the pintle can move up and down as the adjusting nut is turned; but it will not pivot. Pintles are standard sizes to fit conventional types of legs or bases.

Source: Adjustable Caster Company
1411 Walnut Street
Philadelphia 2, Pa.



*Adjustable caster with grooved thread.*





*Automatic cut-off saw in use cutting stock into blanks, and close-up of control panel.*

## Automatic cut-off saw

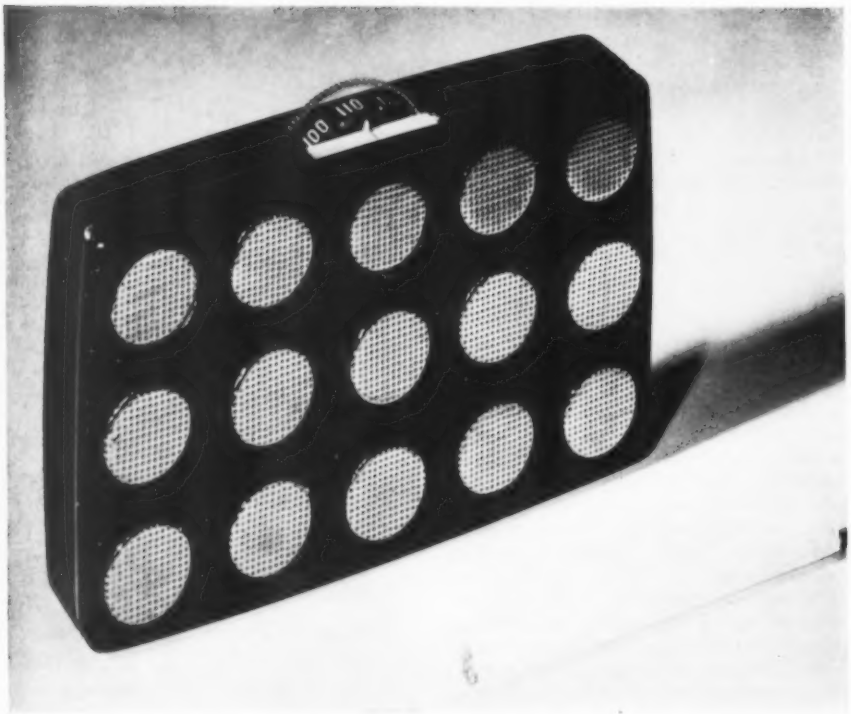
Development of a high-speed steel band saw blade by the DoAll Company has led to their production of a fully automatic cut-off saw for heavy industry. This bandsaw blade is expected to work twice as well as power hack saws. It is regulated by a carefully worked out system of automatic control which not only includes a series of safety devices to protect both worker and machine, but incorporates automatic positioning of materials, automatic indexing of the blanks that are cut off (these are 24" long, and can be longer on special order), automatic control of blade pressure and a blade speed variable from 90 to 300 feet per minute. What's more, the new saw makes a narrow cut, which means a saving of material that would be significant over a period of time. The principal value of the new machine is in cutting up stock metal into sized blanks at a high rate of speed and with a minimum of operator attention.

Source: The DoAll Company
254 N. Laurel Avenue
Des Plaines, Ill.

## Aluminum-plastic coating

Protecting cooling and condensing units from corrosion can now be done with a fast-drying coating of aluminum powder in a plastic base, called "Kolmetal." It can be polished, ground, bent or drilled without cracking or chipping.

Source: Emjay Maintenance Engineers
Rutherford, N. J.



*Miniature personal radio using transistor circuits and oscillator speakers.*

### Pocket-size radio

Transistors continue to produce smaller and smaller electronics devices. The experimental radio recently developed by General Electric is no bigger than a deck of cards. Transistors take the place of vacuum tubes, circuit wiring is printed in metal on a plastic plate inside the case that serves as the chassis, and the smallest available components are used. Transistors use so little current that 14 tiny batteries give about 100 hours' playing time, far longer than any existing small portable. To replace the conventional speaker, a series of crystals about the size of five-cent pieces are set in the cover of the radio. Vibrating in unison, they will produce sound superior to conventional speakers of larger size. Volume and fidelity of tone are expected to be surprisingly good—better than any small portable now in use. Because transistors are still too expensive for a reasonably priced radio, production has not been scheduled.
Source: General Electric Company
Electronics Division
Electronics Park
Syracuse, N. Y.

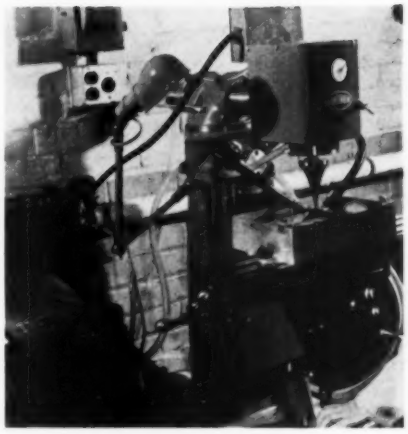
### Brighter fluorescent tube

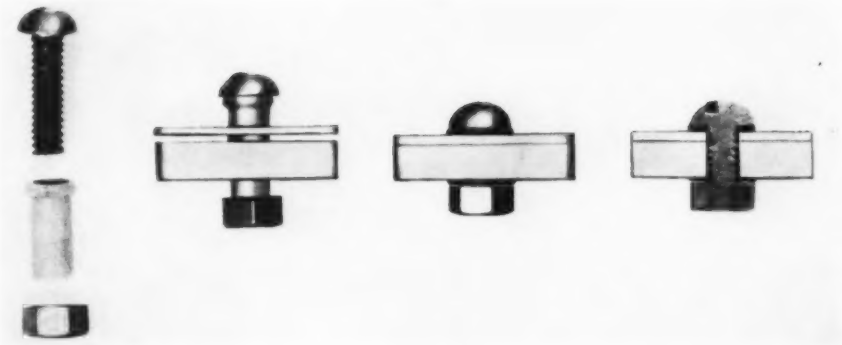
An eight-foot, rapid-start fluorescent tube announced by Sylvania has a higher light output than any type previously manufactured. The nominal wattage of the new tube is 100 and the initial light output is 7000 lumens, giving an efficiency of 70 lumens per watt. The initial brightness is 2560 foot-lamberts. The new lamp produces standard cool white color (other colors will be available later) and has a rated life of 7500 hours. The higher efficiency of the new lamp is accompanied by higher surface temperature, so that the new tube can be used only in well ventilated open-type fixtures. It will also work well out of doors. The list price of the tube is $3.85.
Source: Sylvania Electric Products
Salem, Mass.

### Ultrasonic machining

Machining such hard and brittle substances as glass, hardened steel, semi-precious stones or tungsten carbide can now be done with an ultrasonic machine tool. The tool that does the cutting is either brass or unhardened steel. The cutting is actually accomplished by ultrasonic vibrations at a rate of more than 25,000 per second. The action cannot be seen, for the tool travels up and down only a few thousandths of an inch. The cutting tool is touched to the work, and an abrasive suspended in a liquid is flowed over the point of contact. As the abrasive particles are driven against the work by the vibration of the tool, they strike with forces up to 10,000 times their own weight. Each stroke of the tool may cut into the work a depth of only a few atoms, but the rapidity of the vibration insures fast machining. The complete tool includes a bed for the work, the cutting head and an ultrasonic generator to supply the energy to drive the tool. Dimensions can be controlled to within half of one-thousandth of an inch.
Source: Raytheon Manufacturing Co.
Waltham 54, Mass.

*Ultrasonic machine tool. The tapering conical section vibrates against the material to be cut* 25,000 *times per second.*





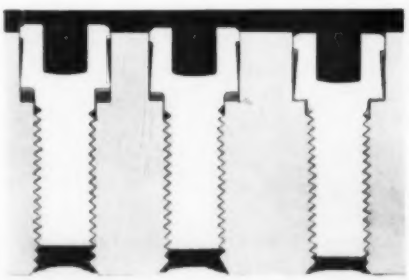
*Nyltite sleeve shown separately, in place over bolt, after bolt is tightened, and in cross section after tightening.*

## Nylon fastening sleeve

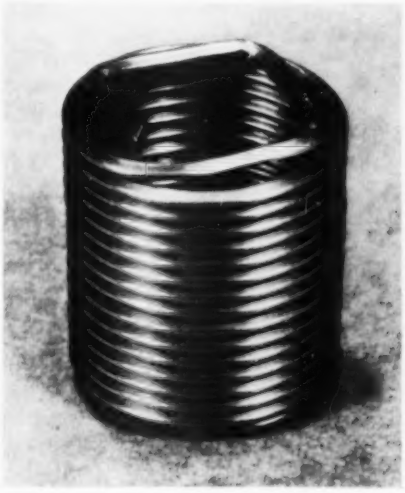
The cold-flow properties of Nylon are exploited in conjunction with bolt, screw or rivet fastenings, in a new product called "Nyltite." The product is a simple Nylon sleeve that is placed under the head of a standard fastener. As the fastening is pulled tight, the flow of the Nylon produces a vibration-proof, leak-proof custom-fitted washer. A longer sleeve that extends along a bolt from head to nut is also available. As the nut is tightened, the sleeve flows on both sides of the connection to form a grommet-like seal, completely isolating the fastener from the surrounding material. The resulting seal is impervious to electrolytic corrosion and can withstand temperatures up to 250°F. Nyltite is available in a range of sizes, and is expected to find wide use in the aircraft and automotive industries, where corrosion and vibration are problems.
Source: Keystone Plastics, Inc.
2331 Morris Avenue
Union, N. J.

## Leakproof socket screw

By making use of a wedge-action seal, "Led-Lok" socket screws are expected to out-perform similar fasteners by being more resistant to shock, vibration and leakage of oil, water or air. The new screw fits standard counter-bored holes. The head of the screw embodies a tapered chamfer shoulder, beneath which is pre-assembled a ½" lead washer. The lead is extruded as the screw is pulled tight, upward into the chamfer and downward into the threads. The seal will withstand hydraulic pressures up to 6,000 psi. The screw can be removed and replaced in its original location without any loss of the locking action. It can also be used in brass or aluminum parts without stripping threads, at a cost of about 10 per cent more than the conventional equivalent.
Source: Safety Socket Screw Company
6501 Avondale Avenue
Chicago 31, Illinois



*Section showing "Led-Lok" screw before, during and after tightening, with lead seal formed around head.*



*Heli-Coil locking screw insert*

## Locking screw insert

Screws can be locked securely in place without the use of lock washers, wires or nuts due to development of a new wire thread insert. The insert is a coil of stainless steel wire, with a square tang formed in the bottom turn. Its grip is firm enough to prevent it from backing off when subjected to vibration or temperature extremes. Screws may be removed and reinserted as often as necessary, the extra torque required for break-away about equalling that required to lock the screw during the initial insertion. Power tools may be adapted for driving of screws with the new insert.
Source: Heli-Coil Company
Danbury, Conn.

## Scratchless negatives

Scratches, dust and fingermarks are the big problem involved in enlarging from miniature photographic negatives. Such flaws have kept miniature film sizes from becoming the universal standard in photography. A trick of scratch elimination known to photo laboratory workers involves rubbing vaseline or mineral oil into the negative surface. The filled scratches do not show in the finished enlargement. But the grease attracts dust, and even careful cleaning can make new scratches. The Silicone Products Department of General Electric has found that a silicone oil called "Refractasil" will not only fill scratches, but also acts as a cleaner, leaving the negative in better condition than before treatment. A special holder that coats both sides of the negatives has been developed for the fluid, which is continually filtered and recirculated through the holder. One filling will last indefinitely. The unit will be available only in 35 mm. size at first, although its value would also be great in other small picture sizes. Its most important use will be for 16 mm. and other sub-miniature sizes.
Source: Simmon Brothers, Inc.
Long Island City, N. Y.

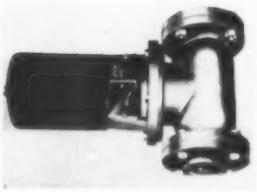
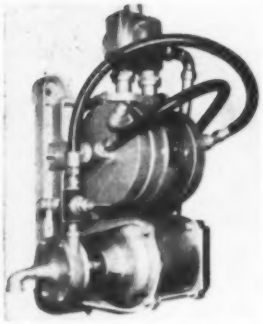
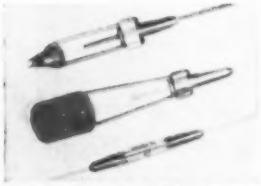
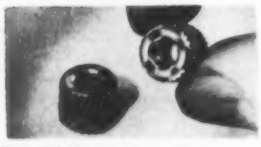
## End-grain fastener

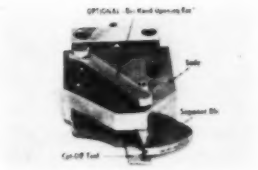
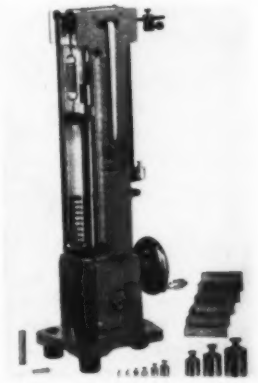
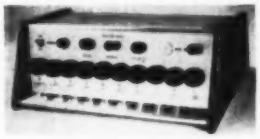
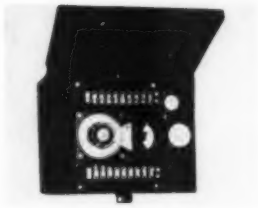
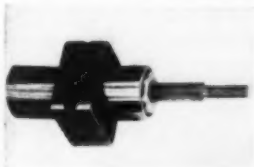
Threading for machine screws can now be inserted into the cross-cut ends of wood boards by the use of a new fastener. It is a tubular insert which is pushed into a hole drilled into the end of a board. A nail can be driven through the board so that it passes through a hole in the insert, locking it in place. The insert can be had in plain steel or in a cadmium-plated finish, and is inside-threaded in three sizes; #10-24, ¼"-20 and 5/16"-18.
Source: Southco Division
South Chester Corporation
Lester, Pa.

## Extruded aluminum pistons

A lighter, stronger piston means reduced wear in a motor, a result which can be obtained with a new aluminum alloy piston that is formed by impact extrusion instead of casting. The extruded piston retains all the features of low thermal expansion, ease of machining and high heat conductivity. Its fatigue strength under identical loads is four times that of a cast piston. The extrusion piston is 30 per cent lighter than those made by casting, but because its walls are thinner, its use involves radical design changes.
Source: Thompson Products, Inc.
Cleveland, Ohio

## *Technics: a quick guide to specialized products and components*

| | Name | Purpose | Manufacturer |
|---|---|---|---|
|  | Eclipse motorized gas valve | Fuel control on boilers, furnaces and other gas combustion equipment. | Eclipse Fuel Engineering Co., Rockford, Ill. |
|  | Liquid level control 13DJ3 | Level control for any electrically conductive liquid. | Photoswitch Inc., 77 Broadway, Cambridge 42, Mass. |
|  | RegO gas indicator | Indication of gas supply in domestic bottled gas tanks. | Bastian-Blessing Co., 4201 W. Peterson Ave., Chicago 30, Ill. |
|  | Circaflo 600 hot spray heater | Electric heating and circulating of paint for hot spray finishing. | Spee-Flo Co., 720 Polk Ave., Houston, Tex. |
|  | Jiffy coupler | Quick connecting and breaking of hydraulic and air lines from ¾" to 1" size. | Standard Valve & Coupler Co., 1114 Ulysses Ave., NE Minneapolis 13, Minn. |
|  | Strandlink and Strandvise | Splicing and ending steel strand messenger wires in ¼" to 7/16" diameter. | Reliable Electric Co., 3145 Carroll Ave., Chicago 12, Ill. |
|  | Torque-proof nut | Attaching metal parts to wood with standard machine screw. | Southco Division, South Chester Corp., Lester, Pa. |
|  | Flush latch | Latch for access doors, etc. in metal cabinets. | Modern Aviation Co., 2812 S. Main St., Los Angeles 7, Cal. |

| | Name | Purpose | Manufacturer |
|---|---|---|---|
|  | Model 700 automatic marker | Automatic marking and cutting off on automatic screw machines. | New Method Steel Stamps Inc., 147 Joseph Campau, Detroit 7, Mich. |
|  | Guid-O-Dril | To guide any portable power drill at true angle. With built-in depth gauge. | High Standard Mfg. Corp. Hamden, Conn. |
|  | Small spring tester | Compression and extension testing of small springs for loads and deflections. | Carlson Co., 277 Broadway, New York 7, N. Y. |
|  | Burroughs multiplexer | Combining up to ten synchronized sweeps on single oscilloscope screen. | Burroughs Corp., Electronic Instruments Div., 1209 Vine St., Phila., Pa. |
|  | T-2 electronic timer | Process timing of heaters, conveyors and other industrial equipment. | Ferrara Inc., 8106 W. Nine Mile Road, Oak Park 37, Mich. |
|  | T-J spacemaker cylinders | Extra compact air or oil operated power cylinders. | Tomkins-Johnson Co., Jackson, Mich. |
|  | Bourns carbon TRIMpot | Miniature trimming and balancing potentiometers of 20,000 ohms to 1 megohm. | Bourns Laboratories, 6135 Magnolia Ave., Riverside, Cal. |
|  | No-Ro-Fix clamping fixture cylinder | Air operated clamping fixture cylinder with 1" to 4" stroke. | Beckett-Harcum Co., 1087 Wayne Road, Wilmington, Ohio. |

## *Technics*

### Printed aluminum

Name plates, instrument and gauge faces or any other flat surface can be printed with any lettering or pattern by a photographic process called Metalphoto. The plate must be made from a specially coated aluminum supplied by the company. The desired design is photographed to obtain an ordinary photo negative. A contact print is made, using the prepared aluminum as the printing "paper," and developed for two minutes in a standard photo developer. After fixing and washing in the ordinary way, the plate is boiled in water for half an hour, which seals the printed design under a hard layer of oxide. The simplicity of the steps, and the absence of any acid etching or other special techniques, makes the new process especially suitable to development work, short-run production and use in plants primarily engaged in other types of production. With the process, it is possible to make ordinary enlargements or reductions from an original layout or negative.
Source: Metalphoto Corporation
2903 East 79th Street
Cleveland 4, Ohio

### Long-life saw blade

A new blade for a circular saw, which is self-honing and can be operated in either direction of rotation, increases the life of the blade four times, according to the Skil Corporation. The improvement comes from a completely new design in the form of the teeth. After the blade has been run in one direction, it is reversed. The sides of the dulled teeth are re-sharpened by the honing effect of regular use, while the second set of teeth perform the sawing operation. The two-way blade can be used for cross cut, rip or general cutting. It is made of a specially treated alloy steel with a black finish, so that the blade will be rust-resistant and glare-free. The blade should be reversed frequently for maximum efficiency, and it is pointed out that no loss of diameter occurs after many honings. The blade comes in three sizes, all with diamond arbors for use on Skil saws.
Source: Skil Corporation
5043 Elston Avenue
Chicago, Ill.

### Manufacturers' Literature

**Alsynite.** Alsynite Company of America, 4654 DeSoto St., San Diego, Calif. 4 pp., ill. Information on the expanded line of translucent Fiberglas building panels produced by this company. Includes specifications, installation information and other physical data.

**Package Design.** Hinde & Dauch, Sandusky, Ohio. 16 pp., ill. H. & D. facilities for designing and producing all kinds of shipping and display packages, this booklet is entitled Creative Package Design. Hinde & Dauch also offer How To Pack It, a 31 pp. booklet about basic corrugated box designs.

**Metals & Alloys.** Carboloy Dept., General Electric Co., Detroit 32, Mich. GE's new technical bulletin VM-100 offers general information and technical data on vacuum-melted metals and alloys, and several commercial services available in connection with them. Another new technical data sheet, HV-4, covers the latest information on Hevimet, a high tungsten alloy.

**Motors.** Technical Development Corp., 4060 Ince Boulevard, Culver City, Calif. 4 pp., ill. Descriptions of 19 models of hysteresis synchronous motors for high fidelity recording and reproducing equipment.

**Pneumatic Platen Press.** Electronic Processes Corp., 1124 San Antonio Road, Los Altos, Calif. 2 pp., ill. A leaflet describing the new Ectrotherm Press, designed for use in plastic welding applications.

**Tools & Production Parts.** Rockford Die and Tool Works, Inc., 1816—17th Avenue, Rockford, Ill. 4 pp., ill. General information about this firm, distributed with a 3-page listing of facilities.

**Cylindrical Castings.** Sandusky Foundry and Machine Co., Sandusky, Ohio. Ferrous and non-ferrous centrifugal cylindrical castings offered by this firm are described in a 4 pp. bulletin. An accompanying chart gives metallurgical specifications on all alloys available in Sandusky castings.

**Air Cylinders.** American Society of Tool Engineers has compiled information on the twelve leading competitive lines of air cylinders. The Air Cylinder Data Package may be obtained from Denham & Co., 925 Book Bldg., Detroit.

**Pipe Insulation.** MMM, Inc., 7120 Avenue C., Houston, Texas. 4 pp., ill. A pamphlet, accompanied by detailed specification sheets, about Vapo-Wall, low-temperature pipe insulation made of Dow Styrofoam.

**Steel Castings.** Farrell-Cheek Steel Company, Sandusky, Ohio. 4 pp., ill. A brief description of this firm's range of specialty carbon and alloy steel castings. The folder also lists all available Farrell-Cheek literature.

### Index to Advertisers In This Issue

## Classified Advertisements

10c A WORD PER INSERTION, $3.00 MINIMUM, PAYABLE IN ADVANCE. BOX ADDRESS COUNTS FIVE WORDS.

### Positions Wanted

INDUSTRIAL DESIGNER *with versatile background, thoroughly experienced in development of commercial and household products, desires position with manufacturer or studio located in Chicago area. Box ID-25,* INDUSTRIAL DESIGN, *18 E. 50th St., N. Y. 22.*

HUMAN ENGINEER—*Offers advise, data and research assistance in fitting consumer, industrial and military equipment to human anthropometric, physiological and psychological requirements. Excellent experience as advisor to leading firms. Available on project, per diem or retainer basis. Box ID-26,* INDUSTRIAL DESIGN, *18 E. 50th St., N. Y. 22.*

INDUSTRIAL DESIGNER—*B. S. in Industrial Design. 10 years experience in styling, engineering, architecture, plant lay-out and client relations. Age 32. Desire position with manufacturer or designer on West Coast. Box ID-27,* INDUSTRIAL DESIGN, *18 E. 50th St., N. Y. 22.*

INDUSTRIAL DESIGNER—*Offers comprehensive personalized service, highly suited to challenging assignments calling for unique and creative design. Excellent experience in production and materials —university trained. Box ID-28,* INDUSTRIAL DESIGN, *18 E. 50th St., N. Y. 22.*

CHIEF INDUSTRIAL DESIGNER AND MECHANICAL ENGINEER AVAILABLE—*Creative ability and versatility demonstrated by success in fields of small appliances, automotive instruments and parts, home furnishings and packaging. Able to lead industrial design department and coordinate with engineering design and manufacturing methods on highest level. Proven success in cost and material savings. B.S. degrees in both Industrial Design and Mechanical Engineering. Age 33. Box ID-29,* INDUSTRIAL DESIGN, *18 E. 50th St., N. Y. 22.*

DETROIT INDUSTRIAL DESIGNER (*graduate engineer*) *offers ability, experience, and cooperation on product development, styling, presentation and engineering drawings, technical literature. Twenty years successful, versatile, creative background. Box ID-31,* INDUSTRIAL DESIGN, *18 E. 50th St., N. Y. 22.*

### Help Wanted

ARCHITECTURAL AND DESIGN AGENCY—MURIEL FEDER—*A personalized placement service for top level architects, designers, engineers, draftsmen, interior decorators, and home furnishing personnel. Selective contacts arranged in a confidential and professional manner. Interviews by appointment. 58 Park Ave., N. Y. MU 3-2523.*

HELEN HUTCHINS PERSONNEL AGENCY—*Specialist industrial, architectural, interior design, decorative arts, trades, home furnishings. Helen Hutchins' long association with a leading industrial design organization insures intelligent and individual screening of all types of personnel for industrial designers. 767 Lexington Ave., New York 21. TE 8-3070. Interviews by appointment.*

TWO PACKAGE DESIGNERS *age 30-45 to work with large well established industrial design firm N. Y. C. Creative ability, fresh graphic ideas, package experience prerequisite. Client relations and staff direction experience preferable but not essential. Reply giving details.* FOUR STAFF PACKAGE DESIGNERS *to work with large well established industrial design firm N. Y. C. Creative design, lettering and ability to prepare comprehensive dummies prerequisite. Reply giving training and experience details. Our staff knows of these ads. Box ID-30,* INDUSTRIAL DESIGN, *18 E. 50th St., N. Y. 22.*

### Miscellaneous

MODELS—INDUSTRIAL—*Complete facilities for modelmaking in all materials. Executed to your specifications. Prompt delivery at reasonable prices. Arnkurt Associate Engineers, 31 East 27th St., LE 2-4286.*

IDEA MAN—FREE LANCE—PHENOMENAL ORIGINALITY—*Science liaisons: ultimate pen; wet ink, spherical/conical point, leak proof;* $25,000. *Ultimate razor; guardless 36" slashing edge, self honing,* $100,000. *Torch, burning solid carbon; 16,322°F. (Vaporizes creation)* $200,000. *Tugboats eliminated;* $100,000. *Atmospheric separation;* $250,000. *Triflers abhorred. Want revolution, your line? Laboratory: Box 2, Brooklyn 17.*

## FOR YOUR CALENDAR

**Through December 31.** 100 Selections from Good Design 1950-1954, and a survey of Good Design popular sellers prepared by *Retailing Daily*, Merchandise Mart, Chicago.

**December 9-31.** Exhibition of student work. The Institute of Design, Chicago.

**January 3-14.** International Home Furnishings Market. Merchandise Mart, Chicago.

**January 3-14.** Winter Market. Waters and Exhibitors Buildings, Grand Rapids, Michigan.

**January 3-14.** Winter Market. American Furniture Mart, Chicago.

**January 5 (throughout the year).** Good Design 1955. Merchandise Mart, Chicago.

**January 7-11.** National Retail Industry Show. Madison Square Garden, New York.

**January 10-14.** Society of Automotive Engineers' Annual Meeting. Hotels Sheraton-Cadillac and Statler, Detroit.

**January 13-February 11.** Art Education Exhibit (thesis material). The Institute of Design, Chicago.

**January 16-21.** New York Lamp Show. Hotel New Yorker.

**January 17-21.** Winter Market. Los Angeles Furniture Mart.

**January 23-26.** Washington Gift Show. Hotel Willard, Washington, D. C.

**January 24-27.** Plant Maintenance and Engineering Show. International Amphitheatre, Chicago.

**January 24-28.** Winter Market. Western Merchandise Mart, San Francisco.

**January 31-February 11.** Chicago Gift Show. LaSalle Hotel and Palmer House.

**February 2-March 20.** 100 Museum Selections from Good Design 1950-54 and forecasts of home furnishings design trends prepared by seven leading design schools in this country. Also Good Design popular sellers, prepared by *Retailing Daily*. Museum of Modern Art, New York.

**February 3-6.** Gift, China, Glass and Housewares Show. Western Merchandise Mart, San Francisco.

**February 8-10.** Society of the Plastics Industry, Reinforced Plastics Division's Annual Conference. Hotel Statler, Los Angeles.

**February 21-25.** New York Gift Show. Hotels New Yorker and Statler.

**March 1-3.** Society of Automotive Engineers' Passenger Car, Body and Materials Meeting. Detroit.

**March 7-11.** Boston Gift Show. Hotel Statler.

**March 13-April 3.** American Craftsmen 1955. University of Illinois, Urbana.

**March** (date unscheduled). American Society of Tool Engineers' First Western Industrial Exposition, Los Angeles.

# Aqua Glass
# Aqua Fiber

preform moldings . . .

*for*

* contour
* lightweight
* strength

**Hawley** products co.

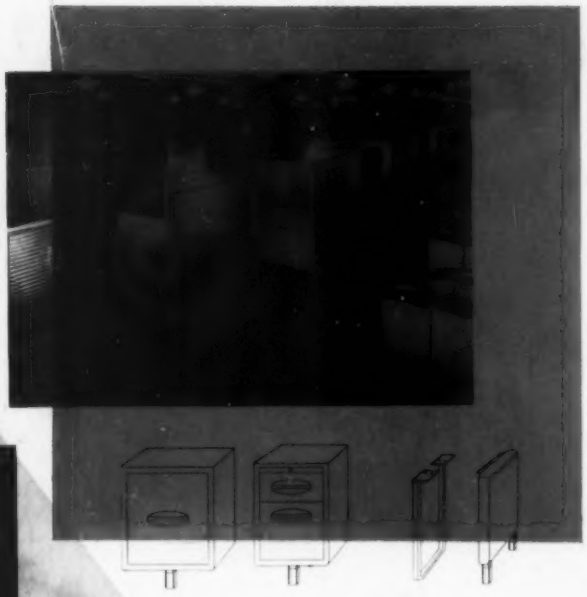
st. charles, ill.

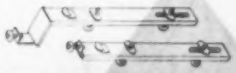
. . . . ROYAL TYPEWRITER CASE . . . . CHROMCRAFT CHAIR . . . . REVERE TAPE RECORDER CASE . . . . AMERICAN LUGGAGE WORKS . . . . EXPERIMENTAL RADIO . .

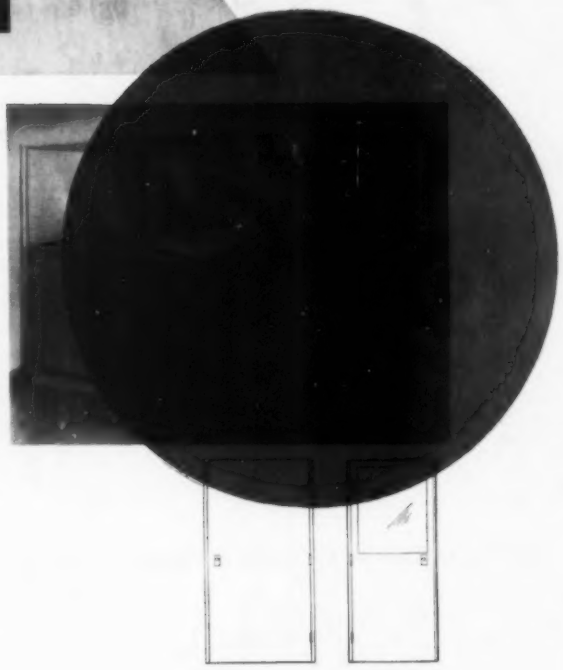
BRANTFORD, CANADA . . . . LONDON, ENGLAND . . . . SYDNEY, AUSTRALIA . . . . BUENOS AIRES, SOUTH AMERICA

modular units for the office

# ...WITH CUSTOM FEATURES ADDED







Basically, Arnot-Jamestown PARTITION-ettes* and OFFICE-ettes† are composed of standardized, modular units, in steel or wood, with all the advantages of economy and function implied by the words **standardized** and **modular.** But, each Arnot-Jamestown unit can be modified to the designer's specifications. The designer can choose material for desk and/or table tops; he can name drawer-interior storage features, colors, material for PARTITION-ette upper panels (bandfrost or clear glass, chalk board, bulletin board, acoustical material)... and other variations.

You will find Arnot-Jamestown dealers co-operative and knowledgeable in helping you to gain these individualized custom features. For detailed information, write:

FURNISH YOUR OFFICE THE MODULAR WAY WITH

Arnot

*T. M. Reg., Pat. Pending
†Licensed under DuPont Patent

**ARNOT-JAMESTOWN DIVISION**
AETNA STEEL PRODUCTS CORPORATION
**JAMESTOWN, NEW YORK**