

ARCHITECTURE

ENGINEERING

# The Southern Architect And Building News

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No. 9

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WITH THE ARCHITECTS AND CONTRACTORS.	
BUILDING AND CONSTRUCTION NEWS.	

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H. E. HARMAN, President.

E. R. DENMARK, Editor.

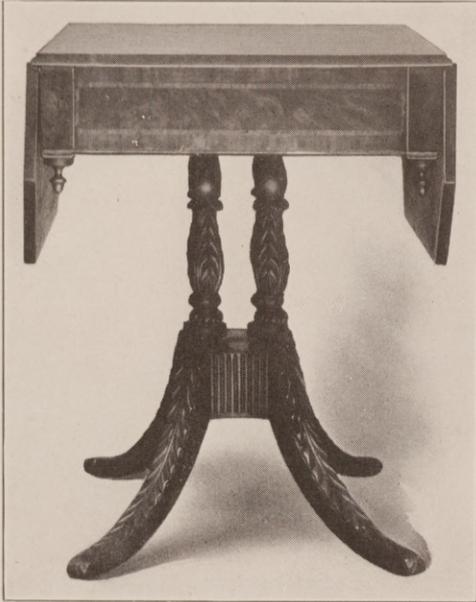
## TO OUR ADVERTISERS

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General Conditions without Agreement .....	.14
Agreement without General Conditions .....	.05
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Cover (heavy paper with valuable notes) .....	.01
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Circular of Information on Fee Plus Cost System (Owner-Architect) .....	.03
Form of Agreement between Owner and Contractor (Cost Plus Fee Basis) .....	.10
Circular of Information on Cost Plus Fee System (Owner-Contractor) .....	.06

The American Institute recommends, without reservation, the Contract Forms named above. They are recommended to the building industry as a whole, and to the Architectural Profession regardless of Institute affiliation.

The Standard Documents, those listed first, are nationally known and used. Progressive architectural firms are discarding private forms or local forms, and are incorporating the Institute Documents into their office practice.

All the evidence shows that the building industry is due for a prolonged period of activity. There is hardly an Architect who does not understand the significance of this to the profession as a whole, and to himself individually.

An architectural firm's reputation, based on business ability, is worth much when it becomes established among those who look for it first—the business men of the average American community. Leave no stone unused in making thorough, incisive, correct business methods and Contract Forms a part—a habit—of your organization.

Use the Standard and Other Contract Documents of the American Institute.

If your local dealer cannot supply the forms, order direct from the Executive Secretary, The A. I. A., The Octagon House, Washington, D. C. All orders filled the day received, transportation prepaid.



## THE EDITOR'S PAGE

### THE 1923 EDITION OF THE GEORGIAN PERIOD—BY WILLIAM ROTCH WARE.

The 1923 edition of *The Georgian Period*, by William Rotch Ware is a wonderful contribution to the history of architecture of this period. This latest edition eclipses all others of the past and the editors and publishers are to be congratulated upon the improvement that has been made over the old edition.

Historical papers, photographs and measured drawings of Colonial or Eighteenth Century architecture in the United States, with reference to earlier provincial and true Colonial work sums up in a few words the contents of this valuable work.

Over a hundred architects originally contributed to this monumental work under the careful guidance of the late Mr. Ware. As their work progressed, portfolios were issued from time to time, and complete classification of subject and location therefore could not be made. Advantage has been taken of the opportunity offered by republication to make certain changes intended to greatly increase the value of this work for ready reference.

The new edition has been rearranged accordingly, and divided into six parts. Part I contains complete indexes and all text matter. Portfolios II to VI contain 454 plates consisting of detailed and measured drawings, and photographic reproductions.

The plates are arranged under the headings of Houses, Churches, and Public Buildings. These in turn are grouped according to location. For example, Part II contains plates of houses in Maine, New Hampshire and Massachusetts, grouped under these geographical sub-divisions. Churches and Public Buildings are also arranged according to location. Thus it is an easy matter, with the help of the complete indexes, to locate any particular subject desired.

It has been the aim of the publishers throughout the revision to follow closely in the footsteps of the distinguished Editor of the original work, Mr. William Rotch Ware, and to present a work that will justify its continuance as an invaluable part of the architect's library.

Six Art Portfolios, size 10 x 14—454 full-page plates and measured drawings—272 pages of text with 500 illustrations—Completely indexed—PRICE, Postpaid—\$60.00. In three bound volumes, \$75.00.

This set of wonderful books for your library may be obtained by addressing a card to the editor of this magazine or direct to the publishers, THE U. P. C. BOOK COMPANY, NEW YORK CITY.

### THE DEPARTMENT OF ARCHITECTURE REVIEW GEORGIA SCHOOL OF TECHNOLOGY.

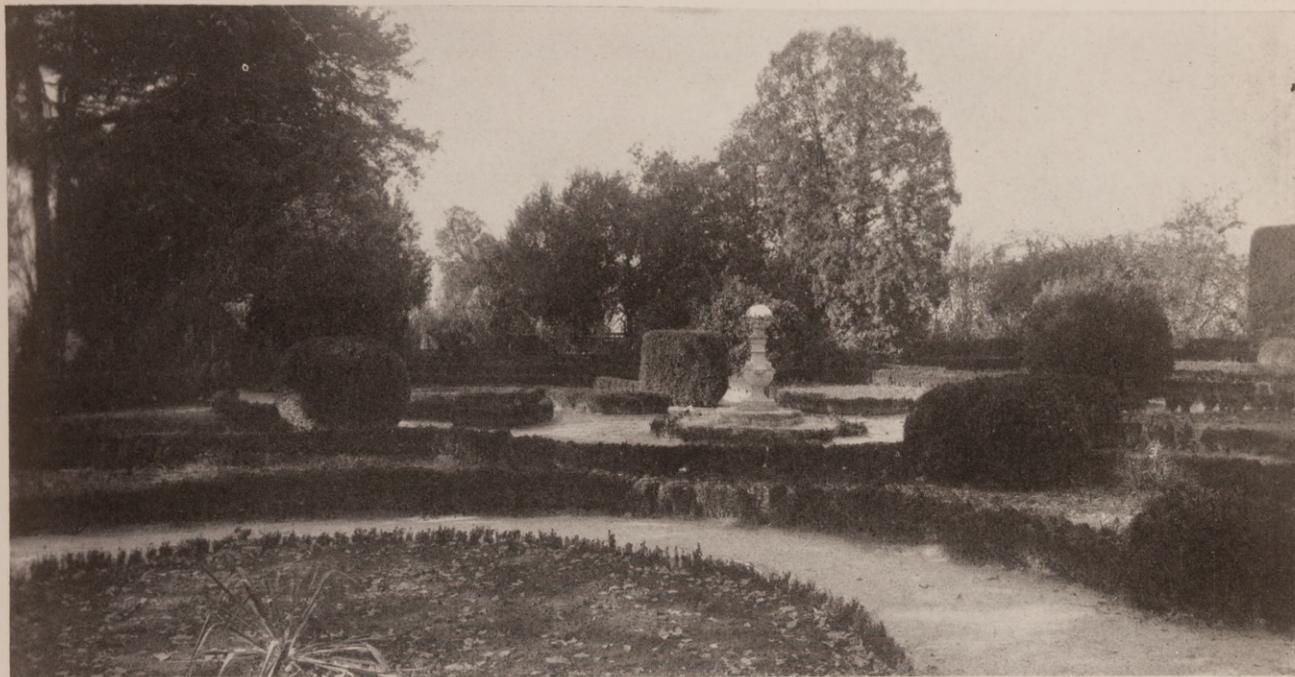
FOR several years it has been the custom for the students of the Architectural Department of the Georgia School of Technology to publish a Year Book containing sketches of the work done during each collegiate year. The 1923 edition which has just come from the press is perhaps the nicest that has ever been gotten out by the department. The editors and students contributing to this edition are to be highly complimented upon the splendid appearance of the book. The subject matter shows a careful selection from evidently a great volume of submitted material, and the typography shows up the illustrations with a pleasing effect.

Dean John Llewellyn Skinner and his assistant professors are to be congratulated upon the splendid work which the department has accomplished during his first year as dean of the school. The department was very successful during the year in the competitions having won three first mention places and four second mentions in the Beaux Arts Institute of Design, and in the Southern Intercollegiate competition they won the first, third and fourth places.

The resignation of Dean Smith at the end of the collegiate year, 1922, and who is now associated with Mr. R. S. Pringle in the firm of Pringle and Smith, Architects, Atlanta, was a great loss to the school, but as it would seem Mr. Skinner has successfully taken over the department where Mr. Smith left off and carried on the work with all the effectiveness possible for a new man.



Storied and reminiscent is this main trail that leads southward from the house. All the plants and flowers of Southern poetic romances crowd about the gravelled walk. The calm of Cathedral aisles is found in this green-walled path



A Scene in the West Garden.

## “Hills and Dales”—The Country Estate of Mr. Fuller E. Callaway, Esq., LaGrange, Ga.

By Cora Paxton Stewart.

THE original Ferrell Gardens at LaGrange Georgia, now the country estate of Mr. Fuller E. Callaway are perhaps among the finest and most beautiful in America. These wonderful gardens were begun near a hundred years ago by Mrs. Dora Ferrell, a beautiful talented daughter of the old South. Through many long years this delightful lady watched each new plant with motherly pride; gathered flowers and shrubs from every clime and with tender care consigned them to the fertile soil of Georgia. And when evening's dusky twilight gathered about the Ferrell home a long line of dark, singing slaves went to and fro watering the diminutive plants with infinite care. With no mathematical precision but with the vision of a born artist Mrs. Ferrell directed the scheme which the garden followed. And now after Time has continued his flight and civilization has advanced this Southern Eden stands as a memorial to the artistic temperament and cultured characteristics of the Southrons.

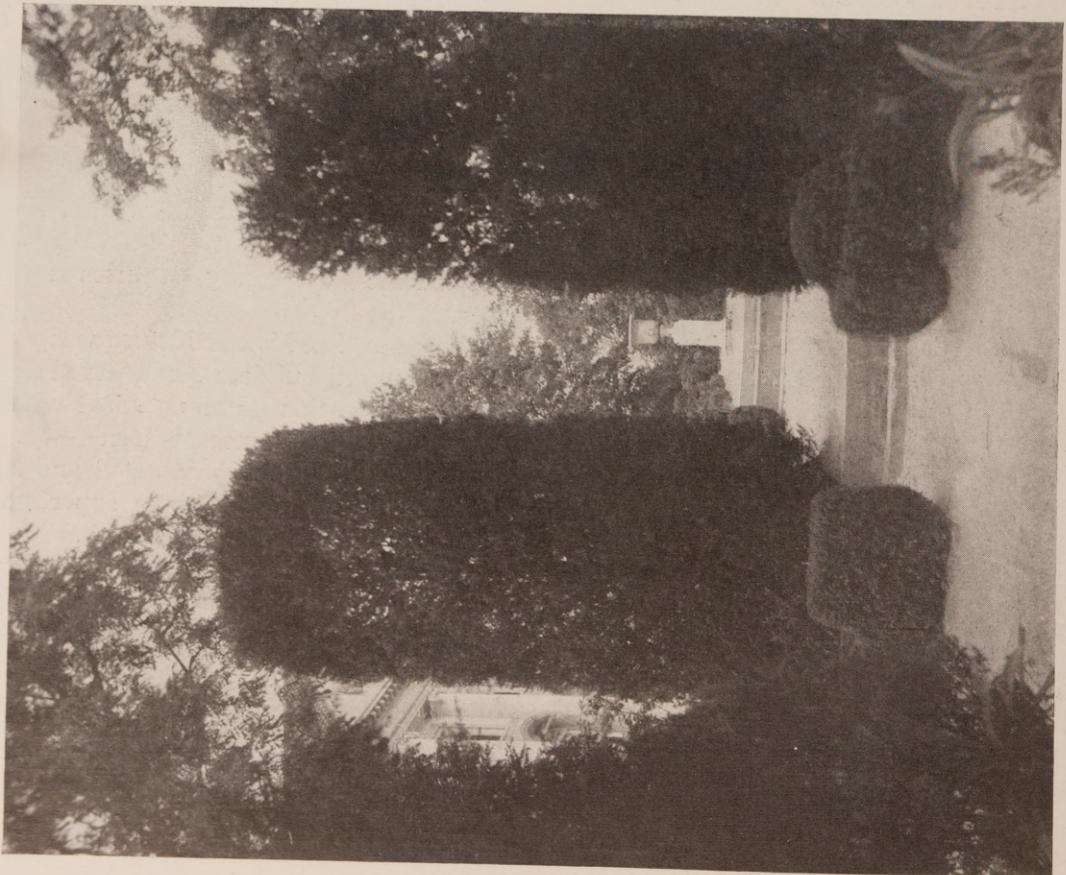
The architect or landscape artist in search of scenery from which to draw inspiration does not necessarily have to travel abroad to find gardens whose interesting features solicit close study.

Realizing that Mother Nature was the greatest of creators and builders Mrs. Ferrell avoided too definite and visible planning. But where opportunity offered a chance to hasten the work of nature terraces were constructed and fertile soil made more fertile. Nature's superfluous twigs were pruned and dispensed with. The present day shows a terraced garden where slender cedars border graveled walks and closely clipped boxwoods, each boasting of some particular bit of personal history, mark each ending and beginning of the terrace.

The first terrace, fronting the house, bears the two favorite mottos of Mr. and Mrs. Ferrell—“Fiat Justitia” and “God Is Love.” Outlined in boxwood and enclosed in a parterre bordered



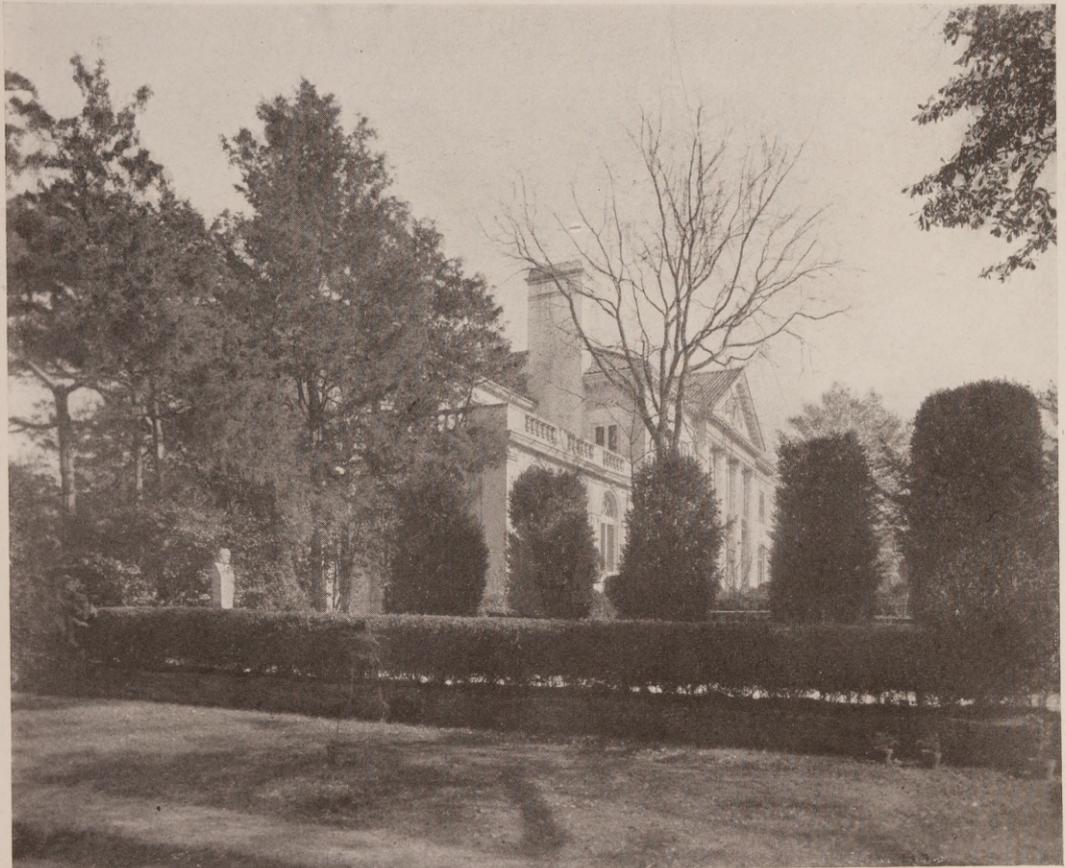
Graveled walks penetrate the labyrinth of boxite hedges and flower myriads.



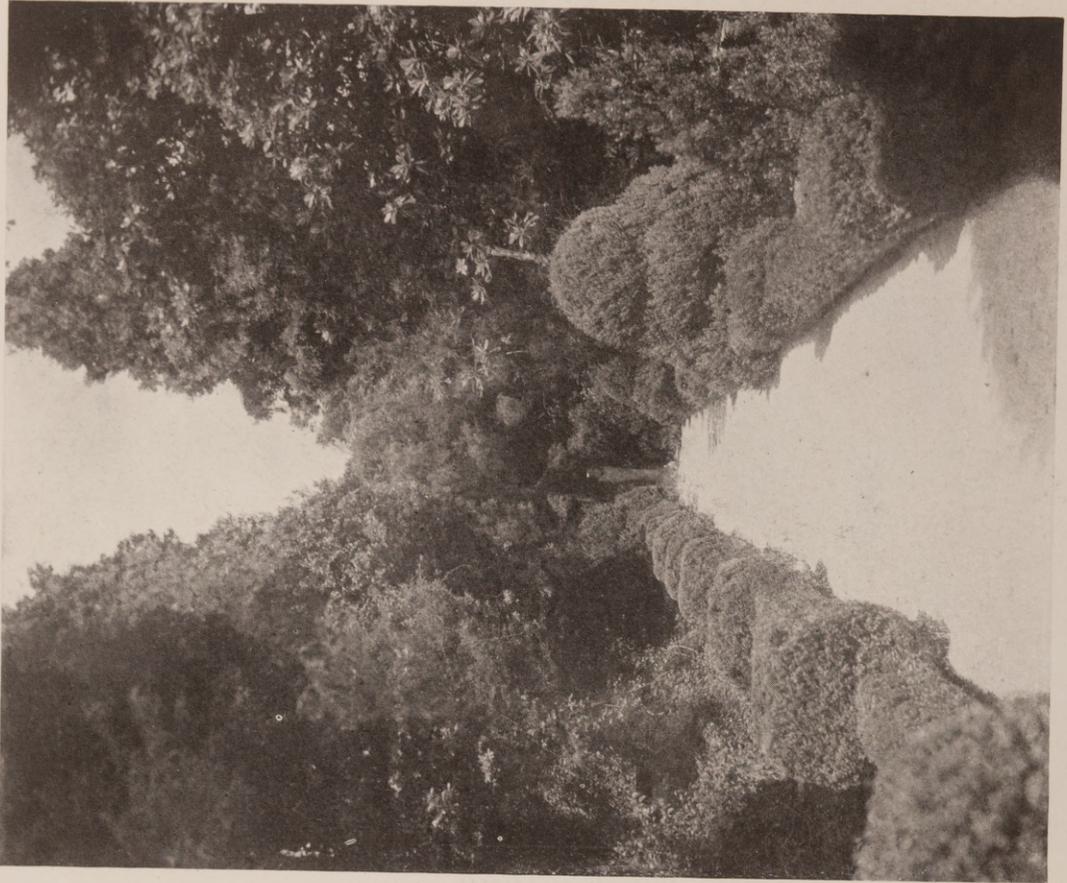
This path leads from the rose garden to the upper terrace.



DETAIL OF FRONT



VIEW FROM ROSE GARDEN  
HOUSE OF FULLER E. CALLAWAY, ESQ., LA GRANGE, GA.  
HENTZ, REID & ADLER, ARCHITECTS, ATLANTA, GA.



Paths whose beauty lies half in their mysterious destination and the green hedges and shading elms.



View Showing Sun Dial in the West Garden.

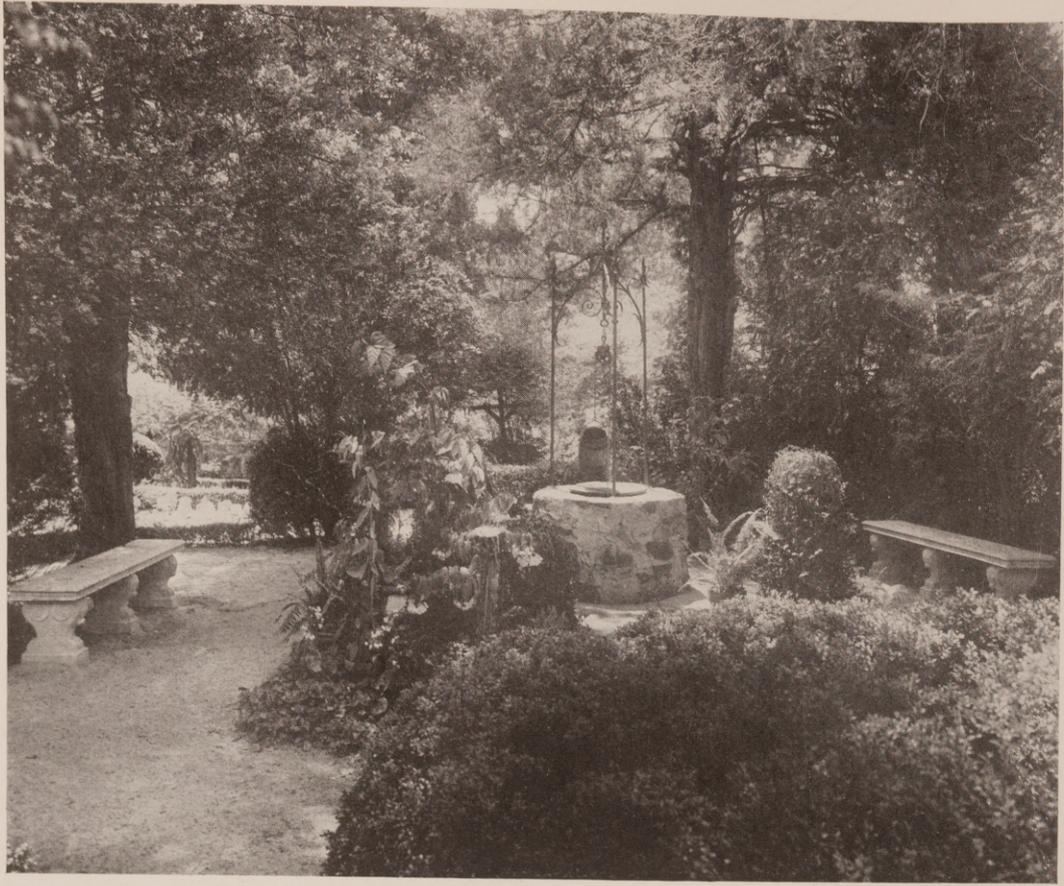


LIBRARY



DINING ROOM

HOUSE OF FULLER E. CALLAWAY, ESQ., LA GRANGE, GA.  
HENTZ, REID & ADLER, ARCHITECTS, ATLANTA, GA.



The old well from which the slaves watered the flowers and shrubbery in the days of Mrs. Ferrell.

with boxwood they awake pleasing thoughts of lovers walking hand in hand among the shaded nooks, and dreaming and planning and building. And quickly the thought comes of a life well spent and deeds well done. With characteristic insight Mrs. Callaway, herself a member of one of the most prominent families of the Old South, grasped the thought of building history through nature's beautiful scheme and added the insignia of the Callaway coat-of-arms. Thus future posterity has been given a history of the families who have builded and loved the beautiful old gardens. Save for this change the original plan of the terrace remains intact. Nearby, and on the same terrace a marble fountain gurgles forth cool waters and bright colored flowers lift their long slender stems upward.

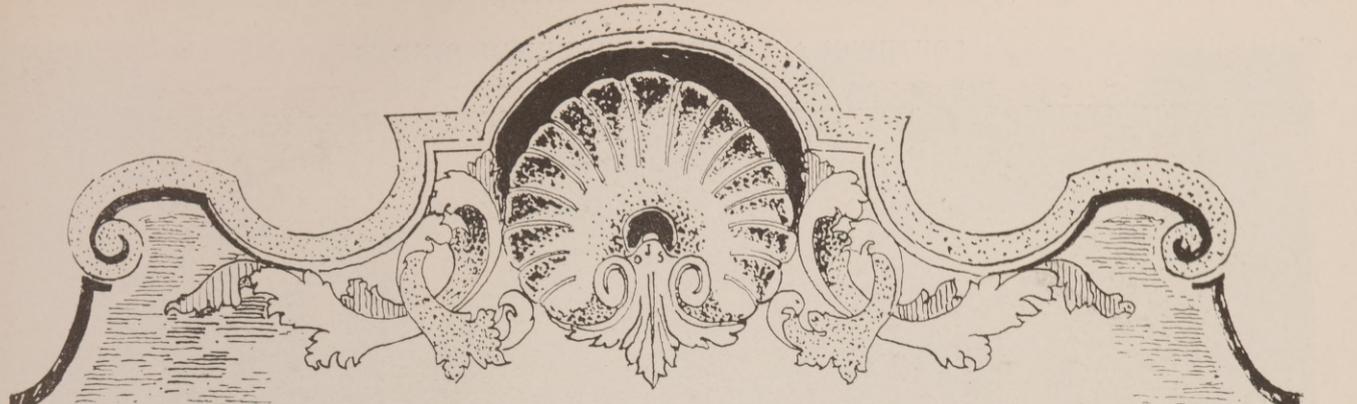
Standing near the fountain one gets a beautiful view of the east front of the house. White Greek colonial columns of the west portal rise from obscuring foliage lending a touch of majestic beauty to the alluring green of the shrubbery and trees. Knightly, strong and protecting is the thought conveyed by the attractive home.

Cloistered nooks where climbing clustering wisteria hangs drooping predominates the adjoining terrace. Rustic seats of willows and

irons hide beneath overhanging shrubbery and yellow and golden Lady Banksia lurk along the half shadowed paths and mingle their fragrance and color with the deep rose blooms of the weigela. How much of the poetry and romance of life must have been given life there. They grasp the heartstrings of the passerby and whisk one away into the land where dreams are master. Southern maidens in the wide hoop-skirts of the sixties and unbearded youths in grey said many a farewell there in the days when the apocalyptic beast ran riot o'er the Southland. The touch of a divine artist is evident; care and patience and genius went into the building of an idea that literally hurls its beauty upon the one who is fortunate enough to view the scene.

Each terrace awakes in the mind some different feelings until man's six senses are pulsing with the joy of living.

Historically interesting are the third and fourth terraces. From the hills and dales of the Holy Land came Lebanon Cedars. The mystic call of the Far East lurks in the drooping branches of the maiden hair fern trees of far Japan. Knightly deeds and Christmas carols speak from the Yew and Bays of Olden England. A shading Cunninghamia tree rises in strength and majesty. Laurel trees from the Amazon bring



REVIEWING  
CURRENT ARCHITECTURE



ENTRANCE DOORWAY, RESIDENCE, SIGMUND MONTAG, ESQ.  
Hentz, Reid & Adler, Architects, Atlanta, Ga.





View from Lawn.



View from Entrance to Driveway  
RESIDENCE OF JAMES G. DODSON, ESQ., ATLANTA, GA.  
J. F. Downing, Architect.



View of Front

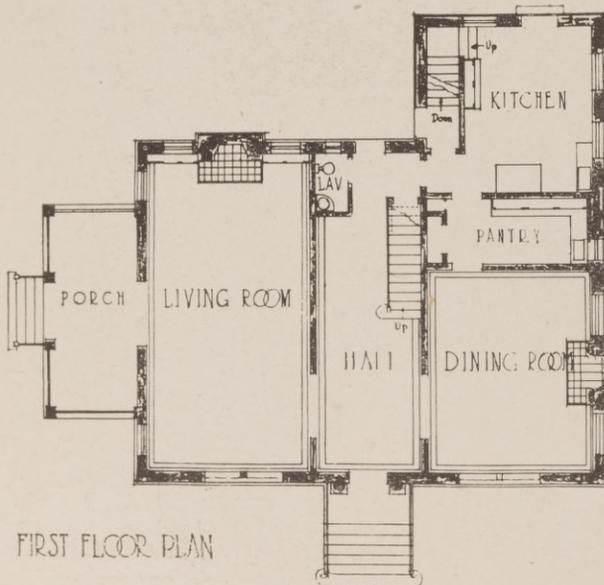


View from Garden at Rear

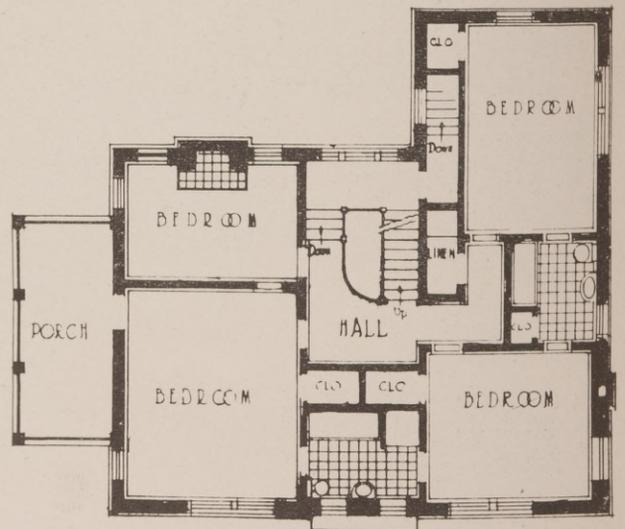
RESIDENCE OF DAVE STRAUSS, ESQ., ATLANTA, GA.  
Hentz, Reid & Adler Architects.



ENTRANCE FRONT



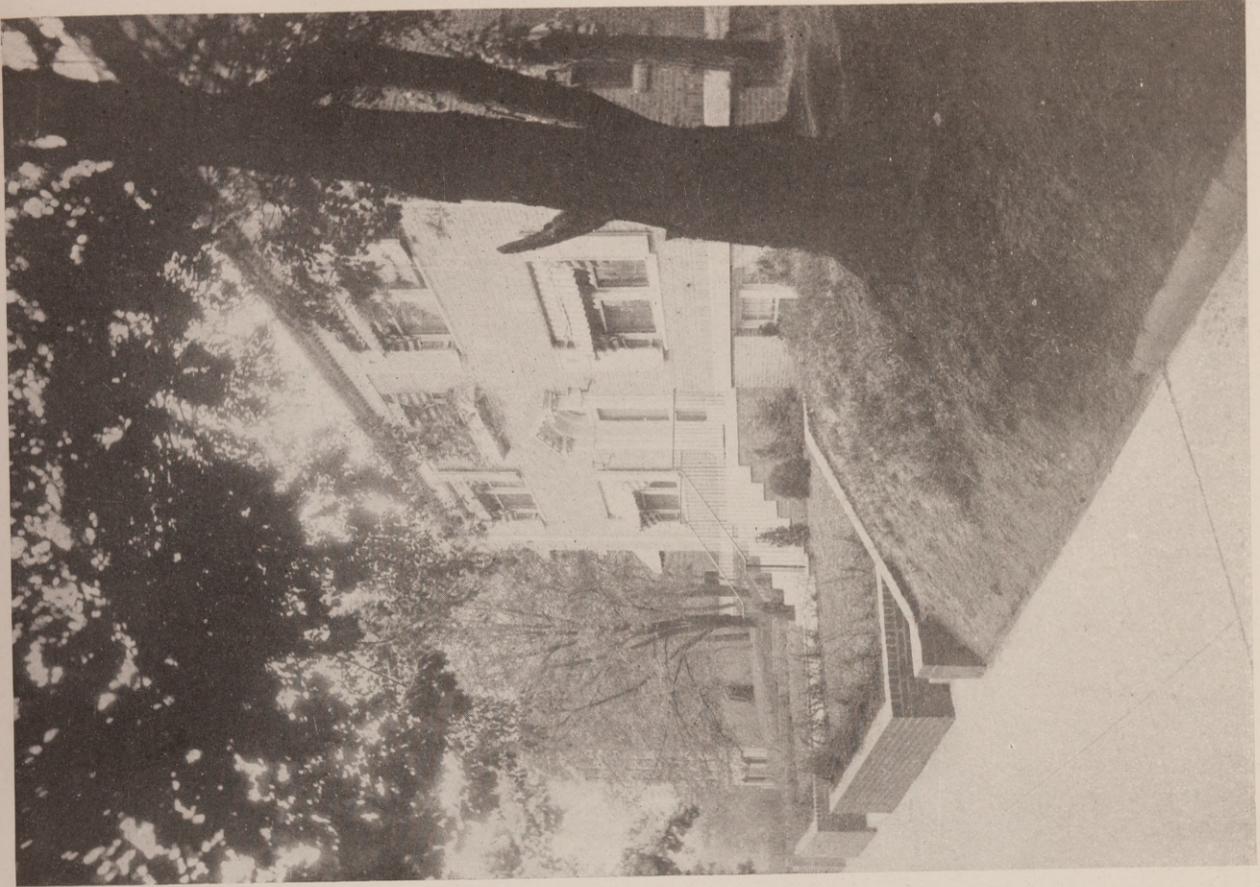
FIRST FLOOR PLAN



SECOND FLOOR PLAN

HOUSE OF DEAN CARDWELL, ESQ., WASHINGTON, D. C.

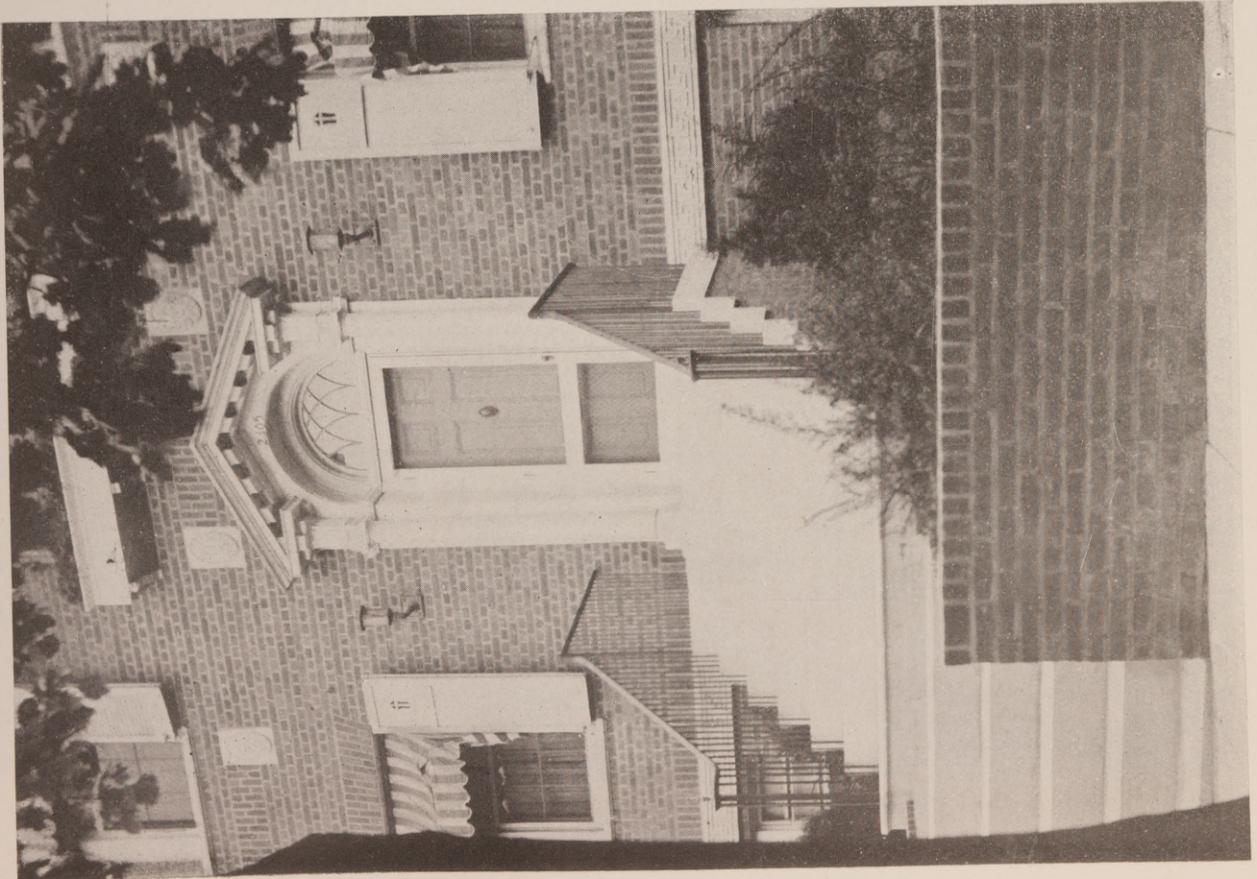
Edwin B. Morris, Architect.



TERRACE TREATMENT

HOUSE OF DEAN CARDWELL, ESQ., WASHINGTON, D. C.

Edwin B. Morris, Architect.



DETAIL OF DOORWAY

HOUSE OF DEAN CARDWELL, ESQ., WASHINGTON, D. C.

Edwin B. Morris, Architect.



STANDARD OIL BUILDING, BALTIMORE, MD.

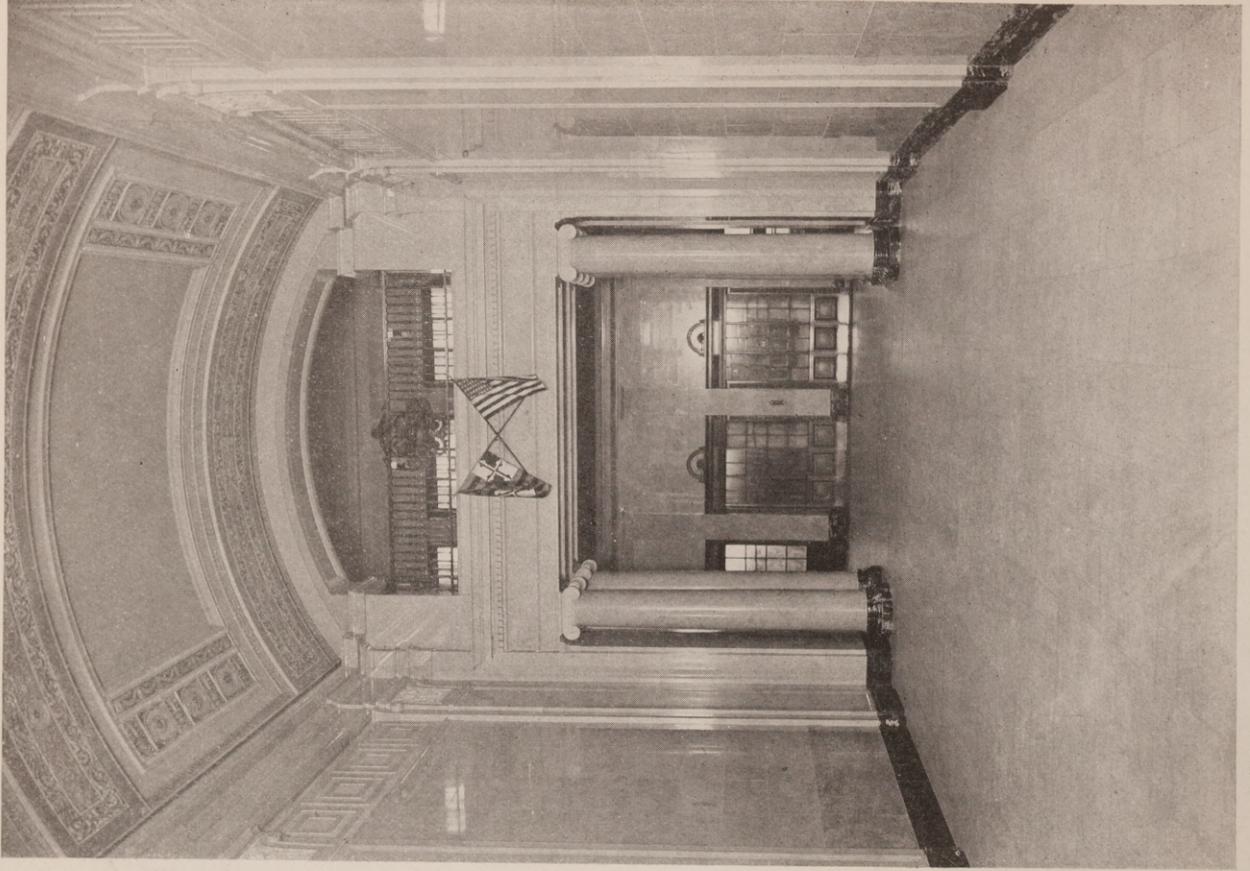
Clyde N. Friz, Architect



LOBBY  
STANDARD OIL BUILDING, BALTIMORE, MD.  
CLYDE N. FRIZ, ARCHITECT



View of Lobby looking towards Entrance to Elevators.



View of Lobby looking towards Entrance to Building.

STANDARD OIL BUILDING, BALTIMORE, MD.

Clyde N. Friz, Architect.

# The Lighting of Theaters and Auditoriums

By A. L. Powell.

Edison Lamp Works of the General Electric Co.

## Part I.

FROM time immemorial men have been accustomed to meet for amusement, edification and companionship and today we have for these purposes, the theater, the lecture hall and the club or lodge room.

The Greeks and Romans constructed gigantic theaters and colosseums for the enactment of their dramas and spectacles but in those days, we are told on good authority, "the performance began early in the morning, so early in fact, that some of the spectators came during the night before the performance." Such lectures or public meetings as were held took place either on the side of a hill or in the Forum and naturally occurred in the daytime for there was no satisfactory method of artificial lighting.



An example of the Elaborate Type of Luminaire Installed in the Modern Picture Auditorium. Inverted mirrored glass reflectors are concealed within the crystal structure and so placed that they direct the light from Mazda C lamps to the ceiling without striking the crystals. Floodlighting projectors directed on the luminaire cause it to sparkle and glow. In addition, a large number of small lamps with concentrated filaments furnish direct light for extremely brilliant effects used during intermissions.

With our present complexities of business life, most meetings and performances occur after dark and generally indoors. Proper lighting is, therefore, a very important factor not only for the transaction of business and comfort of the audience, but also as a very effective means of decoration, and of creating a suitable atmosphere.

Electricity is almost universally applied for lighting, due to its safety, ease of control and adaptability. Our modern stage productions would indeed be impossible if we had to depend

on the candles, oil lamps and gas burners of by-gone days.

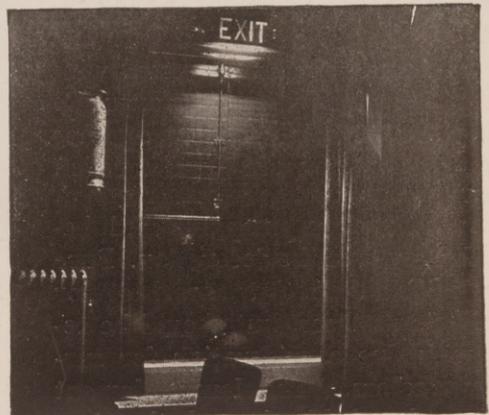
### Entrance, Foyer and Lounge.

At the entrance of the theater, it is necessary to have brilliant illumination to attract the passing crowd. The pupil of the eye contracts when subjected to this bright lighting and unless the foyer is fairly well lighted, it will appear dark by contrast. Since the eye requires a certain period of time to accommodate itself to changes in intensity we must gradually reduce the amount of illumination as we proceed from the entrance to the auditorium.

In attaining this end, it seems desirable to provide a moderate intensity of about five foot-candles in the foyer, and there is a wide latitude in the choice of equipment; hanging luminaires, pedestal lamps, wall luminaires and cornice lighting have all been applied with success.

A golden yellowish tone of light is frequently employed and proves very attractive. The hangings and wall decorations should be planned with due consideration to the color of the illumination. In other words, the fabric should be examined under the particular light to be used before it is selected. Under yellow light a deep blue appears as a slate green, a red appears orange, a green, yellowish green and so on. It is, therefore, possible to enhance the decorative value by the proper combination of color or to materially distort the appearance.

In the rest rooms, the decorative element is predominant and as the name implies, it is desirable to stimulate the effects produced in the living room at home. A discussion of the vari-



Rapid Egress from a Building is Promoted through Good Lighting. A properly designed exit light casts its illumination on the doorsill and surrounding area, as well as indicating the location.



Night Photograph of an Attractive Theater Illuminated Through Decorated Ceiling Panels. At each side of the proscenium arch, a luminaire in the form of a miniature castle is used. The mural paintings on the side walls, executed by a well-known artist, are specially lighted by 100-watt Mazda C lamps in mirrored glass reflectors on 15-in. centers behind ceiling beams. As the theater is designed for use of children, all the decorations are planned to have a special appeal to them.

ous schemes of lighting applicable here will be found in Bulletin Index 41, Residence Lighting.

We proceed from the foyer to the lounge and a lower intensity of illumination, one to two foot-candles, is desirable here. As a contrast, a reddish amber tint of light may be used. The theatre and motion picture house are becoming more elaborately decorated each year, and the value of light as a decorative medium is being appreciated more and more. It is impossible to go into detail as to the many ways light may be used and we must content ourselves with a few specific examples.

There are frequently a number of translucent vases as part of the lounge decoration. Under ordinary conditions they are simply one element in the general scheme, dull and lifeless. If this room is illuminated as suggested with warm light and one vase has a purple light inside of it, another green, another blue, and so on, they will stand in relief, touches of color and life. By such means, beauties heretofore unappreciated become high spots of the decoration. Pure colors, rather than tints, are best for such effects as these, but should be selected with due consideration for surrounding colors. The lamp filament should not be visible through the glass and the surface, while appreciably brighter than the background, not brilliant enough to be glaring. Art glass inserts can be similarly treated. Silk

shaded table and floor lamps and even wall units are among the devices to which pure color can be applied for essentially decorative effects (that is, no dependence is put on them for general illumination), the object, of course, being to obtain contrast and touches of high light.

In some foyers miniature waterfalls or fountains are installed. Colored lamps in suitable moisture-proof fittings can be concealed behind the falling water and in the pool itself. A motor-driven flasher may be used to change the color of light continuously. The combinations are limitless and the fascination of watching the constantly varying play of color in the particles of water is indeed great.

Frequently clusters or bouquets of hothouse flowers are purchased to be used for decoration. They represent an appreciable expenditure and unless something striking is brought into play

they are scarcely noticed by the patrons for they fade into the background. How much more attractive the interior is when such flowers are spotlighted. A small automobile headlight reflector with concentrated filament lamp, fed by a stor-



This View is Indicative of the Elaborateness of the Lighting Equipment in a Modern Motion Picture Theater. The ceiling of the auditorium is of unusual beauty with a great dome 54 ft. across in the center which is lighted by 200 concealed lamps of various colors. At the center is suspended a chandelier of solid bronze, weighing 2500 lbs., 20 ft. long with a spread of 12 ft. This is fitted with 220 candle type lamps. The outer ring of the dome is illuminated by 10 indirect luminaires of unique design. A portion of the proscenium arch is of glass illuminated from behind and furnishing colored lighting effects during the overture.

age battery or through a transformer, can be effectively concealed and used to direct a beam of light on the flowers. Small floodlighting projectors with standard voltage lamps or even ordinary deep bowl reflectors with low wattage lamps have been applied with excellent results.

In other instances marble busts, statuettes and the like are placed in niches but receive no special lighting treatment. Concealed colored lamps can be used to produce some very striking effects. The application of tinted light to statuary or architectural details is one of the most interesting phases of illumination. For example, if an object in relief is lighted by red light from one side and by green light from the opposite side, the shadows cast by the red will be illuminated in green; those cast by the green light will be high spots of red light, at points where both colors mix, yellow light will result. The play of light and shade in color is truly marvelous. Delicate shadings from one tint to another are produced and unthought of, hidden beauties brought to life. With three colors still more startling effects can be secured.

These effects of light can be well studied by using a small black box or booth with colored lamps at different points so wired that they can be readily controlled.

#### Theater Auditorium.

When one reads an article of this nature, he expects to find definite data that will indicate how to light the type of building under consideration. Occasionally, from the very nature of the problem, he will be disappointed. Such is the case with the theater auditorium. As with the church, there is purposely no standardization of architectural treatment or decoration. It is well so, for thus we avoid monotony and secure interest. No two theaters are identical, their shapes and sizes vary according to no rule. Ceiling and wall decorations are widely different and even the ideals of the designers may be at diagrammatically opposite points.

It is therefore safe to say that no two auditoriums should be similarly lighted and the best that can be done in discussing the question is to lay down certain general principles which should be followed and then mention a few schemes of illumination that have proven satisfactory.

The theater must first of all be comfortable, for no matter how interesting the production, if we are annoyed by brilliant lights between acts, we are not in a condition of mental ease.

A high intensity of illumination is not necessary nor desirable. If from one to two foot-can-

dles are provided throughout, there will be enough light for reading programs and seat checks as well as making access to seats an easy matter. On the other hand, the mistake can be very eyestrain in the attempt to read. Some producers with fixed views on the matter actually provide so little light that this condition prevails.

It may often be desirable to vary the amount of light in the auditorium previous to the opening of the performance and between the acts. The eye accommodates itself to the lighting provided. If, for example, the curtain rises on a scene in a mystery play where the stage is quite dark, and it is not desired that movements be seen with certainty, then a rather high intensity of illumination in the auditorium will heighten the effect by contrast. Similarly, if the curtain rises on a moonlight scene which although dim should be seen clearly, and too high an intensity has been prevailing in the house the setting appears abnormally dark by contrast. It would have been better to have lighted the room to a lower value.

It is almost always desirable to gradually dim the house lights as the stage lights are brought



Night View Beneath the Balcony in a Medium Sized Motion Picture Theater. Totally indirect equipment is employed, a number of Mazda C lamps and mirrored glass reflectors being concealed by an ornamental composition housing. The location of outlets conforms with the decorative treatment of the ceiling. Soft, well diffused, glareless illumination is provided.

up, rather than "pulling the switch" with resultant extreme contrasts.

With some types of structures a large central luminaire is best suited, for others a distributed arrangement of outlets is logical.

If the luminaires are of the direct type, no matter how elaborate their design, care should be taken that the visible sources are of low brightness and also that they are not normally viewed against a dark background. For most conditions side walls should not be particularly bright as a subdued rather than a brilliant effect is generally desirable. When the ceiling is light in color, indi-



VIEW OF FACADE  
PALAZZO del QUIRINALE, ROME.  
BERNINA, ARCHITECT



ENTRANCE DETAIL  
PALAZZO del QUIRINALE, ROME.  
BERNINA, ARCHITECT

# PERSONAL MENTION

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## Dr. D. Everett Waid.

D. Everett Waid, F. A. I. A., treasurer of The American Institute of Architects and president of the New York Chapter of the Institute, has received from his Alma Mater, Monmouth College, the honorary L.L. D degree.

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J. Ed. Overlook, architect, has moved his office from 1209½ Main Street to Suite 519, Wilson Building, Dallas, Texas.

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Meanor & Handloser, architects, have moved their offices from the Robson-Pritchard Building to the fourth floor of the Professional Building, Huntington, W. Va.

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Announcement is made of the establishment of a partnership between J. Frank Collins, of Spartanburg, and Jos. B. Simpson, of Greenville, for the general practice of architecture, with offices in the Andrews-Law Building, Spartanburg, S. C. Manufacturers' catalogs and samples are desired.

---

Wilbur T. Mills, of Columbus, Ohio, formerly president of the Mills and Millspaugh Company of that city, announces that he is resuming the independent practice of architecture at 900 Arts Building, Columbus, Ohio.

---

It is announced that the name of the Watson Engineering Company has been changed to the Watson Company, architects and engineers. The address of the company remains the same, namely, 4614 Prospect Avenue, Cleveland, Ohio.

---

Herbert Foltz, architect, announces the removal of his offices to Suite 704-710 in the new J. F. Wild Building, 129 East Market Street, Indianapolis, Ind.

---

Randolph F. Ware, architect, announces the removal of his offices to 341 York Street, Newport, Ky.

---

Charles Morris and Joseph L. Weinberg, architects, have formed a partnership for the general practice of architecture under the firm name of Morris & Weinberg, 3226 Euclid Avenue, Cleveland, Ohio.

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## Announcement.

The Portland Cement Association announces the appointment of Walter B. Elcock as assistant general manager in charge of the Southeastern offices of the Portland Cement Association.

Mr. Elcock joined the staff of the Portland Cement Association in April, 1914. During 1915 he was division engineer in charge of association work in Colorado, Utah, Wyoming and Idaho. In 1916 he was appointed district manager in charge of our Atlanta office. He has been continuously with the association since joining our staff, excepting for two years spent in the army during the war as major of infantry.

Mr. Elcock's headquarters will be at heretofore at the Portland Cement Association office in the Hurt Building, Atlanta.

Association district offices have recently been opened in New Orleans, Jacksonville, Birmingham and Memphis. These offices, as well as one to be established in Raleigh, will increase the effectiveness of our service to users of cement and concrete in Tennessee, North Carolina, South Carolina, Georgia, Florida, Alabama, Mississippi and Louisiana.

Portland Cement Association.

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## Announcement.

The Portland Cement Association announces the appointment of James A. Hudson as district engineer in charge of a new association office just opened in Memphis in the Exchange Building. This office will have charge of association activities in Tennessee.

For several years prior to joining the association staff in April, 1919, Mr. Hudson was engaged in various engineering and construction work with one of the Southern cement companies, and later with the War Industries Board.

Mr. Hudson has been connected with the Atlanta office of the association as field representative in Mississippi.

Portland Cement Association.

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Announcement is made that Lawrence S. Funke, architect, has opened an office for the practice of architecture at 707 Haas & Howell Building, Atlanta, Georgia. Manufacturers' catalogs and samples will be appreciated.

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Raphael A. Nicolais, architect, announces the removal of his offices from the Fort Worth National Bank Building to Suite 2106, F. & M. Bank Building, Fort Worth, Texas.

## Elexits Apply Idea of Convenience Outlets to Lighting Fixtures

By C. H. Huntley.

(General Electric Co.)

THE convenience outlet is a recognizedly essential part of every well planned house, store and office building wiring scheme.

Now comes the Elexit, which applies the same idea to ceiling and wall lighting units. In effect it makes it possible to move these lighting fixtures, especially wall brackets, practically as easily as portable lamps. It gives the lighting system a flexibility, the lack of which has long been apparent and the need for supplying which has been given long and continued study.

The term Elexits includes a specially designed outlet into which an attaching device on the end of the lighting fixture hooks. The fixture is rigidly and strongly held—as rigidly and as strongly as by the present methods—and the electric connection is completed by snapping it in, much as in the case of the convenience outlet. The fixture is detached by simply pressing in a small and inconspicuous spring latch, which releases the hooks. The entire attaching device is concealed under the canopy of the fixture. No skill, and no more labor than is involved in hanging or taking down a picture, is required. It should be made clear that the name Elexit covers only the outlet and the attaching device. It is not the name of any type, design or make of lighting fixtures, and can be had on lighting units, of a wide range of kinds and manufacture. Elexits are manufactured by various electrical manufacturers.

The flexibility of lighting arrangements which they provide helps solve two problems that from time to time confront the architect—designing the lighting so as to permit different arrangements of light in certain rooms for special occasions.

With Elexit outlets in the walls, wall lamps may be placed wherever the outlets are located. Thus, instead of its being necessary to place the furniture in accordances with the placement of the lights, the furniture may be arranged as desired and the lighting made to conform to it, and rearranged as often as wished.

If an unusual amount of light is desired in a room for some special event, lighting units may be detached from other rooms and carried to it and attached easily and quickly.

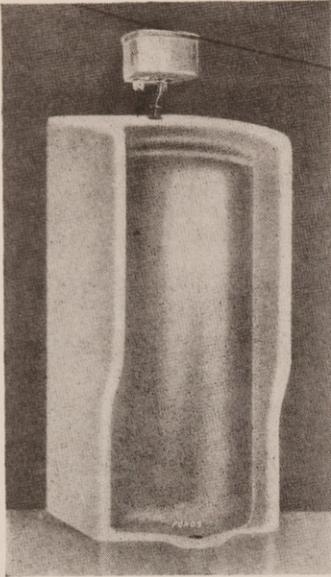
In the larger cities, where individual dwellings are the exception and apartment houses the rule, the limitations of space in apartment houses often presents a problem as to the placing of furniture and furnishings. The wall brackets are not infrequently in the wrong places for the furniture of the incoming or prospective tenant, and under normal conditions apartments quite often remain untenanted because they provide no suitable places for cherished pieces of household equipment.

In an apartment house completely equipped with Elexits, the superintendent, or the tenant himself, can make the location of wall brackets conform to the furniture and furnishings of the prospective tenant without cost and with little trouble. Furthermore, on the vacating of an apartment in a building thus equipped the superintendent can take down the fixtures, refinish them and replace them without having to call on an electrician to detach and attach them.

What is true of apartment houses in this respect is also largely true of hotels. It is said that all of the fixtures in a large hotel in New York are refinished in its own refinishing room three times a year. The time and money which would be saved under such circumstances with Elexits in use is strikingly apparent.

A somewhat similar condition exists in commercial and industrial buildings. A different arrangement of furniture, partitions or machines often becomes desirable. In such event it is usually necessary, where Elexits are not used, to make a substantial outlay for rewiring, or else to accept what seems to be the inevitable as exemplified in an improper and unsatisfactory arrangement of lights. On the other hand, if a liberal number of Elexits are installed, partitions, furniture or machinery can be changed at will with the certainty that there will be an Elexit outlet

# Good as It Looks!



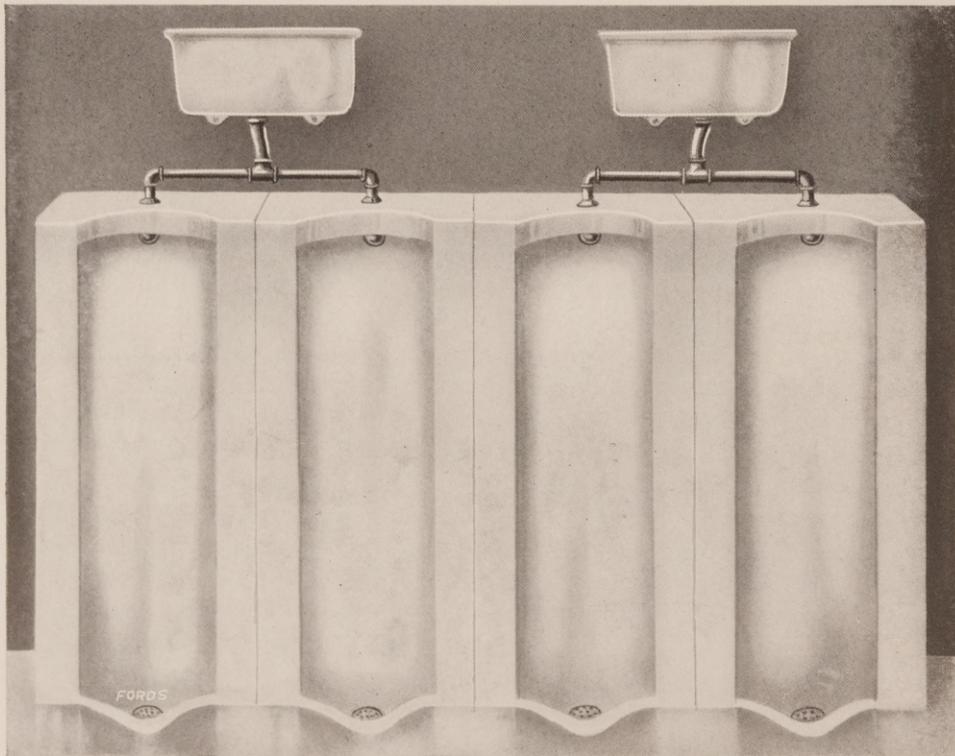
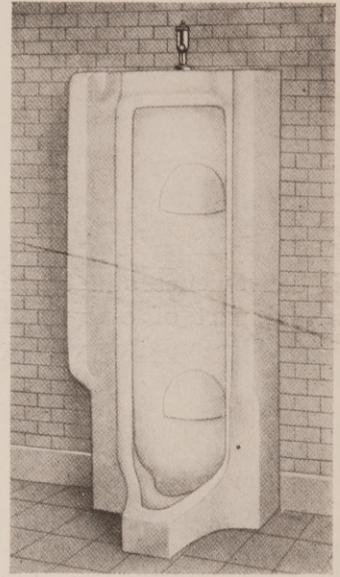
The difference in grade between Fords Porcelain Ware and the ordinary porcelain ware can readily be told at a glance. Its pure white, highly glazed finish, both inside and outside, lends the appearance of cleanliness, sanitation and refinement so much desired for the pantry, kitchen and bathroom.

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nearby to which the improperly located fixture can be transferred.

For several years past large department stores have found themselves confronted with the problem resulting from constantly changing methods of store lighting, involving frequent changes of fixtures. It is safe to say that progress in the art of lighting will surely be as great in the next ten years as in the past decade, so the installation of Elexits in large department stores becomes almost a necessity. With Elexits installed, the necessary changes in the types of lighting units can be made quickly by the store employes without the services of an electrician. The same principle applies also to the dwelling house.

In these stores and in hotels and commercial and industrial buildings, the cleaning of an inverted lighting fixture bowl presents a continual problem. It is necessary for a workman to get a stepladder and, while precariously perched on its top, to handle the washcloth, pails, etc. With Elexits installed, this problem is considerably simplified. A few spare lighting units can be kept on hand and the person who does the cleaning can substitute a clean one for the dirty one, washing the latter at his convenience without danger to himself or risk of breaking or straining the fixture.

Another field for the use of Elexits is presented by buildings like the Grand Central Palace in New York. By employing a proper installation of them, the lighting arrangements can be made to accord with the wishes of exhibitors, who can use the style of fixtures best suited to their particular display without being under the necessity of calling in an electrician or having to have unsightly wires about which would detract from the appearance of the exhibits. In such buildings Elexits should be installed all around the walls not more than three feet apart.

Museums and art galleries are additional buildings in which Elexits may advantageously be used. They may be installed there as in the supporting base for statuary, or at probable picture locations. In the latter case the Elexit plug may be used as a means of suspension for the pictures themselves as well as for a connection to the lamps which light the pictures.

Churches, banquet halls and theaters and similar places where the lighting needs are varying and seasonal, or where special occasions warrant additional lighting, offer another field. With Elexits provided, these problems are solved, for the number of fixtures may be increased or de-

creased at any time and to the extent desired.

The architect seeks to incorporate in the plans he devises not only the best of today's devices, but to anticipate, so far as he can, tomorrow's needs and possibilities.

Elexits aid in accomplishing both things. They add to the comfort and convenience of the house of today, promoting satisfaction on the part of the owner or tenant, and assure the building of an element of equipment that will be demanded tomorrow. It is a fair assumption that the use of Elexits will become universal in the near future. They are entirely practical, they meet a recognized need, and are the result of continued efforts to devise what has long been considered an improvement so ultra desirable that it virtually becomes a necessity. They are not a fad or a "wrinkle" or an ephemeral novelty. They represent a common sense idea which is rapidly being accepted because it meets a very clear and very general need.

---

#### SANITARY FLOOR MAT.

The sole leather floor mat has been built especially for use in lobbies and entrances in buildings. Many office buildings use the sole leather mat in the cabs of their elevators since it is so far superior to other methods of floor coverings in elevators. It has a reinforced end made by using a double blank process all along the edges and designed to eliminate dangerous curling corners and tripping hazard. If an elevator has the starter or other mechanism cut into the floor, the mat is cut out to fit around the starter box. Any shape or size mat can be made to order for any purpose. Because of its design the mat is sanitary and easily handled, rolling up like a carpet, cleaning itself as it is rolled. It is made in two thicknesses, namely 7/16th in. and 9/16th in. and in two kinds of surfaces, either the corrugated or the smooth surface. The smooth surface is of course preferred for use in elevators being easier on the feet, relieving fatigue. It is made of genuine solid sole leather stock held together by Bessemer galvanized steel wire with galvanized cleats for reinforcement along the outer edges.

In making the mat, the workman cuts out the little leather blanks or pieces by means of steel dies, strings it on the wires and it is then clamped to the desired width. Any length may be had but no width wider than 9 feet. Its heavy construction makes it efficient for the heavy wear in elevators and lobbies, the main thoroughfares any building. Made by the Standard Heel & Counter Co., of St. Louis and Chicago.

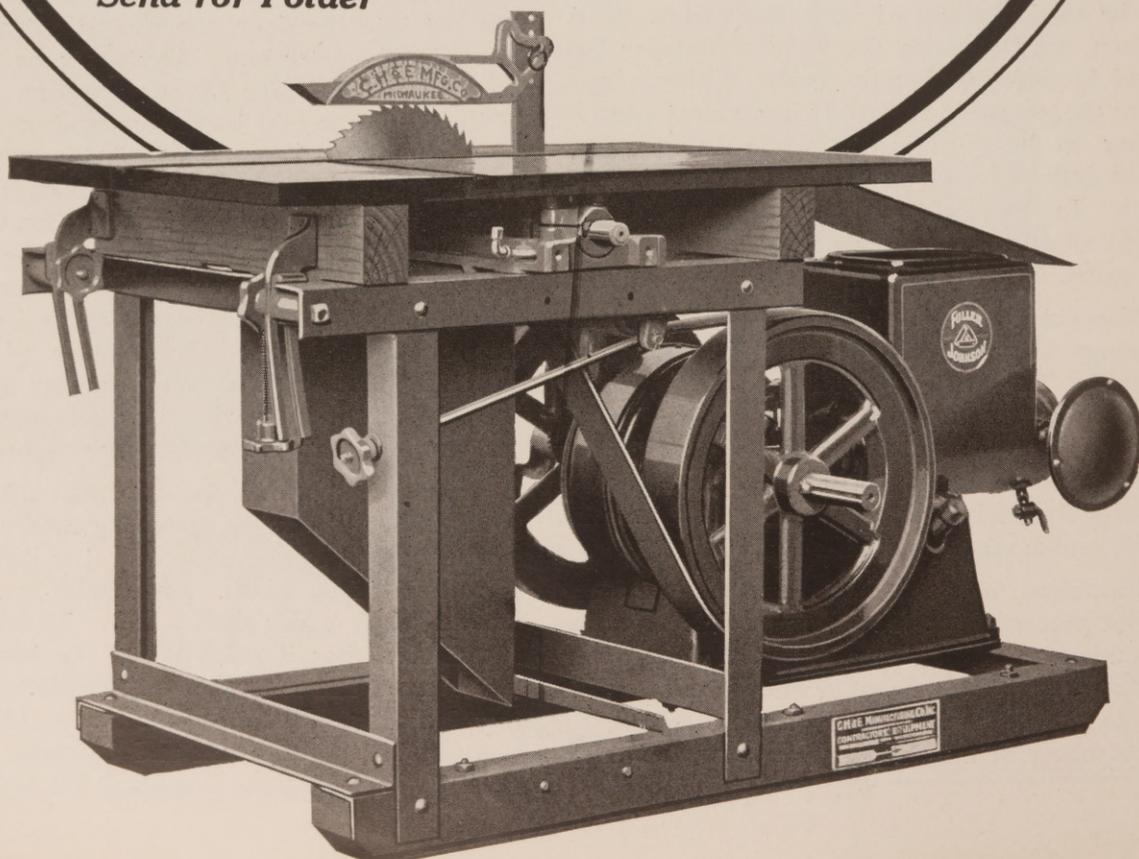
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# The Lighting of Theaters and Auditoriums

By A. L. POWELL.

(Continued from page 45)

rect luminaires find application or lamps can be concealed by coves or cornices.

Lamps concealed by art glass panels set flush with the ceiling or above a skylight offer another means of securing the desired result. This scheme is especially well suited beneath the balconies, where pendent fixtures would interfere with the view. With recessed lighting units, it is well to have some auxiliary units to avoid a dark ceiling.

The practice of studding architectural details with small lamps has little to recommend it either from the illumination or artistic standpoints.

It is required by law and desirable for the safety of patrons to provide lights indicating exits. Sometimes the luminaires used for this purpose merely mark the location of the door. Other equipments are so designed that they not only mark the exit but also provide sufficient illumination to allow convenient egress when the auditorium is in darkness. It is better that the light be thrown on the steps and not in the main body of the room.

## Motion Picture Auditorium.

The day of the dull, darkened motion picture auditorium is rapidly passing and the time is not far distant when suitable illumination will be mandatory. This will not work a hardship on the industry, for proper lighting will make the theater more attractive, reduce the liability of a panic and eliminate the gloom which is always attendant with a darkened room. All these features will tend to increase the attendance, which, of course, is the end toward which the management strives.

Contrary to the general impression it is quite feasible to provide sufficient illumination for patrons to find their way to the seats and even read the program without interfering with the appearance of the picture. Intensities in the order of .2 foot-candle at the rear of the house and .1 foot-candle at the front meet these conditions. Bright light sources must be eliminated of comfortable conditions for viewing the picture are desired and hence the indirect systems of illumination are of especial service here. A considerable amount of investigation work has been done on this subject.

In addition to providing the low intensity desirable while the picture is being shown, it is necessary to have a means of instantly flooding the auditorium with light. Fires, smoke, explosions, etc., are factors which often cause an audience to become panic-stricken. If with adequate light-

ing they can see for themselves the proximity of the danger, the chances of accident are decidedly reduced.

While it is true that the low intensity of illumination can be obtained through the use of dimmers inserted in the circuits, it is preferable to have the fixtures constructed to accommodate two or more circuits. Thus low wattage lamps can be burned at their proper efficiency for the low intensity and the loss of power in the resistance is avoided. Dimming devices are of course necessary to obtain gradations of color, when such effects are used.

In those auditoriums where it is not deemed advisable to supply at all times sufficient general illumination for the patron to find his seat with safety, so called aisle lights are employed to advantage.

The indirect system of illumination can be made to be decorative and as ornamental as any of the other systems which may be less applicable to this particular problem. It has the additional advantage that any degree of uniform illumination can be obtained without introducing glare. A fairly high intensity produced with the ordinary systems of direct lighting is quite likely to introduce glaring conditions. Most of the modern theaters have elaborately decorated ceilings and the upward light is an advantage.

Indirect lighting does not necessarily mean monotony. In recent years many forms of indirect equipment have been developed which permit a wide latitude in choice of equipment. Ornamental bowls in various decorations, pendant from the ceiling, are probably the most commonly encountered form. Coves and cornices can be well utilized for concealment of lamps and reflectors. Large portable floor stands so placed as not to interfere with the view have been applied. Wall brackets and urns with inverted mirrored reflectors are also called into play where there are no cornices available. In the long narrow theater with a low ceiling it is often desirable to use indirect wall luminaires in order to avoid interfering with the projection of the picture. In some instances, the front edge of the balcony has been extended and with special construction used as a location for indirect lighting units.

Even where indirect lighting is employed for the principal source of illumination, the effect of a direct lighting installation can be obtained by so designing the main fixture that it is luminous on the exterior. Even the cut crystal with its scintillating beauty has been employed for this

## How the Name Originated

The name 2-point is a good one. This is proven by the frequent inquiries we receive as to why it is so called. The answer is short: The name is unique and easily remembered. It is quickly said and written. It refers to positive, definite facts, hence carries an appeal to engineers and business-men, the men we wish to reach.

The facts refer to the construction of the product. For many years heat insulators were almost standardized. The heat loss through them was accepted as a necessary evil and no improvement was sought.

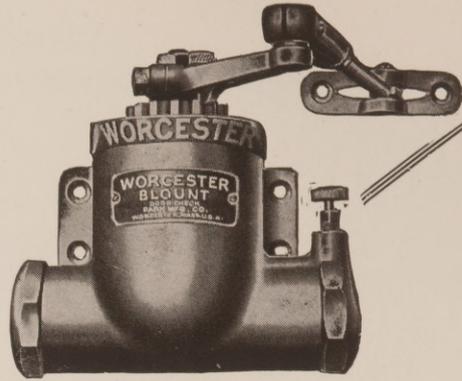
Then the idea of using asbestos fibres as a vehicle for loose Kieselguhr occurred to us and was carried to a practical form. Furthermore, the surface of the sheet of Kieselguhr bearing asbestos was mechanically treated to hold great quantities of air in tiny pockets. Thus an insulator was secured possessing the endurance of felted asbestos to heat, blows, vibration, wearing and all the other deteriorating conditions high temperature insulation must face, yet having highest efficiency.

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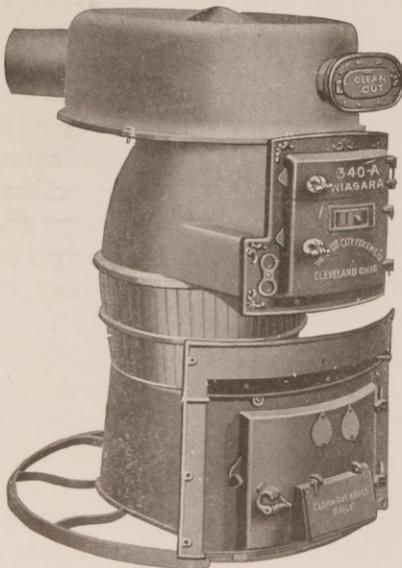
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purpose. Fixtures have been made carrying inverted mirrored glass reflectors with relatively large efficient lamps, the reflectors concealed within a framework or housing and this in turn surrounded by a crystal casing. Alone the crystals would appear dull and lifeless but skillfully placed and properly directed floodlighting projectors send beams of light on the exterior of the fixture, causing it to have the desired sparkle. Similarly the candlestick with silk shade has been employed in conjunction with the large units.

Where cornices and coves are used for concealing the light, attention must be paid to the equipment of these. Frequently, through a desire to save on the original cost, receptacles are placed within the cove and no reflecting device whatever provided, the rough plaster finish being used. Needless to say, this has relatively little reflecting power and moreover, unless the contour of the cove is designed by someone who understands the principles of light reflection, it is an accident if a favorable distribution of light results. Mirrored glass reflectors are very efficient for this purpose and should be employed. Enamelled reflectors are next in order of desirability. A reflecting surface finished in paint is likely to deteriorate very rapidly and plaster is open to the same objection. Small particles of dirt lodge in the crevices between the particles of plaster and reduce its reflecting power.

Not only is the question of the design of the cove and choice of reflecting equipment for use in it of importance but observation of actual installations of this type of lighting indicates oversight of an element which must be given attention if the lighting is to be permanently successful. This is the cleaning of lighting equipment. In many instances months and even years elapse without a thorough cleaning. The only attention the lighting receives is an occasional replacement of burned out lamps and this is not attended to until the effect becomes so spotted that it is extremely noticeable. The accumulation of foreign material on the reflecting surfaces and lamps is indeed heavy, and it would be fair to assume that with the neglect so prevalent and the depreciation factor which must be applied to the installation is considerably over 50 per cent. In other words, half of the light which is being paid for is being lost through dirty conditions.

The orchestra lights in the moving picture auditorium should be carefully selected. If poorly designed with considerable reflected or "spill" light, they are annoying to the audience and also affect the clearness of the picture. Several really satisfactory types utilizing the indirect principle are now on the market.

Attention should be paid to the color of the

"frame" surrounding the picture. The deep black frequently employed is not well suited, for it creates too severe contrast, a rather light tone of gray is preferable.

In many of the larger more modern houses, elaborate systems of colored lighting are installed. The use of colored light for psychological and decorative effects is unquestionably most desirable, and we shall see more of this as time progresses. At present, however, huge clusters of lamps of pure color are often visible and the lighting fixtures themselves rather than the lighting effects become the center of attraction. The novelty appeals but this method of illumination is scarcely subtle enough to endure. Eventually light will be applied with greater ingenuity or skill and delicate effects, rather than an obviously crude method, will come into use.

Colored light is of great value in the motion picture house in connection with the musical program. The relation of light and music is not as indefinite as many imagine, and this question is discussed in detail in a later section.

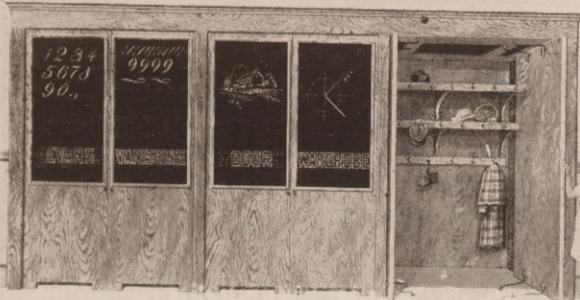
The lighting of the motion picture auditorium will undoubtedly go through the same transition that the "world's fair" has experienced. In the days of the St. Louis, Jamestown and Buffalo Expositions, bare incandescent lamps were studded over all the buildings to furnish so called "outline" lighting. The effect was striking at first sight, but was not of a quality which caused one to pause and admire for an appreciable length of time. At the Panama Pacific and at the Brazilian Centennial Expositions, outline lighting was tabooed. Soft pastel shades and tints were employed, lamps were concealed from view and the beauties of the architecture brought out through painting with light. We might use an analogy to still further illustrate this. In music the obvious soon dies, but the composition with hidden beauty survives. Most of the popular airs of a generation ago are unknown to the youth of today but Beethoven's "Minuet" will be "popular" centuries hence.

#### \$250,000 Church Building for Birmingham.

Birmingham, Ala.—Plans for a new building here for the First Christian Church at Twenty-first street and Seventh avenue, to cost about \$250,000, are being prepared by W. L. Welton, of Birmingham. It is stated that construction will begin soon. The main auditorium will seat 1200.

The building committee, of which J. B. McWane is chairman, is incorporating in its plans an office building over and around the church.

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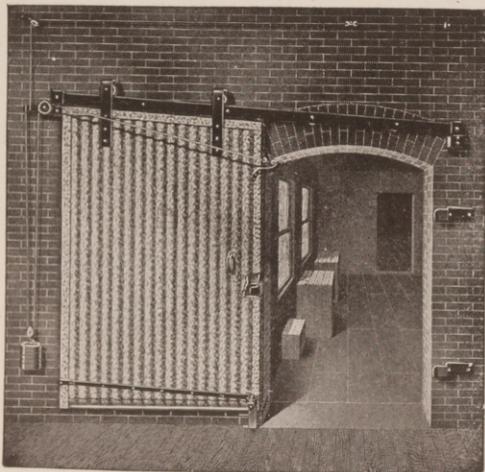
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## “Hills and Dales”—The Country Estate of Fuller E. Callaway, Esq., LaGrange, Ga.

(Continued from page 34)

thoughts of swarthy aborigines and mingle with those of the Chinese tong-tong when the tea plants of China greet the eyes.

Rising in regal majesty above the surrounding forestry is a giant Yew of mighty proportions. History lurks on every limb, and thoughts dash back to yester centuries. Back in its native England what scenes might this monarch of the garden have viewed. What escaping knight have hidden in its protecting foliage while a pursuing cavalcade dashed by, what battle ranged about its trunk, what fair daughter of Eve within its shade listened to the wooing words of gallant youth, what pageant of legendary lore found life beneath its mothering boughs, and was that scar left by Robin Hood who cleaved a bough to bend into a bow—the head grows dizzy with the rush of thought. Its setting in a court of royal trees and shrubs and flowers is worthy of its prestige. Nearby a quiet pool mirrors its proud the pool. And within the droop of the Yew tree's far reaching branches, while the surrounding flowers are born anew in the glistening waters of longest limbs secluded benches are near-surrounded and hidden by flowers and shrubs that lurk about the bench-feet.

Climbing, clinging vines wind about the shrubbery and benches and trees. Now thrusting their tendrils upward, seeking the sun's rays, failing to find a foot hold they reach out in lateral lines embracing, clinging to whatever comes within their grasp. Entwined and enmeshed vines and shrubs and flowers grow in wondrous array forming ideal nesting places for the wealth of feathered denizens of the gardens. From the dense thickest growth comes the mating call of

the thrush, the red bird, and the lilting song of the mocker. High overhead the saucy jay flaunts his graceful body, struts authoritively and scolds in endearing terms the earliest spring brood. Peace and quiet predominate and the thought flashes through the mind, “God's in his heaven, all's right with the world.”

During the cold winter months the birds find shelter in well constructed bird houses that have been placed appropriately about the garden.

“Hills and Dales” is a living, breathing kaleidoscope of color and sound and symphony that awakes all the artist's praise and commendation.

An old stone well covered with ivy, is the center of attraction in the West Garden. It was from this well that the Nubian slaves of ante-bellum days drew water for the growing flowers and shrubbery to drink.

The Callaways have added a new addition to the garden. Separated from the original garden by a broad driveway it has a dissimilar beauty from the Ferrell Garden. Old fashioned sunflowers, larkspur, bright roses, and poppies bloom in profusion; colors almost clash, blend and sway to and fro in the breezes. One feels that they have been caught in an unending panorama of beauty and color but suddenly the flowering growth is left behind and brown cottages rise before the eyes, half clothed pickaninnies play about the door, gaze up in African awe at the intruder, hesitate and grin in broad welcome. Standing on the little eminence where the houses rest one gets a panorama view of the great farms that stretch in unending waves toward a horizon of trees to the westward.

## Review of Recent Architectural Books and Trade Catalogues

### CONCRETE CONSTRUCTION FOR ARCHITECTS.

By DeWitt C. Pond.

(Author of “Engineering for Architects.”)

Mr. Pond the author of this valuable work has for many years been identified with the office of one of the largest and well know architectural firms in this country, and has had charge

of the various engineering problems in the construction of many large factories and industrial buildings built of reinforced concrete. The book is fully illustrated with drawings of special engineering features, and is an authoritative and up-to-date work.

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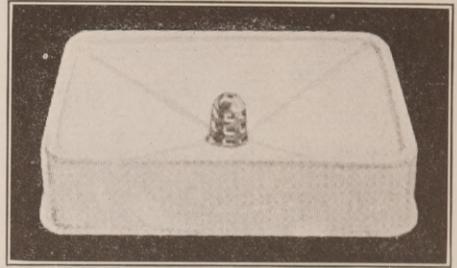
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#### NEW CATALOGUE ISSUED BY THE J. G. WILSON CORPN.

The new catalogue issued by The J. G. Wilson Corporation, New York City, gives a comprehensive and thorough description of the operation and advantages of their rolling steel doors. This catalogue is fully illustrated with cross section views of the machinery that operates the doors and contains measured drawings with explanation as to installation of the different types and styles of doors.

Architects desiring this interesting catalogue may obtain copy by writing to THE J. G. WILSON CORPORATION, 11 East 36th St., New York City. Mention Catalogue No. 35.

#### THE CONTROL OF LIGHTING IN THEATRES.

Is the name of the beautiful and instructive book recently issued by the Frank Adam Electric Company of St. Louis, Mo., which is being distributed among the architects throughout the country upon request upon their office stationery.

The compilers of this book have the following to say in their introduction, "Necessity, in a way, has produced the most of this book—for there has always been a great need for standardized practice, and greater effectiveness in stage and auditorium lighting. We want this book to be an aid to the appreciation and production of better lighting. A history of lighting control in the theatre is given and the development of the Major System is fully explained with illustrations and text. Architects should have this book in their files.

#### NEW SOUTHERN LITERARY MAGAZINE.

We have received the first two issues of THE SOUTHERN LITERARY MAGAZINE, and while all the members of the architectural profession may not be interested in reading a magazine of this type yet we feel that those who might be will profit by this short review.

THE SOUTHERN LITERARY MAGAZINE is very beautifully gotten up being well illustrated with the finest pictures of out door scenery and contains many verses by the South's most able poets. Short stories, discussions of literary subjects that should be of interest to all well educated people and comments upon the latest

books compose a well balanced magazine of this nature. One feature that is very interesting is a series of pen sketches by the famous French artist LeMoyne of Indian life during the early days when the state of Florida was being settled. These sketches are very valuable from a historical standpoint and show the work of a gifted artist with the pen.

The magazine is issued monthly, 9x12, printed on the finest coated paper, well illustrated and a very splendid magazine for the lover of fine literature. Price \$3.00 per year. Published by THE HARMAN PUBLISHING COMPANY, ATLANTA, GA.

#### BEAUTY PLUS SERVICE IN FLOORS.

The new edition of "Beauty Plus Service in Floors" published by the Southern Pine Association has just come from the press. It contains detailed directions for the laying, finishing and care of Southern Pine floors, as well as information on the subject of standard sizes and grades of Southern Pine flooring.

This booklet will be mailed upon request without charge to any point in the United States and Canada east of the Rocky Mountains.

Write to the editor of this magazine for copy or direct to THE SOUTHERN PINE ASSOCIATION, NEW ORLEANS, LA.

#### THINGS YOU OUGHT TO KNOW ABOUT CASEMENT WINDOWS.

This is the title of the new booklet just issued by the Casement Hardware Company, 230 E. Ohio St., Chicago, Ill., and which is of extreme interest to the architect who desires to use and know more about the uses of casement windows. Catalogue No. 9 issued as a supplement to this booklet gives measured drawings showing operation and installation of their line of casement hardware.

Copy sent upon request for your files. Copy may be had by writing to the editor of this magazine or direct to the CASEMENT HARDWARE COMPANY, CHICAGO, ILL.

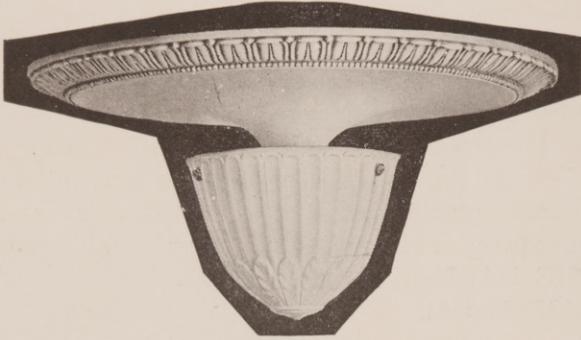
#### NEW CATALOGUE.

The Bommer Spring Hinge Co., 251-271 Clason Avenue, Brooklyn, N. Y., recently issued their new Catalog No. 47, illustrating their well known line of Bommer Spring Hinges.

We consider this catalog to be beautiful, comprehensive and exceptionally practical; it embodies working drawings and dimension tables for the selection of the proper size spring hinges for various doors, and is replete with information of value to all architects, builders and hardware dealers as well as to all users of spring hinges.

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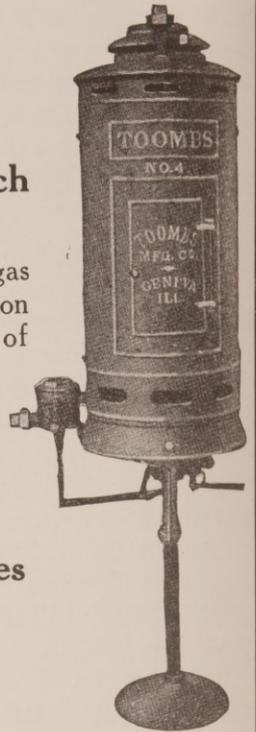
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Granatex Stucco has been purchased by leading builders' supply and lumber dealers during the past two years.

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## SPECIAL FINISHES FOR GRANATEX STUCCO.

The beauty and attractiveness of a house depend to a large extent upon the individuality of the finished surface. A much greater variety of tones, texture, and combinations may be obtained with the pebble dashes than with any other form of finish, and magnesite stucco is well adapted to hold the pebbles firmly by its very high strength and bonding power, but if there is a demand for another type of finish the following directions should be closely adhered to.

**SMOOTH** finish may be produced only with a bronze, celluloid, or bakelite trowel. A steel trowel discolors the surface of magnesite stucco when a finish is attempted with it. Work the surface as little as possible and not in one spot more than another.

**FLOAT** finish may be produced by gently rubbing the surface with a wooden or cork float after the stucco has partially set up. A fine-grained roughness is produced.

**SPONGE** finish may be produced by dabbing a sponge against the soft surface of the stucco. Rougher textures are produced by greater pressure with the sponge. Dip the sponge frequently into a pail of the magnesium chloride binder solution to keep it clean, and squeeze out the excess liquid.

**STIPPLE** finish is produced by tapping the ends of the bristles of the brush or a broom against the surface of the soft stucco. Stippling is a very crude and unscientific method of surfacing, as it not only reduces the denseness of the surface, but also punches the stucco full of holes. These holes catch and carry water into the body of the stucco, thus reducing its waterproofness. The stipple finish is NOT recommended.

**LIFTED** finish, produced by pressing the trowel flat on the surface and then lifting away is open to the same objection as stippling.

**SPLATTER** finish (throwing soft lumps of stucco on the surface) is certain to be uneven and is otherwise undesirable.

National Magnesite Stucco Company.

---

### ANNOUNCEMENT.

The Indiana Flooring Company takes pleasure in announcing it has taken over and merged with its business the firm of G. W. Koch & Son, Inc., founded in 1857, of No. 9 East 40th Street, New York City, manufacturers of high grade parquetry and specialty flooring.

This merger includes the factory and entire personell of G. W. Koch & Son, Inc. Mr. A. J. Lehmer its former president has become Vice-President of the Indiana Flooring Company in charge of its Koch department. It is the purpose

of the Indiana Flooring Company in this department to adhere to the same high standards of material and workmanship that G. W. Koch & Son have maintained for over 65 years.

---

### ANNOUNCEMENT.

Beginning June 1, 1923, Universal cement will be sold and invoiced by the sack instead of by the barrel.

On cement sold prior to that date, the price per sack will be determined by dividing by four the price per barrel. On quotations and sales made on and after June 1, the price will be figured by the sack.

This change is made only after sending an inquiry to thousands of cement buyers, including dealers, contractors, architects and engineers, large industrial concerns and others. The replies were overwhelmingly in favor of the change.

Universal Portland Cement Co.

---

### REPAIRS BROKEN CONCRETE FLOORS QUICKLY.

**QUICKFIX**, a new compound for repairing concrete floors that will produce a patch of flint-like hardness in 48 hours, has recently been developed by The Master Builders Company, Cleveland, Ohio. When used according to the method specified by the manufacturers, **QUICKFIX** will produce permanent patches in concrete that can be used two days after installation, contrasting with the two to three week period heretofore needed for concrete patches to harden.

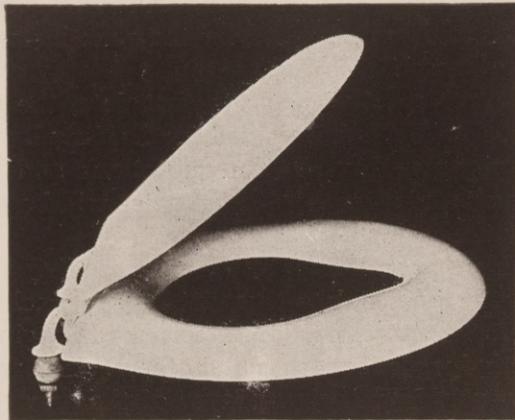
One serious problem that the maintenance divisions of industrial plants constantly face, and for which no solution has until now been found, is the efficient maintenance of concrete floors and driveways. The increasing volume of internal trucking done for the most part with steel wheeled trucks and trailers, has resulted in more rapid dusting, crumbling, and disintegration of the floors and roadways over which the traffic moves. Operations are finally impeded by the poor condition of the route, and the necessary repairs are undertaken later, as a rule, than they should have been due to unwillingness to block and divert traffic until absolutely unavoidable.

After making the repairs it has been the practice to block off the affected areas until the patches are hard enough to resist wear. This is usually a period of from two to three weeks, varying with weather and temperature, the nature of the surface repaired, and the methods used. During this period all traffic must follow a circuitous route at considerable inconvenience and loss of time.

A special study of this problem by the Master Builders Company, who are specialists in con-

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NICES, ELEVATORS, SKYLIGHTS,  
ROOFING AND SIDING, MILL-  
WORK AND GLASS.

crete floor construction, has enabled them to develop a material and a method of patching which shortens this repair period to the minimum. The material is QUICKFIX and when properly applied only 48 hours is required to produce a surface sufficiently hard to bear moderate traffic, and 60 hours fits it for normal use.

The installation of QUICKFIX patches can be made by any handy man, not necessarily skilled in the handling of concrete, by following directions furnished with the material. QUICKFIX speeds the hydration of the cement. In 24 hours the strength of a Quickfix patch is 71 per cent greater than that of ordinary cement mixtures; the permanent tensile and compressive strength of the patch is considerably greater than that of ordinary cement. In addition Quickfix furnishes a binding property which not only bonds the coarser aggregates of the patch, but which bonds the patch firmly to the edges of the old surface. The resulting flint-like patch becomes practically an inherent part of the old floor.

Interference with traffic is very largely eliminated. Patches can be laid Saturday noon and put into use Monday morning. The cost of using Quickfix for floor repair is less than two cents a square foot which is decidedly moderate when the inconvenience of having traffic hindered is considered.

#### MORTON C. TUTTLE COMPANY

813 Converse Building, 101 Milk Street, Boston, Mass.

##### A Statement.

A statement such as this seems to offer the best and simplest means of widely informing my friends that I have withdrawn from the general managership of the Aberthaw Construction Company, of Boston, and have established a new corporation to be known as the Morton C. Tuttle Company, which will engage in general building and in water power construction.

With me in this enterprise are associated, as directing officers, Messrs. Nathaniel McL. Sage, Clayton W. Mayers, and Lyle M. Richardson, all of whom have been for some time past, co-workers with me in the Aberthaw Company.

A few words concerning each:

Mr. Sage followed preliminary years at Massachusetts Institute of Technology with an exacting practical experience in building, which included every stage from the position of job time-keeper to that of superintendent in charge of important operations. His war service was with the Bethlehem Ship Building Corporation, in the building of destroyers. During the past five years, he has been manager of the Southern

office of the Aberthaw Construction Company, at Atlanta. Here his large undertakings have included such varied and scattered items as a dry dock at Pensacola, Florida, an office building in Atlanta, and construction in the Carolinas, Georgia and Tennessee.

Mr. Sage's close and friendly associations with the South have made him conversant with business conditions and methods in that section—particularly as they influence costs of industrial building and operation. He is thus competent to advise intelligently concerning interests affecting the South.

Mr. Mayers has added fifteen years of work in engineering and accounting to his college training at Haverford. During nine of these years he has been estimator and chief estimator for the Aberthaw Construction Company. His understanding of the theory and practice of engineering design has been exemplified in the sound result of his methods. These, together with his lectures and his writings, have won him national reputation as an authority in the highly technical field of construction costs. Mr. Mayers is a contributor to Hoole's **Hand Books**, and his texts, **Economy in the Design of Concrete Buildings**, and **Estimating Concrete Buildings**, in addition to extensive circulation among practitioners, have been adopted for class use by more than one hundred schools and colleges of engineering.

Mr. Richardson is a graduate in Civil Engineering of the Massachusetts Institute of Technology. Since then he has lived in the midst of building, having risen through all grades to the position of general superintendent in charge of Southern work for the Aberthaw Company.

Arrangements have likewise been completed for adding to the Tuttle Company's staff Mr. Otto R. Rietschlin, who, for six years, has been employment expert for the Aberthaw Company. Mr. Rietschlin, a graduate of Massachusetts Institute of Technology, is an experienced engineer, a student of labor problems, and a resourceful executive.

Because no policy and no system may prove more effective than the men through whom they are to function, I have felt it well thus briefly to characterize the officer personnel of the Morton C. Tuttle Company. In addition to their individual attainments, it is noteworthy that these men are accustomed to working together as a unified group.

As for myself, I care to add little to the statement that I have been with the Aberthaw Construction Company for close to twenty-five years.

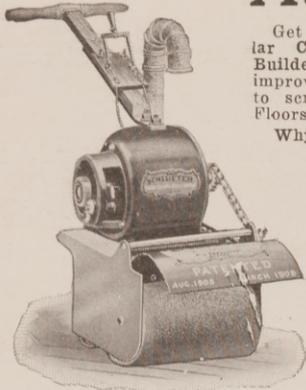
Soon after the outbreak of the World War, on request of the War Industries Board, I organized the Emergency Construction Committee,

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Bearing—Electric

## Floor Surfacing Machines

### Attention!



Get in LINE with all the Regular Contractors, Carpenters and Builders. What you need is an improved Schlueter Floor Surfer to scrape all your old and new floors.

Why surface by hand and suffer—Loss of Time—Money, and Contracts on account of unsatisfactory work, when you can purchase an IMPROVED SCHLUETER SURFACER—the machine with all troubles left out!

“The SCHLUETER Sur-facers are worth their weight in gold” as one of our customers describes them, and he is right.

A few jobs and the machine has paid for itself. In a short time the people will know who and what you are ; you get the

work because you have the TOOL. You advance to a higher grade and are a man of high class work, for that is just what the people of today demand.

We want to send you a SCHLUETER on Trial and let you see for your-self the quantity and quality of work it accomplishes.

#### The Improved SCHLUETER Floor Surfer

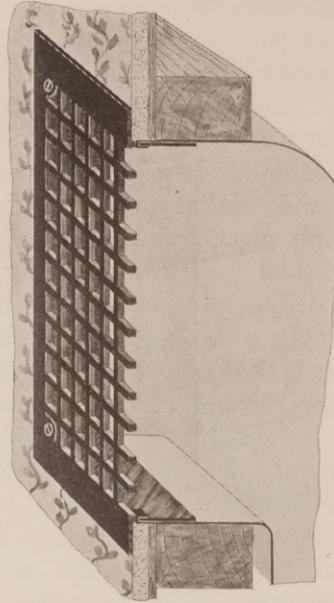
will surface right up to the wall or baseboard without the use of Side Roller. Just the Machine you would want for surfacing all floors whether old or new. Perfect results guaranteed. More than 20,000 of our Machines now in use. Guaranteed against defect in material and workman-ship for five years.

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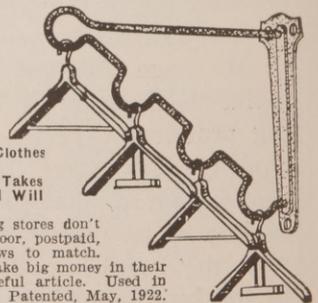
They Can be Put anywhere Clothes  
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Put one on Your Closet Door—it Takes  
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every home. Write for particulars. Patented, May, 1922.

Compact Clothes Hanger Bracket Mfg. Co., 1205 C St., Washington, D. C.



subsidiary to the Board. With this I served until I was taken over by the Fleet Corporation, first to supervise production and, subsequently, to direct the consolidated operations of purchase, transport, storage and production for the Fleet Corporation. This work continued to the close of hostilities.

In my present enterprise I assume that the policies and methods which I have elsewhere made effective will continue to prove acceptable. In building, as in other fields, there is opportunity—even if a limited one—for those who offer a superior and trustworthy service. This is particularly applicable in two kinds of construction projects: First, those in which quality and time of delivery are primary requisites; Second, those in which uncertainty as to various conditions to be met, or lack of time for complete advance planning, necessitate the beginning of building

before specifications may be prepared. In either type of project, it is essential that the work be entrusted to an agent of assured technical and fiduciary competence.

Under such circumstances I am prepared, with more confidence than ever before, to render a service perfected in many details and freed from all hampering restrictions. The ready evidence of those corporations and individuals in whose behalf I have already carried through large construction enterprises is available for all who may be interested.

The Morton C. Tuttle Company has established temporary offices at Room 813, Converse Building, 101 Milk Street, Boston, (Telephone Congress 7857) pending completion of quarters in the Park Square Building.

MORTON C. TUTTLE, President.  
Boston, May 9, 1923.

TABLE FOR SPACING REINFORCING BARS.

Did you ever want to use in concrete slabs reinforcing bars of a size other than you had originally figured?

Sometimes the stock of bars runs out and a new supply must be ordered, and it is impossible to quickly secure the correct size. Or a few bars may be left over from another part of the work which should be used up. The table given below is for the purpose of quickly and conveniently finding the equivalent spacings of various sizes of reinforcing bars when used for reinforcing slabs. Of course, experience and good judgment must be used in employing such a table because obviously it would not be proper to substitute 1-inch bars for 3/8-inch because the spacing would be out of all proportion. The table legitimately should be used when, for example 5/8-inch bars

are substituted for 1/2-inch, etc. It should be borne in mind also that there are limits to the spacing of slab reinforcing bars, since the bars should not be spaced too wide, especially for thin slabs; also bars should not be spaced so closely together that coarse aggregate will not easily pass between the bars.

How to Use the Table.

Suppose the plans called for 5/8" round bars spaced 4 inches on centers, and you wanted to utilize some 3/4" round bars you had on hand. Read down the left-hand column to 5/8" round and then across the table where under the column headed 3/4" round you will find the figure 1.44. Multiply the spacing given, 4", by 1.44, and the result is 5.76 inches, or 5 3/4 inches, the spacing to be used for 3/4" round bars.

Size of Bar Specified	SIZE OF BAR AVAILABLE																		
	1/4" Rd.	1/4" Sq.	3/8" Rd.	3/8" Sq.	1/2" Rd.	1/2" Sq.	5/8" Rd.	5/8" Sq.	3/4" Rd.	3/4" Sq.	7/8" Rd.	7/8" Sq.	1" Rd.	1" Sq.	1 1/8" Rd.	1 1/8" Sq.	1 1/4" Rd.	1 1/4" Sq.	
3/8" Rd.	0.45	0.57		1.27	1.78	2.26	2.79												
3/8" Sq.		.44	0.79		1.40	1.78	2.18	2.78											
1/2" Rd.			.56	.72		1.27	1.56	1.99	2.25	2.86									
1/2" Sq.			.44	.56	.79		1.23	1.56	1.77	2.25	2.41								
5/8" Rd.				.46	.64	.82		1.27	1.44	1.83	1.96	2.50	2.56						
5/8" Sq.					.50	.64	.79		1.13	1.44	1.54	1.96	2.02	2.56	2.55				
3/4" Rd.					.45	.57	.70	.89		1.27	1.37	1.74	1.78	2.27	2.25	2.86	2.78		
3/4" Sq.						.45	.55	.70	.79		1.07	1.36	1.40	1.78	1.77	2.25	2.18	2.78	
7/8" Rd.						.42	.51	.65	.73	.94		1.27	1.31	1.66	1.65	2.11	2.04	2.60	
7/8" Sq.							.40	.51	.58	.73	.79		1.03	1.31	1.30	1.65	1.60	2.04	
1" Rd.								.50	.56	.72	.77	.98		1.27	1.27	1.61	1.56	1.99	
1" Sq.									.44	.56	.60	.77	.79		.99	1.27	1.23	1.56	
1 1/8" Rd.									.44	.57	.61	.77	.79	1.01		1.27	1.24	1.57	
1 1/8" Sq.										.44	.48	.61	.62	.79	.79		.97	1.24	1.57
1 1/4" Rd.											.46	.49	.62	.64	.82	.81	1.03		1.27
1 1/4" Sq.												.49	.50	.64	.64	.81		.79	

# Rayflecta

## BATHROOM HEATER

Note Its  
Distinctive  
Features

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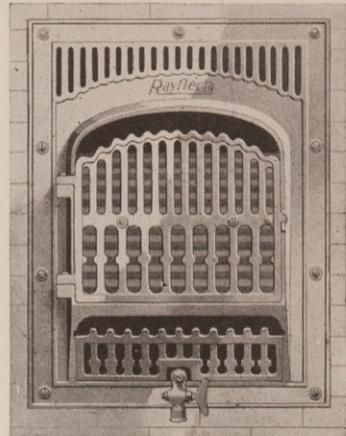
Show your customers the **Hinged Door** permitting instant accessibility for cleaning. Point out the **Continuous Air Circulation** by which the entire room is heated **Thoroughly and Evenly**.

Call their attention to the **Superior Appearance and Finish** of the Rayflecta. (White Porcelain, Gray Porcelain, and Nickel.)

Lay stress upon the **Improved Burners** which insure maximum heat without fumes or odor. Let them examine the **fire-safe construction** of the wall-box.

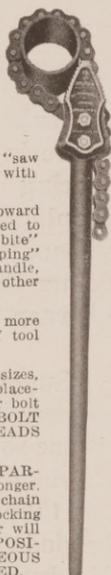
Then you'll sell more Rayflectas than any other heater of this type you might handle. Shall we send you prices and terms?

**Gas Appliance Division of The Trolley Supply Co.**  
MASSILLON, OHIO



# SPARTAN

CLAIMS CARRY  
CONVICTION



**JAWS:** Drop forged tool steel, hardened and "saw tooth tempered," permitting resharpening with a file.

**TEETH:** Milled at an angle—"UP" and "IN" toward center line of wrench when tool is applied to pipe. This angle tooth gives **IMMEDIATE "bite"** on pipe even when teeth are dull without "cramping" wrench. The angle teeth force jaws against handle, eliminating "SPREADING" jaws, as in ALL other designs.

The design of teeth on periphery of jaws permit more "grips" for all sizes of pipe within capacity of tool than any other tool of its kind.

**BOLTS:** Made of special alloy steel in standard sizes, insuring greater strength and easier replacement. Two-bolt construction permits use of lower bolt for repair in the field should upper bolt break. **BOLT HEADS WILL NOT PULL OFF OR THREADS STRIP.**

**CHAIN:** Of standard flat link design, made of "SPARTAN" special alloy steel. Guaranteed stronger, therefore more reliable than any other flat link chain made. It is impossible to cramp chain when locking jaws to pipe, as a slight pull toward the operator will lock chain immediately. **IMMEDIATE AND POSITIVE "BITING" OF JAWS WITH INSTANTANEOUS LOCKING OF CHAIN IS THEREFORE INSURED.**

**HANDLE:** Forged throughout entire length, insuring greater toughness than "rolled" steel. All parts are carefully selected wrought steel, interchangeable and guaranteed against inferior material and workmanship.

*The Tool in its Entirety is Made  
in Our Own Factory*

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The HUTCHISON Positive Automatic Damper Regulator saves your Coal by turning ALL that is in it into Steam or Vapor heat. It is a very marked advance in Boiler regulation. It can be set to work at ONE Ounce Pressure or can be instantly adjusted to any pressure up to Four Pounds. Higher Pressures if you order it.

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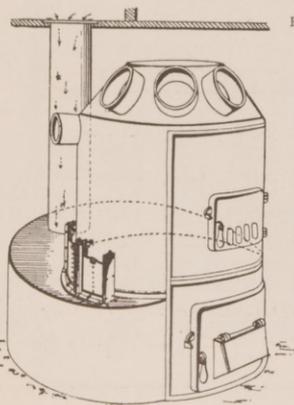
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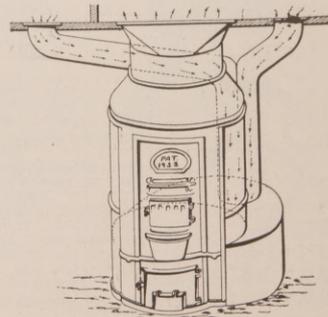
**WM. G. CARRICO**

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Washington, D. C.



Pat. 1922



Pat. No. 1,418,776

## STANDARD RECOMMENDED PRACTICE FOR PORTLAND CEMENT STUCCO.\*

### General Requirements.

1. **Design.**—Whenever the design of the structure permits, an overhanging roof or similar projection is recommended to afford protection to the stucco. Stuccoed copings, cornices and other exposed horizontal surfaces should be avoided whenever possible. All exposed stuccoed surfaces should shed water quickly, and whenever departure from the vertical is necessary, as at water tables, belt courses, and the like, the greatest possible slope should be detailed. Stucco should not be run to the ground whenever other treatment is possible. Should the design of the structure require this treatment, the backing should be of tile, brick, stone, or concrete, providing good mechanical bond for the stucco, and should be thoroughly cleaned before plastering. Unless special care is taken to thoroughly clean the base and each plaster coat from dirt and splash before the succeeding coat is applied, failure of the stucco may be expected.

2. **Flashing.**—Suitable flashing should be provided over all doors and window openings wherever projecting wood trim occurs. Wall copings, cornices, rails, chimney caps, etc., should be built of concrete, stone, terra cotta, or metal with ample overhanging drip groove or lip, and watertight joints. If copings are set in bricks with mortar joints, continuous flashing should extend across the wall below the coping and project beyond and form an inconspicuous lip over the upper edge of the stucco. Continuous flashing with similar projecting lip should be provided under brick sills. This flashing should be so installed as to insure absolute protection against inferior leakage. Cornices set with mortar joint should be provided with flashing over the top. Sills should project well from the face of the stucco and be provided with drip grooves or flashing as described above for brick sills. Sills should also be provided with stools or jamb seats to insure wash of water over the face and not over the ends. Special attention should be given to the design of gutters and down spouts at returns of porch roofs where overflow will result in discoloration and cracking. A 2-inch strip should be provided at the intersection of walls and sloping roofs and flashing extended up and over it, the stucco being brought down to the top of the strip.

3. **Preparation of Original Surface.**—All roof gutters should be so fixed, and downspout hangers and all other fixed supports should be put in place before the plastering is done, in order to avoid breaks in the stucco.

Metal lath and wood lath should be stopped

not less than 6 inches above grade to be free from ground moisture.

All trim should be placed in such manner that it will show its proper projection in relation to the finished stucco surface, particularly in overcoating.

\*Adopted by letter ballot of the Institute April 17, 1920.

## PROFESSOR H. A. THOMAS JOINS CARNEGIE TECH STAFF.

Professor Harold A. Thomas, for the past 13 years a member of the staff at Rose Polytechnic Institute, Terre Haute, Indiana, has been appointed to the faculty at Carnegie Institute of Technology for next year. He will begin his new work in the Fall as Professor of Theoretical Hydraulics and of Hydraulic and Sanitary Engineering.

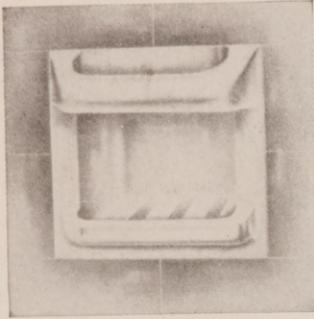
Although one of the younger men in his field, Professor Thomas is already widely known as an engineer of extensive experience. He was graduated from Columbia University in 1906 with an A. B. degree and the C. E. degree in 1908. At the completion of his studies he was awarded the Illig medal for the highest standing in four years of the engineering course.

His teaching experience has included connections as Instructor at Columbia University and at the University of Washington. Later he joined the staff at Rose Polytechnic Institute serving 8 years as Associate Professor of Civil Engineering and for the past 5 years as Professor of Hydraulics.

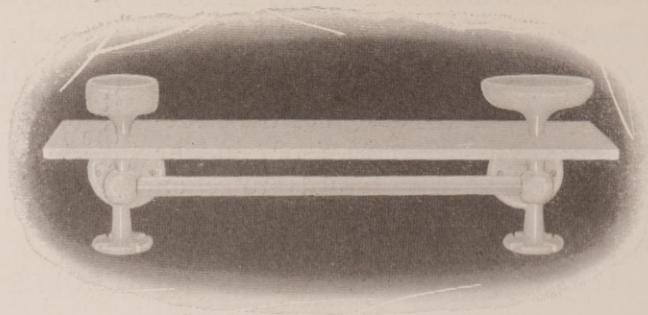
In his professional work, Professor Thomas has served as a member of the Engineering Corps of New York State Water Supply Commission, member of the Engineering Corps of the Great Northern Railroad, Assistant Engineer for Miami Conservatory District on flood-control work at Dayton, Ohio, and as a Consulting and Practising Civil and Hydraulic Engineer at Terre Haute, Ind. He has also carried on or supervised various experimental studies on the proportioning of concrete, and originated the "Heap Test" for controlling the consistency of concrete.

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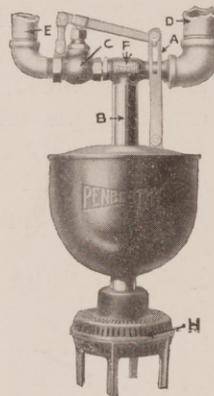
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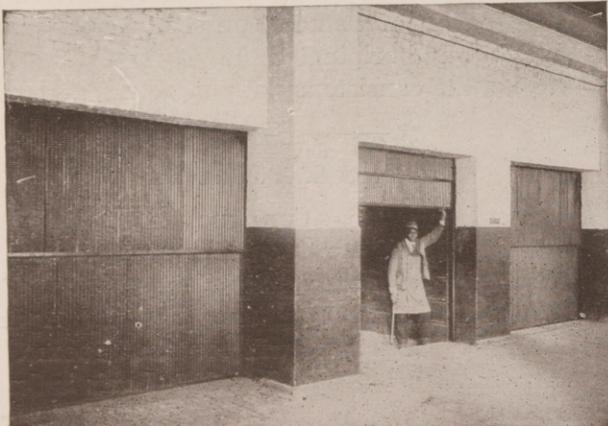
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