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CONSTRUCTION

A · JOURNAL · FOR · THE · ARCHITECTURAL
ENGINEERING · AND · CONTRACTING
INTERESTS · OF · CANADA



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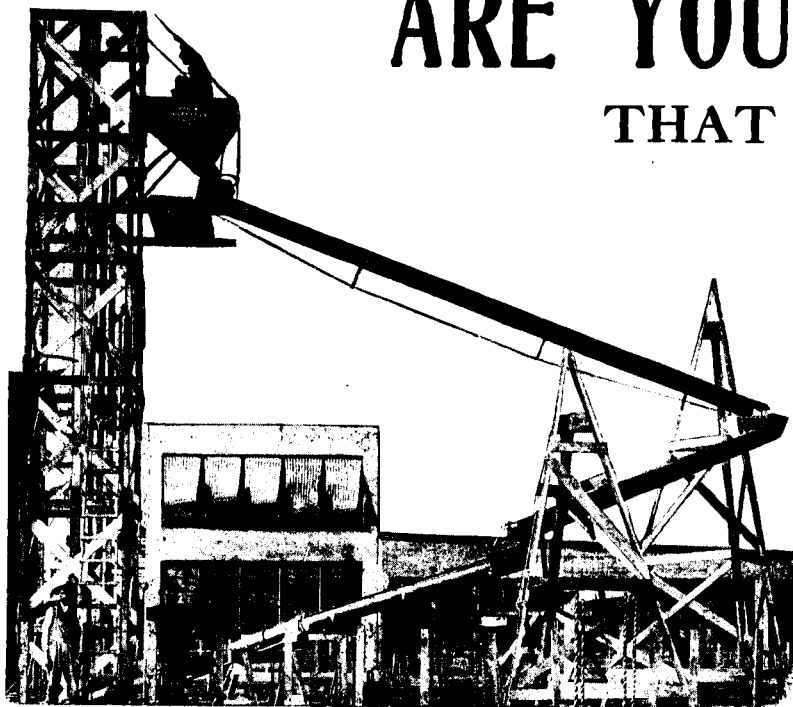
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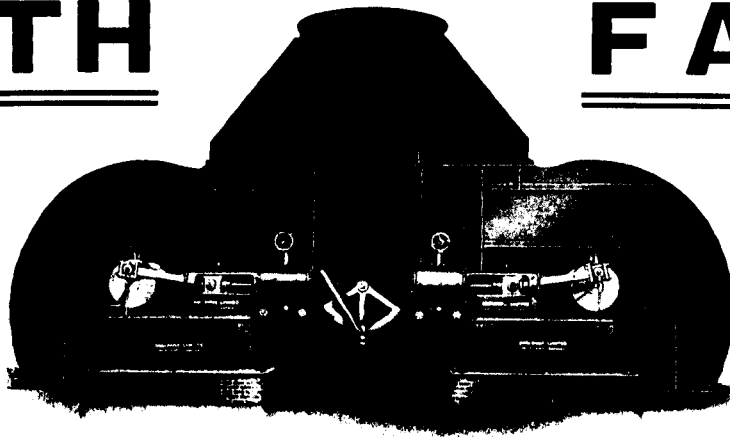
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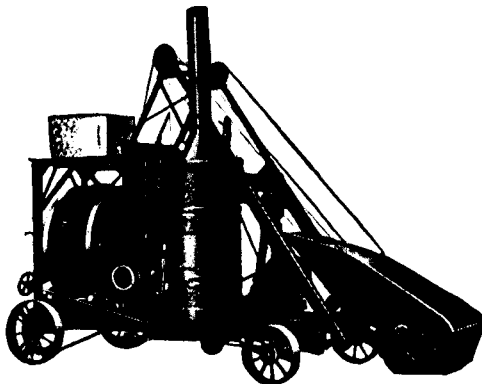
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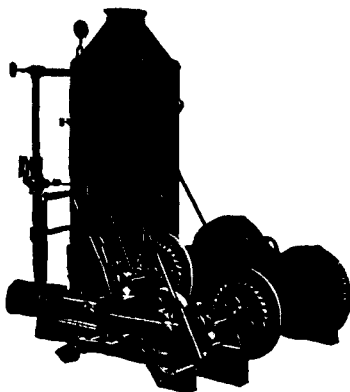
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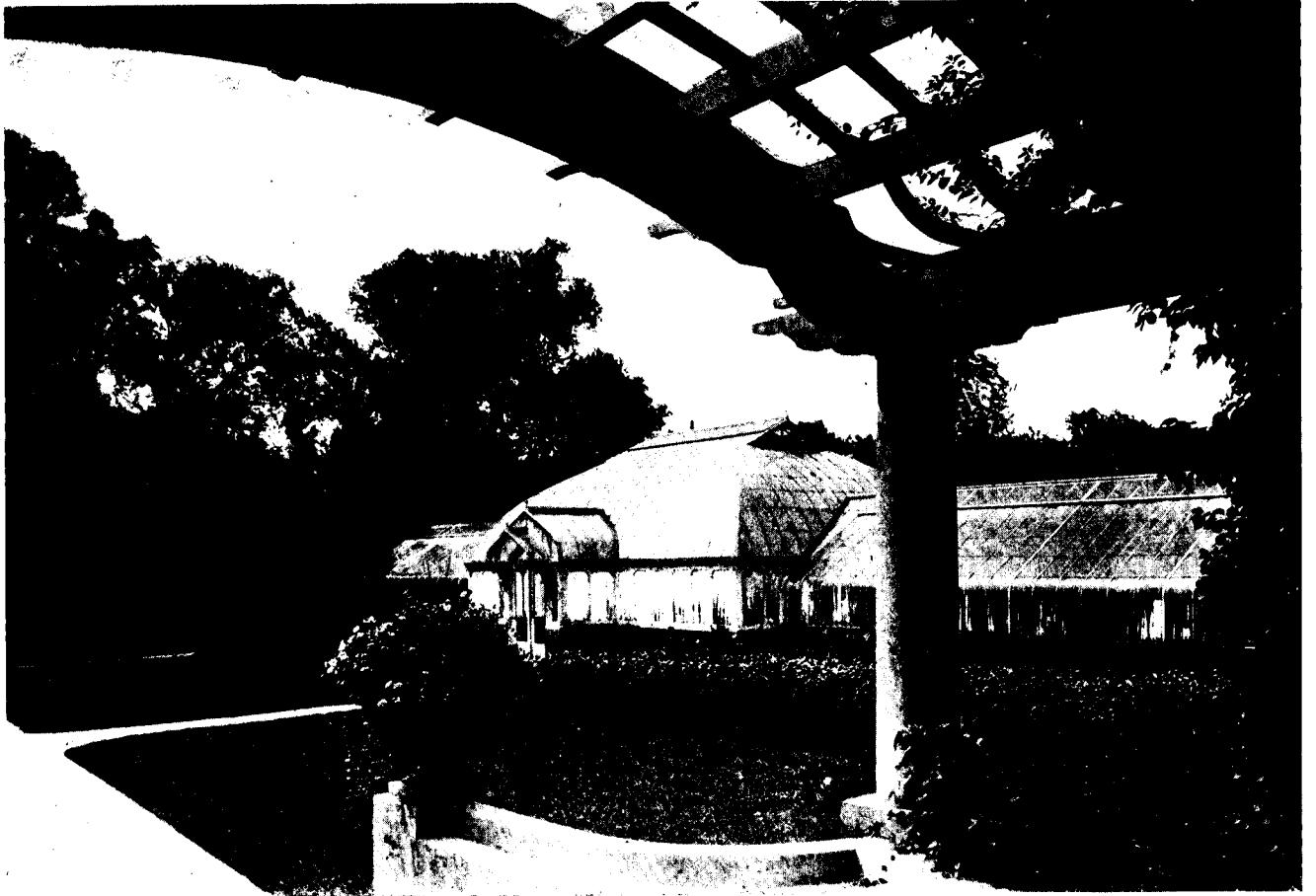
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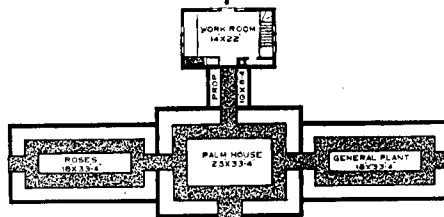
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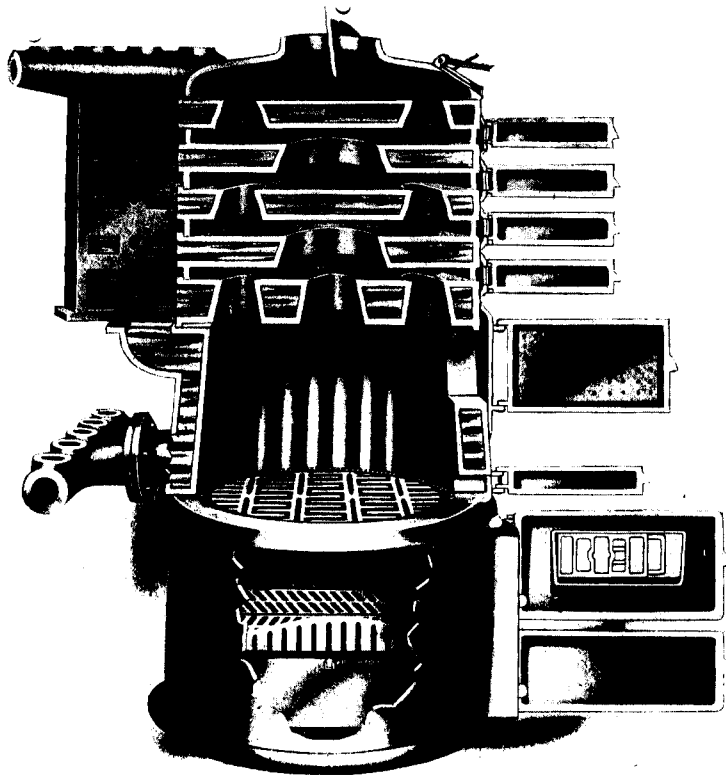
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We have many letters
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"Two years ago I bought a house at ————— Road, and this week I was comparing notes with my neighbor, ————— who lives at —, in a house that is exactly the same as mine. It has the same frontage, the same depth, the same number of rooms, and is built with the same material. The only difference in the houses, as far as I can see, is that he has a 'Sovereign' in his house while I have a boiler that also has a good reputation. I had always understood that there were several boilers in Canada that were one about as good as the other, but I never appreciated the fact that the Taylor-Forbes Boiler is considerably better than any other, until I was comparing notes with what the 'Sovereign' Boiler will do as compared with another kind of a boiler where the conditions are exactly the same. My neighbor has a five-section 'Sovereign' Boiler and he has one large wall radiator in the sun parlor more than we have. He burns the same amount of coal that we do, yet last winter every room in his house was comfortably heated and the sun parlor was used as a bedroom. It was also comfortable. Now in our house, we have no radiator in the sun parlor, and I know that our boiler—and mind you the houses cost the same amount of money and I was told that this boiler was the best boiler made—could no more get away with a radiator in the sun parlor than a hen could get away with an ostrich egg. Even being short this radiator, which ought to be the biggest one in the house, we did not have the same satisfaction in heating and the fire had to be kept up to its very highest pitch, and required constant attention, in order to get a comfortable heat in very cold weather. Yet my neighbor in the same weather, had his sun parlor comfortably heated and the radiator turned off in their sleeping room, the temperature being comfortable enough without it.

"As I said, both boilers were charged up at the same price, and they were both installed by the same plumbers, and if I had known there was such a difference in heating systems that I have since discovered there is, I would not have considered purchasing a house that was not heated by a 'Sovereign' Boiler, and I will not do so in the future.

"You may use this letter in any way you see fit, for the general statements, and you can give my name privately to any person that wants more particular information."

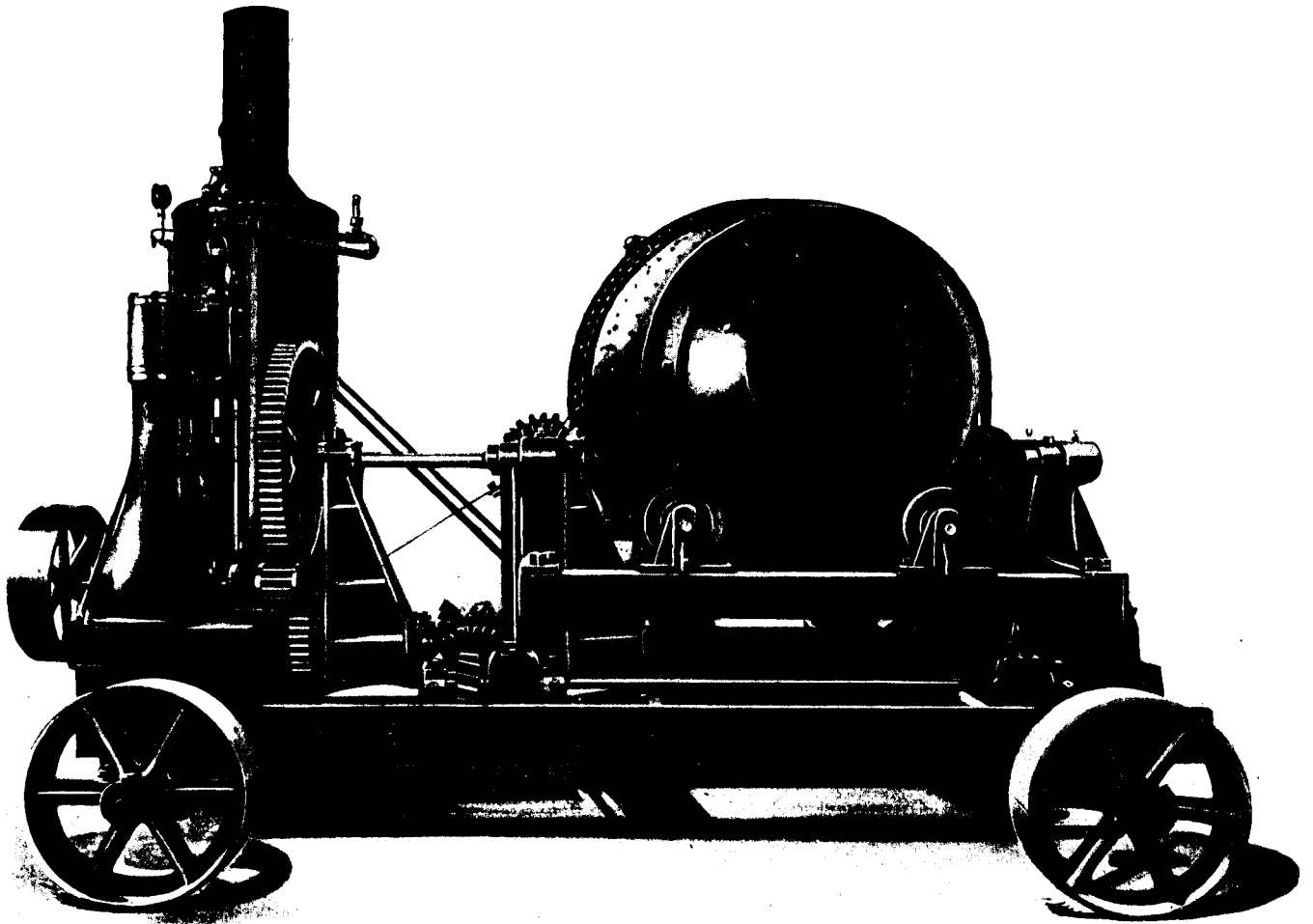
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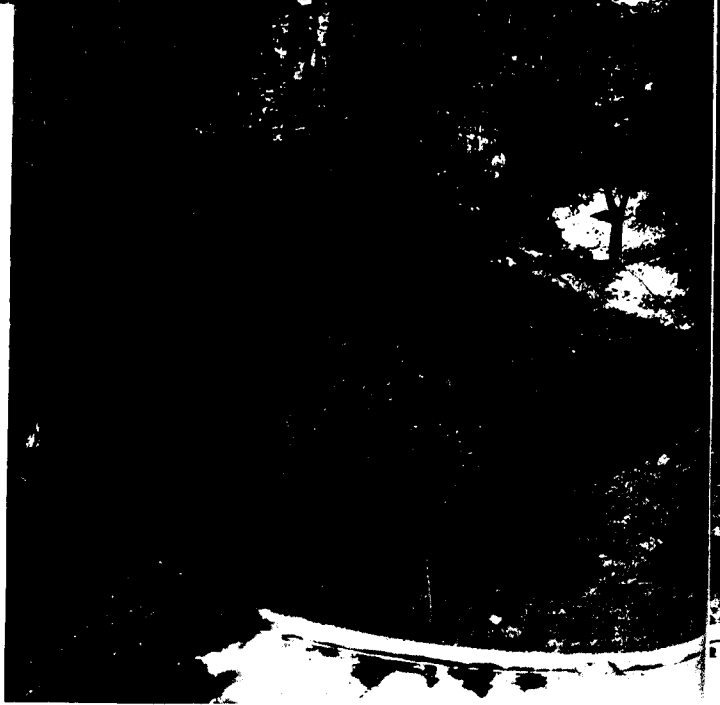
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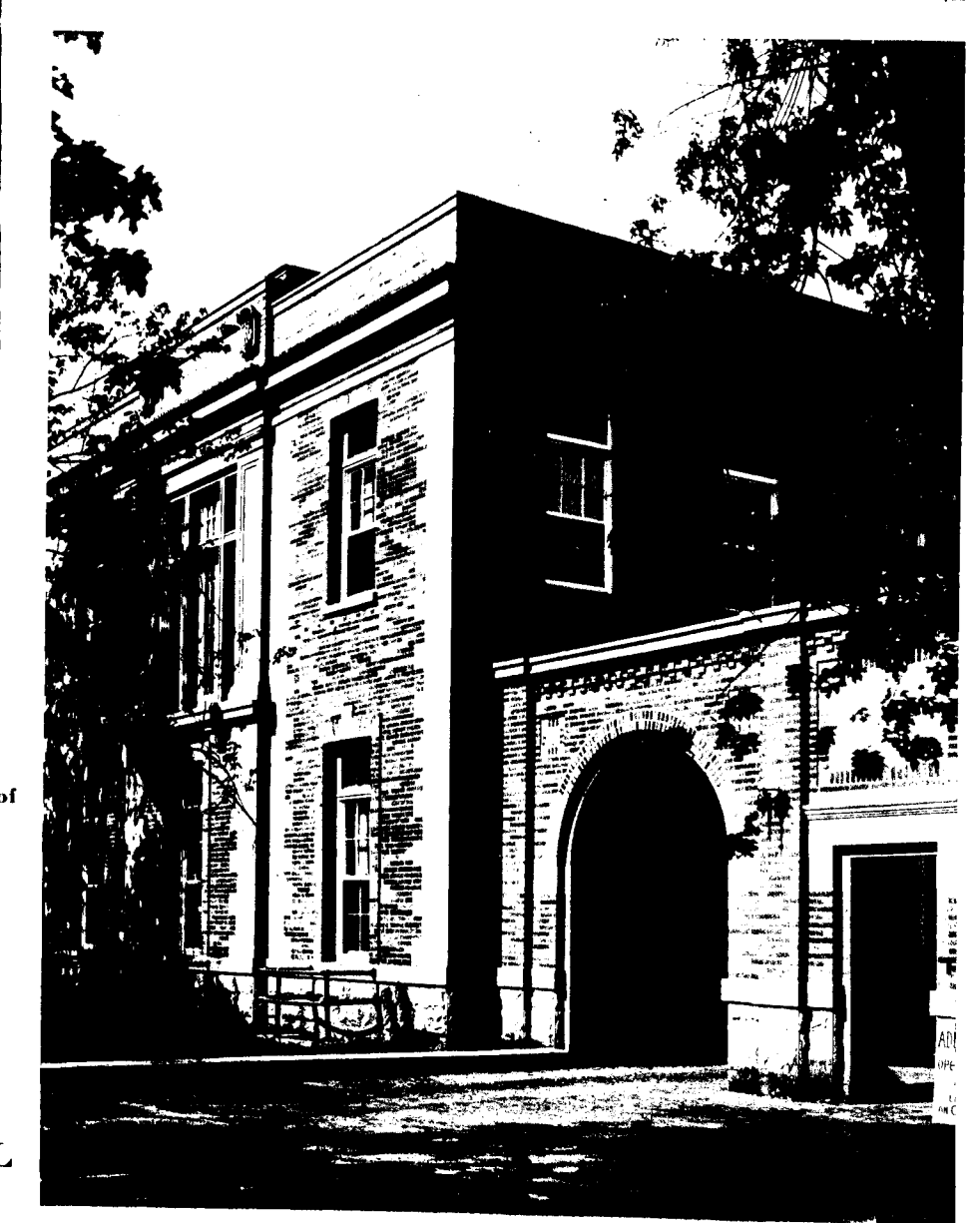
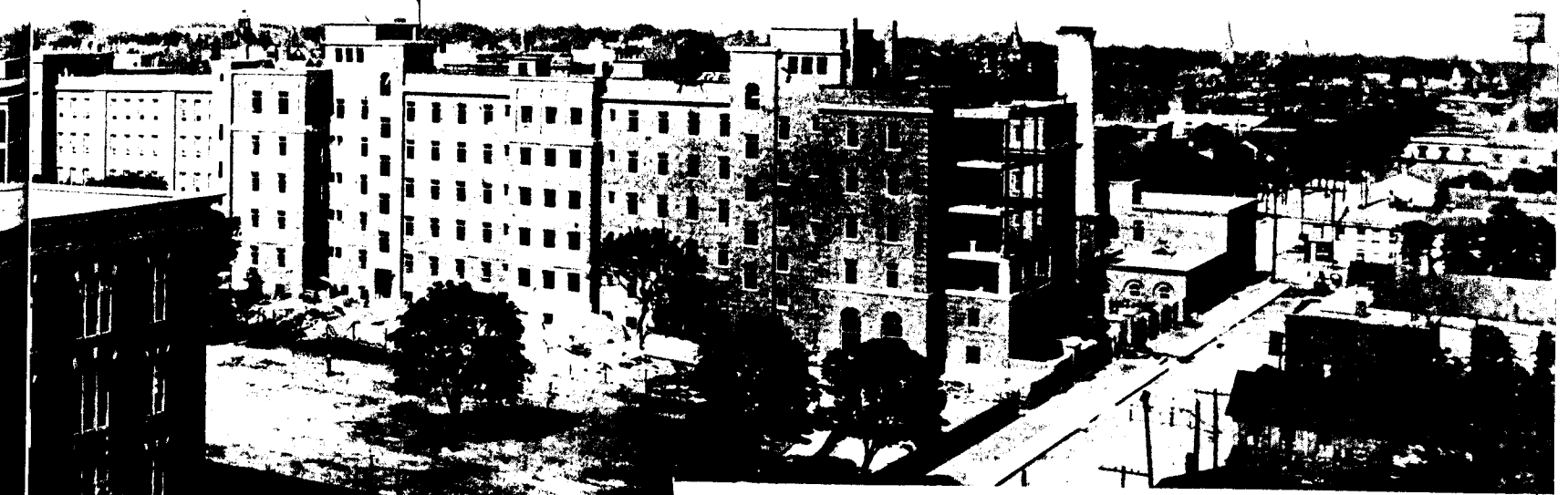
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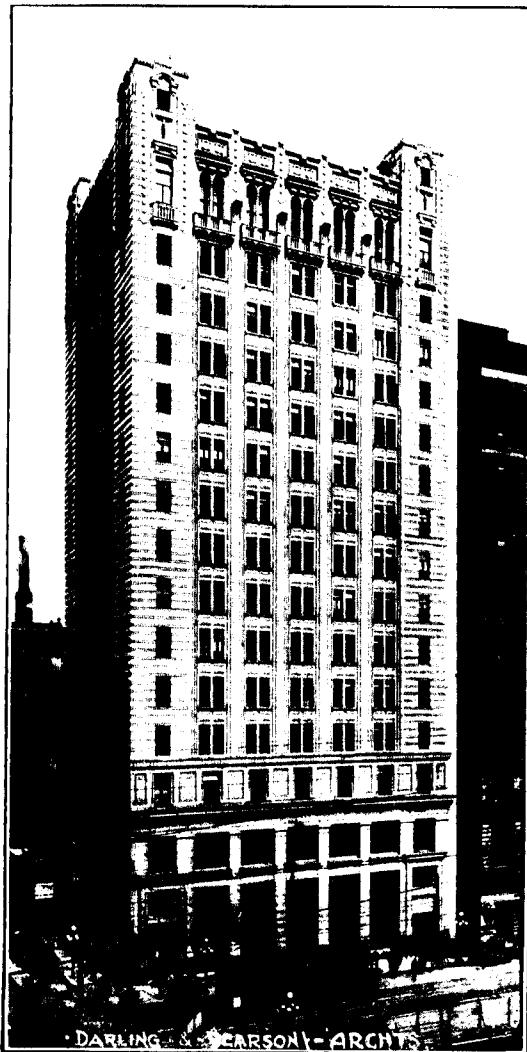
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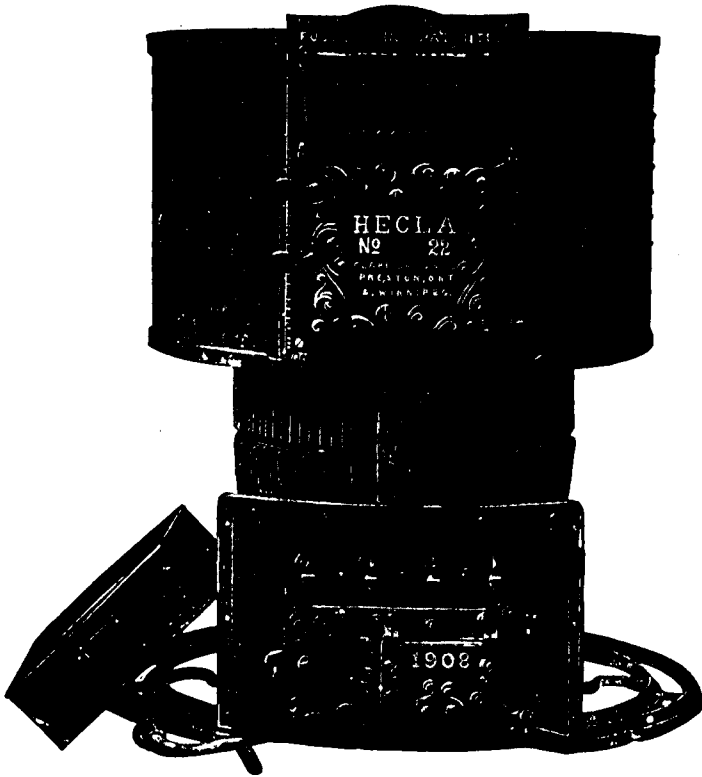
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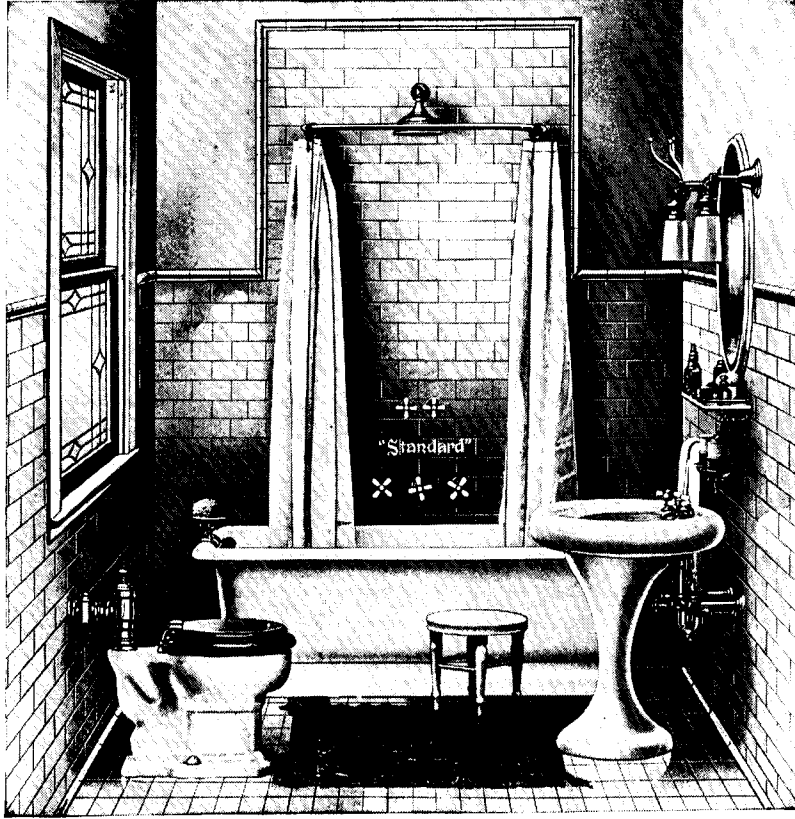
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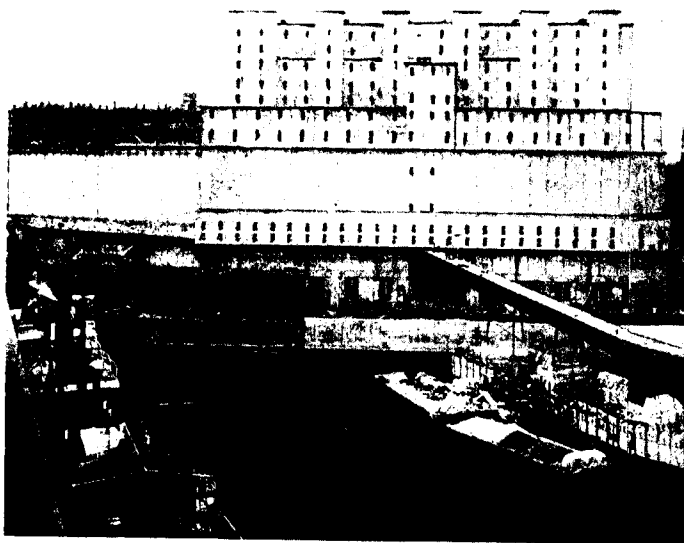
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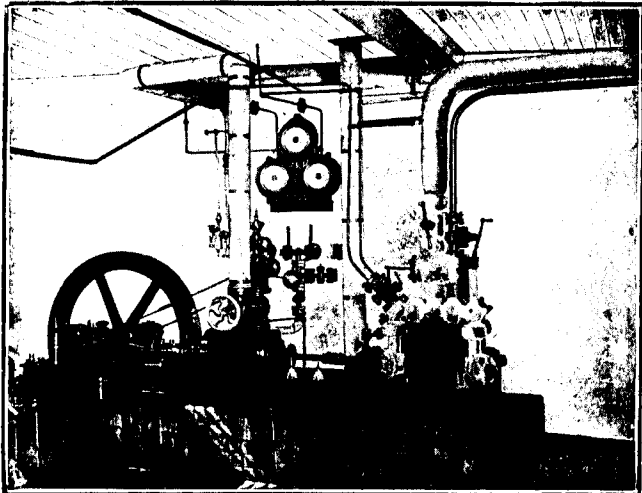
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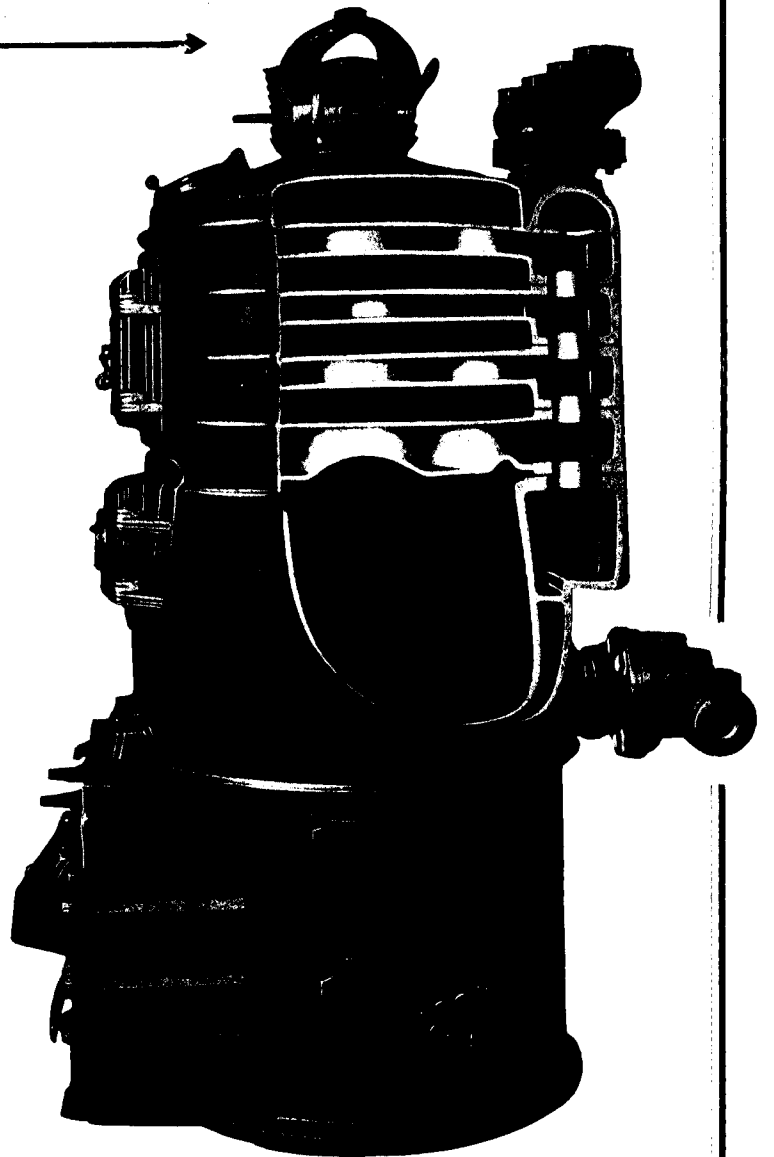
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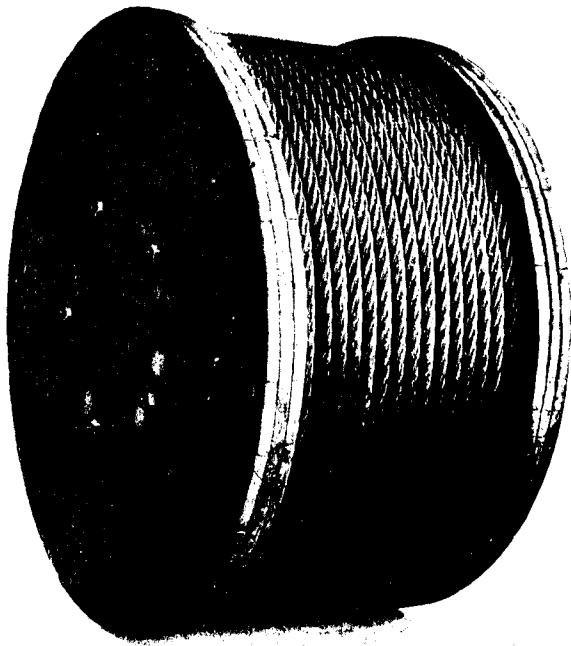
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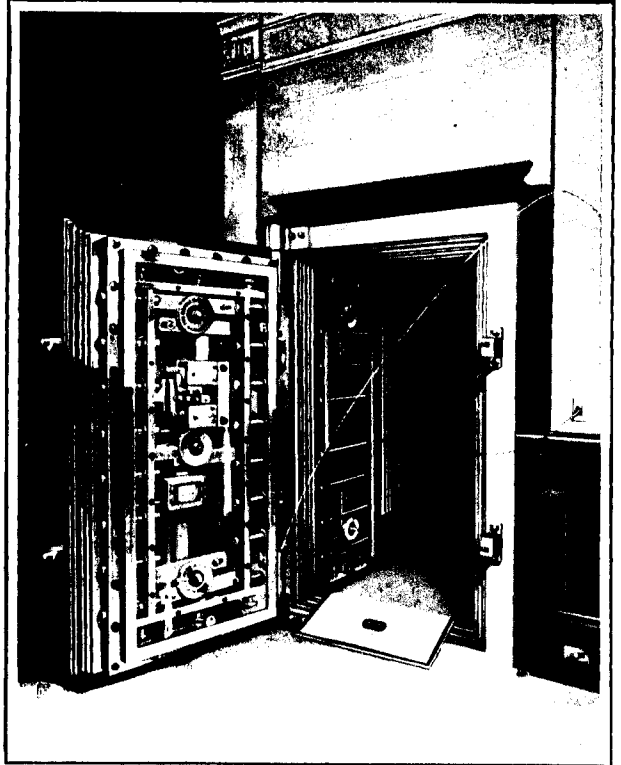
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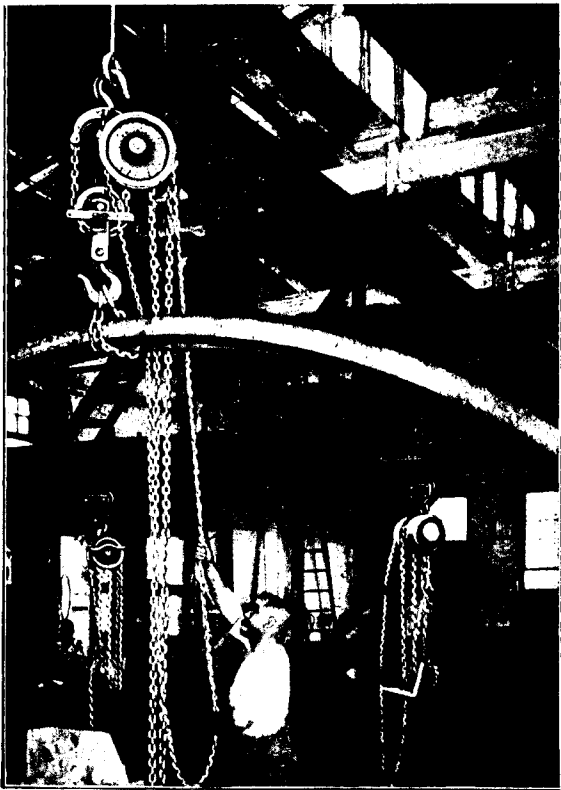
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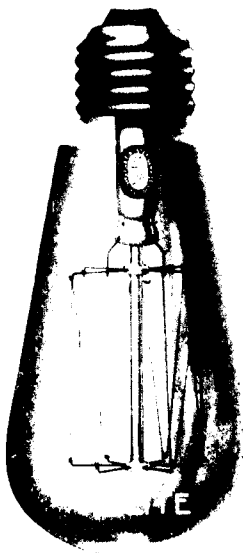
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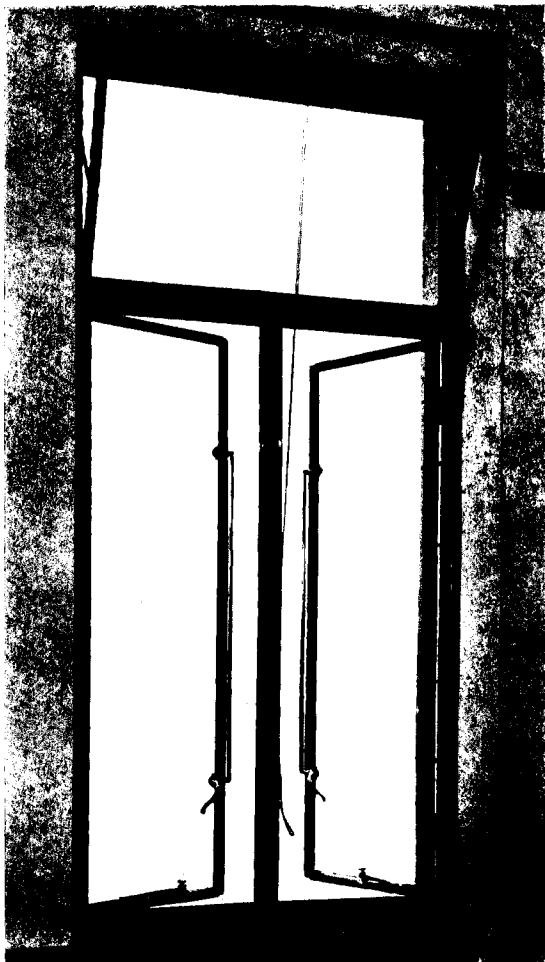
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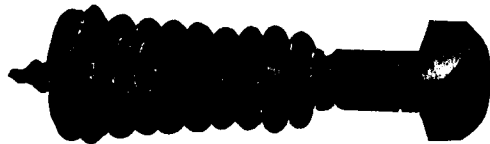
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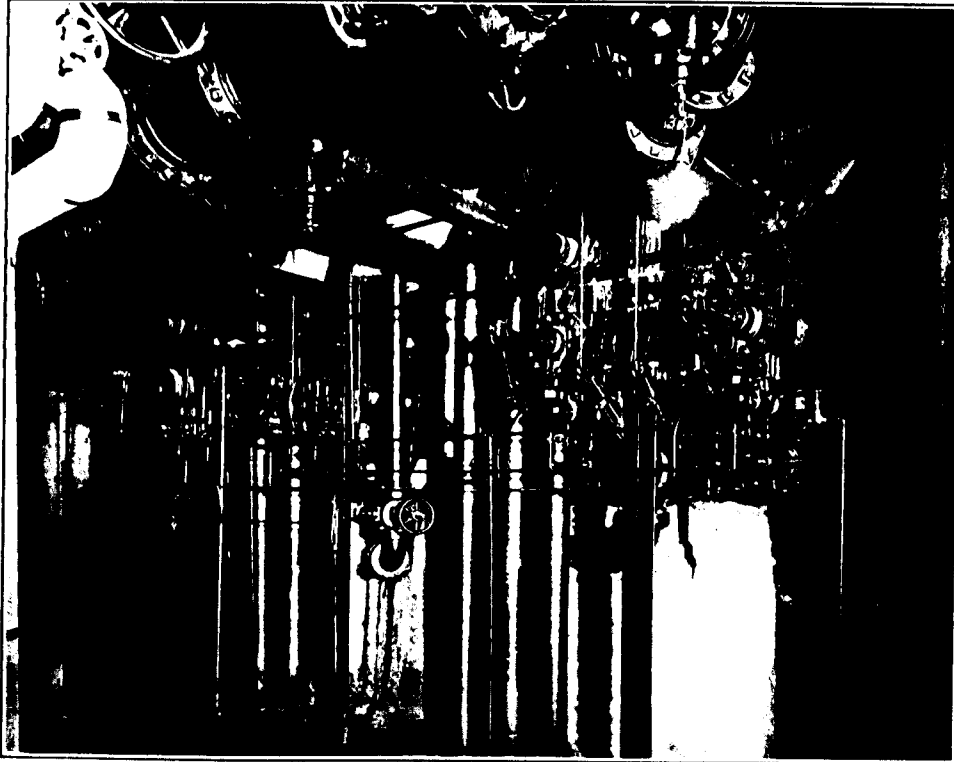
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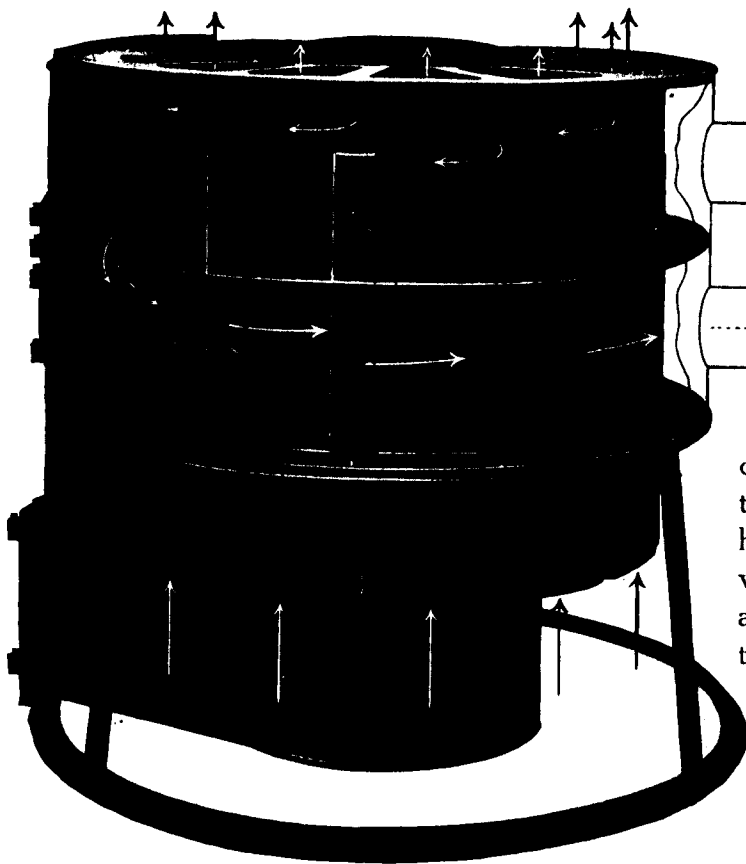
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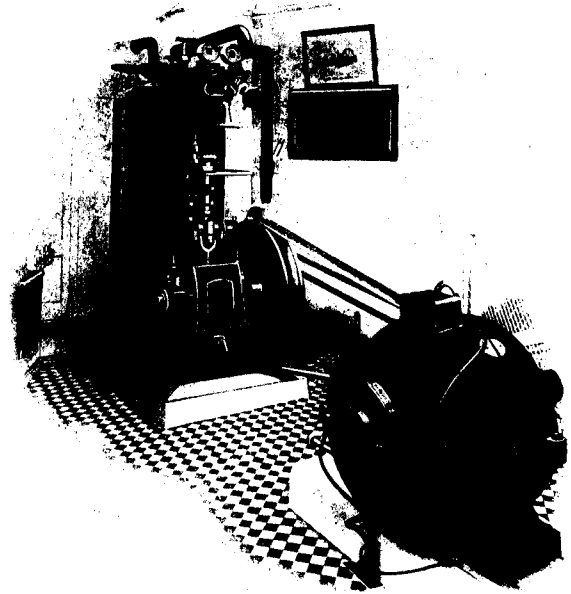
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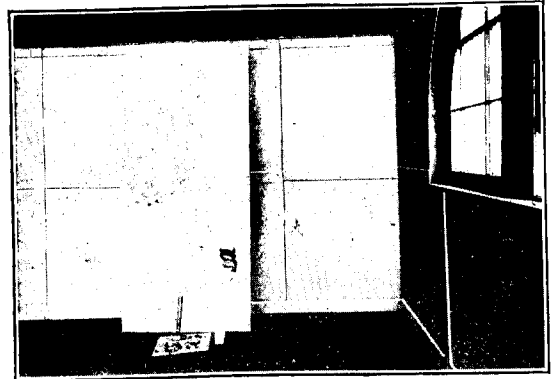
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Plate F 3342

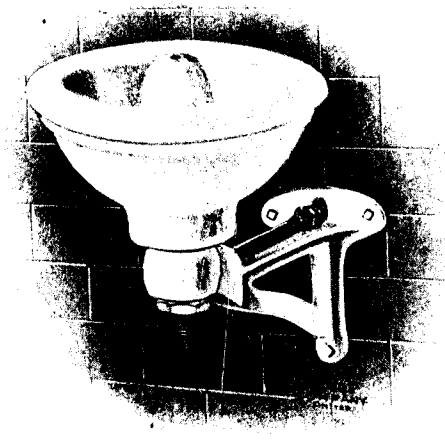


Plate F 3305

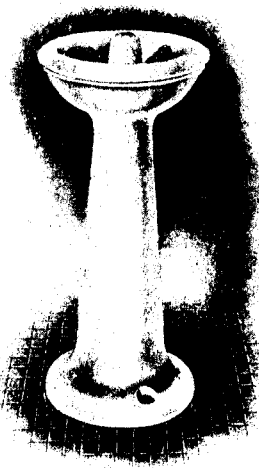


Plate F 3013



Plate F 3025

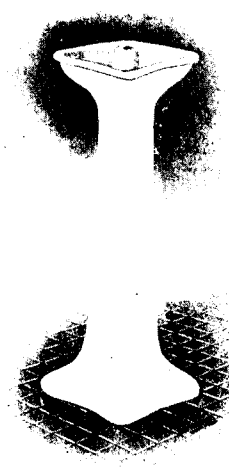


Plate F 3055

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CONSTRUCTION

VOL. VI

NO. 8

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H. GAGNIER, Limited, Publishers
GRAPHIC ARTS BUILDING, TORONTO, CANADA

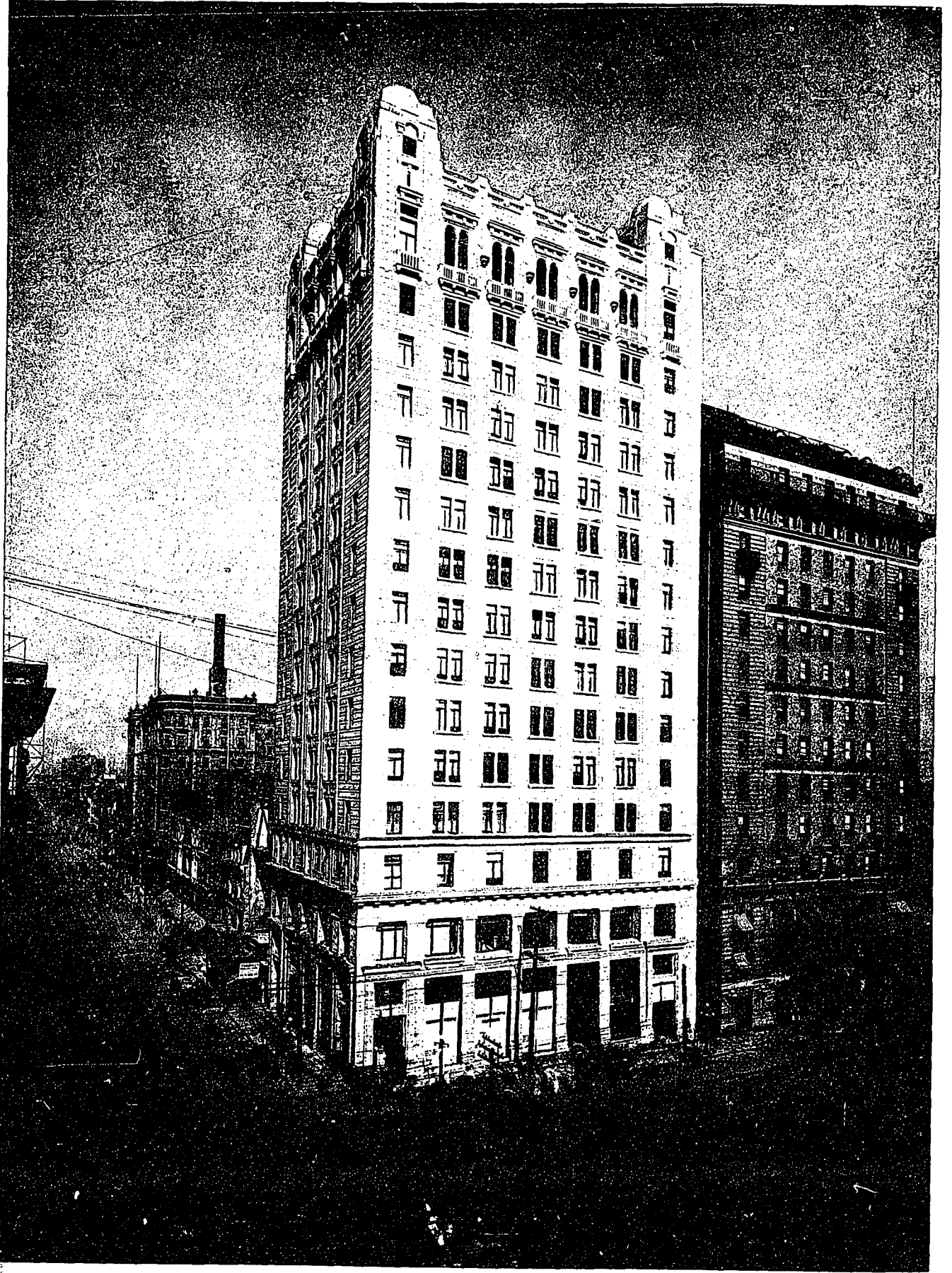
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Q *Competition for the new capital buildings at Canberra, Australia—Mistake in abandoning the premiated design of the general lay-out.*

CANADIAN ARCHITECTS are invited to compete in the designing of the principal public buildings for Canberra, the capital city of Australia. We feel the honor bestowed upon the profession and it is to be hoped that the various provinces will be well represented in the final results. If so, we trust a better fate awaits them than fell to the young architect who entered the premiated design for the new capital's lay-out. After a careful analysis of his scheme, together with the others submitted, a local departmental board came to the conclusion they could not favor the accepted plan. Thereupon they made one of their own and resolved—using their own words—“to approve of the plan for the lay-out of the city as prepared by itself.” They frankly admit plagiarizing the best ideas in each scheme. It is hardly creditable to think that any enlightened Government would permit of such a course and if so that the profession at large would condone such action. If we do not assert ourselves, fight for each other's interests, then we cannot hope to have justice done by us. While lamenting this procedure, which deserves nothing less than the most severe censure, there is still an opportunity for the architectural merits of the structures themselves to be of a redeeming quality. The new plan, while it does not permit of praise when compared with the accepted design, may still lend itself to an acceptable solution if the proper men succeed in this competition and are allowed to proceed without the constant interference of an assuming board. One phase of the committee's work is commendable. It is desired to have all buildings architecturally harmonious. Plans are to be submitted which embody the whole official block—Parliament house, Capitol, administrative offices, public library, etc. In this way the same style will pervade the *tout ensemble* and prevent the usual hodge-podge which accompanies a series of buildings, expressing the ideas of several individuals who refuse to co-operate in one consistent effort to create a perfect harmony throughout.

Q *The skyscraper—How treated in America and Europe—The need of a definite and lasting ruling in Canadian cities.*

IN THIS ISSUE is illustrated the tallest skyscraper in the Dominion of Canada. It denotes the natural trend of our present-day existence. Imbued with a spirit of progressiveness, we are writing the history of our inmost thoughts in the buildings which crowd our busy centres. Where shall the limit be? This question has been and is agitating all the deep students of humanity. Toronto as well as the other Canadian cities must decide quickly on the merits of this class of building before it is too late to adjust the matter satisfactorily. With such a vacillating council there can be little hope for a proper solution. One day it countenances a 250 foot building, again it passes a by-law limiting the height to 130 feet, and then turns around, granting a special permit for one approximating 300 feet.

The report of the officers of the Fifth Avenue Association, who have been making a careful study of building conditions as affecting the height in other cities, cites the various American municipalities where buildings and streets conform to the highest standards of usefulness, beauty, safety and healthfulness. Boston, for example, regulates the height of its buildings under what is known as an “A and B law.” Under this Act the city is divided into two districts, District “A,” or the business section, having a height limit of 125 feet, and District “B,” the residential part, being limited to buildings of 80 feet. Exceptions, of course, are made in the case of grain and coal elevators, sugar refineries, church steeples, towers, etc. Boston has been restricting building heights for nine years, and so has Baltimore. In the latter city no structure is allowed to be built more than 175 feet high, except towers, spires, belfries, and special fireproof buildings. Denver limits all buildings or parts of buildings to twelve stories, except campaniles, spires, domes, water towers, and smokestacks. Los Angeles places its building height maximum at 150 feet for all except public buildings, monuments, and such other structures as may be exempted by a two-thirds vote in the City Council.

Portland, Ore., limits the best type of buildings, those absolutely fireproof, to twelve stories, or 160 feet in height. Rochester provides that the height of a building shall not be more than four times the average of its horizontal dimensions, while in San Francisco and Providence the limitation of height is based upon the character of a building's construction.

European cities, while not comparable to America, the home of the skyscrapers, have their regulations governing the height of various structures. London's Building Act of 1894 in a street under fifty feet wide limits all heights to the width of the street. In thoroughfares more than fifty feet wide no building can be erected higher than eighty feet. In Birmingham the height is regulated in accordance with a proviso that a line drawn upward at an angle of 45 degrees from the edge of the premises will meet no resistance. Berlin permits a maximum height of 72 feet, but no building can rise higher than the width of the street. The maximum height allowable in Cologne and in Dusseldorf, known as the Park City of Europe, is 65 feet 6 inches. Munich draws the line at a building having a ground floor and four stories, not counting a mansard. Frankfort, Germany, is divided into zones, the maximum height for buildings varying from 58 feet 11¼ inches to 65 feet 6 inches in the inner city. In Zurich a maximum height has been fixed at 43 feet. Paris does not permit a façade higher than 65½ feet, while in Rome the height limit is set at 78½ feet, with a minimum height required of 45¾ feet.

In a recent issue of the New York "Times" Dr. Werner Hegemann, one of the world's greatest authorities on city planning, states that America is building a New York which they cannot endure. He believes that in ten years downtown New York will be built up and practically without light.

Mr. Hegemann says: "It is not beyond the bounds of possibility that you may solve the problem of your great necessity for concentration of great business space upon your narrow island by the construction of skyscrapers vaster even than the ones which you already build and plan. The business of your lower city may eventually be concentrated in a few vast towers. But between those towers will be spaces more commensurate with their soaring height than those which now divide existing skyscrapers. The practical way of getting this space, and with it light and air, is to create as a matter of health requirement a standard of light and air that every office window must be provided with. Without complying with this standard, no skyscraper should be built. If you do that a man planning to build a skyscraper will have to buy from his neighbors light and air and keep their properties down by paying for it."

Since the larger cities of the world have already set a comparatively reasonable limit to the height of their buildings, it seems rather imperative that our Canadian cities should consider the question in all its phases and decide on a fixed standard which our commercialistic spirit can in no way undermine.

Q *Registration necessary for the practice of architecture in the Province of Quebec—What such action means to the profession.*

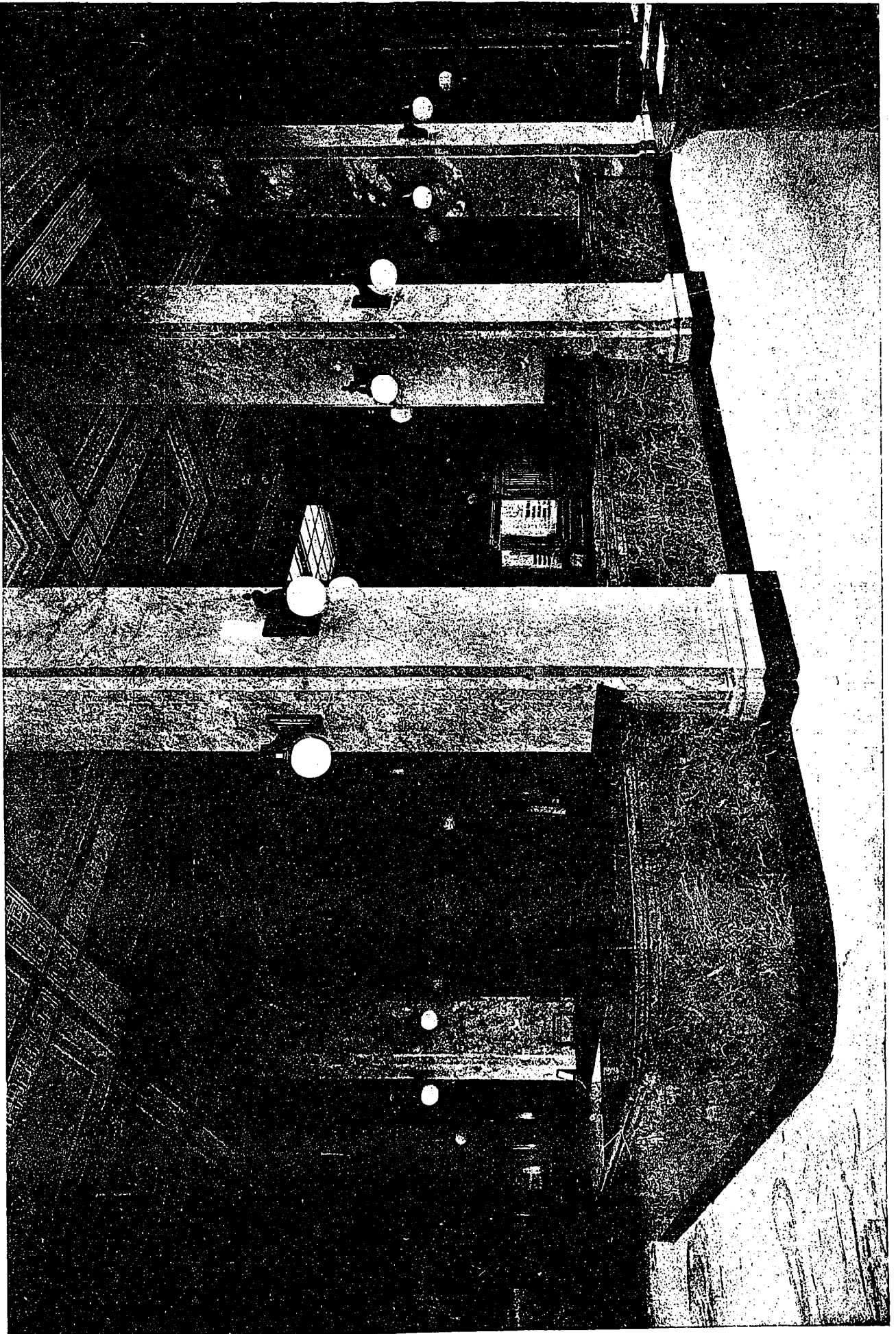
THE ASSOCIATION of Architects of the Province of Quebec is a closed corporation. At least this is the decision just handed down by Mr. Justice Demers. The same ruling was made several years ago by Judge Champagne of the Circuit Court, and forced to an issue in order to ascertain the opinion of the Superior Court. During trial the plaintiff, the Association of Architects, alleged that the defendants were engaged locally in the practice of architecture without being enrolled in the association. The defendants contended that it was not a closed corporation and that they should be allowed to practise as qualified architects on account of their experience and training without going through the formality of registering as members of this association. The law dealing with such registration, they maintained, applied only to those who, in the words of the article, "held their title in virtue of this law." Defendants represented as they held their title of architect in virtue of certificates conferred by American Institutes of Architecture, they did not fall under the operation of this law. The plaintiff association, on the other hand, maintained that the architectural profession, in virtue of the law referred to, was placed on the same footing as the legal and medical professions.

Justice Demers, in summing up, did not enter into a discussion of the question raised, but contented himself with declaring that all persons who were not members of the Association of Architects and who employed the style of architect and engaged in practice as such, were amenable to payment of a penalty not exceeding \$25 for the first offence.

The defendants were condemned to pay a penalty of \$1 with costs of the action as they were never before convicted of the offence and the case should have been tried before the Circuit Court. Such a decision will form a permanent basis for action and settle the much disputed question.

Q *Impending collapse of the stone tower of the Victoria Memorial Museum at Ottawa—Advisability of rebuilding the whole structure.*

"COLLAPSE impends of Laurier Tower"—Startling headline this, but not unexpected. For some time workmen have been constantly patching and bracing in the hope that some miraculous turn of nature would stop its falling career. But it is no longer possible to prevent the inevitable. This makes the second tower to go, and should be serious enough to prevent another like catastrophe. It would be well for the Government to consider the advisability of rebuilding the whole structure. In this way the other glaring mistakes could be eliminated and the artistic merit of the museum raised to the standard necessary for all public buildings belonging to our Capital City.

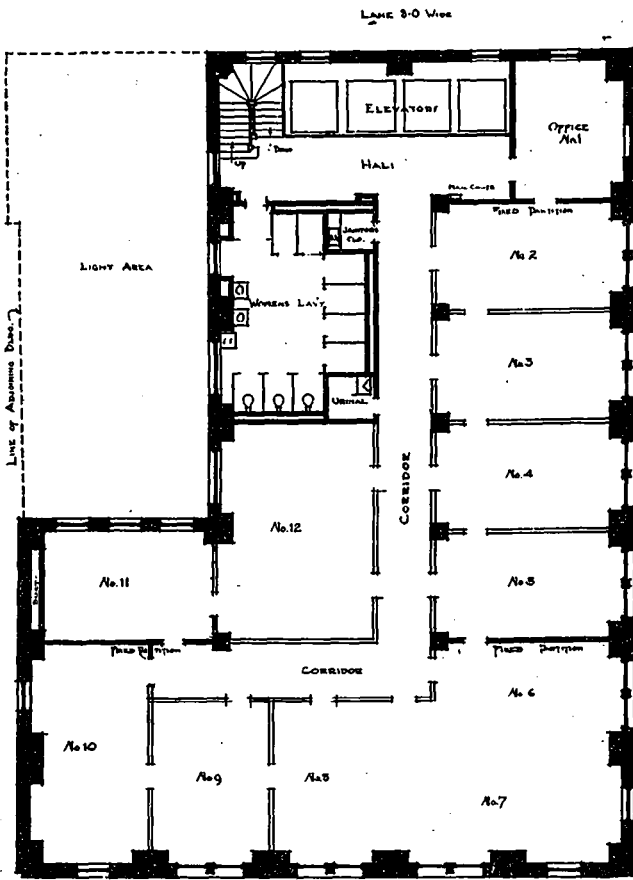


MAIN OFFICE.

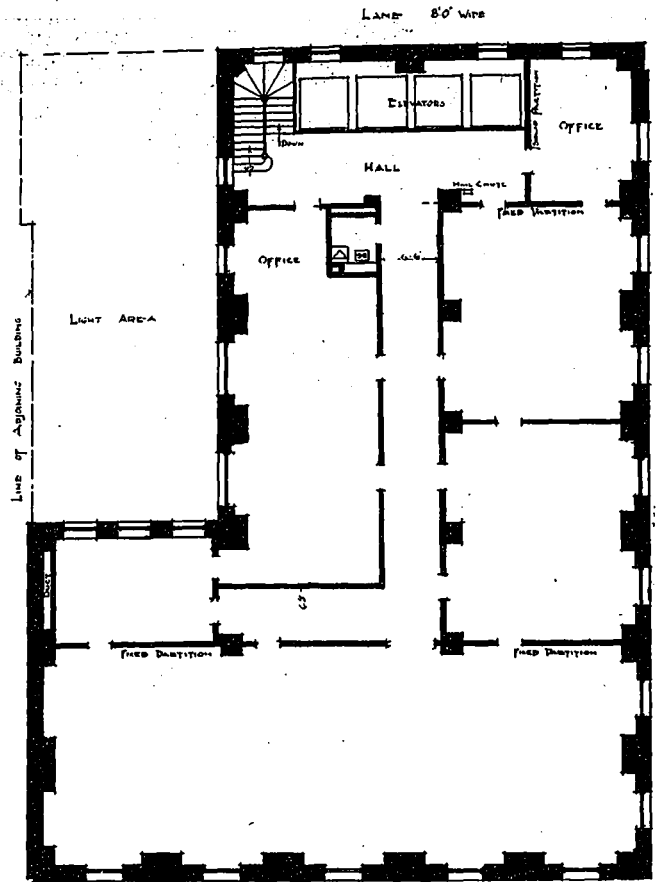
C.P.R. BUILDING, TORONTO.

DARLING & PEARSON, ARCHITECTS.

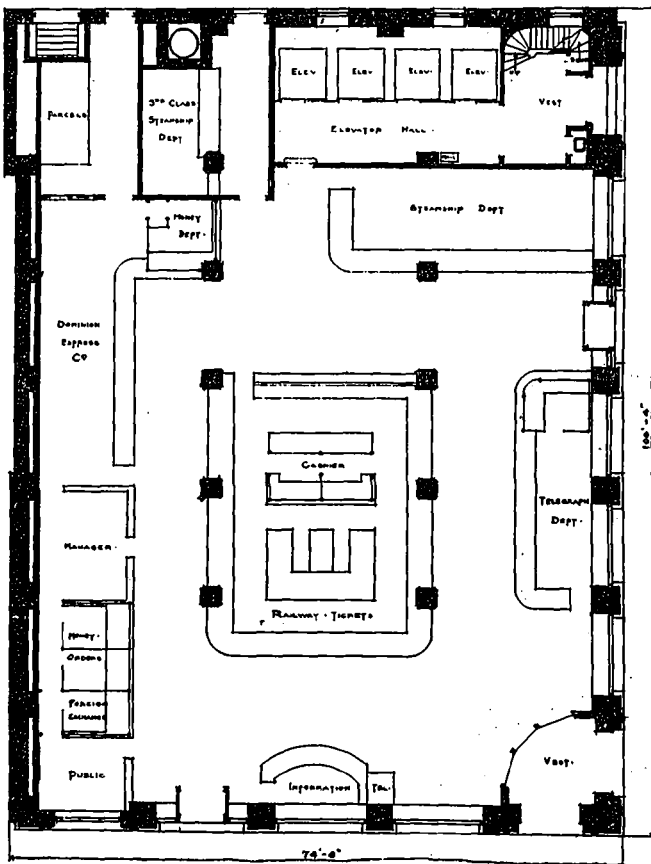
CONSTRUCTION



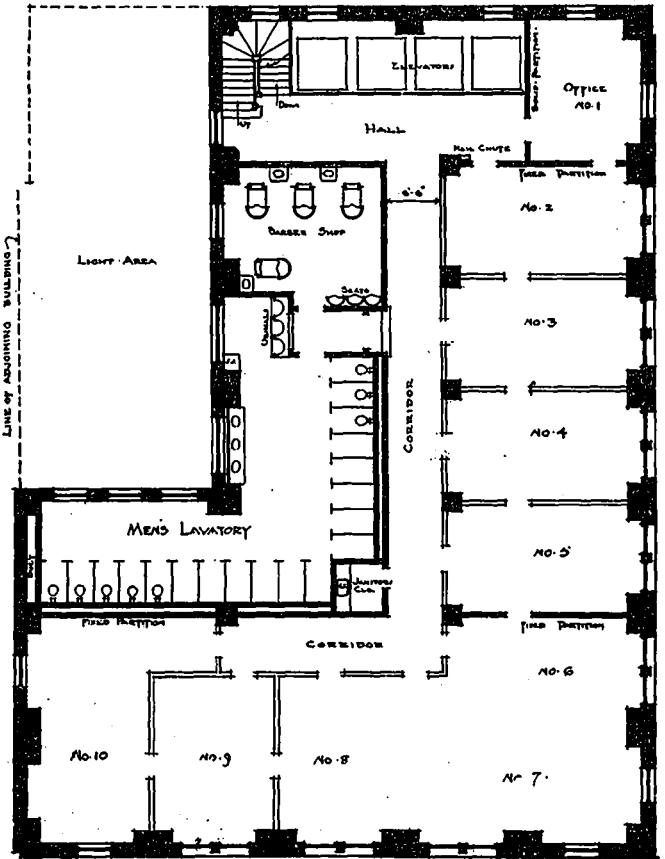
EIGHTH FLOOR PLAN.



TYPICAL FLOOR PLAN.



GROUND FLOOR PLAN.



SEVENTH FLOOR PLAN.

C. P. R. Building, Toronto

DARLING & PEARSON, Architects

THE rapid strides in commercialism are nowhere more clearly depicted than in the buildings of to-day. Hardly a city of any appreciable size but boasts of its skyscrapers. The need for such structures is seldom considered; the advertisement forms the basis for undertakings of this nature. Still the tall building receives the hearty support of the majority, who look upon it as a necessary evil. It holds a position creative of awe and wonderment; it furnishes a means of giving vent to our proud natures; it presents to the world something original, a product as it were of our rapid drift towards the acme of business undertakings.

The Canadian Pacific Railway Company's building is the tallest structure in the British Empire. It rises fifteen stories above the street level, reaching a height of 236 feet, while two stories lie below the ground floor. When compared with American cities of the same size as Toronto this building stands forth in the most favorable comparison; it only suffers in contrast to the work being carried on in the very large business centres such as New York, Chicago, etc. In New York city there are 175 structures which have fifteen stories or over; the Metropolitan Life Tower and the Woolworth each having over fifty.

Authorities are generally of the opinion that the skyscraper in itself is æsthetic and practicable, but fear on account of the congestive features. By the proper handling of this problem there will be no need of foregoing the impressive effects of the tall building and we will witness still greater skill in the erection of what is undoubtedly the most inspiring product of all art.

The exterior has a pronounced vertical feeling subdued somewhat by the horizontal courses consisting of alternate plain and ornamented bands. The four corners are solidified by means of pier effects extend-

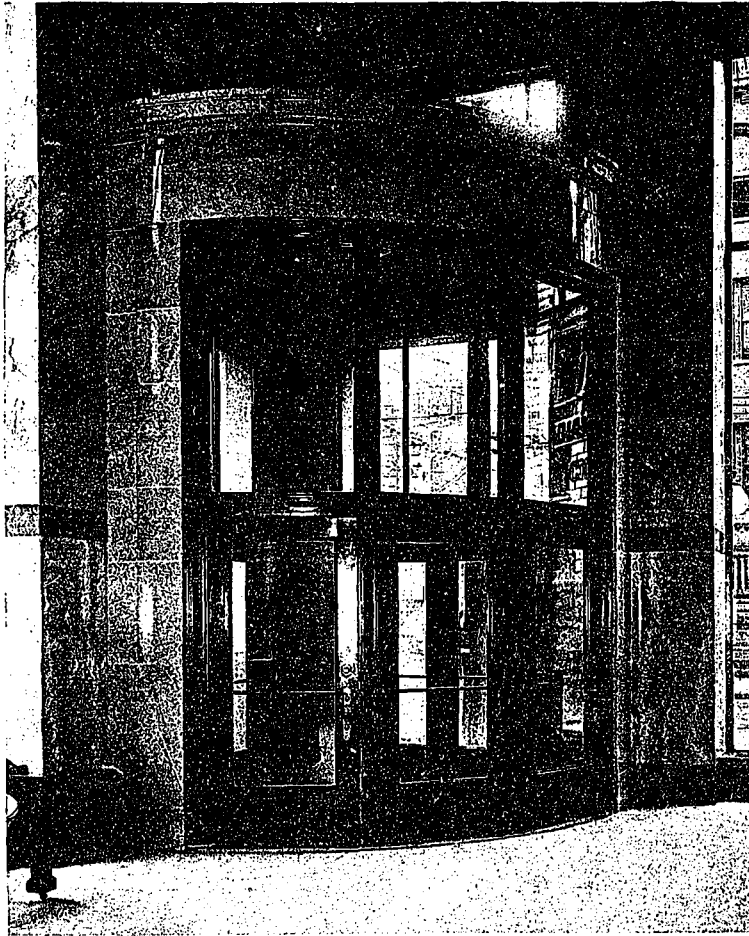
ing throughout the structure and finishing at the top with small domes. The first two stories are treated in Stanstead granite in a simple and dignified manner. As much space is allowed for the openings and window treatment as is consistent with the maintenance of an artistic and substantial design. From the third floor up the building consists of a light colored semi-glazed terra cotta. The third story illustrates the decorative use of this material; the panels between the windows as well as the cornice being extremely rich in design, while the effect is all the more striking by means of the subdued detail work throughout.

Above the third floor the eye is lifted upward by means of the piers, which run uninterrupted throughout the height of the structure. The various floors are indicated by moulded panel bands between the piers, which enrich the central feature of the building in keeping with the corner piers. At the fifteenth floor is the arcade effect which forms an ornate finish to the whole edifice. The balconies, the figures, the slender columns, the carving above all, tend to give the skyline an extremely rich character and form a pleasing contrast to the plain treatment of the first stories.

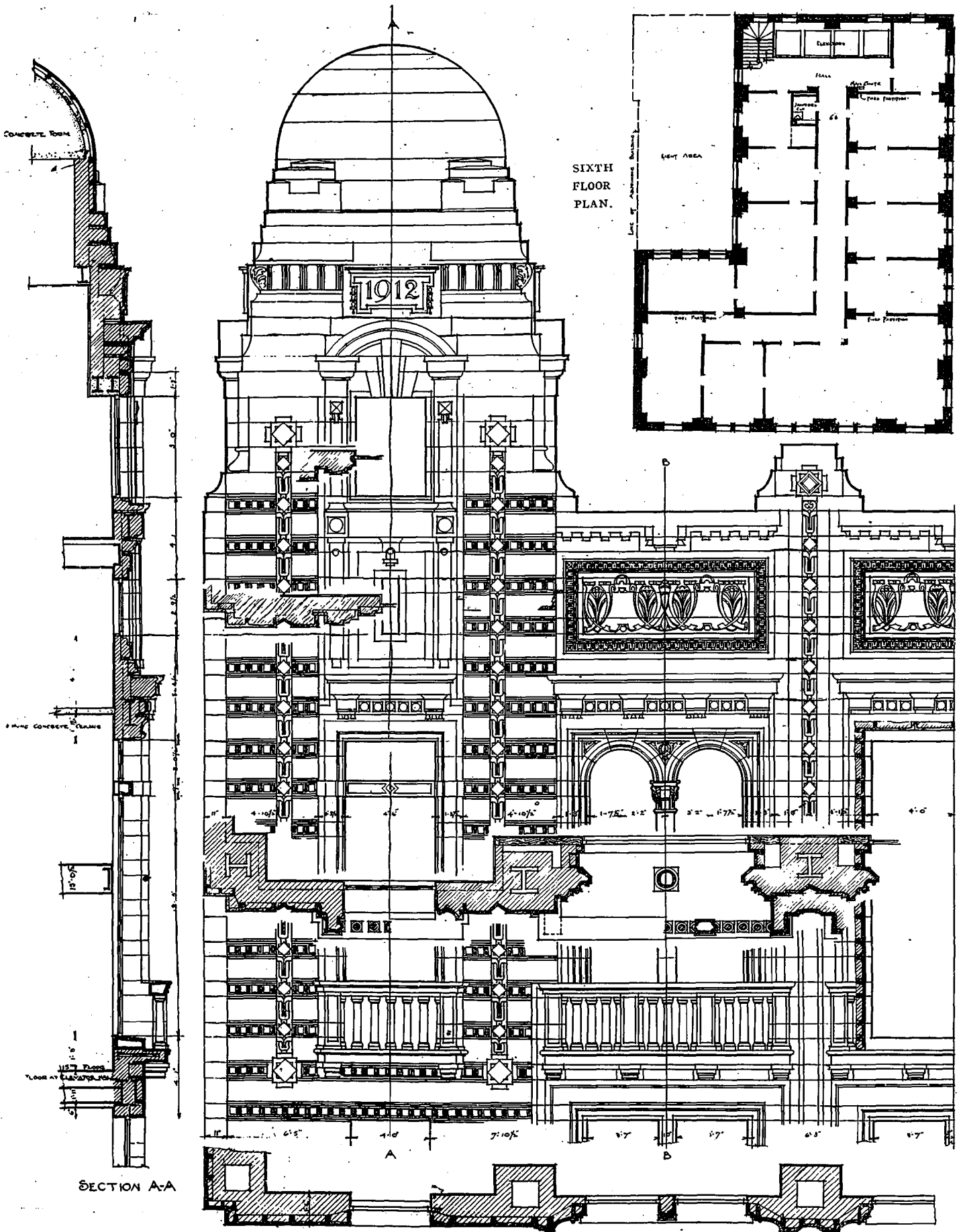
The building alone cost approximately \$1,000,000 and con-

sumed over two thousand tons of steel in construction. Caissons were sunk to bed rock, some forty feet below the surface. The foundation excavation was started October, 1911, and the building ready for tenants March, 1913. Fireproof throughout, the wall columns are bricked in, interior columns covered with 2-inch terra cotta tile, wall beams and girders bricked in, and floors, roof, etc., of terra cotta arches. All windows are of steel frames and sash.

The ground floor is given over to the main office of the Canadian Pacific Railway Company. Passing through a large vestibuled entrance of marble



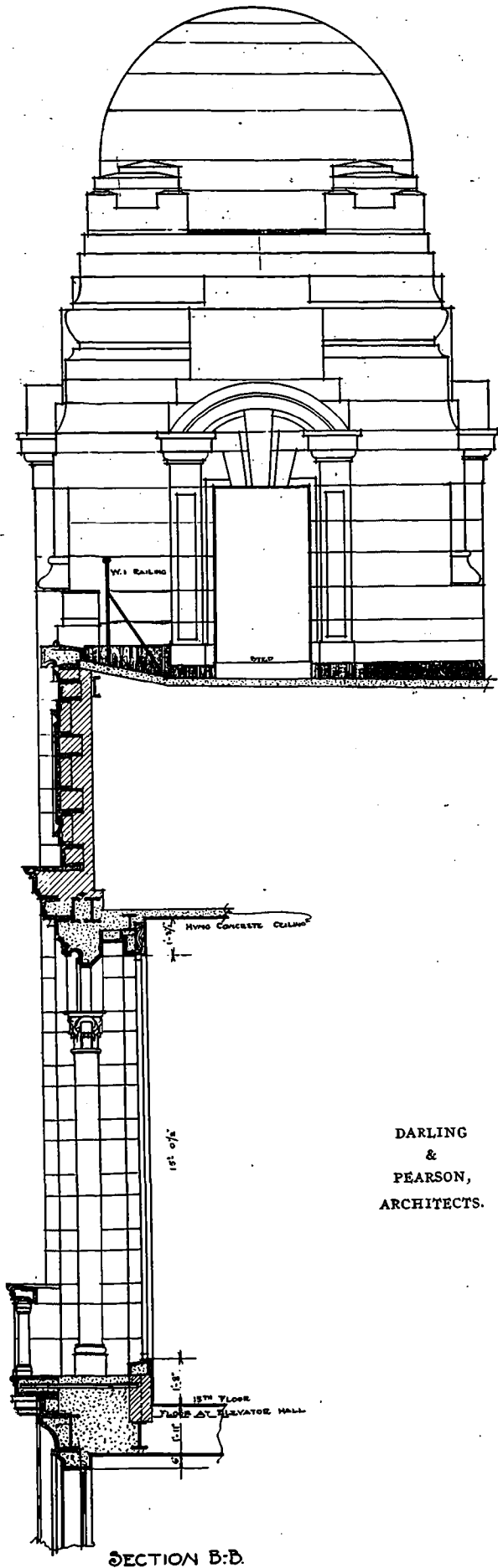
MAIN ENTRANCE.



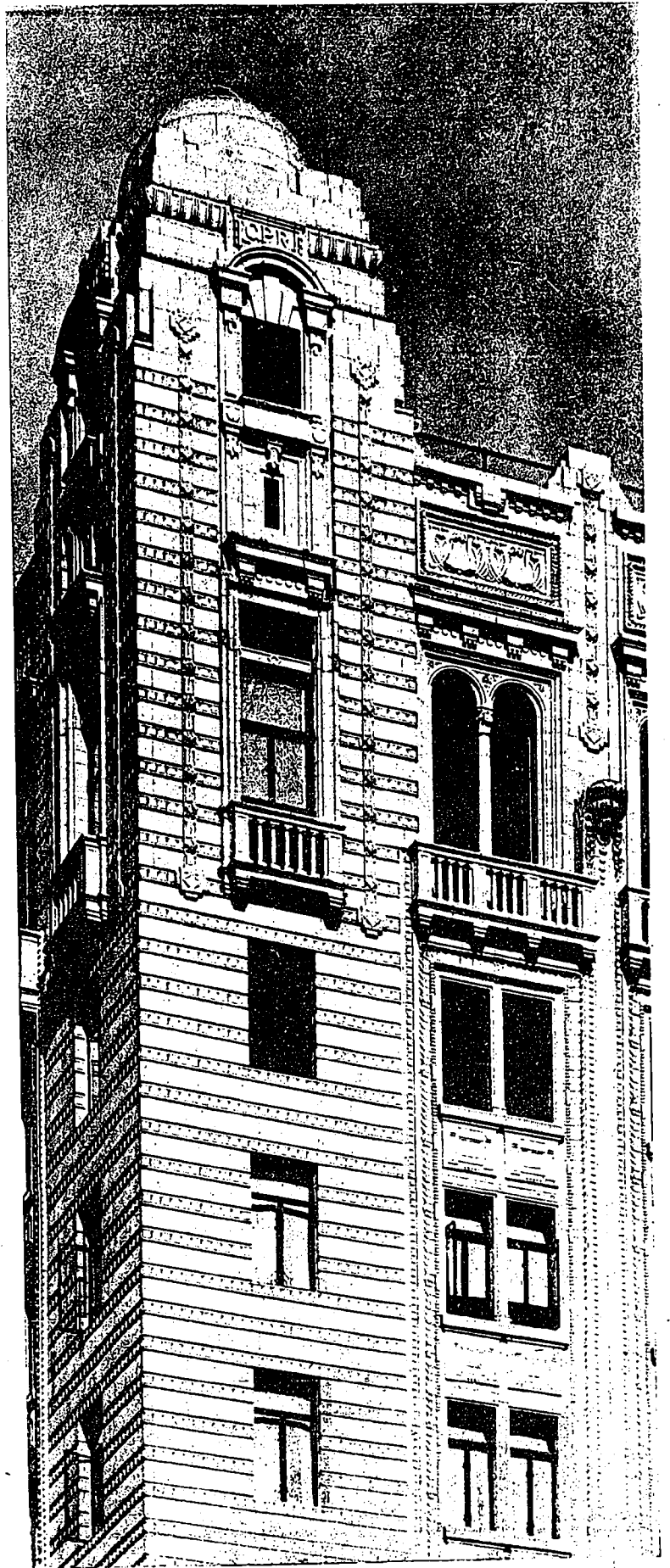
EXTERIOR DETAIL, FIFTEENTH STORY AND ABOVE.

C.P.R. BUILDING, TORONTO.

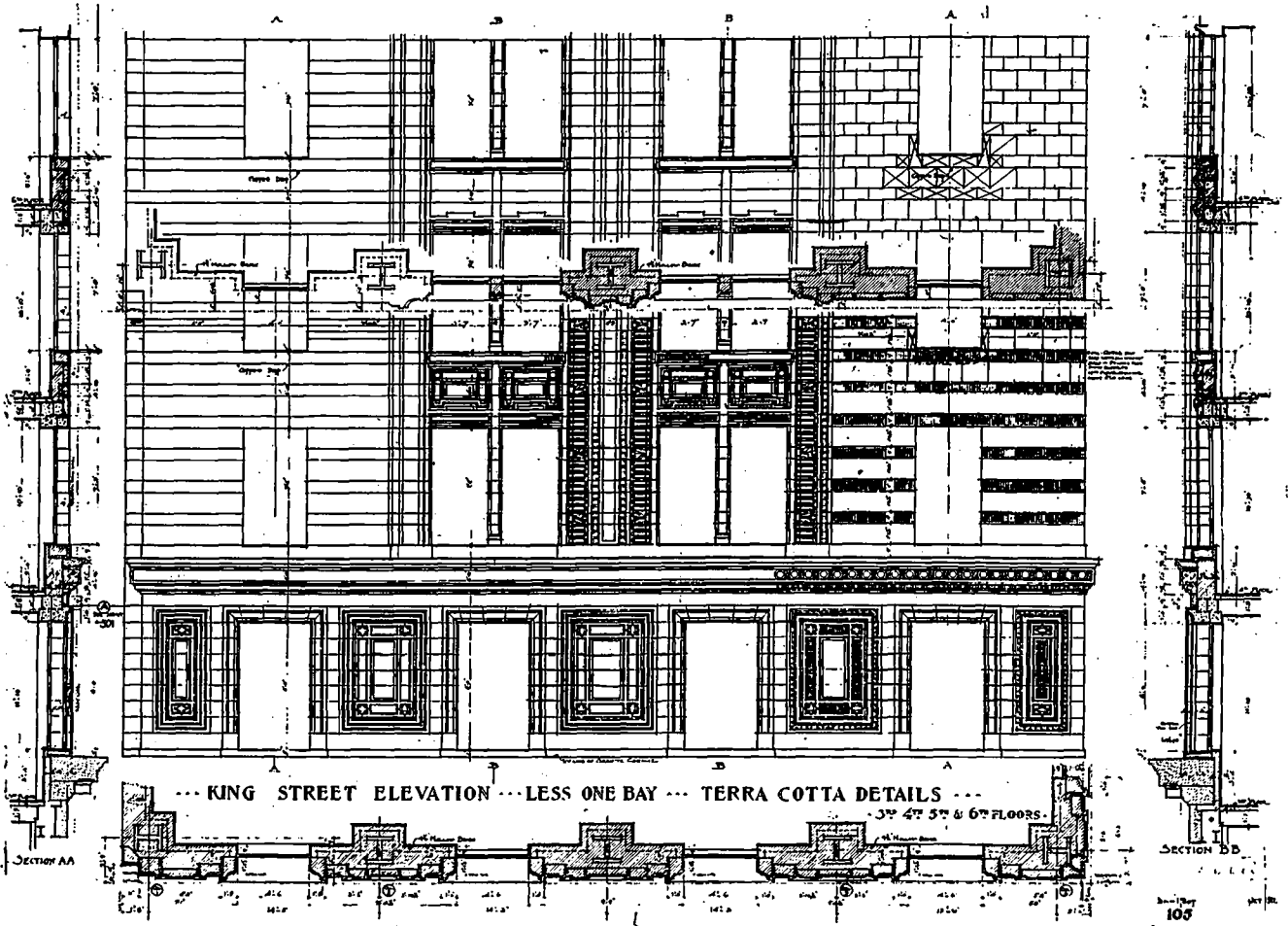
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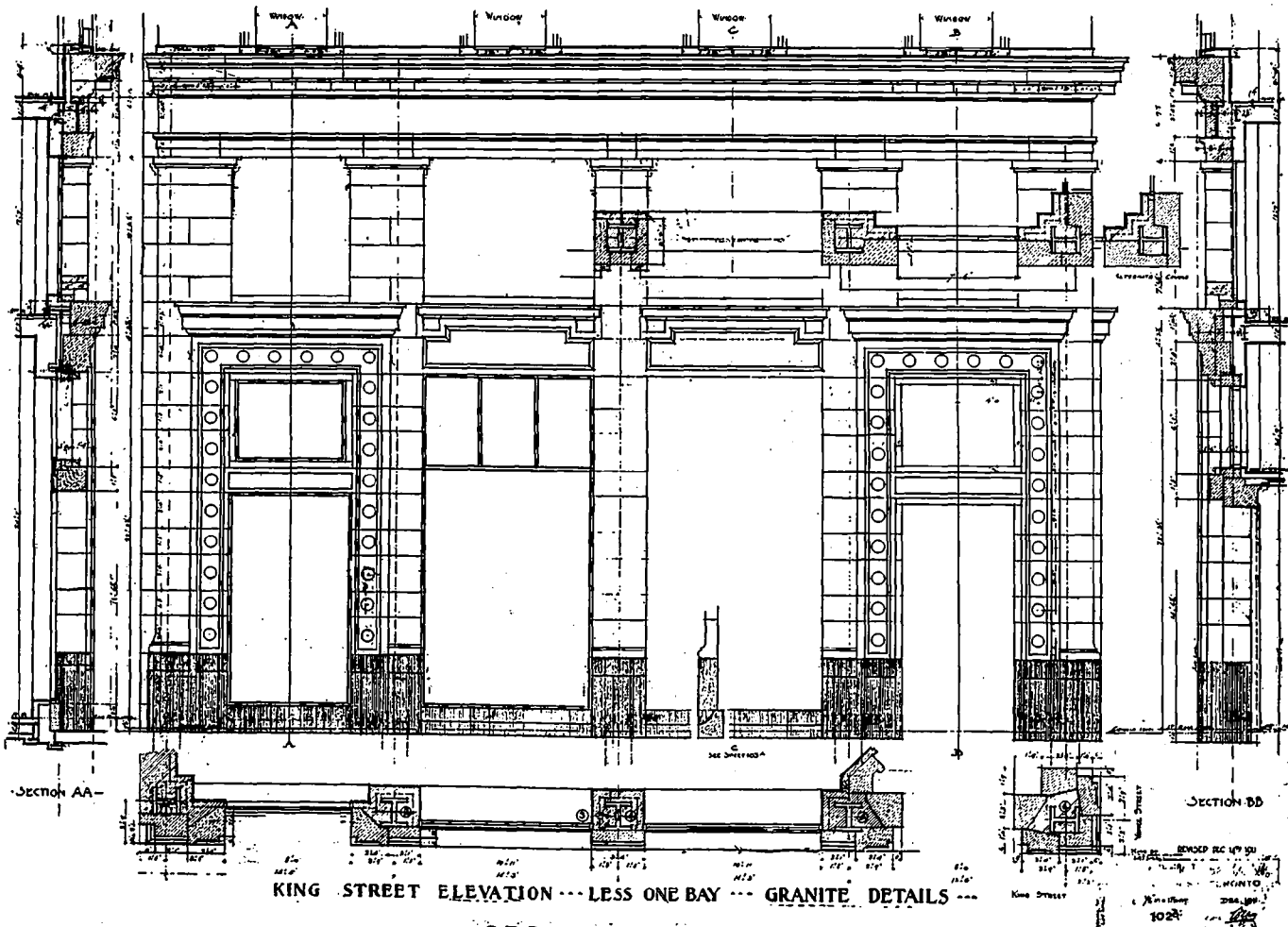
DARLING
&
PEARSON,
ARCHITECTS.



C.P.R. BUILDING, TORONTO.



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SECTION BB

--- KING STREET ELEVATION --- LESS ONE BAY --- GRANITE DETAILS ---

C.P.R. BUILDING, TORONTO.

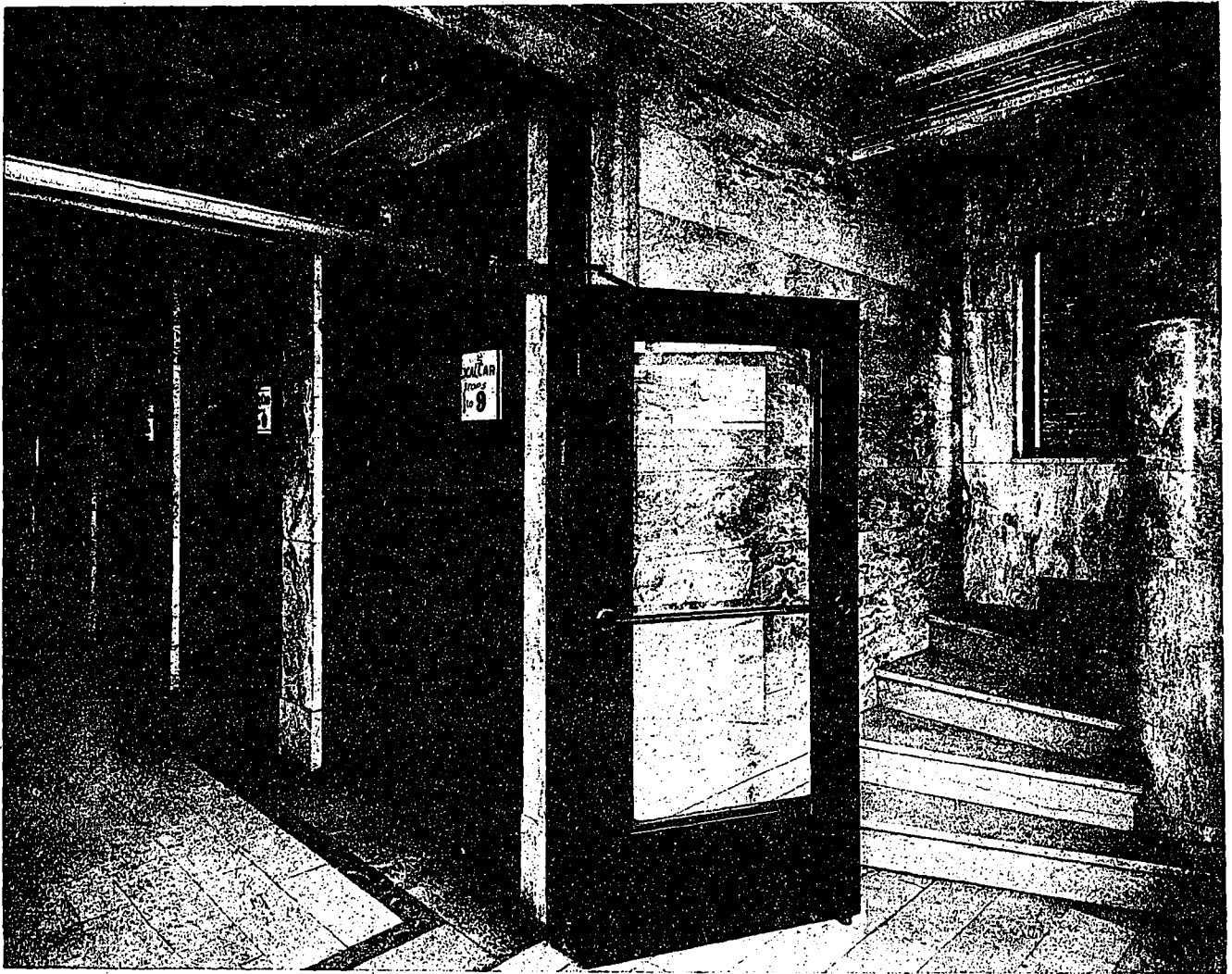
102



MAIN OFFICE.
C.P.R. BUILDING, TORONTO.
DARLING & PEARSON, ARCHITECTS.

and iron, one is immediately impressed with the airiness within. Extending 68 by 77 feet and reaching 25 feet in height, well lighted by means of the large window openings and skylights; accessible by means of four entrances; it affords the proper facilities for an institution of this nature. Ten large columns covered with Escalette marble support the richly panelled plaster ceiling. The walls are treated in various marbles; the dado being of Cippolino, the base of verte antique, the ten-inch belt of verte Tynos, the borders in verte Royal and Escalette, and the large panels in Jaune Royal. All flooring

For cleaning and humidifying the air entering the building, a purifier with a total capacity of 18,000 cubic feet per minute has been installed. The apparatus consists of a five-foot settling tank, spray chamber and eliminator. Two curtains of water in proportion of one pound of water for each pound of air are operated, so that each horizontal line of spray heads is blown out three or four times an hour as desired. The water circulates by means of a centrifugal pump, the suction of which is connected to a strainer placed in the settling tank of the air washer. In connection with the air washer is an automatic



VESTIBULE AND ELEVATOR HALL.

here and elsewhere is of pink Tennessee marble tiles; the counters, forty-two inches high, of verte Tynos.

The main stair hall and elevator corridor is finished in marble and bronze; the stairs being of white Italian marble. The elevator grilles maintain the same dignified character of the exterior first story treatment. All corridors have marble tile flooring, with borders of verte antique and red Tennessee wainscot four feet six inches high of Jaune Royal marble. Lavatories are finished with tile flooring, marble stalls, wainscot and basin fittings. The woodwork throughout the building is mahogany.

thermostatic regulator for the purpose of humidification. This controls the temperature of the water and the incoming air so as to furnish the desired degree of humidity in all seasons.

Ornamental plate prism glass is used for all corridor doors; white pebble glass in office partitions and roulante dipped plate glass on mezzanine floor.

The elevator installation consists of four direct acting plunger elevators, three having a travel of 188 feet and the fourth 199 feet 6 inches.

In the basement are located two pressure tanks, each of 5,000 gallons capacity.

The Entrance to an Estate

F. R. MAJOR

THE entrance to an estate should foretell the true picture of what lies within. It should be the key note to the ensemble—the home and its surroundings. It may vary in design, due to the many styles of architecture and the wonderful diversity of nature, but it should never be a discordant note breaking the perfect harmony of the whole arrangement. For the entrance gives birth to the first impression as well as affecting the final one.

The people are slowly awakening to the need of privacy, and should be alive to the artistic possibilities when considering the practical side. The house should have either a natural or an artificial protection from the curious public whether it sets close to the main thoroughfare or is removed some distance away. Such a need opens up new opportunities for the artistic improvement of our highways and byways.

That the entrance is assuming its proper relation is readily seen in the accompanying illustrations, which are widely scattered throughout the Eastern States. Each one has its own style, but planned as a coherent part of the original layout. Very often the mistake is made in having a second party design the grounds and approach, who is not able to grasp the true feeling of the original scheme. As a result a very attractive house will often fail to harmonize with the surroundings, no matter how beautiful they in themselves may be. But this idea is fast losing vogue. We are planning as never before to make the entrance, the drive, the walks, the garden and the house one harmonious scheme. And this honest effort is enriching every section of our country with artistic estates in perfect attune to the nature about them.

What could be more pleasing than the gateway,

fig. 1. The posts are built of the same rough stone as that used for the house, while the timber roof is wild with the overhanging *Wistaria Sinensis*. What a picturesque and Oriental effect this vine gives when left alone, which is undoubtedly the best way to train a Japanese species. This example shows how a little skill in the treatment of the same materials can produce a harmonious effect without appearing monotonous.

Compare with this the other roofed entrance, fig. II. Although treated differently, it creates a like impression in that it belongs to its own individual setting, and nowhere else. The design of the one is upright, possessing a dignity in keeping with the house, while that of the other is low and rustic, conforming to the nature of the bungalow. In the latter a wild charm is effected by the use of the rough wood taken from the depths of the forest, which makes it simple in construction and inexpensive.

An unusual effect and one that lends dignity to its lines and a rustic nature to the whole, is found in fig. III. One enters between brick piers, passes a series of low posts chained together, and rests beneath a charming pergola. On one side is growing the hardy Dutchman's Pipe

with its deep green foliage soon to shield the resting-nook from the sun. On the other side is the Japanese Morning Glory, wending its way up the rough tree posts and around the branches still clothed with the bark of their original haunts. Between the poles and vines the sunlight wanders, filling one with awe at the thought of what must await them as they emerge from these mysterious patches of light and shade. And there is no disappointment, for the pergola brings into uniformity the piers and massive

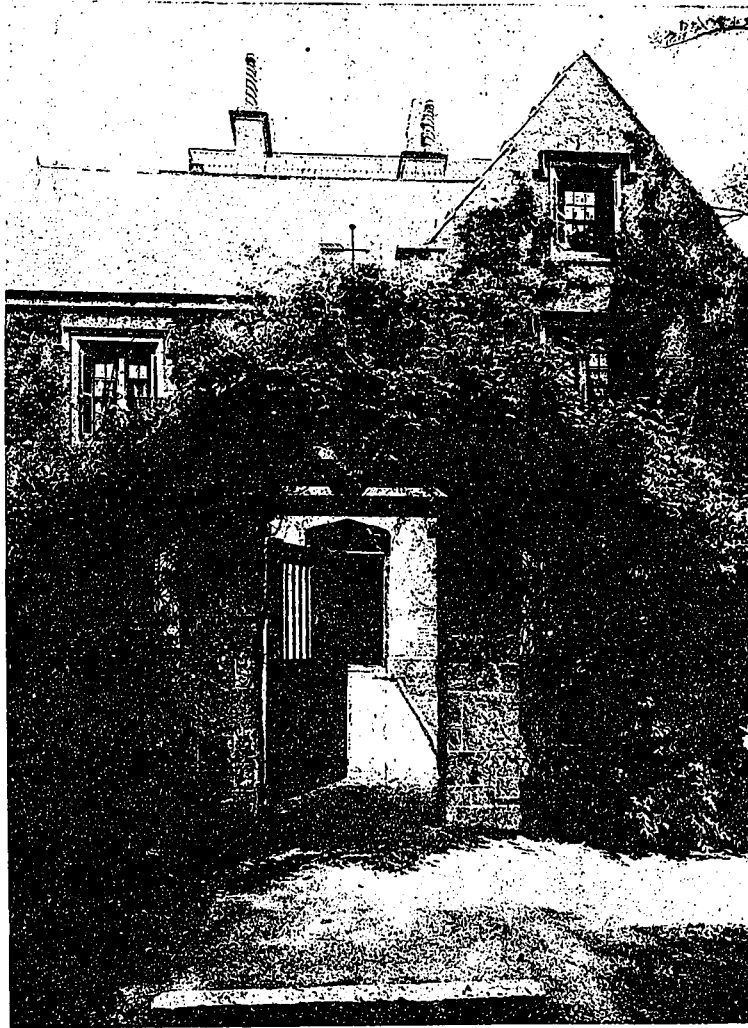
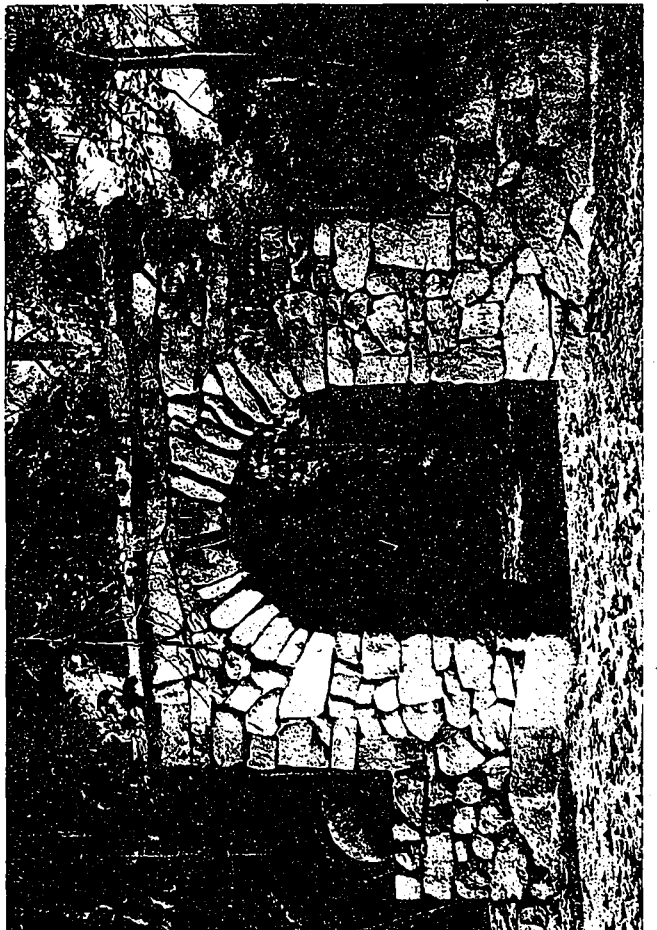
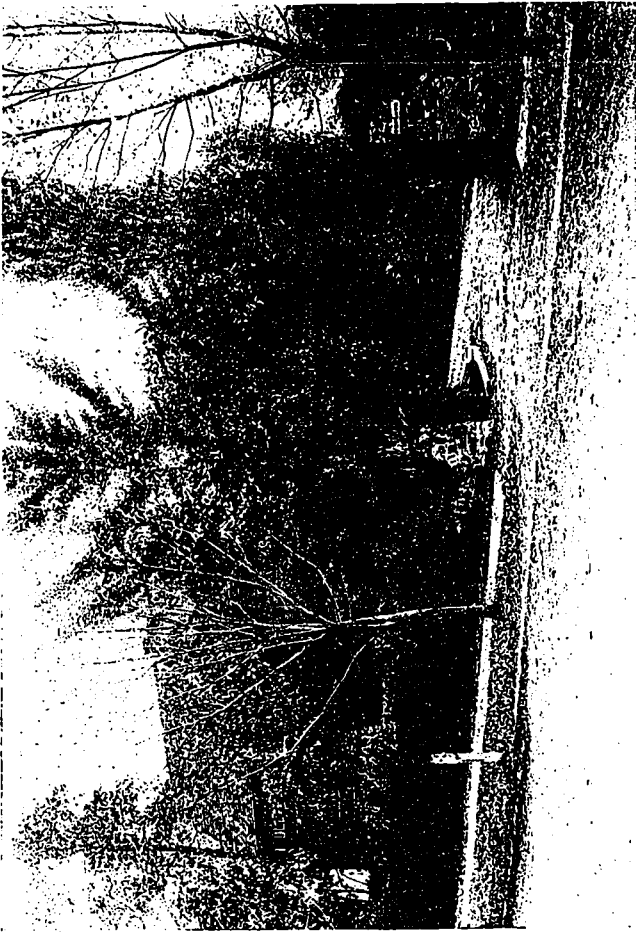


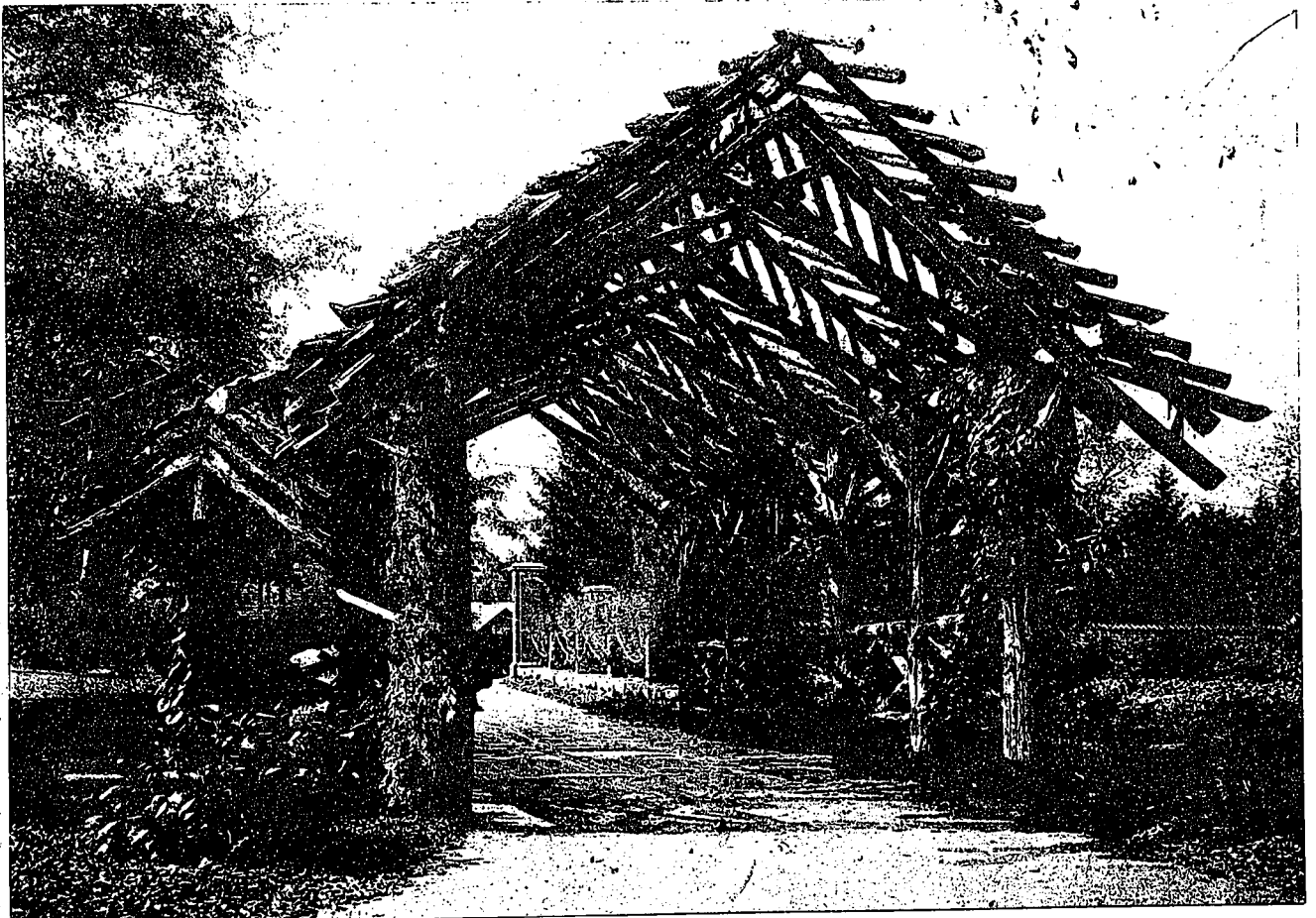
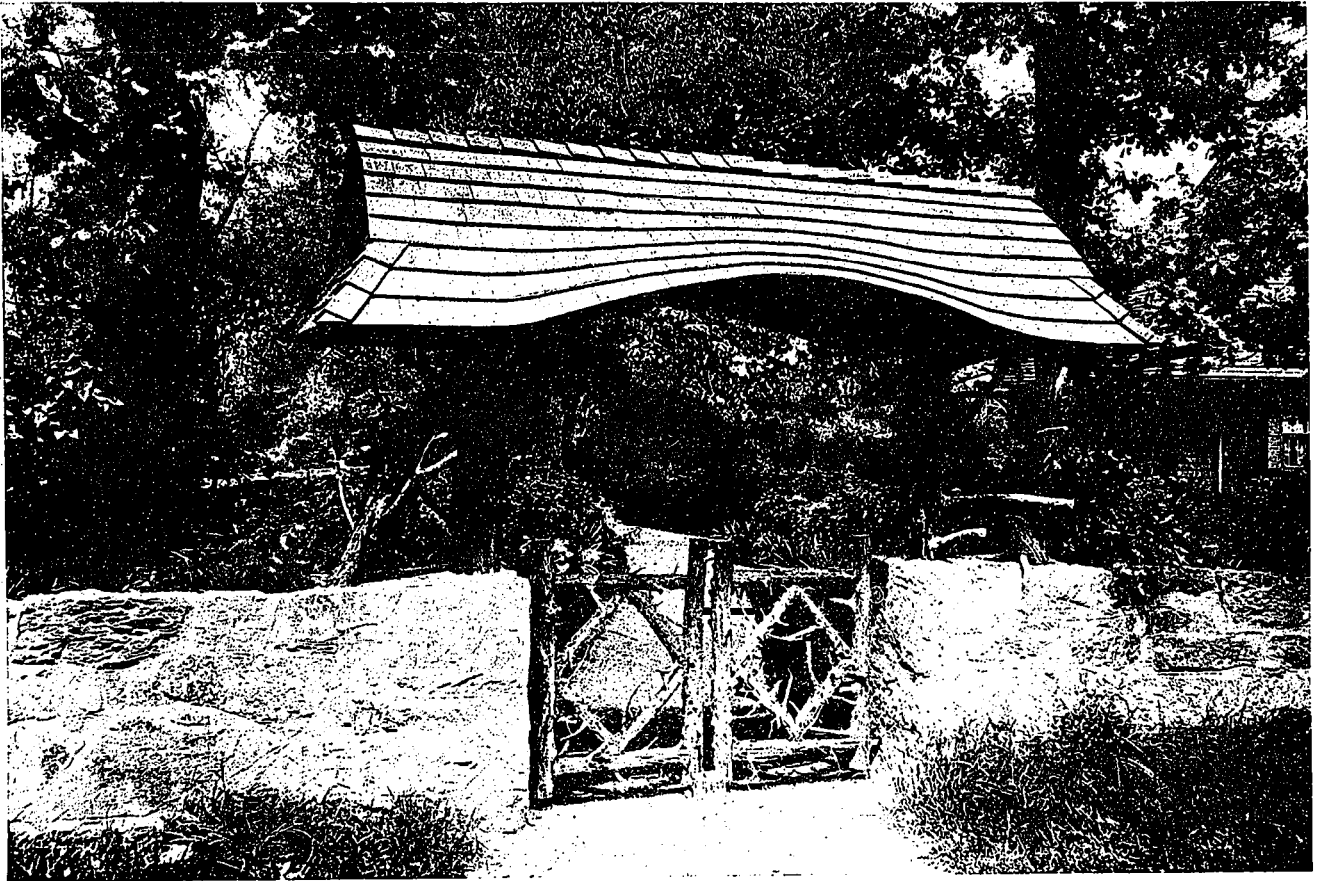
FIG. I.



ENTRANCES TO ESTATES.

FIGS. IV. AND V.

FIGS. VI. AND VII.



FIGS. II. AND III.

ENTRANCES TO ESTATES.



FIG. XIV.

chains with the wonderful panorama of flowers and gardens within. It exemplifies the close relationship

existing between nature's materials, no matter how we may see fit to form and shape them.

The two entrances, figs. IV. and V., belonging to the same estate, demonstrate the use of field and rubble stone. The one consists of two square piers from which spring a wrought iron arch, the filigree work of which would ordinarily be adornment enough. But the vista through the trees together with the heavy foliage near by demand the climbing Wistaria to embolden its somewhat delicate character. The other entrance affords a charming contrast. The opening is through a heavy mass of stone. In trying to penetrate the depth of the forest what could more adequately express the deep mysterious impressions of a dense wood than this structure made from the rough stone of the neighboring fields?

A drive leading into private grounds should have an entrance with sufficient character in itself to distinguish it readily from the rest of the enclosure. Too often the opening is an abrupt ending of a hedge or fence, a source of considerable annoyance especially if the estate is very large. To offset this the posts or abutments that form the entrance should be of a different material than that of the fence or have some individual motive.

The piers in fig. VI., which mark the road leading to the half timber house are very humble, with no attempt at proportion or style. The Virginia Creeper helps to relieve the crudeness and draw them into closer harmony with the other trimmings. The



FIG. VII.



FIG. XV.

entry, fig. VII., is also built of stone gleaned from the fields, but somewhat more pretentious in design. A touch of dignity is added to the view by the stone seats which tend to form a second and more formal entry.

Wrought iron lends itself to the artist's skill in ornamenting the approach to vast estates and palatial residences. Nothing is more effective or practical. Figures VIII. and IX. represent two antique Spanish wrought iron gates adorning the gardens of elaborate setting. Figure X. exemplifies the ornate design breaking the heavy feeling of a solid wall. The same is made quite inviting through the open appearance of the grill and the verdant growth on either side. Figures X. and XI. convey immediately the thought of seclusion. While arousing one's desire to enter and see the charm within, still they impress the idea of trespassing.

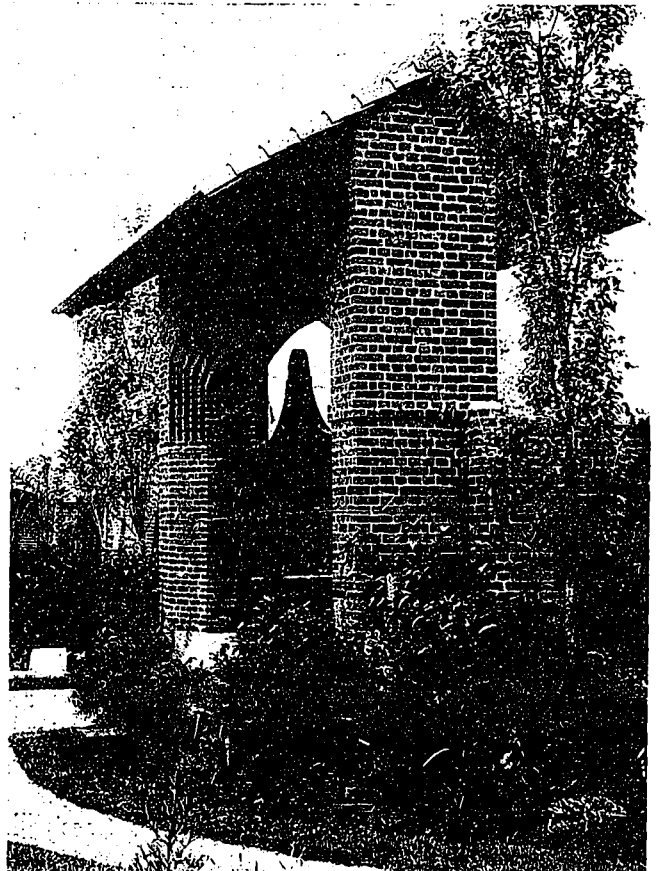
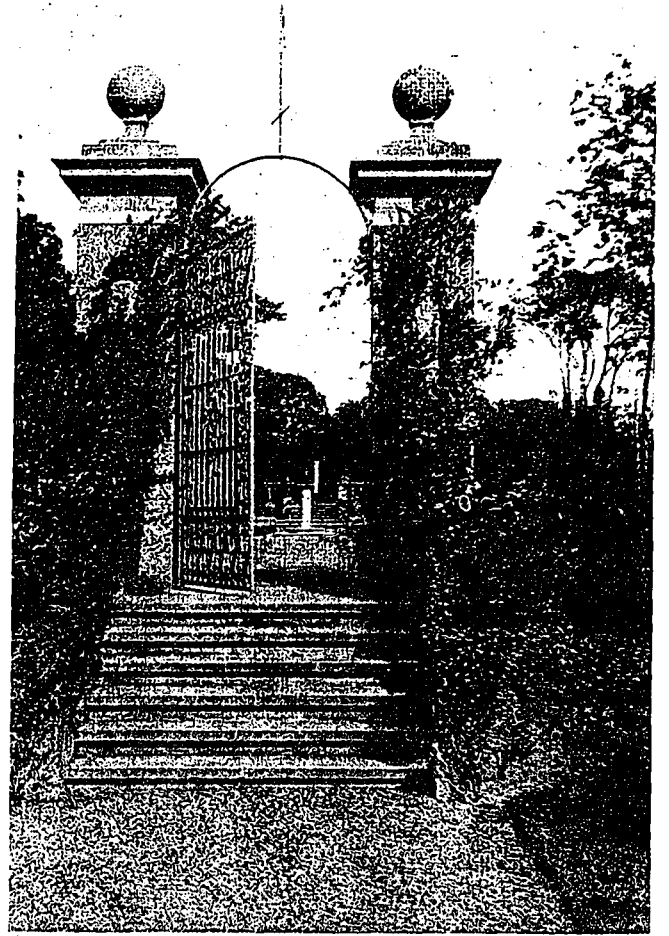
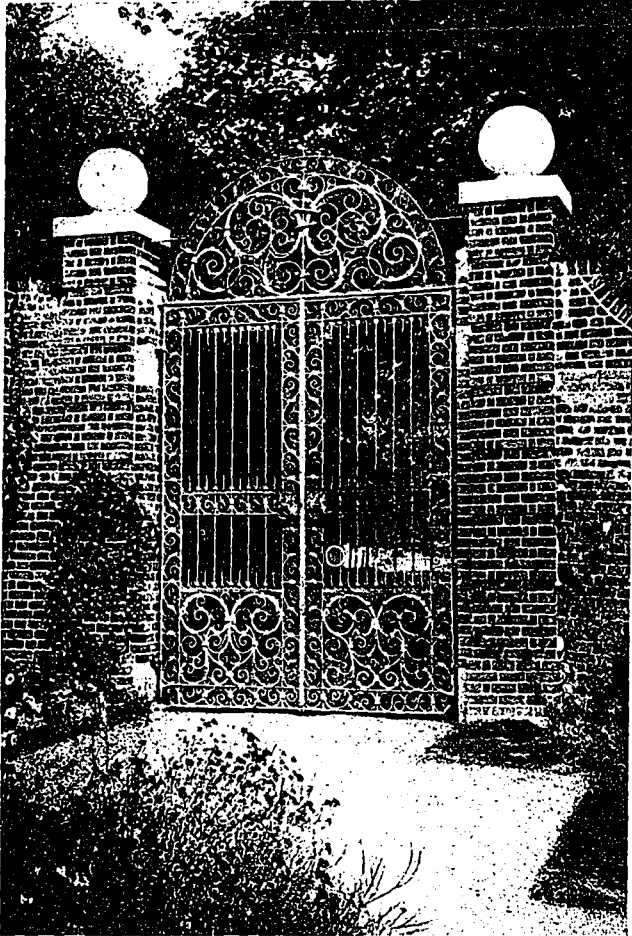
One would seldom think of using the stumps which rarely escape the clearings for an artistic setting. Yet these horny monsters, fig. XII., have been partially clothed in ferns and vines as a guide to the sombre recesses of a heavy growth of timber. The mystery of the house beyond the trees could find no stronger impetus than this wild and rugged effect.

While fences, hedges, gateways and trees all serve as introductory motives, they should never detract from each other, but should be so correlated that the general plan will be harmonious throughout. Too many translations of the same idea in a small

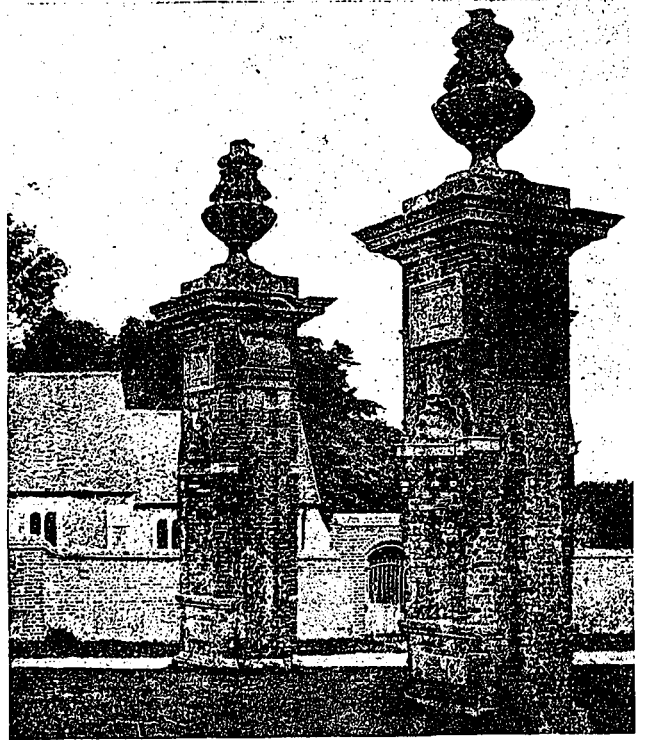
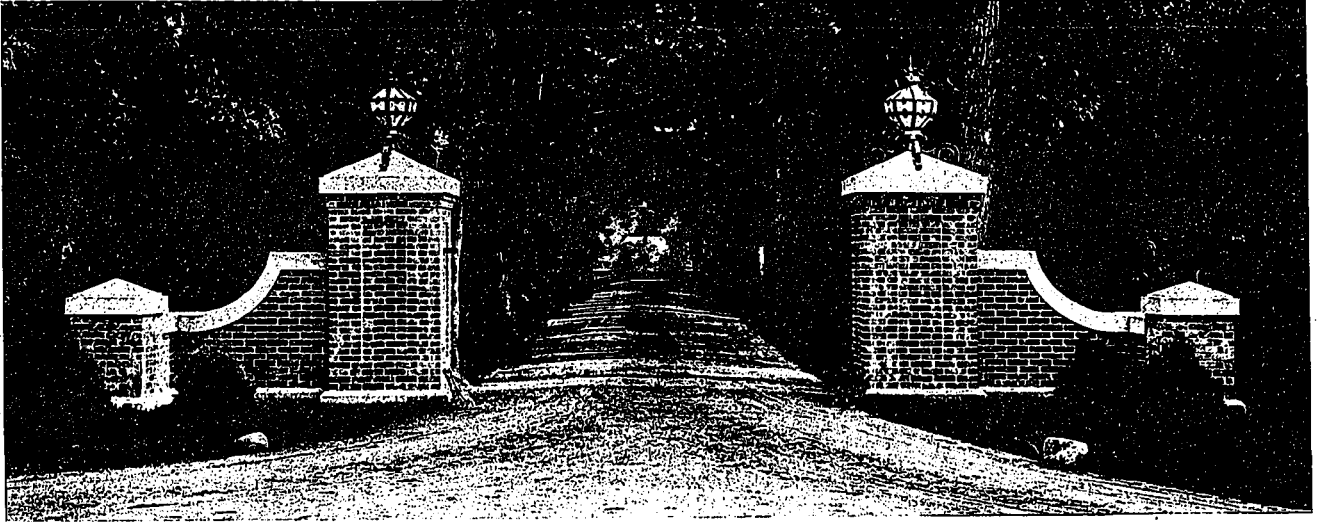
area will weaken the design. This may be seen in the illustration of fig. XIII. After entering through



FIG. XIII.



FIGS. VIII., IX., X., AND XI.
ENTRANCES TO ESTATES.



FIGS. XVI., XVII., XVIII., XIX.
ENTRANCES TO ESTATES.

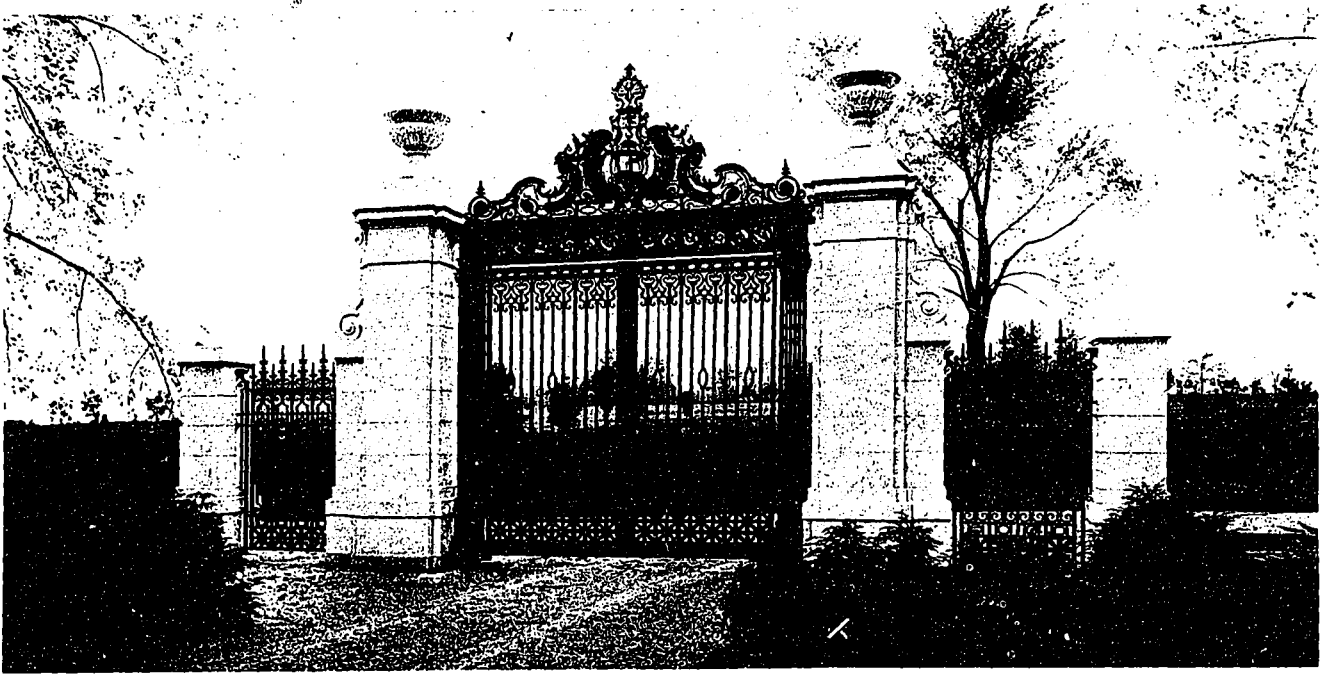


FIG. XX.

the gate of roughly hewn saplings one is confronted with many kinds of openings, such as the majestic poplars, the simple hedge, the archway and various timber effects. Any one of these would have answered for an appropriate entry to the grounds within.

One commendable feature of the natural entrance is its kinship to the trees that shelter it and the grass and shrubs that surround it. It bids welcome to the farm-house, the cottage, the bungalow and the mansion. It adapts itself to the quiet and repose of the forest home as well as to the grandeur of the wealthy estate. The artificial entrance, on the other hand,

with its air of dignity and stateliness admits only to a carefully groomed house and garden. A type of the artificial opening which conveys readily the more formal nature of the grounds is found in fig. XIV. The posts and enclosure are of concrete with a decorative frieze of ordinary iron pipes painted a deep red. The view within reveals a winding road leading to the house, which is also concrete.

The landscape should never be sacrificed to the driveway. On the other hand, the driveway and entrance should adapt themselves to the contour of the land and its natural growth. A heavily wooded section of short extent should have a straight drive

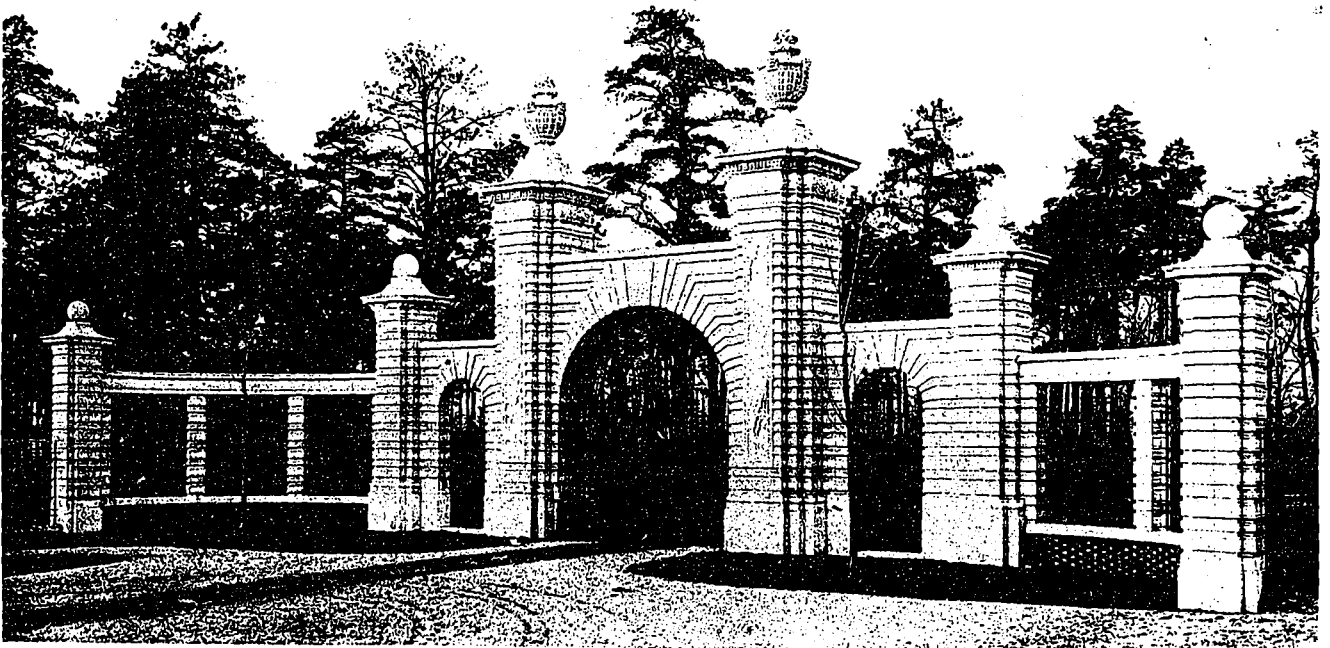


FIG. XXI.

with an angular opening, while a long stretch of woods or open lawn bespeaks a more easy approach. The low stone entrance, fig. XV., conforms to the graceful sweep of the drive. The design is thoroughly in keeping with the soft open lawn and whatever boldness might have resulted from the use of stone has been relieved by the vines.

Another entrance similar in dimension to the one mentioned last is fig. XVI. Here also the lines are consistent to the general effect of the setting, while a proper amount of life and color has been introduced by the use of brick with suitable capping and orna-

In using artificial materials many conditions have to be considered, such as the style and pretentiousness of the house, the extent and lay of the grounds, together with the character of same, and the location of the entrance in respect to the house and grounds. A vast estate should command an imposing entrance. The large marble and iron gateway, fig. XX., conveys immediately the large scope of the plan within. Here is an artistic expression possessing a stateliness and character all its own and yet preserving the style and harmony of the whole arrangement. The same may be said of the elaborate entry, fig. XXI.

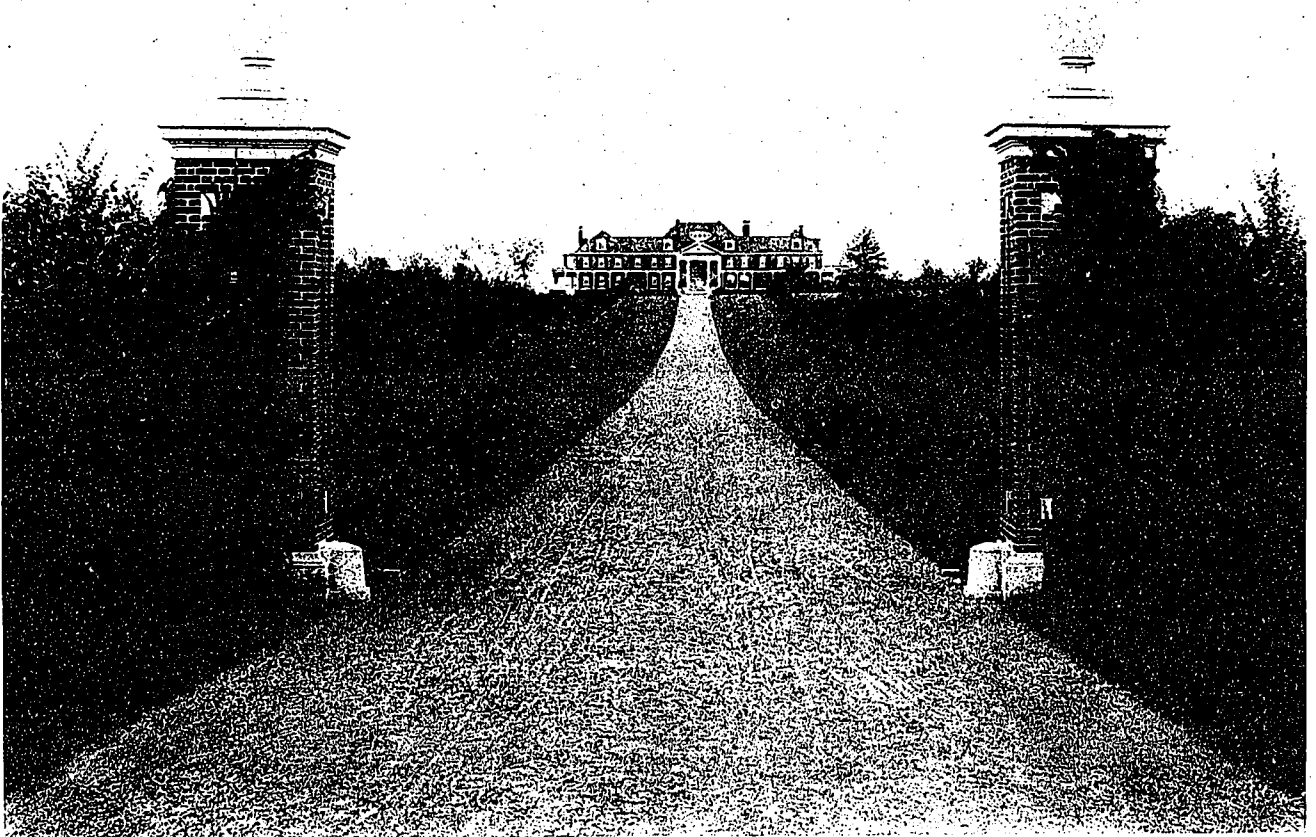


FIG. XXII.

mental iron-work. The entrance, the drive, the trees and the house at the end of the charming vista are all harmonious parts of the composition.

Two examples of decorative piers somewhat similar in design are shown in figs. XVII. and XVIII. One has a finish of rough plaster with ornamental lamp brackets, the other of brick with shell fountains and panels. The character of the entrances are especially well suited to the surroundings, and to have an idea of how much out of place each one could be, picture them with their settings reversed. Figure XIX. represents quite a different type from the others. Here the iron-work runs from one building to the other and creates a feeling of wide, extensive tracts beyond.

Marble, terra cotta, brick and iron enter into the composition of this design. The general tone of the terra cotta and brick is a very delicate cream which reflects the texture and color of the house within the grounds.

The approach to the house in fig. XXII. is straight and dignified. It requires a somewhat stately entrance, simplified somewhat to be in perfect harmony with the general character of the home itself. In contrast to this is the entrance, fig. XXIII. With a sharp curve of the road, the rough growth of shrubbery, etc., the necessity of a retaining wall—all demand an opening marked with an individual feeling. It is of ornate design, full of character and yet does not produce or need the upright stately effect of the

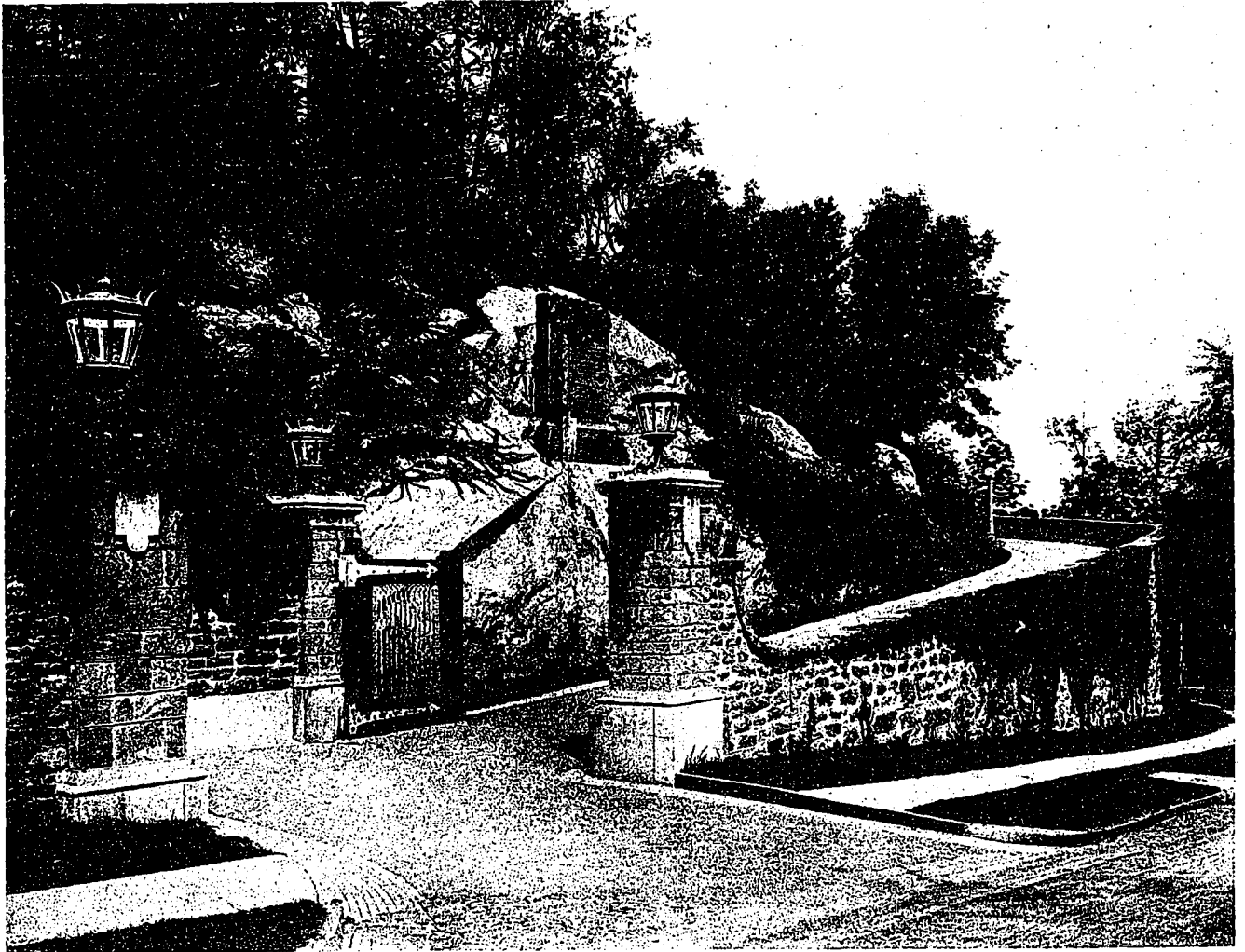


FIG. XXIII.

one in fig. XXII., where one feels no interruption.

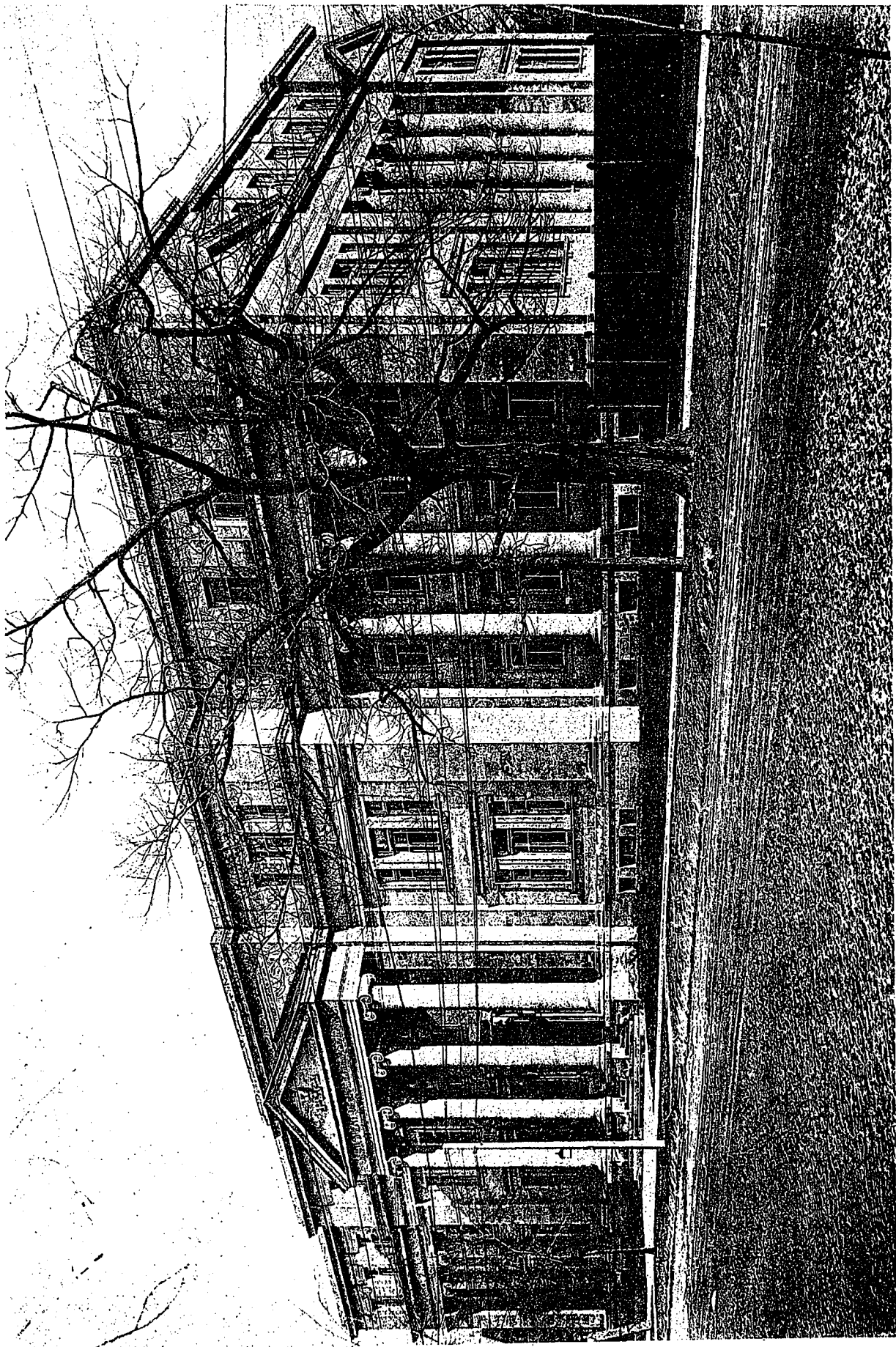
What wonderful possibilities lay in the perfecting of the many parts and mastering each feature so that it becomes a truthful expression of the others. The first impression is often the most telling. How necessary, then, for the owner as well as the architect to realize the need of an appropriate design for the entrance. It should be one of the most consistent features, interpreting the individuality of all the parts to which it gives access. The plan may consist of an inviting cottage growing up in a regular labyrinth of flowers, or an attractive bungalow surrounded by nature's choicest trees and shrubs, or a stately mansion with its formal gardens; yet if the entrance does not harmonize perfectly with the home and its surroundings it fails in the chief essential—to become the keynote of the ensemble. It should be the motive that vibrates in unison to the harmony of the whole and leads one into the delight of a perfect symmetry between the work of man and that of nature.

THE distance from the line of roadway to the entrance gate is dependent on many things. If the drive runs at right angles to the road, it is advisable to place the gates far back to allow a turn of large radius for carriages. If the public road be nar-

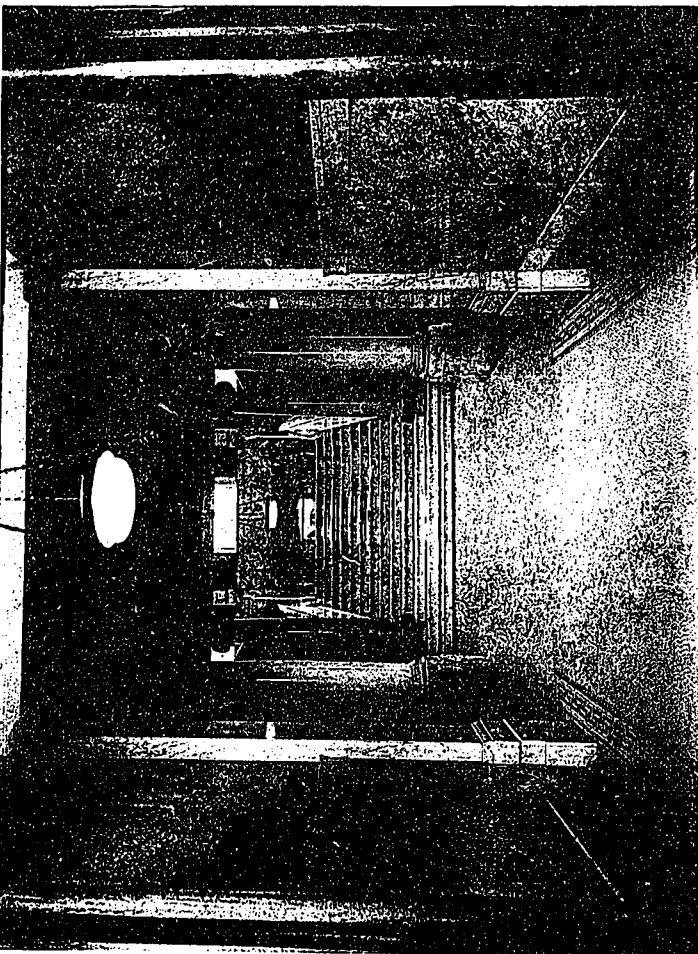
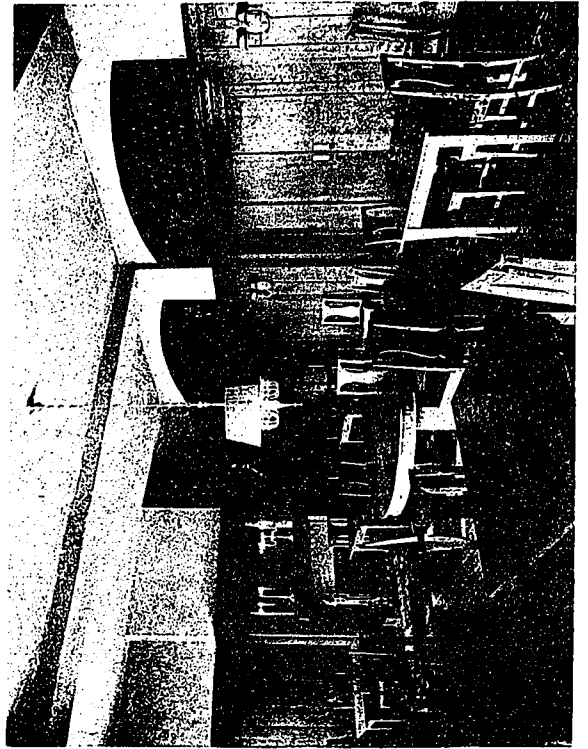
row in proportion to the amount of traffic upon it, it becomes all the more necessary to have some form of well recessed wing walls.

For entrances placed at right angles to the road, the cup-shaped plan is generally most effective, as it allows a good outside green, which may be protected by posts and chain. The most difficult entrances to set out with satisfactory lines are those which are of irregular shape, i.e., with unequal wing walls. Nothing could be more deceptive than the effect of curves. Somehow, even when they have had much careful planning, they lose that easy flow of line which on paper looks so pleasing, for there is all the difference between a flat scale drawing and the lines as laid down and viewed in perspective.

The carriage entrance, if sufficiently important, should be provided with side gates for pedestrians on one or both sides; these may be any width from three to five feet, and the parapet or sidewalks where these exist, with proper kerb and channel terminating against the pillars. The opening for a carriage gateway is usually twelve feet, but if the gate pillars and general arrangement are on a large scale fourteen feet is not too wide. Where wrought iron is used and a very wide open effect is aimed at, fixed side panels with strongly braced and strutted hanging bars may be adopted.—*Mawson*.



HOUSEHOLD SCIENCE BUILDING, TORONTO UNIVERSITY, TORONTO.
G. M. MILLER, ARCHITECT.



FOUR VIEWS,
HOUSEHOLD SCIENCE BUILDING,
TORONTO UNIVERSITY, TORONTO.

G. M. MILLER, ARCHITECT.

CONSTRUCTION

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CONTRIBUTIONS—The Editor will be glad to consider contributions dealing with matters of general interest to the readers of this Journal. When payment is desired, this fact should be stated. We are always glad to receive the loan of photographs and plans of interesting Canadian work. The originals will be carefully preserved and duly returned.

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Vol. 6 Toronto, August, 1913 No. 8

CURRENT TOPICS

R. B. WHITTEN and Geo. A. Oman have formed a co-partnership for the practice of architecture under the firm name of Whitten & Oman, with offices at 413-415 Lougheed Building, Calgary.

* * *

GEO. B. POST & SONS, architects, whose Canadian branch office is in the Standard Bank building, Toronto, announce the removal of their main office from 347 Fifth avenue, New York city, to the Architects' Building, 101 Park avenue.

* * *

THOMAS KELLY & SONS have been awarded the contract for the construction of Manitoba's new Parliament Buildings, to be located on the magnificent site bounded by Kennedy street, Broadway, Osborne, and the Assiniboine River.

The contract was awarded for \$2,859,750, and calls for the completion of the building during 1917, which is in about three and a half years' time.

* * *

AT A MEETING of the Council of the University of Manitoba, Arthur A. Stoughton, of New York, was appointed to the chair in architecture, which was recently established in connection with the university. Mr. Stoughton enters upon his new work after years of practical experience. Among the more important designs are his Soldiers and Sailors' Monument, New York city, and the Canton Christian College, China.

* * *

PRESENTING an unique appearance, something after the style of the forestry building at the A.Y.P. Exhibition at Seattle, and composed entirely of British Columbia timber, for the most part fir, will be the Forestry building at Hastings Park, erected by the Vancouver Exhibition Association. The general effect will be rustic; in place of stone pillars there will be massive logs four feet in diameter, and the beams will also be composed of logs; 14 inch logs will support the gallery and the second floor. This massive, ornate building will be a valuable object lesson on the forestry of the province.

* * *

A SCHEME has been outlined for the University of Alberta which it is estimated will take 100 years to carry out and which will be sufficient for that length of time. The Albertans believe that in the course of the next century the Alberta University will be one of the largest and most important on the continent. The plans call for the erection of 100 or more buildings grouped together in three or four units. The arts or university building alone will cost half a million dollars while others of the various structures will be little less costly. The dining room when completed will seat 1,400 students and the residences planned will have a housing capacity of 2,500 students.

* * *

LONDON WILL soon see the construction of a new hotel on the site of St. George's Hospital, near the top of Constitution Hill and facing the principal entrance to Hyde Park. The Governors of St. George's Hospital have resolved to accept proposals to sell their site for the approximate sum of \$2,350,000, and to amalgamate with the Westminster Hospital in the erection of a new hospital in a suburb. Some years must elapse before the projected hotel comes into existence, for one of the conditions placed by the Governors of the hospital on their acceptance of the proposal is that the hospital authorities shall remain in occupation of the present building for two years, by which time the new hospital which is to be a result of the amalgamation with the Westminster Hospital will be ready. The cost of the hotel is to be \$5,000,000.

AN AMBITIOUS PROPOSAL put forward by a few gentlemen who are deeply interested in the future of the Dominions, and of which Lord Grey, ex-Governor-General of Canada, is the head, looks to the establishment of what is grandiloquently described as the Temple of Empire in the very heart of London. Mr. Grey, who recently obtained a three years' option on the Aldwych site of a building lease of ninety-eight years, for the purpose of erecting offices for the Dominion Governments, writes now to say there is danger of exception being taken to the site unless it is secured freehold. Accordingly he has communicated the fact to the London County Councillors, who suggest that the site should be taken outright, at a price of \$6,500,000.

* * *

AT THE INTERNATIONAL exhibition of 1911 the United States had a pavilion built to represent a typical old Colonial house, one characteristic of which was that the bricks were brought from across the ocean. When the exhibition was over the building definitely passed into the hands of the Roman municipality. Now Bulgaria has opened negotiations to purchase the American pavilion in order to have in Rome a permanent building in which to exhibit specimens of Bulgarian art. It is intended to transform the site of the old exhibition of 1911 into an artistic quarter, where all countries will be represented by permanent exhibits. England is turning her exhibition building into a home for the British School, which hitherto has had small quarters in the Palazzo Odescalchi.

* * *

DRASTIC PROVISIONS to guard against slum districts were taken in the new building by-law of Hamilton, Ont. recently formulated by the revision committee. One of the new clauses makes it compulsory for every room in a dwelling house to have a window, at least ten per cent. of the area of the floor space, opening outside. The abolition of dark rooms is considered an essential to proper living conditions, and this provision in the new by-law is along the line of present-day progress. Another striking change is the clause which compels every private house to have a back yard of a depth corresponding to the height of the house. The aim of the by-law drafters was to provide an air space of at least ten per cent. of the extent of the lot in order to guard against slum conditions.

* * *

DETAILED PLANS have now been announced by the C.P.R. at Winnipeg, showing the enormous extensions to be made to the local terminals, which, when completed, will entirely change the appearance of Higgins avenue. These improvements will involve an addition to the Royal Alexandra Hotel of 474 rooms, a new six-story office building, replacing the present baggage and old Dominion Express offices. There will also be considerable ex-

tensions made to the present station and waiting rooms while in the train shed, the tracks are to be raised six feet, and lastly the Main street subway is also to be raised to a corresponding height, and it will be widened to permit of the installation of two additional tracks. Every effort will be made to have all the improvements finished within two years and will cost approximately \$1,500,000.

* * *

AT THE ANNUAL meeting of the Victoria Chapter of Architects held recently, officers were elected as follows: President, J. C. M. Keith; vice-president, Ridgeway Wilson; council, Messrs. James Cullin, Butler, Rose and Spurgeon; secretary-treasurer, N. Reid. It was shown that the organization has grown in numbers and in influence during the past year, having sixty-two full members, twenty-five associated members, and five student members. That a member is engaged in preparing conditions to govern the competition in the preparation of plans for the new Provincial Royal Jubilee Hospital was one of the announcements made. Another statement of interest was that two members had been appointed a committee to act with the city building inspector in examining applicants for the position of assistant city building inspector. These matters, it was argued, were but a few of the indications of the constantly increasing influence of the body which now included practically every local architect.

* * *

THE EXCAVATIONS during the past year in Egypt by the British School of Archaeology have resulted in a series of remarkable finds illuminating a civilization of over 10,000 years ago. The most interesting discoveries were made in the great cemetery of the first dynasty (5500 B.C.) at Tarkhan, about forty miles south of Cairo, where 800 graves were explored. They yielded in abundance alabaster vases, slate palettes, pottery vases of the time of Mena, and the only skeletons of donkeys known from ancient Egypt. At another site, at Gerzeh, a few miles further south, numerous remains of the twelfth and eighteenth dynasties were unearthed, including statuary and gold ornaments. Another interesting archaeological event is the recent discoveries under Nero's palace at Rome. A. Forestier, in describing the work, says: "In Nero's palace there were found, by the side of the triclinium (or dining room) five well-preserved subterranean rooms, carefully plastered and cemented, vaulted, and in communication with each other. These were the piscinae, or fish tanks, in which sea fish were kept alive in water brought from the sea by means at present not definitely ascertained. It is well to state that the fresh-water fish was food only for the plebeians; the patrician families, and, naturally, the Emperors, ate only sea fish, numerous varieties of which were kept in plenty to meet the demand of the imperial table. The piscinae are at present, of course, dry.

Pleasing Design in Reinforced Concrete

V. J. ELMONT, C. E.

THE EMPLOYMENT of reinforced concrete as a building material has increased very materially during the last two decades, owing to the steady growing understanding and appreciation of its economical and technical advantages.

At the present time there is no class of architectural structures, in which reinforced concrete is not used to a more or less extent, but only in a few of them—factories, warehouses, exhibition halls and buildings of a similar type—does the reinforced concrete play any important part in the façades. In contradistinction to this the exterior treatment of reinforced concrete is of great significance in many engineering works, for example, bridges, water towers, silos, chimneys, retaining walls, etc.

Many structures reveal the fact that both architects and engineers are afraid to let the reinforced concrete appear visible without any foreign embellishment. There is, in fact, a tendency to cling to the old forms, though no reason can be deduced why it should be forced into an unnatural imitation of stone buildings, erected of single cut pieces, or of skeleton steel frame buildings covered with a material which has properties entirely different from those of steel. It is, of course, an irresistible temptation for a mercenary or unscrupulous architect to design the façade in the easiest way possible by making monolithic reinforced concrete look like masonry through the medium of joint lines.

The average observer might perhaps appreciate

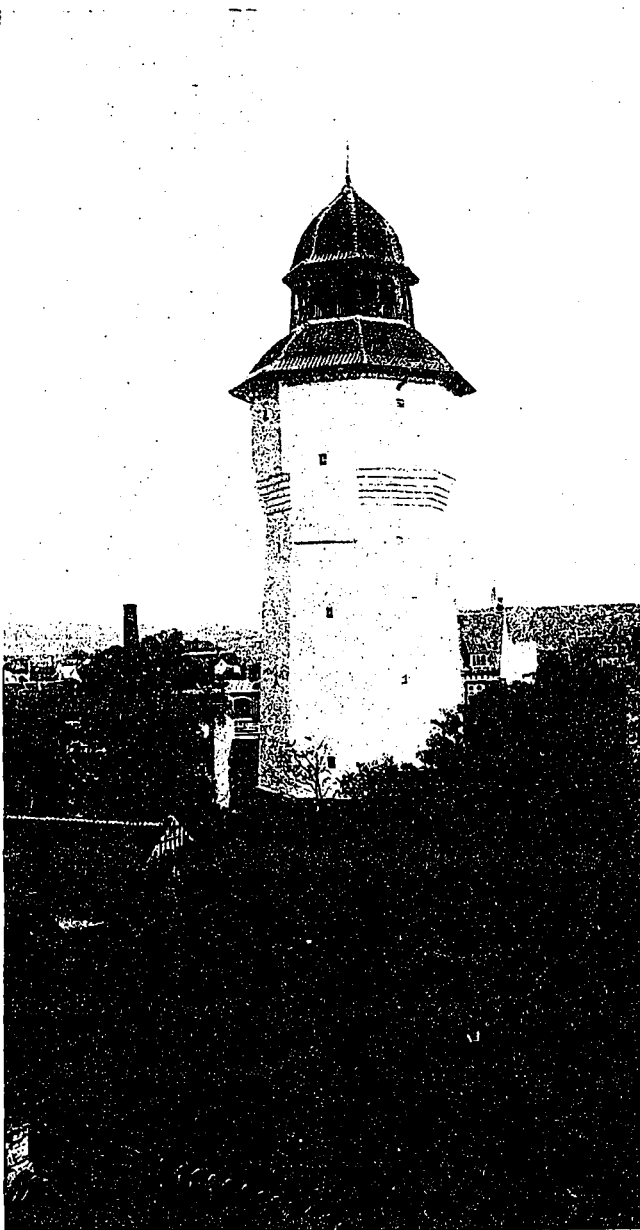


FIG. I.—WATER TOWER.

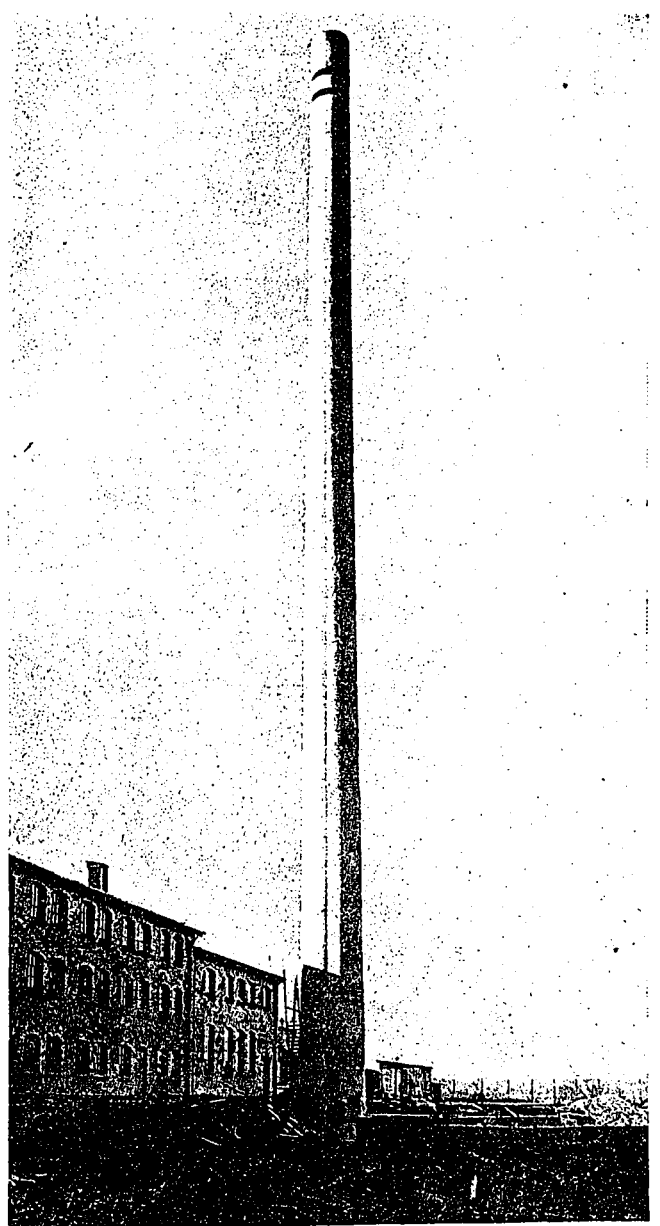


FIG. II.—CHIMNEY.

the exterior of a structure in which the designer has been successful in his efforts to veil the real character of the material used, but it must be characterized as deception and falsehood in art, considered from an æsthetical viewpoint.

It should be mentioned that all over the world we find architects and engineers who, to judge after their works in reinforced concrete, possess sufficient knowledge of the artistic and structural properties of the material itself. They should allow this know-

exception of the spire, which is made of wood covered with red tile. The tank has a capacity of 100,000 gallons. As the tower also serves as an outlook, special arrangement was made for this purpose with stairs and an open platform built in the spire. The tower is rough plastered and painted with a light yellow color, the base being dark grey. The part of the building which projects between the tower shaft itself and the shell around the water tank gives room for the staircase which passes from inside the tower and out between the shell and the wall of the tank, thus leading up to the roof.

The 160-foot chimney in Fig. II. shows how easily and inexpensively a chimney structure can obtain a more pleasing and satisfying exterior than most of the reinforced concrete chimneys. This is accomplished by applying a special forming, which allows of a gradual decrease in the width of the chimney from the bottom to

the top, and which at the same time gives a few strongly marked lines in the shaft.

The bridge in Fig. III. is built on the boundary line between France and Germany, providing an approach from Lorraine into France. The simplicity of its lines and the ease with which the layman realizes the object of each part of the bridge, that is, understands the basic principles involved, create a liking for similar structures. This feeling is caused by our long familiarity with arch structures

ledge to form the main guiding factors in the design of reinforced concrete façades, thus developing an artistic style, which will be all the more pleasing because of its harmonious possibilities in conjunction with the purposes of utility and the monolithic character of the material. In process of time thereby "the average observer" will reach an appreciation of reinforced concrete, realizing its strength and permanence, though it will likely be years, as Ibsen says, for the crowd to reach the place where the few advanced are now.

Naturally it will not take reinforced concrete so long a time to develop a true and harmonious type, as in former times it took new materials or building forms to evolve from their primitive state to full development. Owing to convenient communications, the easy means of interchanging thoughts and results, and the all round ability of architects, engineers and artisans, reinforced concrete will shortly reach a state of perfection. The circumstance that reinforced concrete design has been thoroughly discussed at the international architectural congresses—held for the first time in London, 1906, afterwards in Rome and Vienna—will help materially in the same direction.

As examples of plain design in reinforced concrete the following engineering structures are worthy of consideration: Fig. I. shows a 150-foot high water tower built entirely in reinforced concrete with the

in stone; but entirely belonging to reinforced concrete. The principle to suspend the roadway to the arch is a feature which portrays very clearly how the most significant qualities of cut stone and steel are united in reinforced concrete.

Fig. IV. shows a bridge of the same type, only with larger span and dimensions. The solid hand-railing, employed in this case, seems to help successfully in the balancing of the masses of the structure.

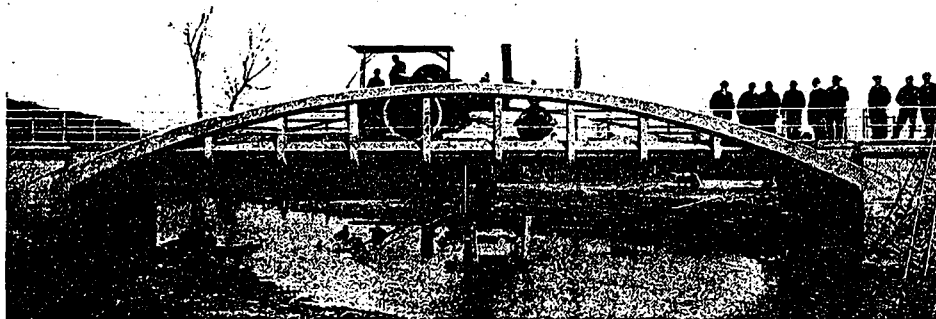


FIG. III.—BRIDGE BETWEEN FRANCE AND GERMANY.

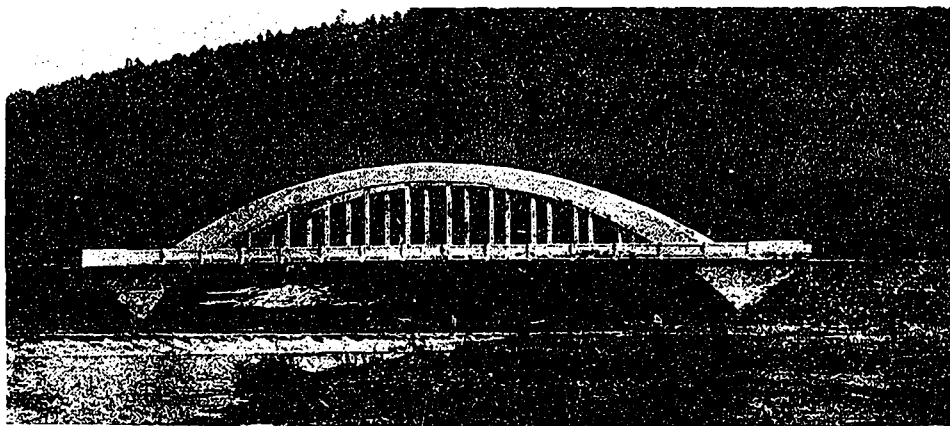


FIG. IV.—CONCRETE BRIDGE.

Fig. V. gives a design with a mixture of good and bad details, especially the misuse of ornamental features. The small arches at the ends of the bridge

show a typical concealing of the true nature of the material by employing joint lines. Concrete, to be practical, must be truthful.

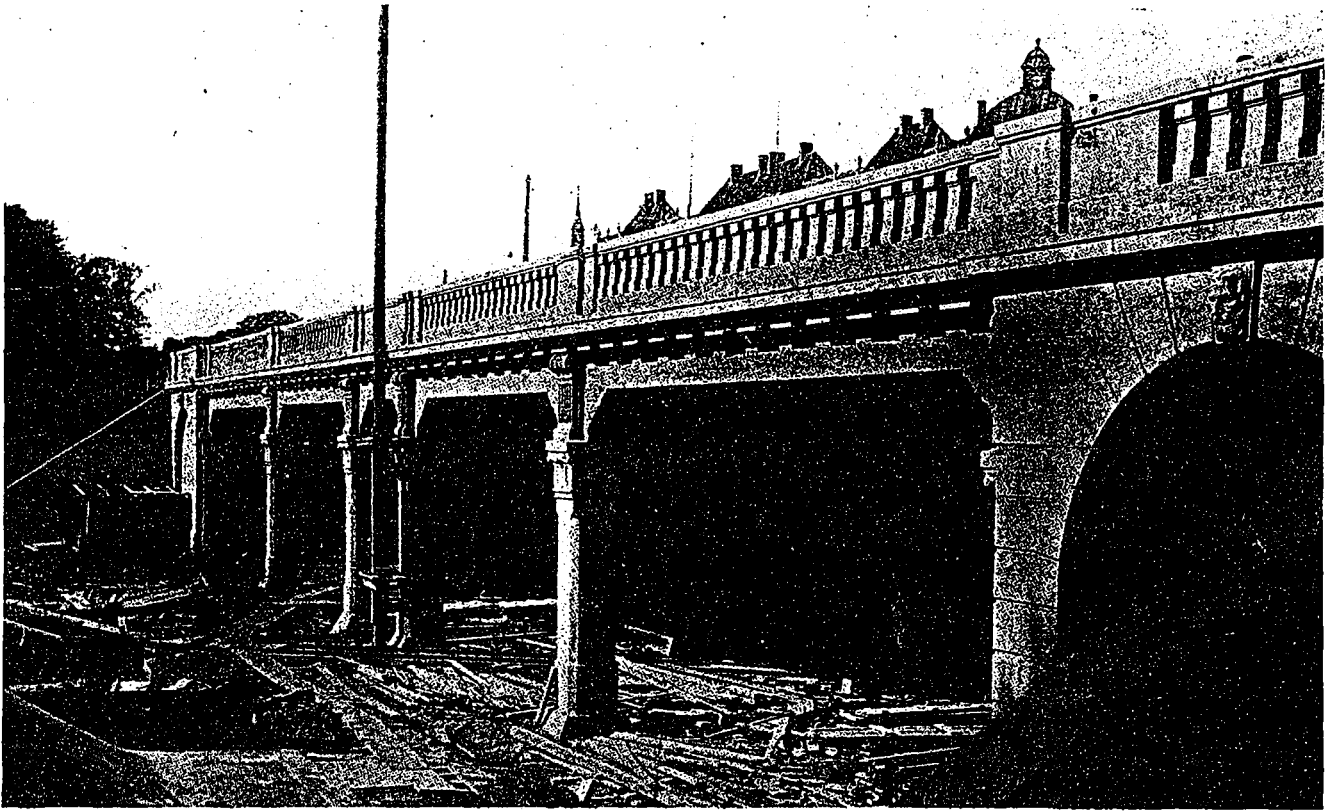


FIG. V.—ATTEMPT TO CONCEAL NATURE OF MATERIAL USED IN CONSTRUCTION.

THE difference between the two great historical divisions of architecture is based on the structural design. In the first instance the elements of the classic orders are the lintel and the column, while in Gothic architecture the design depends upon the vault, arch and buttress. All other sub-divisions of architectural design are purely adaptations of these, and illustrate either growth or decadence.

In modern times new materials have been introduced. The use of structural steel has developed designs impossible with any other material; but even with this modern material the use of the column and lintel is adhered to. For the application of an entirely new principle in construction one must turn to reinforced concrete. This differs from all other materials heretofore used in that it is composite, using the tensile resistance of steel to develop the compressive resistance of a monolithic artificial stone.

If particular styles of architecture can be developed from the column, lintel and arch, it is certain that in the use of a new material such as reinforced concrete, a style of architectural design and decoration can be developed which will express truly the nature and capabilities of the material. Unfortunately, it is difficult to overcome the habits of years and the training of past generations, so that up to the

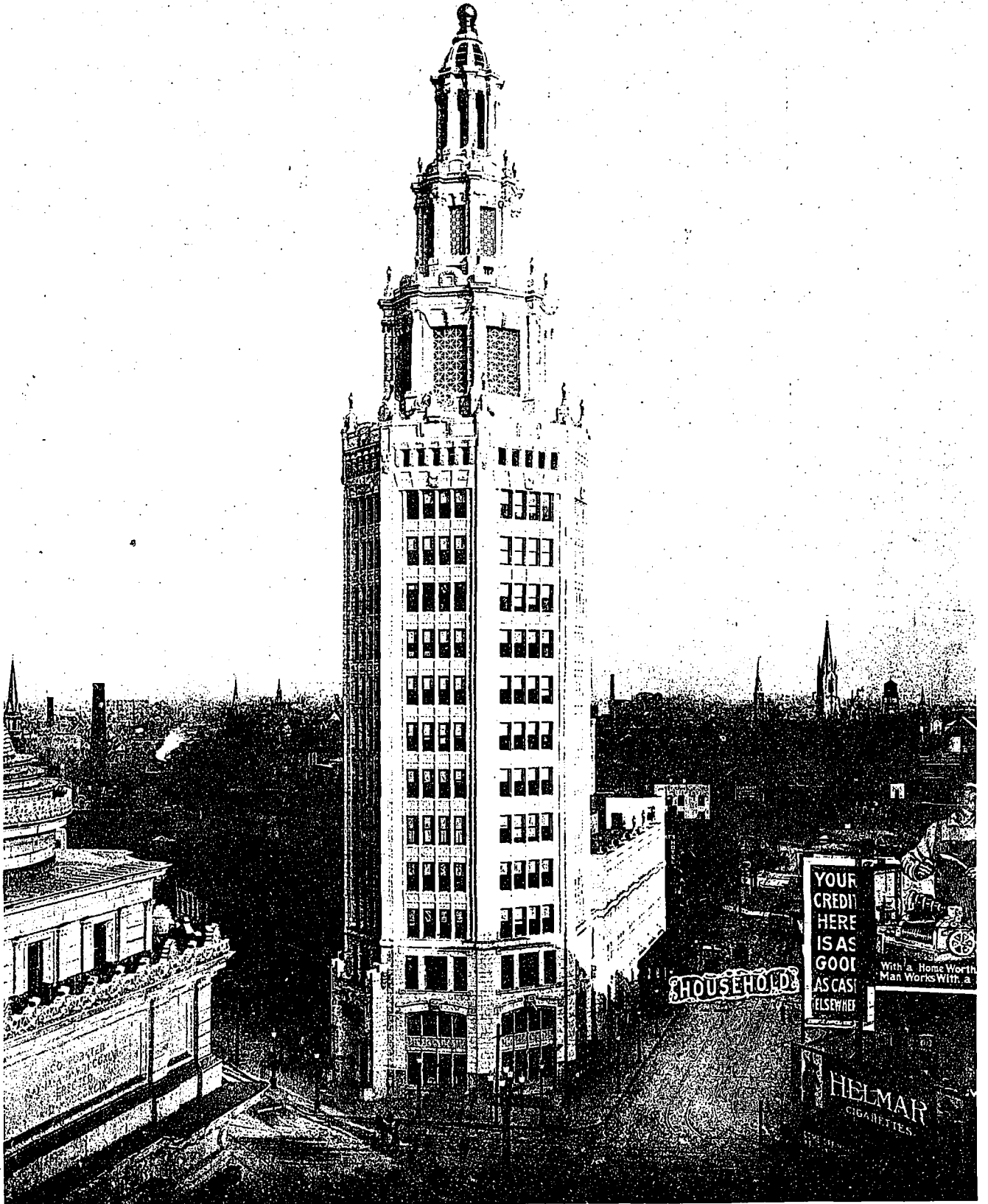
present time the architectural designer has shown, in handling reinforced concrete, the influence exerted by previously used materials.

The effort of the architectural designer to imitate masonry construction in handling reinforced concrete shows an effort to deceive the observer into a belief that the structure is built up of blocks cemented together, and, in order to make the deception doubly real, the joints are boldly marked by casting a bevel into the concrete to illustrate the chambered joints of massive masonry construction. Not satisfied with this effort to simulate masonry, the designer sometimes goes to the extent of bush-hammering the centre section of the blocks.

The essential difference in the possibility of reinforced concrete, as compared with the lintel and column supports of the classic orders and the vaulted arch and buttress of the later mediæval construction, is that it is practically a masonry material, possessing, besides the great compressive resistance of stone, the tensile strength of the steel which can be embedded in it. It is therefore possible to develop a particular style of architecture in working in this material, though it can be used for the development of almost any architectural treatment, a feature which is particularly valuable in house construction.—*Sloan*.



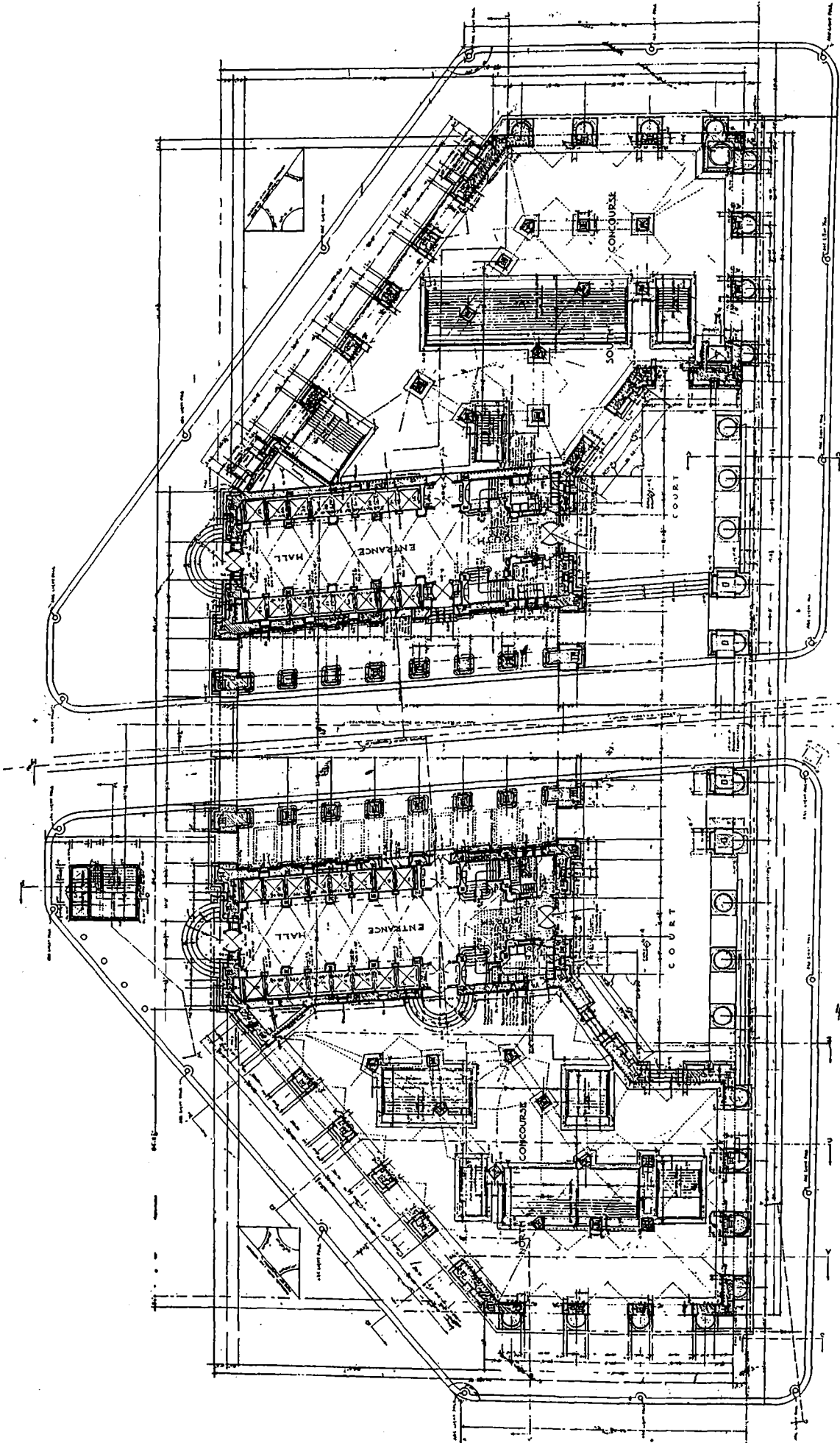
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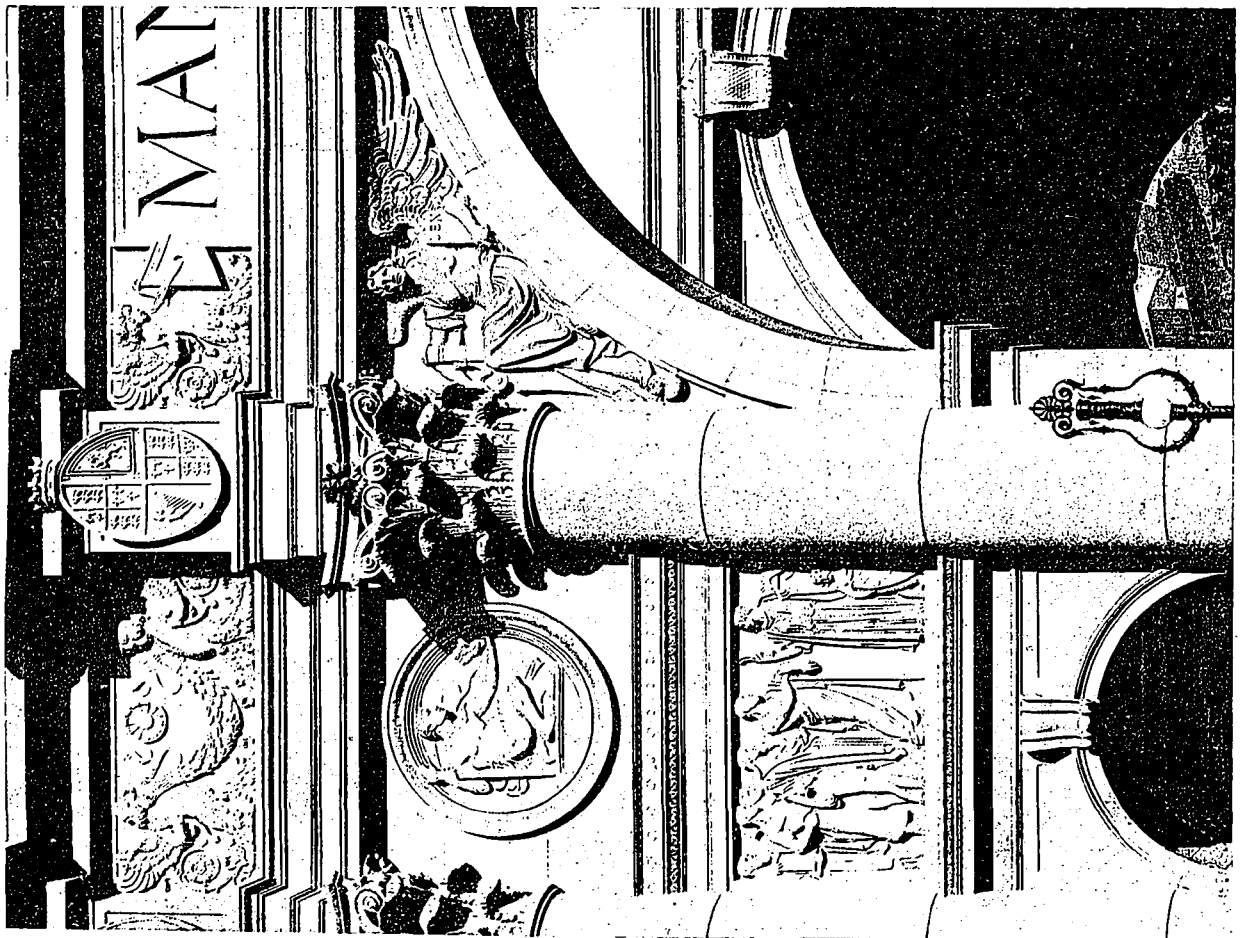
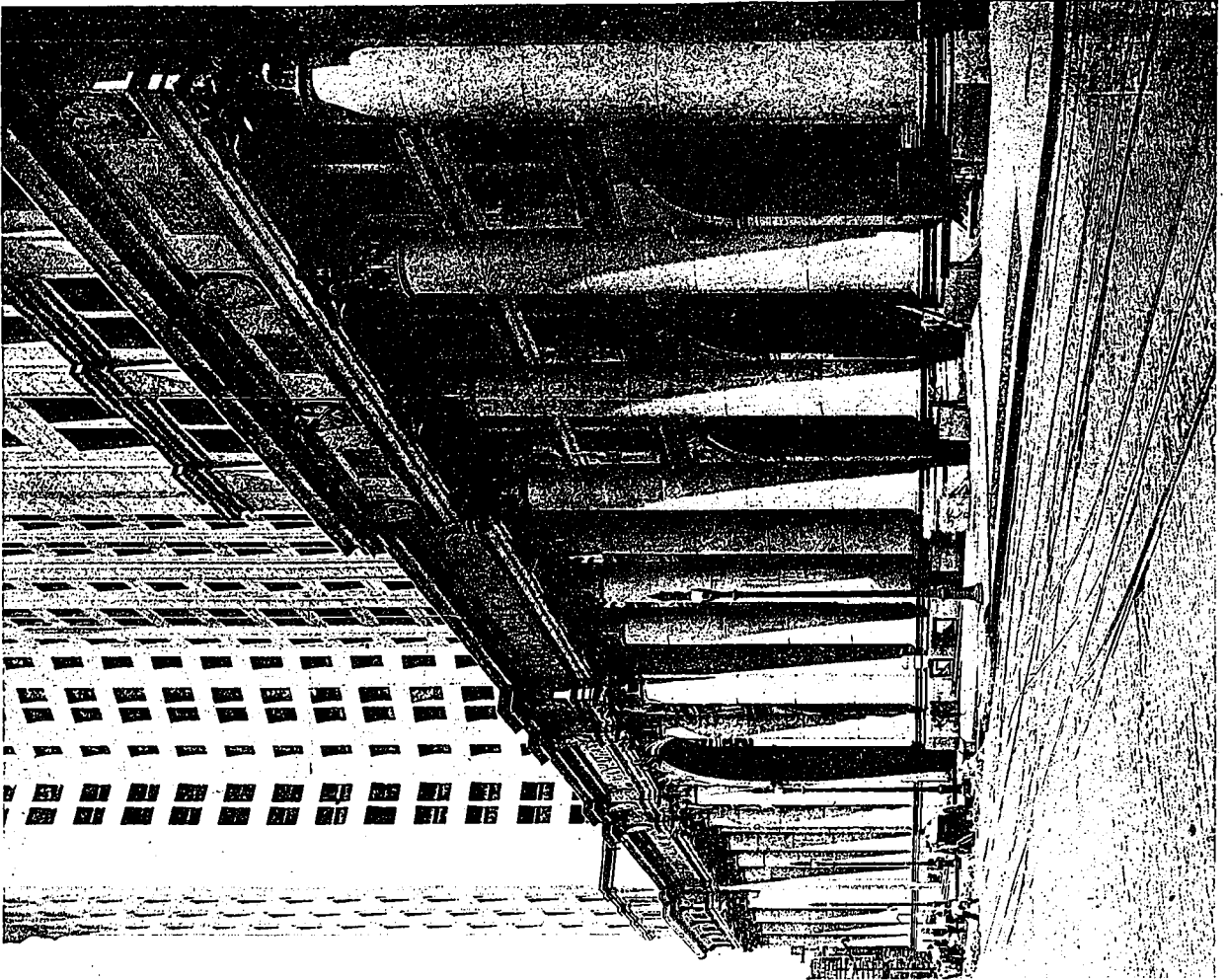
PLAN OF FIRST FLOOR
 Scale 1/8" = 1'-0"

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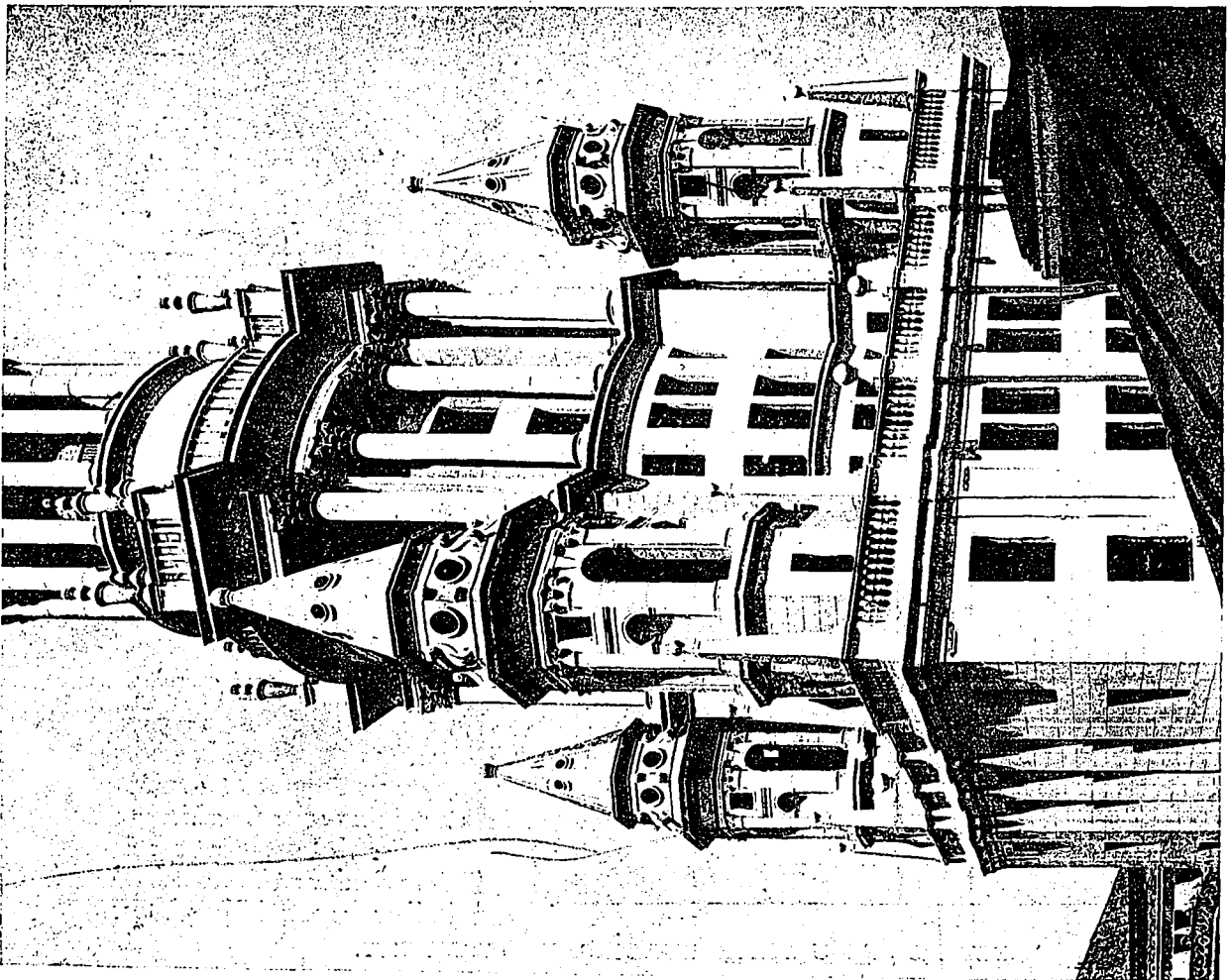
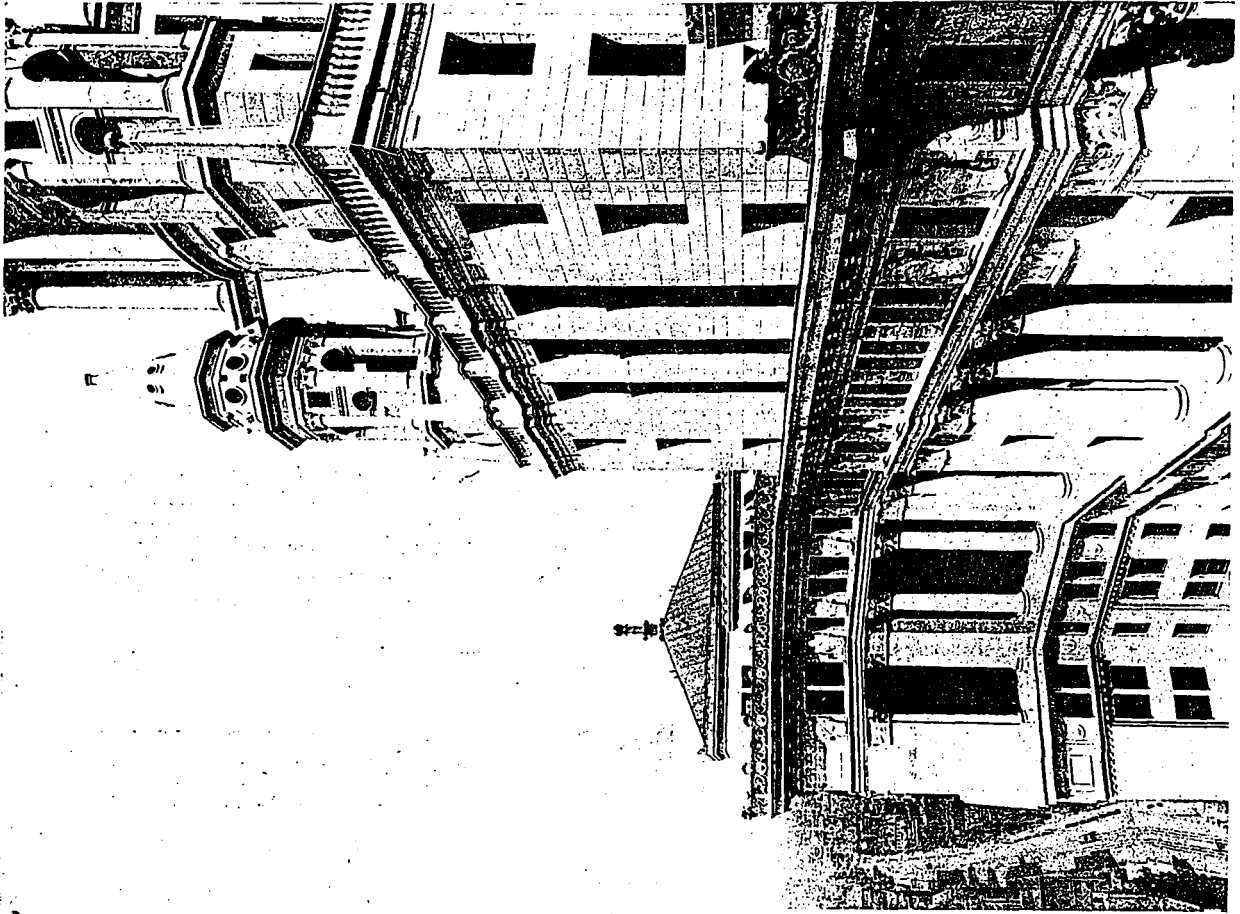


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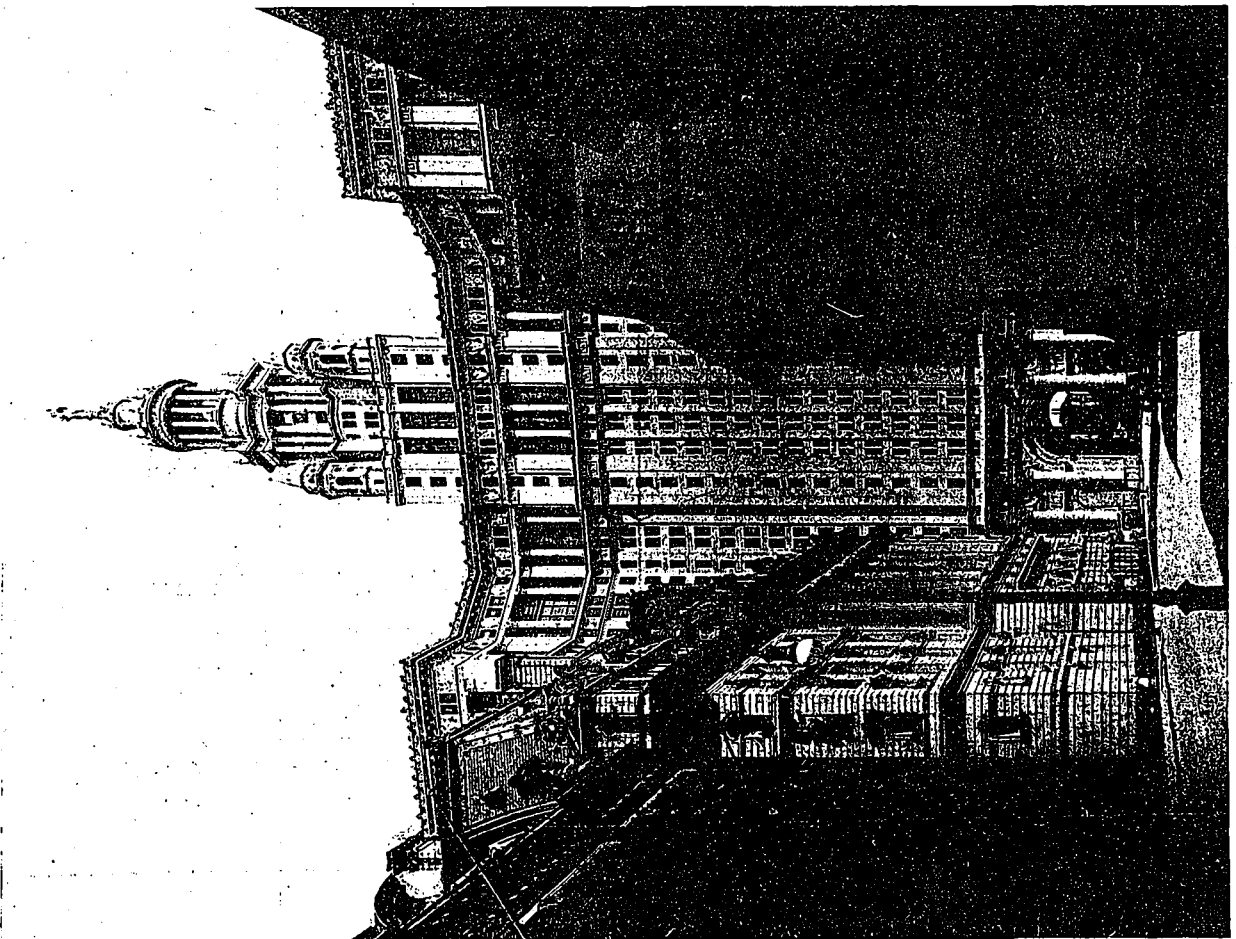
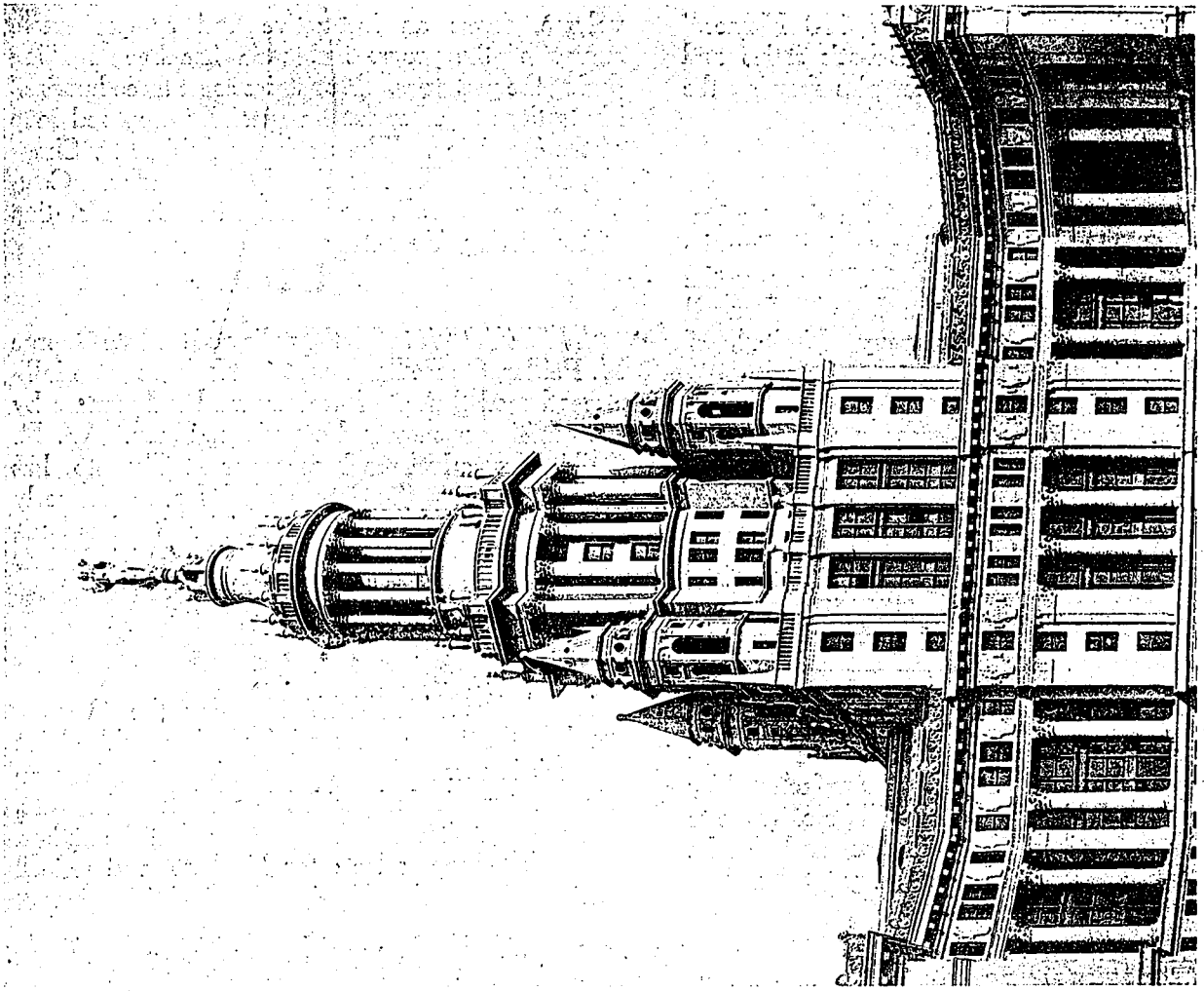
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SAMUEL CABOT, INC., have just published a booklet entitled "The Book of 100 Homes." Each house was treated with Cabot's stains and affords a series of prominent examples showing the effectiveness of this material.

* * *

THE WHOLE installation of the elevator system of the C.P.R. Building, Toronto, including the drilling through rock to a depth of 200 feet for the cylinders, was carried out by the John McDougall Caledonian Iron Works Company, Limited, of Montreal and Toronto.

* * *

THE ARCHITECTURAL Year Book of the University of Illinois, published by the Architectural Club of that institution, presents in a tasty manner the students' work during the past year. The results are highly commendable and indicative of the careful instruction being tendered at the various universities.

* * *

THE LONDON Concrete Machinery Co., Ltd., has just issued a 168-page catalogue illustrating the various lines of machinery manufactured by that company. This information will be of value to the architects, engineers and builders, and can be obtained by addressing the company at London, Canada.

* * *

THE VESTIBULES, entrances, counter railings, teller's cage, window frames, and elevator enclosures on the main floor of the C.P.R. building, Toronto, are of bronze, the elevator enclosures on the upper floor and the stair railings throughout are of iron. This material was furnished by the Architectural Bronze and Iron Works of Canadian Allis-Chalmers, Limited.

* * *

BUILDERS' QUANTITIES, by W. E. Ballard, is a recent volume added to the Longmans' Technical Handicraft Series. It is for the use of students, and all persons interested in the building trade. Actual examples of preparing bills of quantities are given with the correct method of dealing with them. The book is published by Messrs. Longmans, Green & Co., London, E.C., and cost 60 cts.

* * *

THE CONCRETE HOUSE and its Construction, edited by Maurice M. Sloan, is the title of a book published by the Association of American Portland Cement Manufacturers, Philadelphia. The book considers the fire-resisting qualities of concrete in the construction of dwellings and enters into all the details of this method of building. The volume contains 224 pages, well illustrated, and cost \$1.00.

CANADA TO-DAY, 1913, bound in one volume, forms an instructive and comprehensive survey of the progress Canada has been making during the past year. It contains some three hundred illustrations together with a specially prepared map of the Dominion. The work is published by Simpkin, Marshall, Kent & Co., Ltd., London. Cost, 50 cents. Canadian address, 306 Confederation Life Building, Toronto.

* * *

IN KEEPING with the policy of the late George H. Pedlar, the Pedlar People, Ltd., have materially strengthened their staff at Oshawa headquarters by the addition of new and experienced men. W. R. Geikie, formerly branch manager at Toronto, has been made managing director; W. Loach, formerly of the Canada Foundries, Ltd., Toronto, has been added to the operating department; A. T. Enlow has been given general charge of the sales and advertising department.

* * *

THE BEST SELLER among the German novels of the summer season is "The Tunnel." Like so much in recent German romantic and melodramatic literature, it deals with New York society life. The story gets its name from the fact that the author, Herr Kellerman, selects for his hero a daredevil young engineer, who conceives the gigantic project of connecting Europe and America with a tunnel. Some of the newspapers which are reviewing "The Tunnel" say that it would probably be as much a mistake to ridicule the suggestion as it was to scoff at some of the ideas first launched by Jules Verne and H. G. Wells, which, in the meantime, have become every-day actualities. One commentator has figured out that the shortest tunnel route between the Old and the New World would lie between Cape Ortegal, Spain, or Brest, France, and Cape Charles, Labrador, distances of about 2,250 miles.

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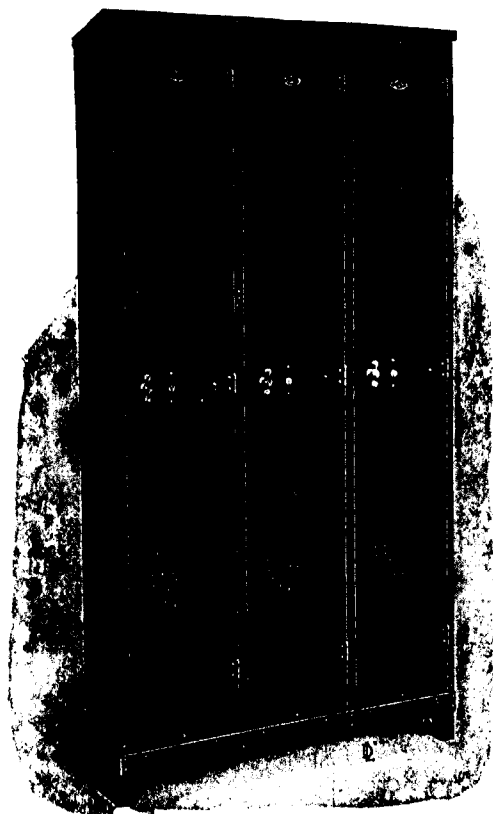
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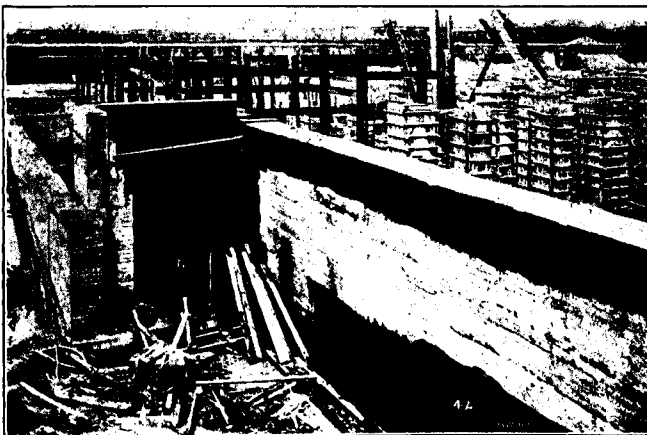


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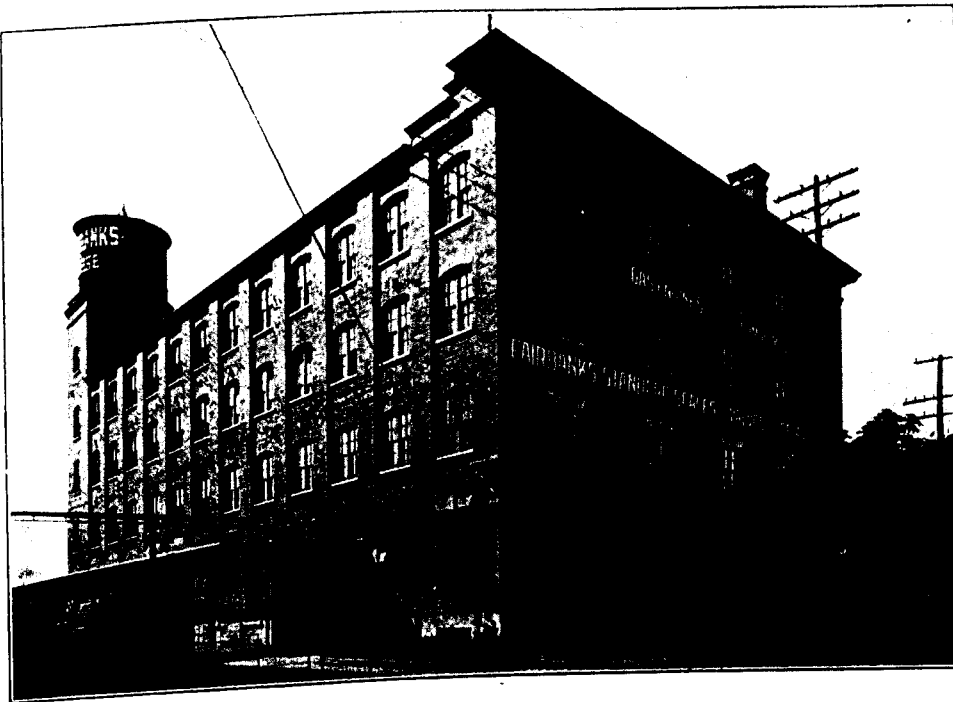
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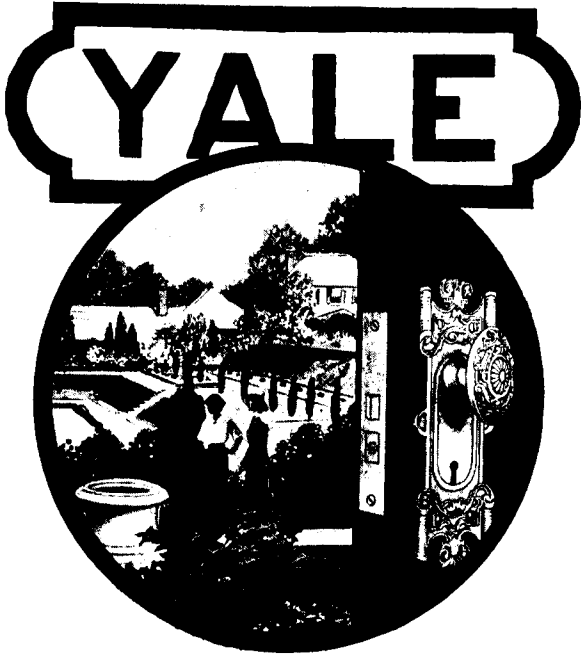
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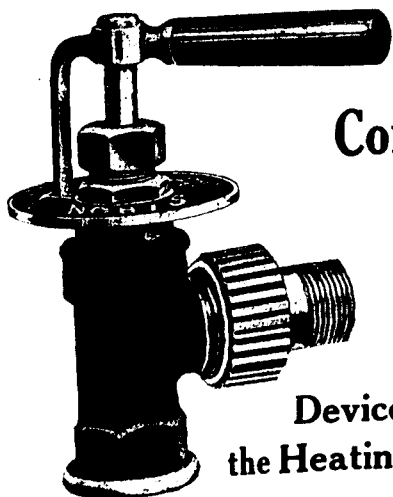
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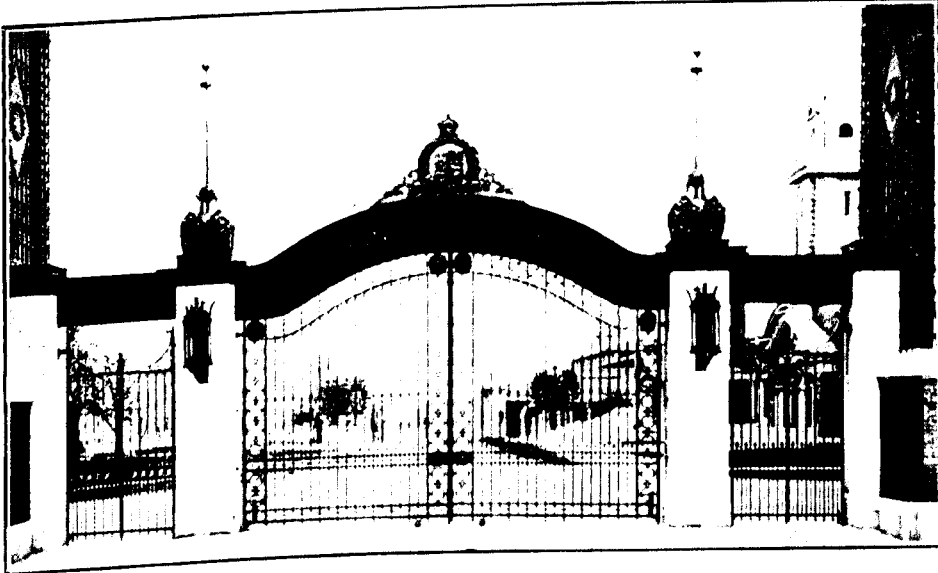


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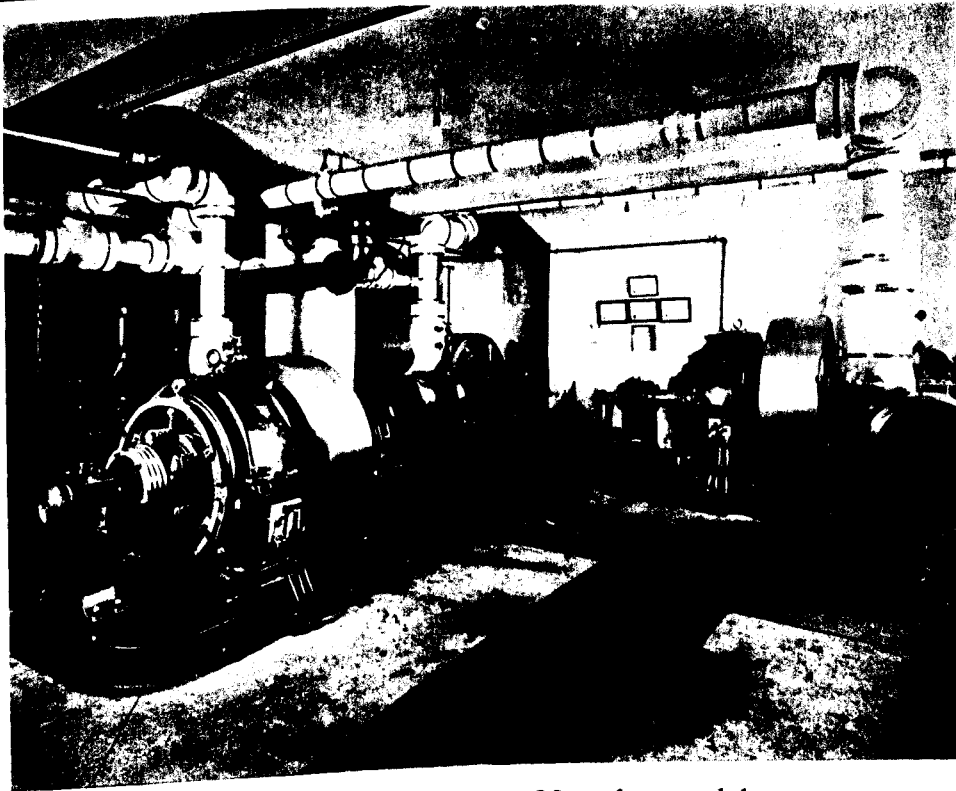
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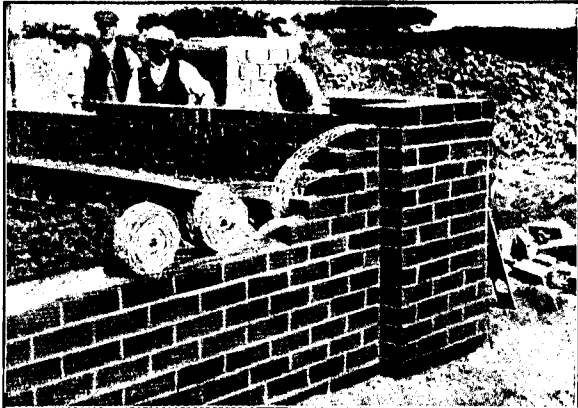
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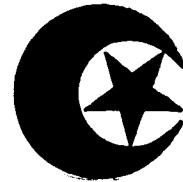
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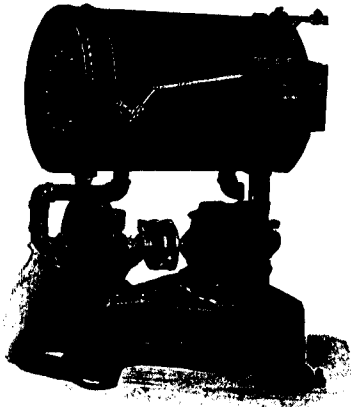
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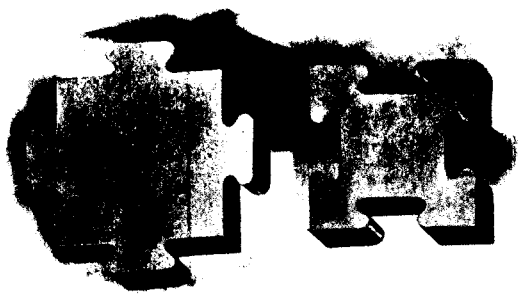
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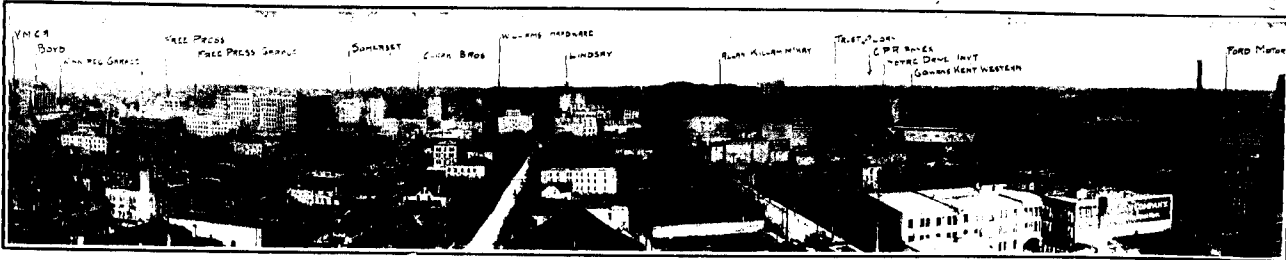
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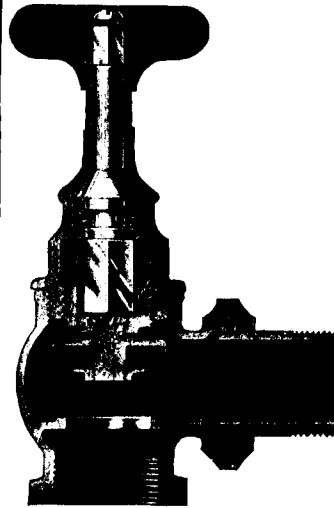
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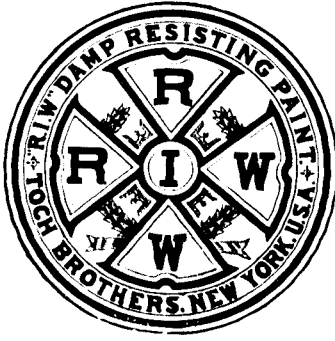
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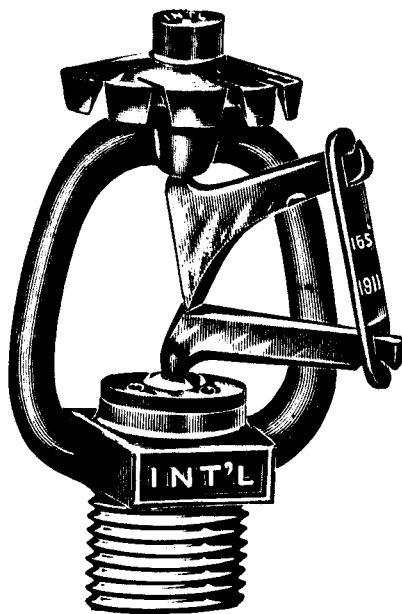
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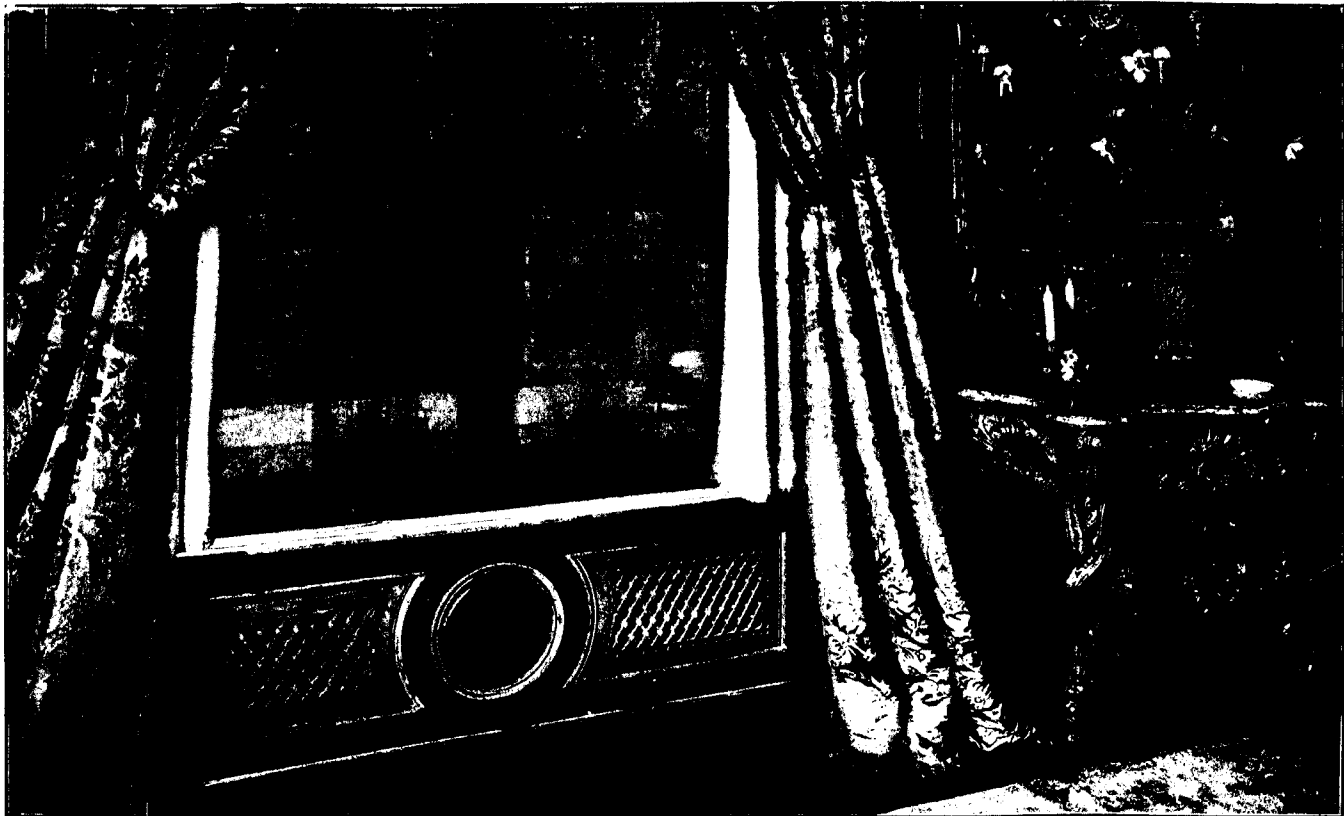
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