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CONSTRUCTION

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



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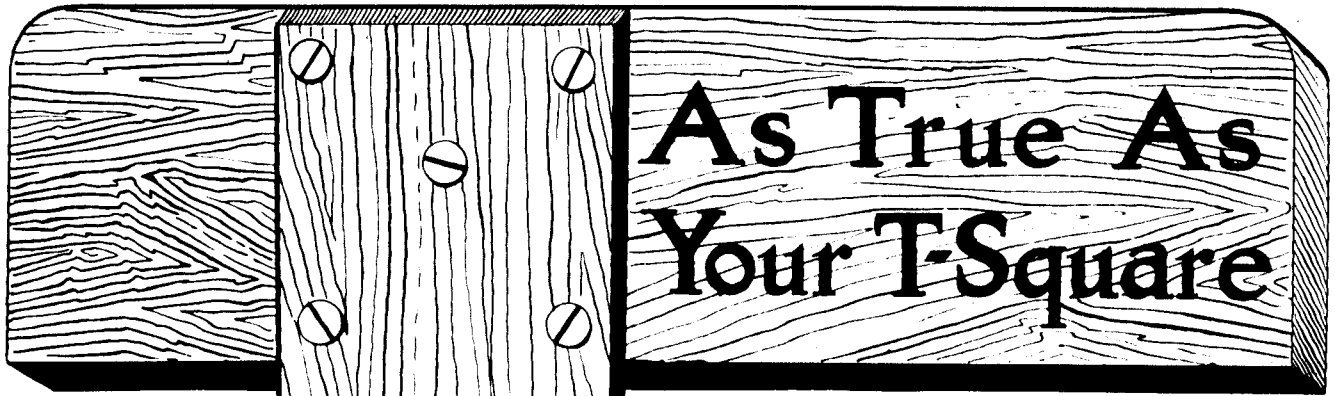
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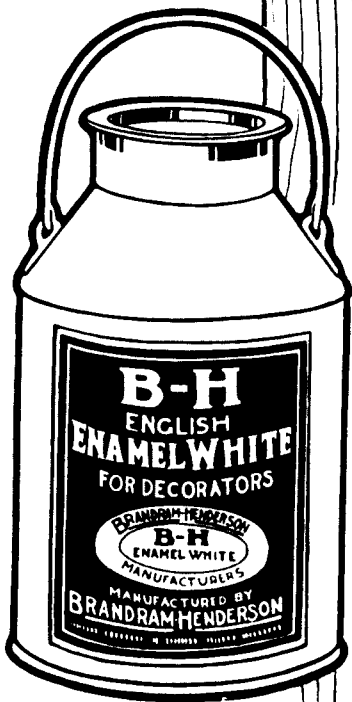
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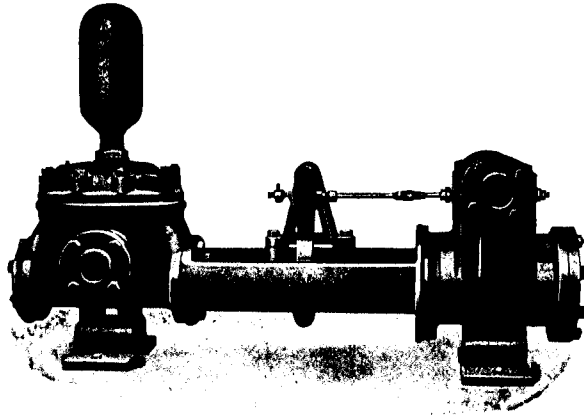
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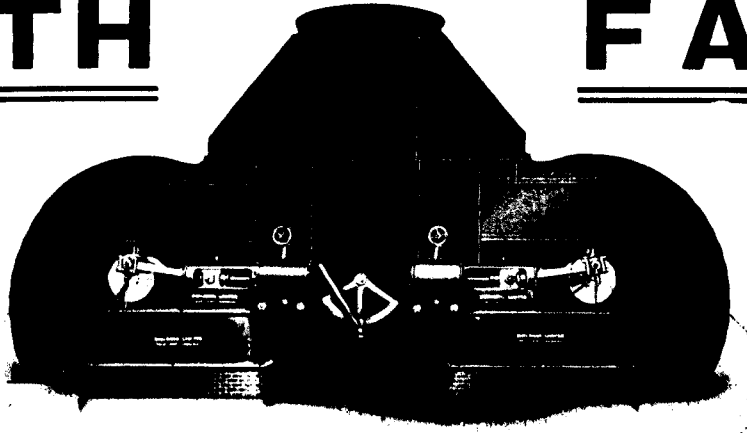
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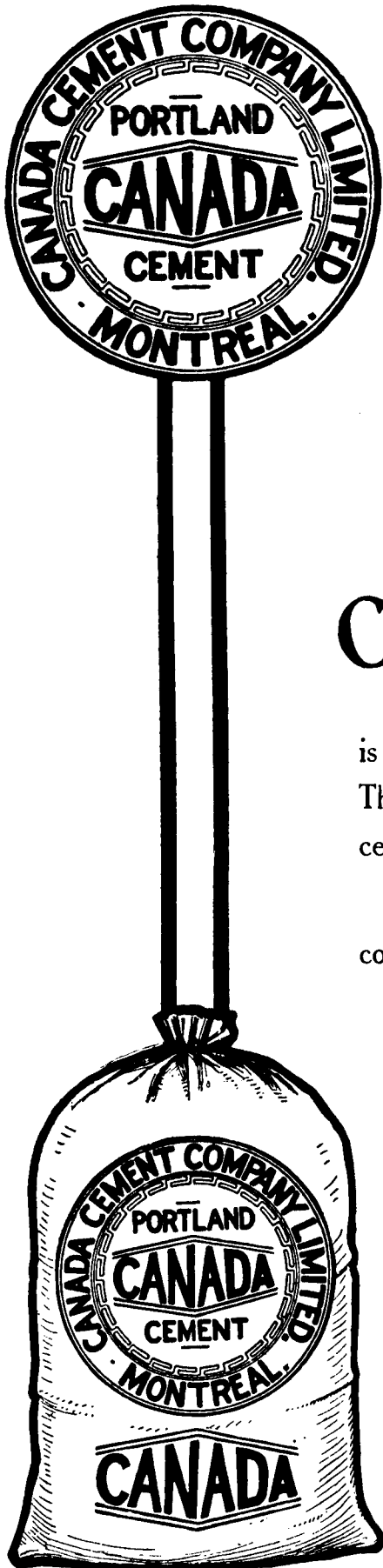
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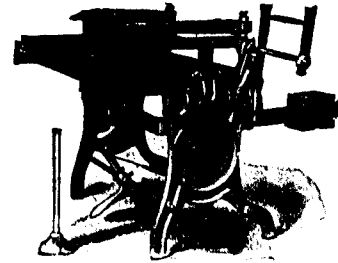




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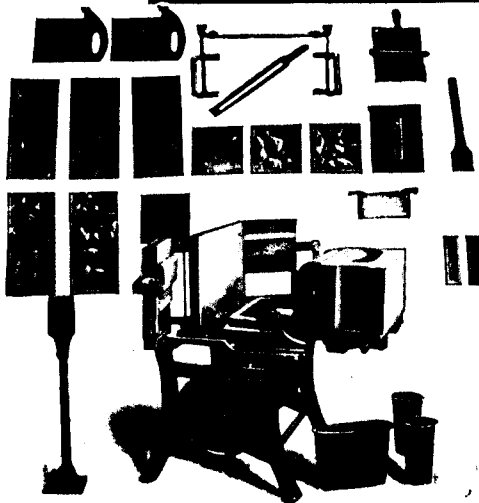
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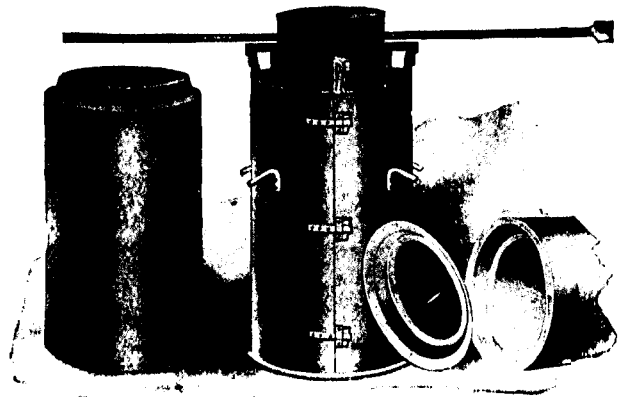
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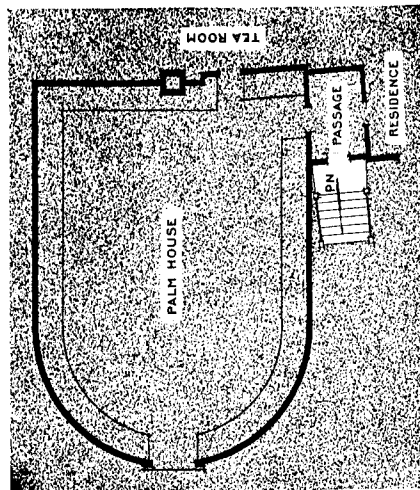
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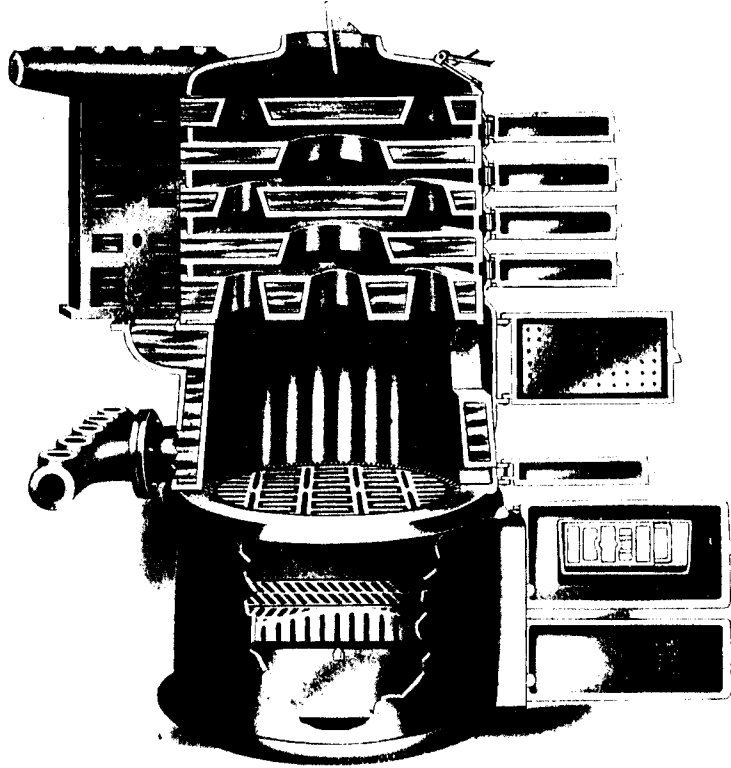
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The 1913-1914 "Sovereign" will burn *hard coal* to better advantage than any boiler designed to burn hard coal only.

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With the new model "SOVEREIGN" the house may be heated during the early spring and fall with waste wood or other material, or the cheapest kind of free burning fuel—while the winter fires may be maintained, with entire satisfaction, on the kind of coal or wood that is most readily available in the locality where you live.

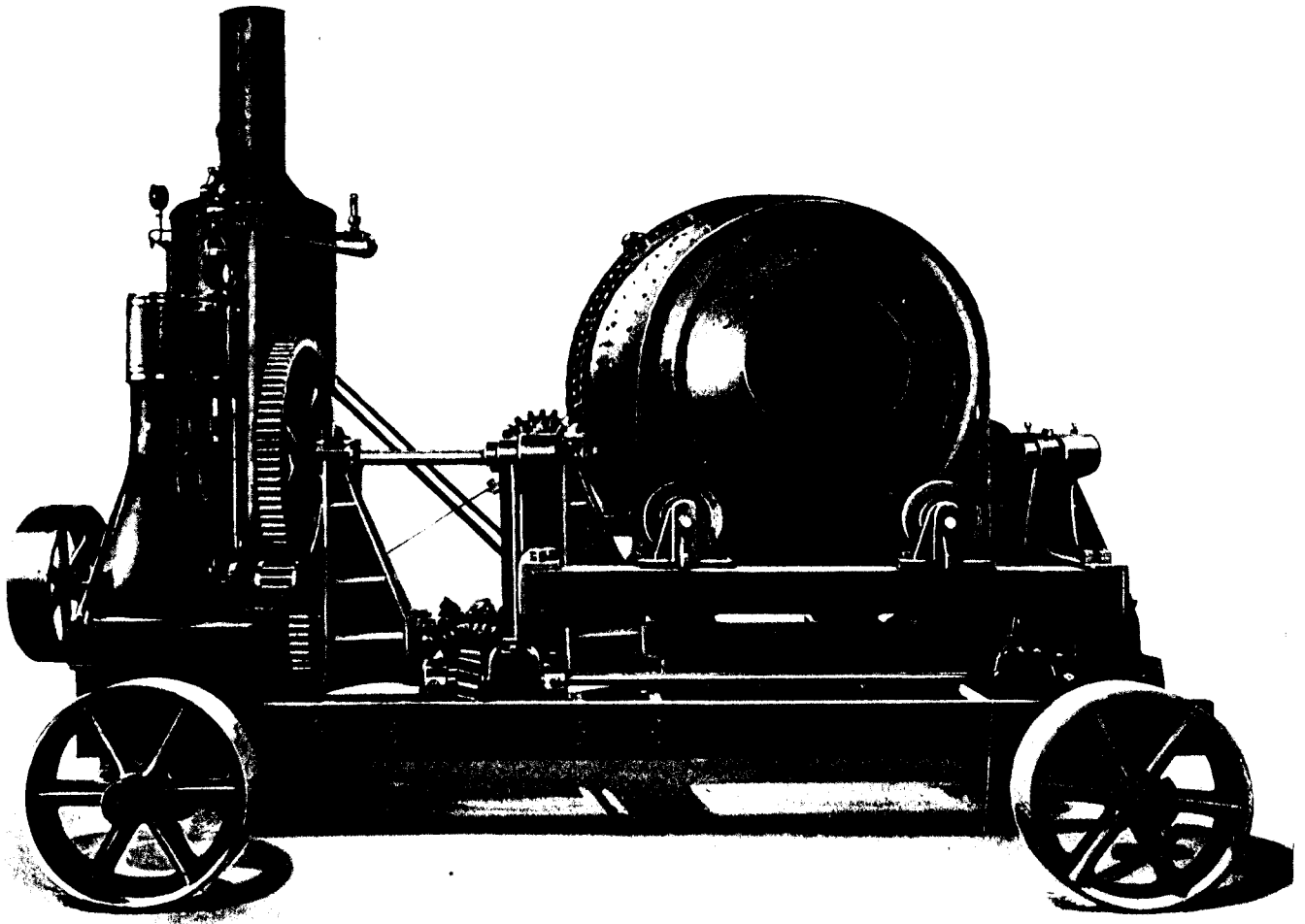
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The heart-shaped drum is the key to its perfection. Watch it at work on some important job or at any of our showrooms.

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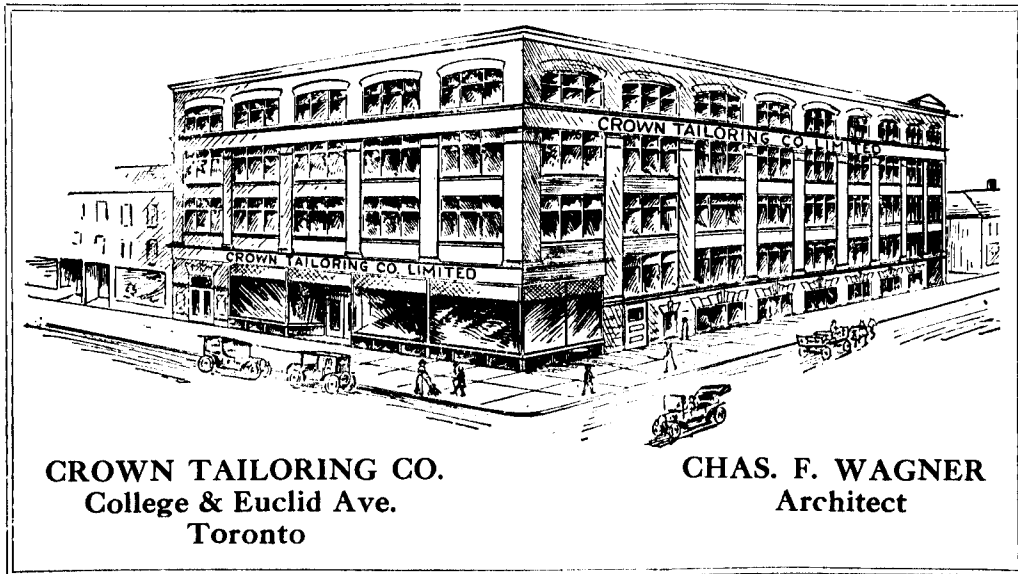
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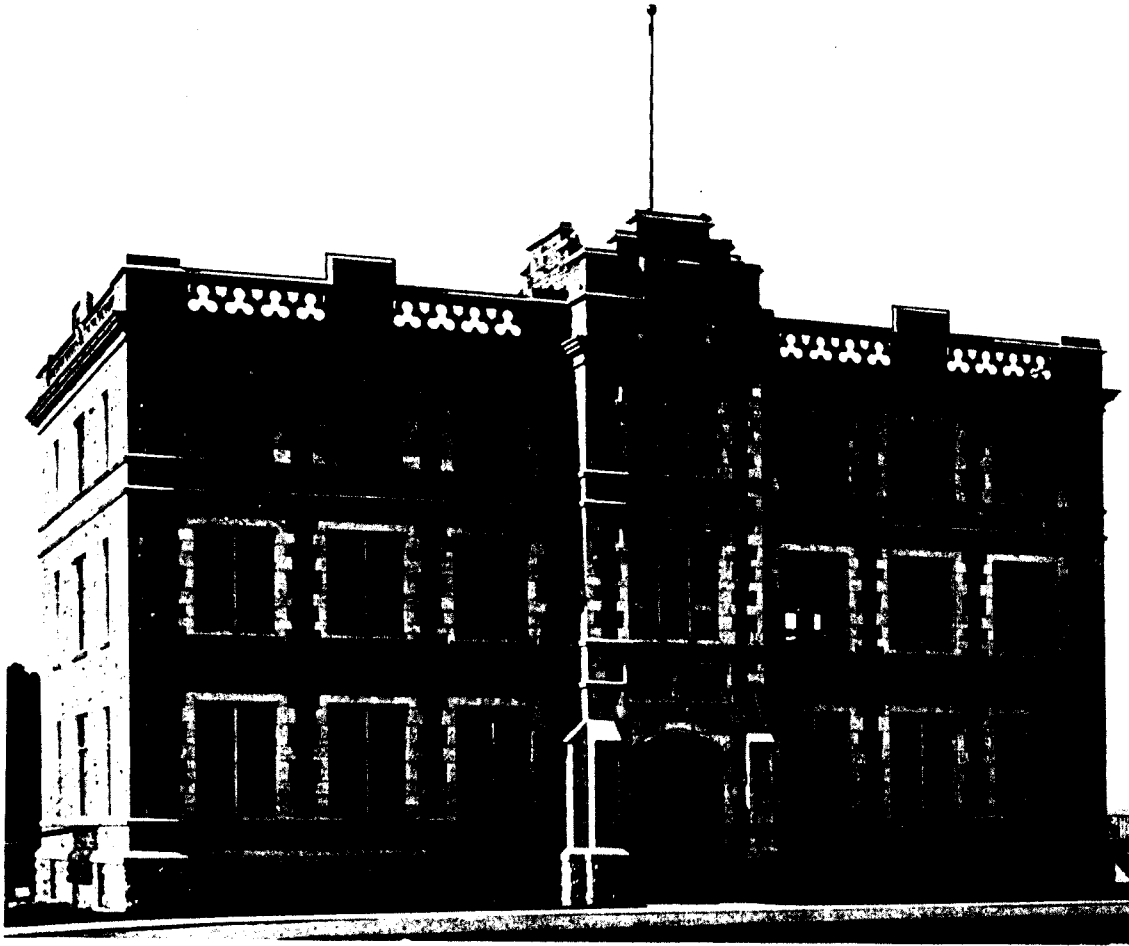


Turnbull Elevator Equipment is installed in the above high class new factory building. For results---maximum value and maximum efficiency install Turnbull Elevators.

The Turnbull Elevator Manufacturing Co.

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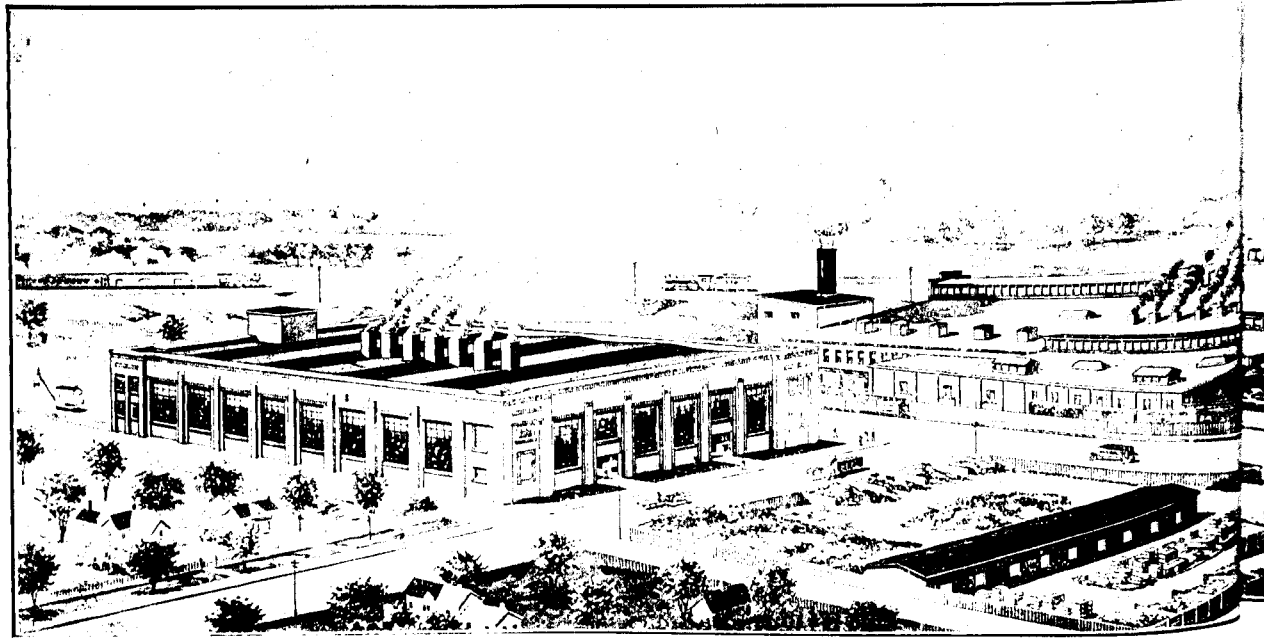
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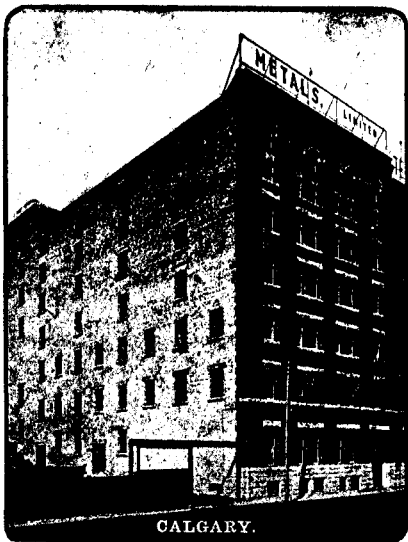
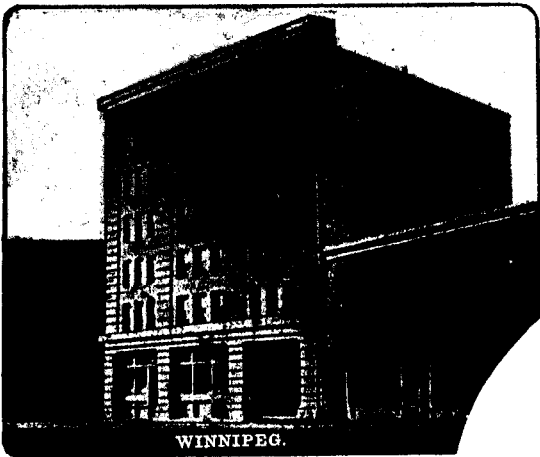


Your Client Wants to

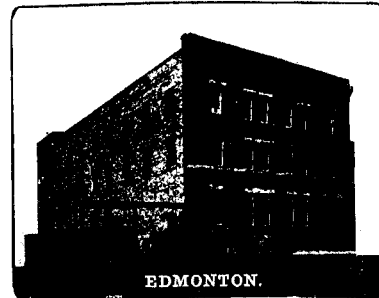
Many a client was delayed last year, due to lack of radiators or boilers. Many an expensive building remained idle, waiting for heating apparatus.

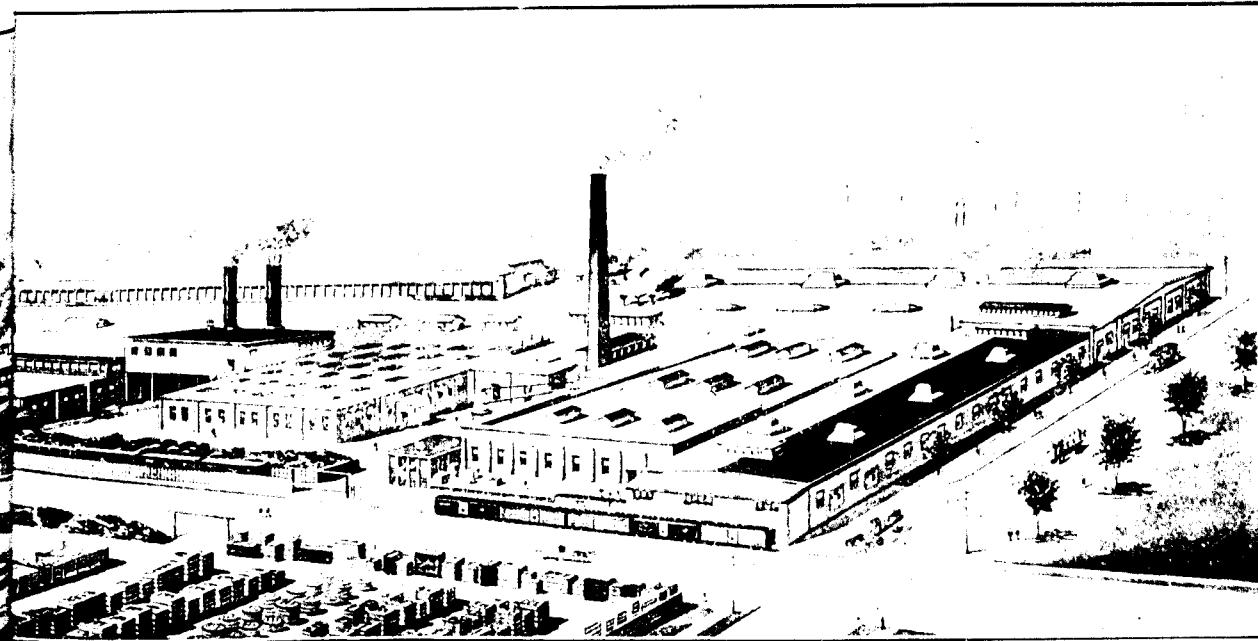
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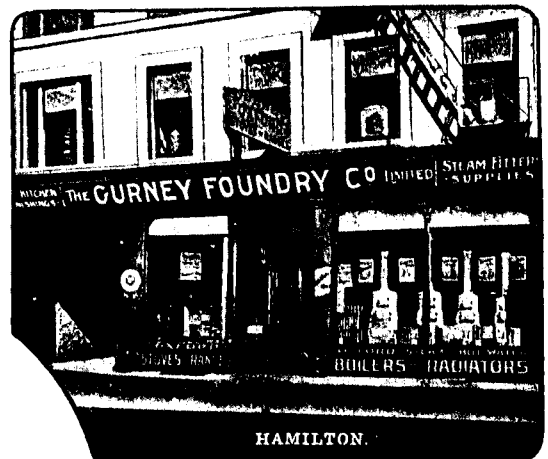


Occupy That Building

We go into the fall with materially increased stocks, covering "everything for the heating contractor" in the building pictured here.

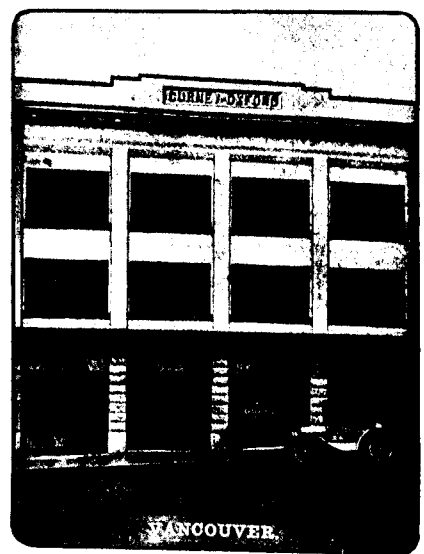
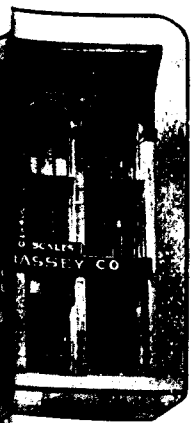
The quality of Gurney-Oxford boilers and radiators is *known*. We've been longest in the business, and have grown to be the largest, because we please our customers.

Specify Gurney-Oxford boilers and radiators—one quality runs through them all, the very best—and there is a kind for every requirement—and in this way *you'll get service*.



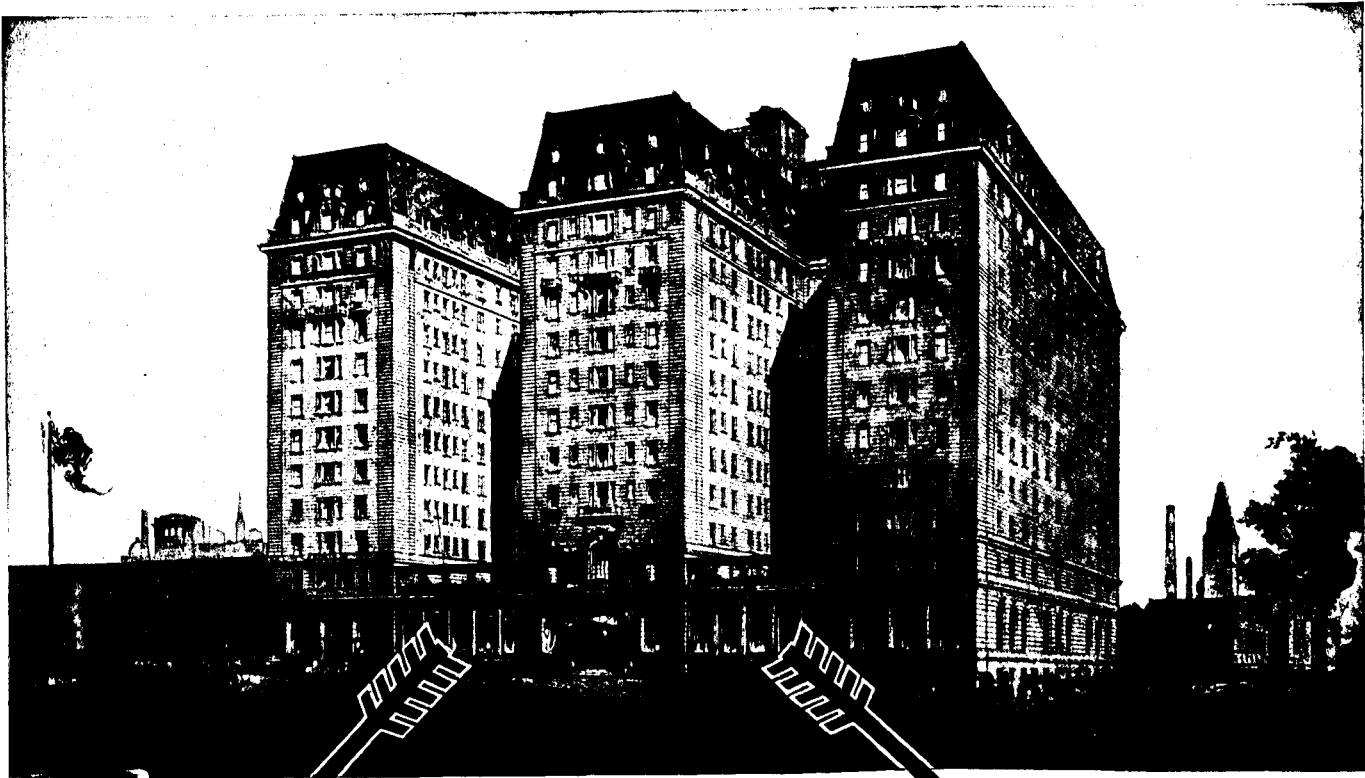
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CALGARY'S NEW HOTEL

Has a Made-to-Measure Inter-Phone System



C.P.R. Hotel, Calgary, Alta.

**For Telephone Service the Best Equipped
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Architects - E. & W. S. Maxwell, Montreal



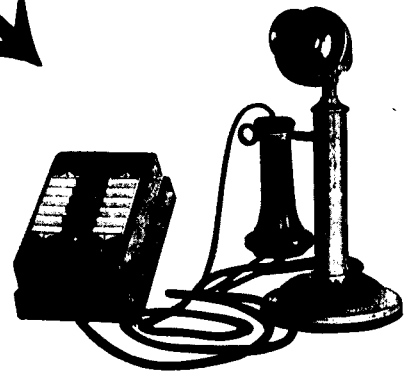
Two separate and complete Inter-Phone Systems are installed in this hotel.

One system, of 12 stations, is for the use of the executive staff. This system is absolutely non-interfering.

The other system has 24 stations. This system is the Selective Ringing, Common Talking Type. It connects the Main office, Manager's Office and Housekeeper's Office with the quarters of the house servants, situated in various parts of the building.

Besides these there is a telephone in each guest-room. These connect with a large Multiple Type Private Branch Exchange that has a capacity for 580 lines.

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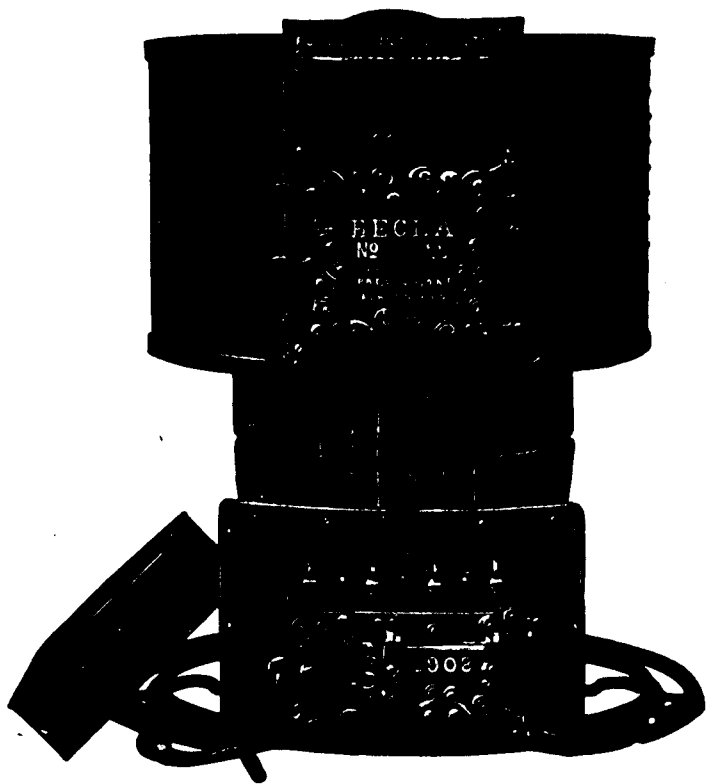
THE Northern Electric
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FOR COAL OR WOOD



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- Automatic Gas Damper prevents gas puffs.
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CAST IRON COMBUSTION CHAMBER

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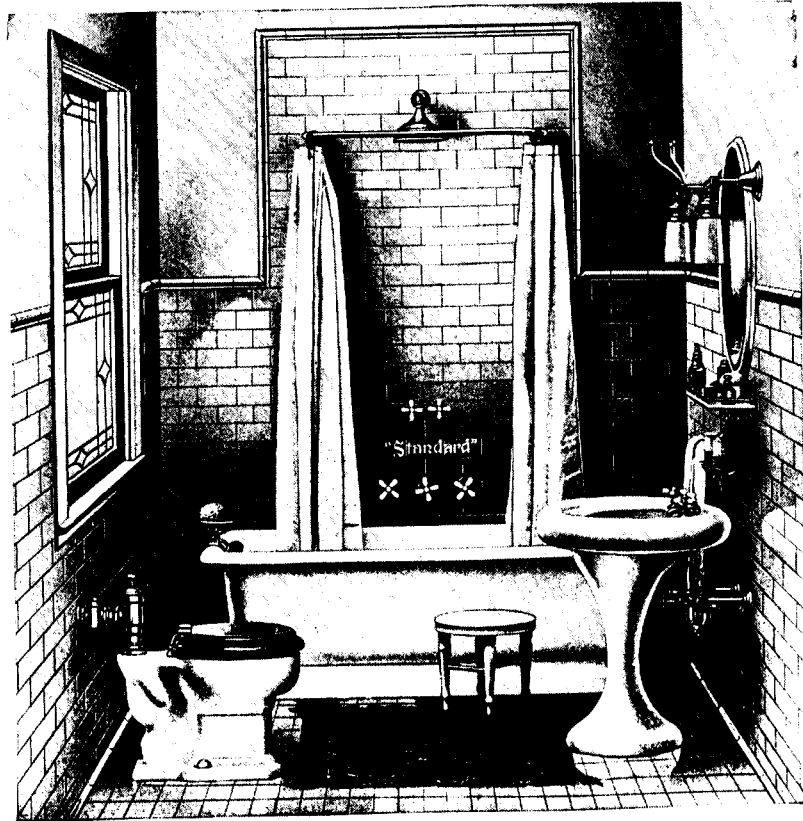
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“Standard Sanitary”

MODERN BATHROOM



Design P-55

This bathroom illustrates a simple but extremely practical and beautiful interior and shows how successfully beauty and utility can be combined. The simple shower over the tiled-in bath offers the maximum of bathing facilities with the least possible equipment and display.

The Lavatory is the “Standard Sanitary” “Narova” design, a pattern that has proven very popular on account of its handsome appearance and excellent quality. It is enamelled all over, free from cracks and crevices, and is easily kept immaculately clean and sanitary.

The Closet is of the Metric Flushing Valve Type. Its operation is accomplished by pushing momentarily a small index button, and is guaranteed to thoroughly flush the bowl at each operation.

All Closets of this type, operating on direct pressure, should be supplied with water at a minimum pressure of ten pounds through a full 1¼-inch I. P. size supply pipe to each Closet.

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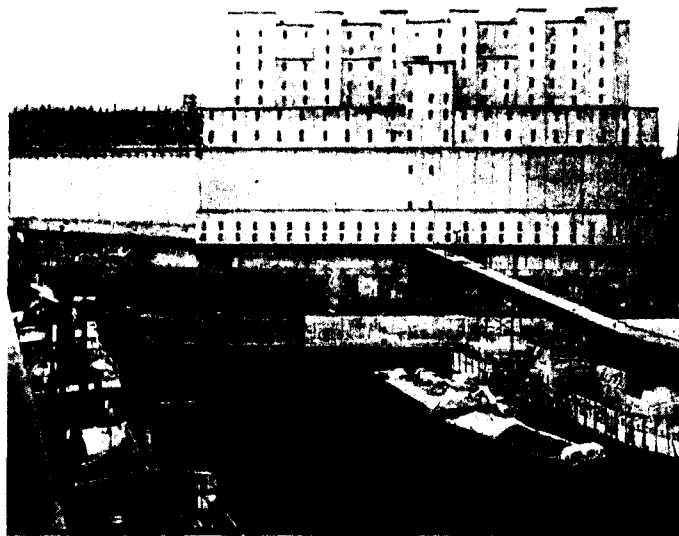
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MEDUSA =

Makes this Building Waterproof

THE Waterproofing Problems confronting the builders of this elevator were about as difficult as any the structural engineer is called upon to solve. Out of the number of waterproofing compounds on the market, Medusa Waterproofing was chosen because it has an unbroken record of success in every work for which it has been used. When investigating waterproofing for concrete,—note the number of important jobs for which Medusa has been used. It fulfills the most rigorous requirements of any work.



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Medusa Waterproofing is the original dry, white powder waterproofing. It has a host of imitators, but none successful, for our patents fully cover the correct principle of waterproofing for cement,—the only method that permanently prevents leakage and seepage of water and makes the concrete impervious even to dampness. Specify it for your next work.

Manufactured by

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Tenth Floor, Eastern Townships Bank Bldg., Montreal, Que.

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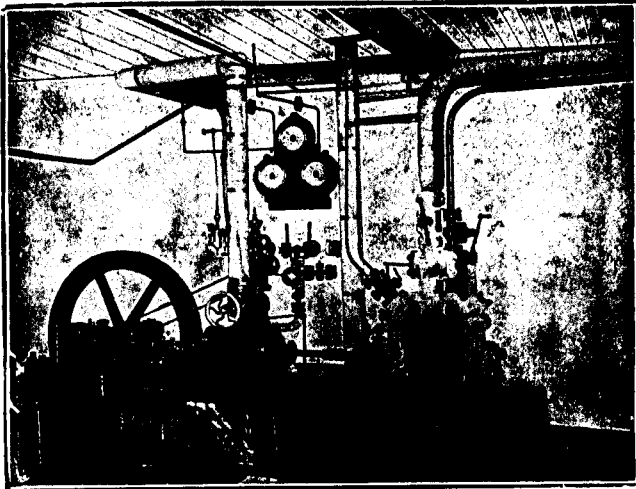
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under floors insures a quiet building. It is scientifically constructed — and sanitary.



Bird & Son, Est. 1795, Hamilton, Ontario, Montreal, Winnipeg, Vancouver.
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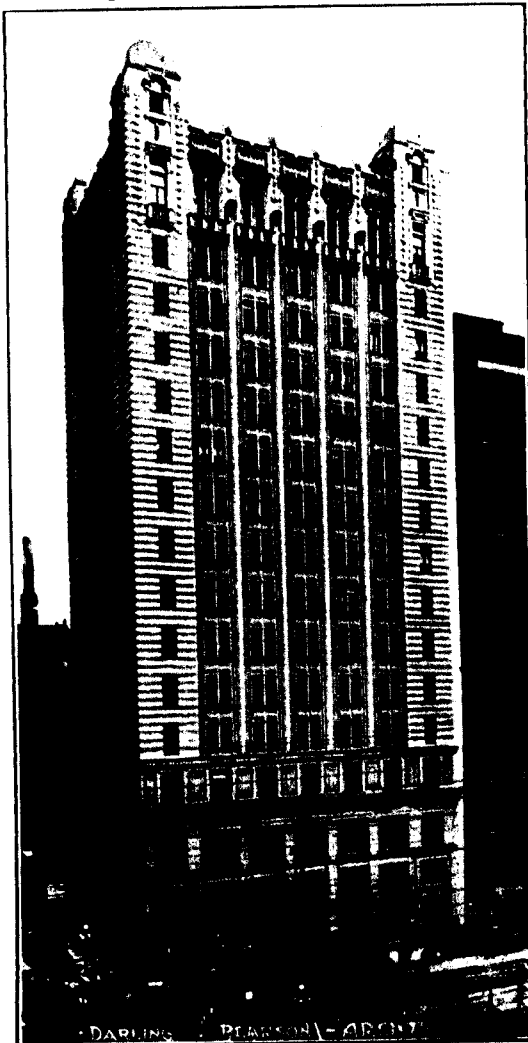
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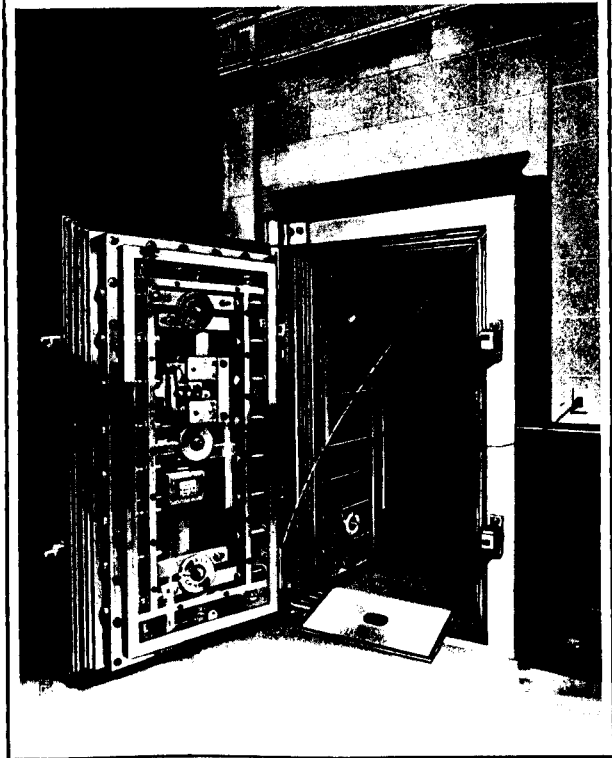
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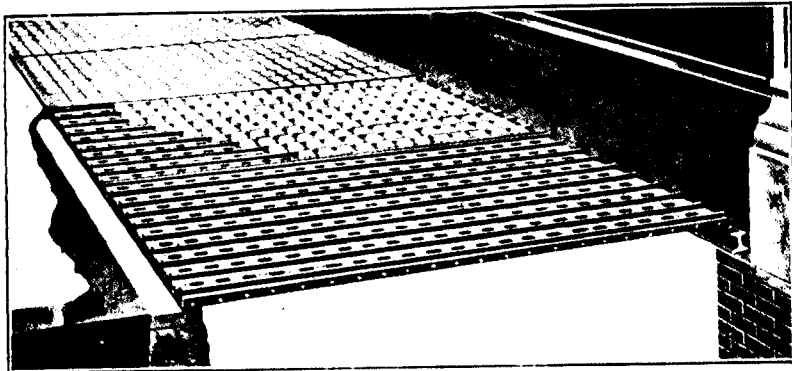
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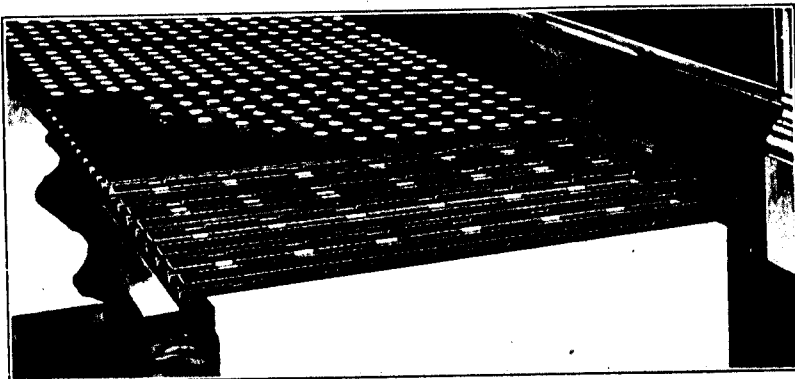
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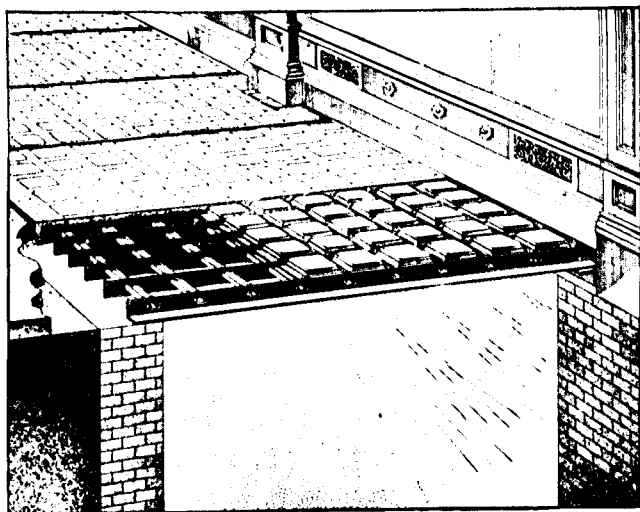


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has stood the test of years, and installations of many years ago are still in good condition. The glass area of approximately 70 per cent. on the underside of this construction gives you the assurance of the maximum amount of lighting.

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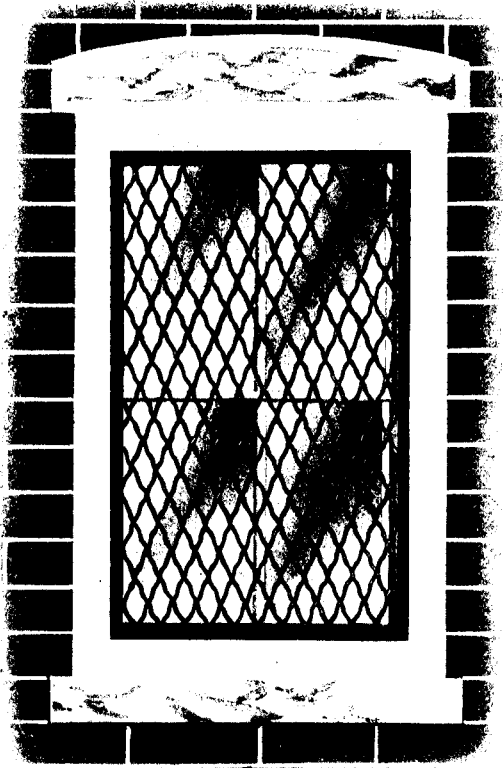
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All of the Above Constructions Are Covered by Canadian Patents

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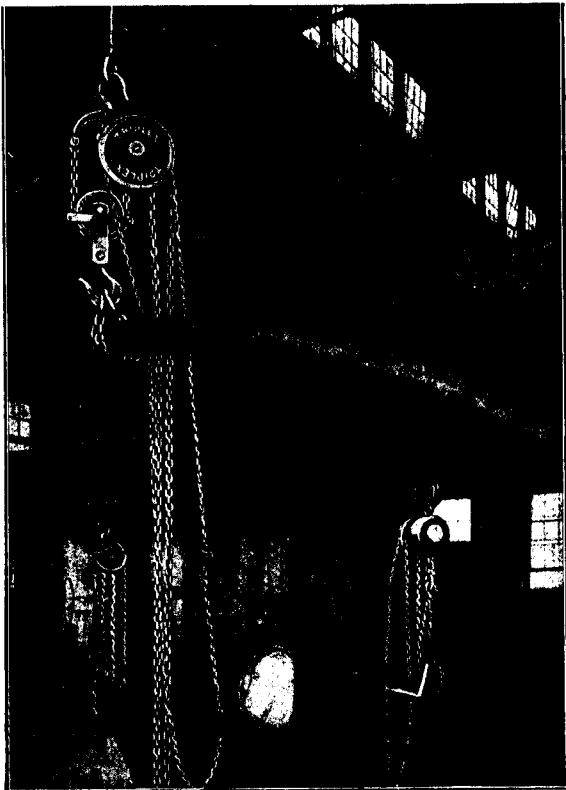
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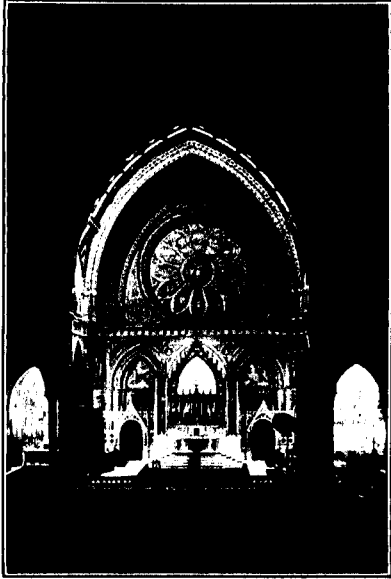
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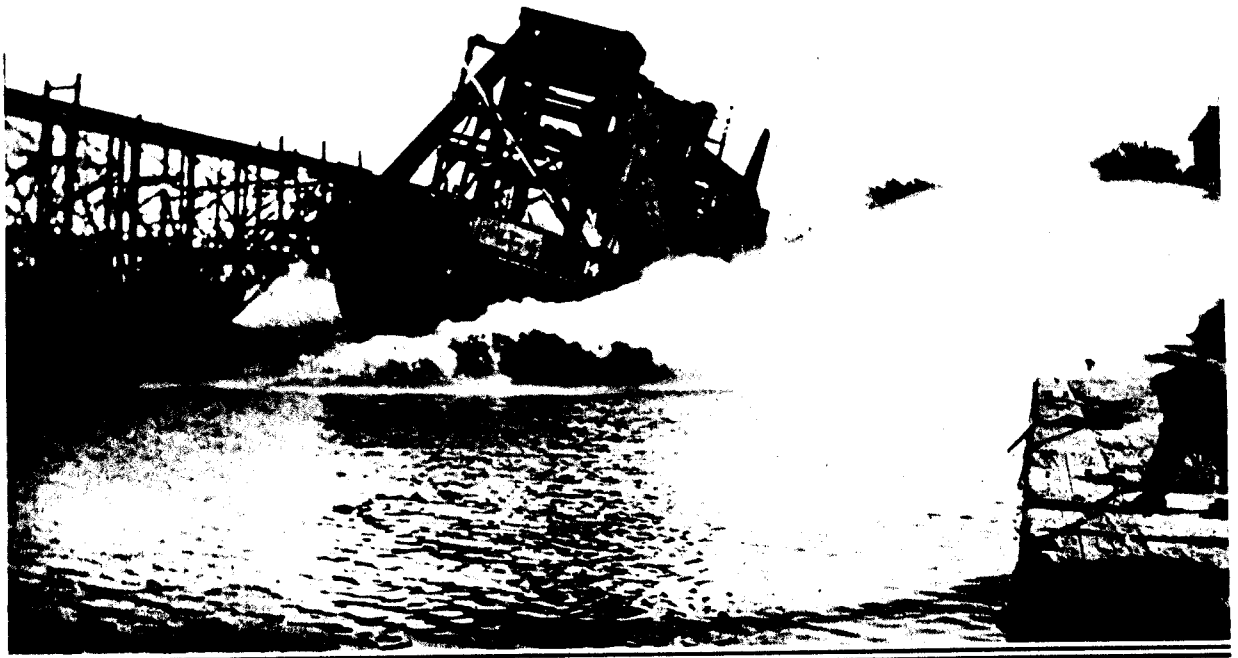
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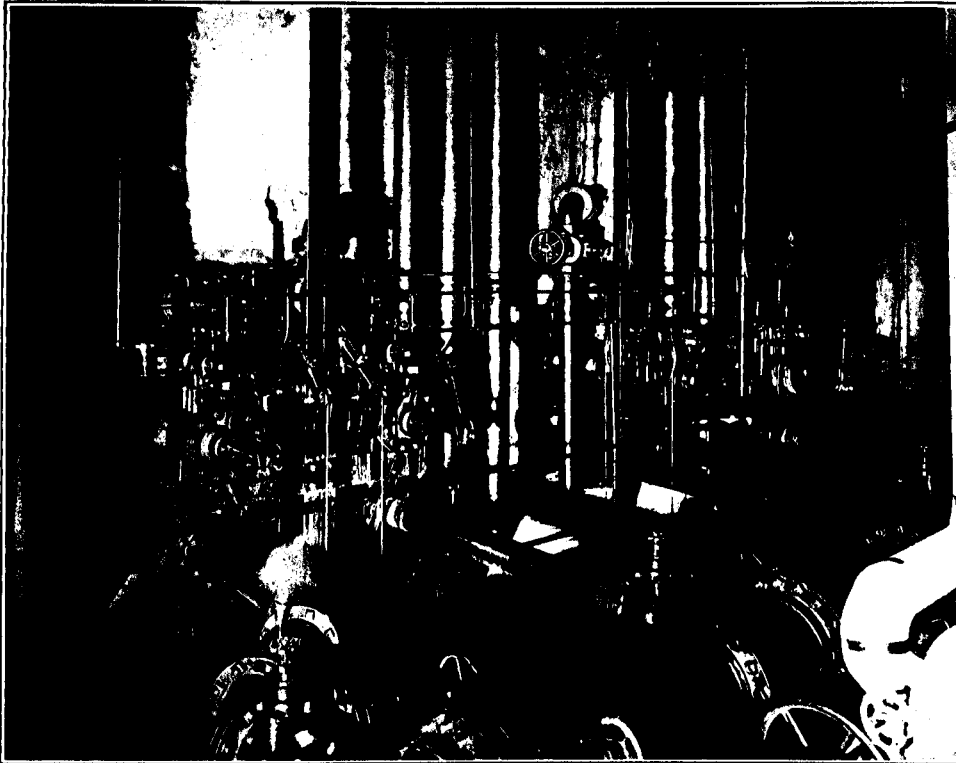
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for building the interior walls of this Home. Write for Catalogue, also list of Federal and State Buildings, where our Sanitary “American” Enameled Brick are used.

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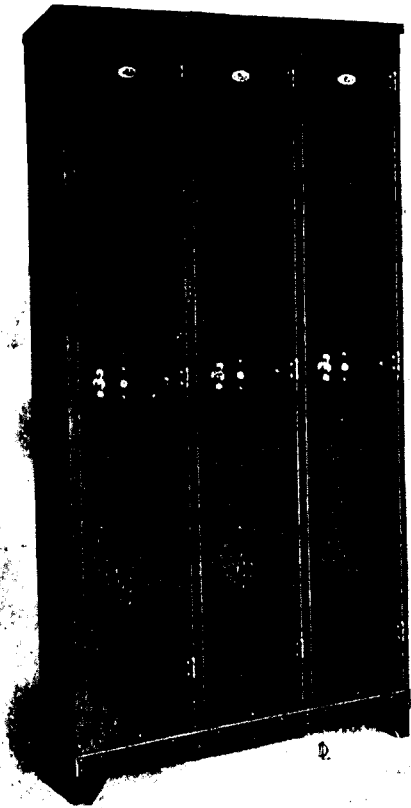
We also manufacture the Old
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“American” Enameled Brick as seen in interior walls of Home for Disabled Volunteer Soldiers, Hampton, Virginia.

See SWEET'S 1913 Edition
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The immaculate finish. Never turns yellow. Is made for both exterior and interior work, and for gloss and flat finish.



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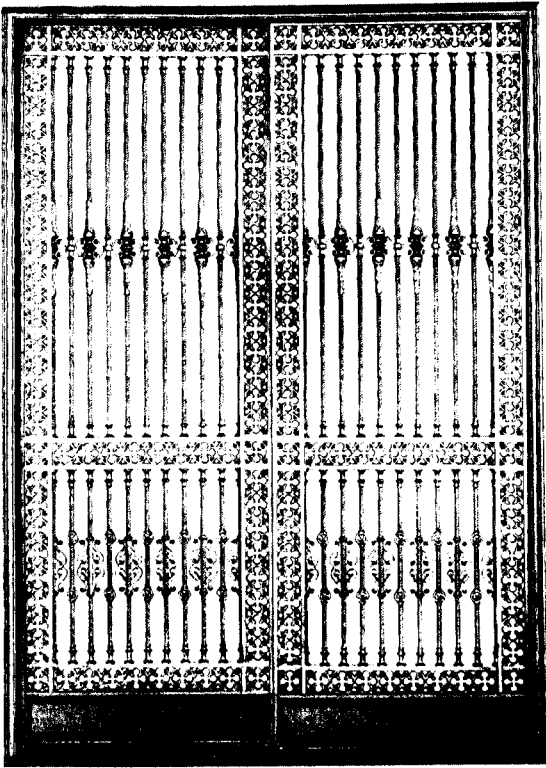
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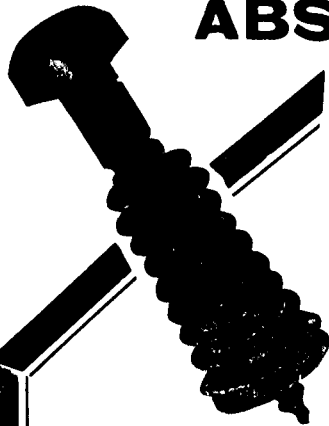
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are necessary in all construction work—that is the reason why SEBCO Expansion Bolts and Screw Anchors are specified by modern architects and used by every large contractor and builder. There is no quicker, neater or more substantial method of attaching fixtures and apparatus to hard substances such as brick, stone and concrete. The Shield or Anchor expands with the tightening of the bolt or screw, embedding itself firmly in the material in which it has been inserted, allowing no movement of any kind. It holds the fixture in place permanently.

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The whole window is stamped by steam power, with steel dies, so that all parts are uniform.

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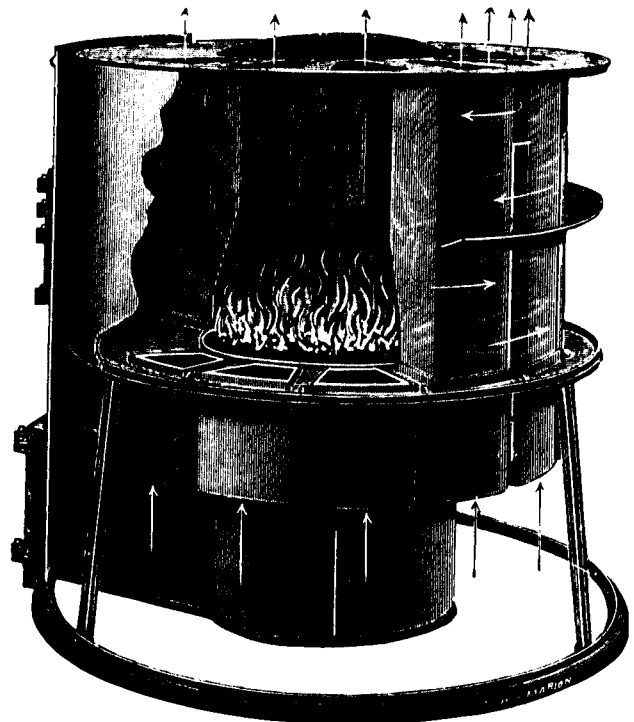
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CALORIFIC WARM AIR FURNACE

Note the immense fire surfaces on the hot air columns. Not an ounce of heat energy is wasted. The smoke, gases and direct action of the fire combine to heat the air in the air chambers, causing a constant flow of warm air and produces an even heat at a small fuel expense.

The Calorific Furnace will save 50% in coal bills. Its extreme durability makes it the most economical furnace to install.



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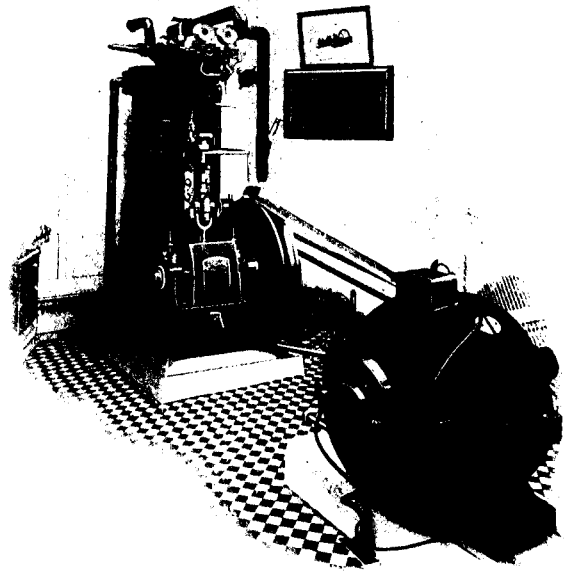
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Temperatures as desired.
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 Need only unskilled attention and
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 Always available.
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are made in designs and sizes for every use. They are constructed to withstand the abuse that a public fixture usually encounters and their snowy enameled surfaces will last a lifetime. We manufacture the most complete line of Drinking Fountains ever offered to the trade and they are fully described and illustrated in a NEW CATALOG which will be sent upon request

MADE IN 167 DESIGNS AND SIZES



Plate F 3342

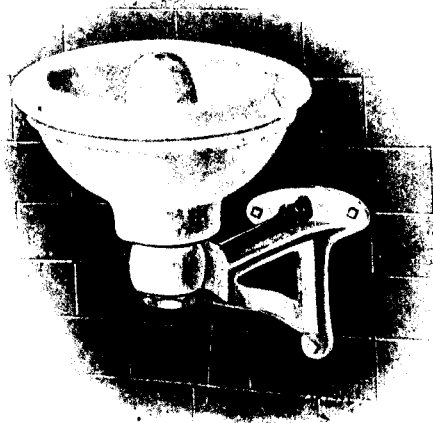


Plate F 3305



Plate F 3013



Plate F 3025

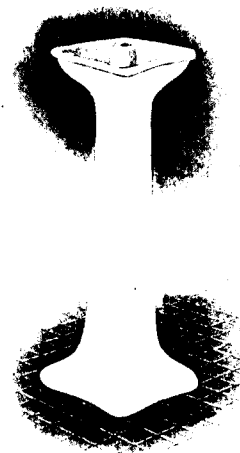


Plate F 3055

The Standard Ideal Company Ltd

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The
ELEVATOR
EQUIPMENT

in the new

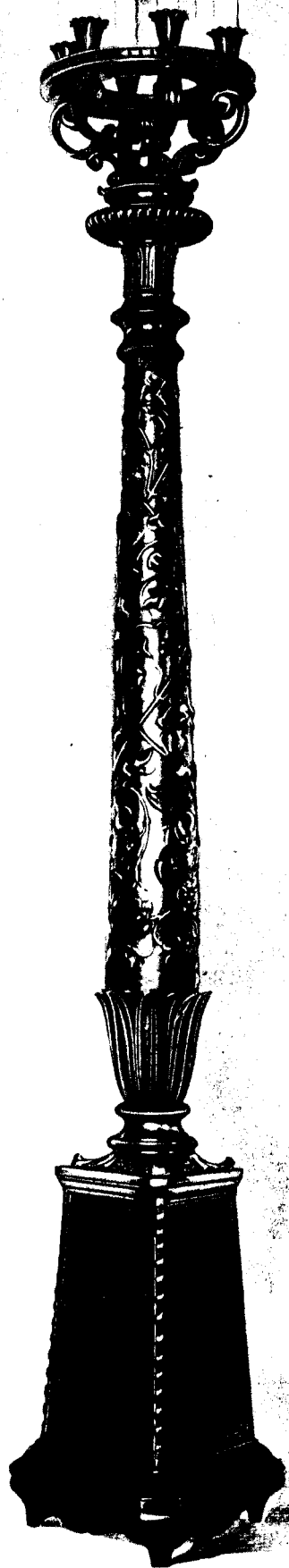
BANK of TORONTO
BUILDING
TORONTO

was installed by the

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ELEVATOR
COMPANY
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TORONTO, ONT.

Works:
HAMILTON, ONT.



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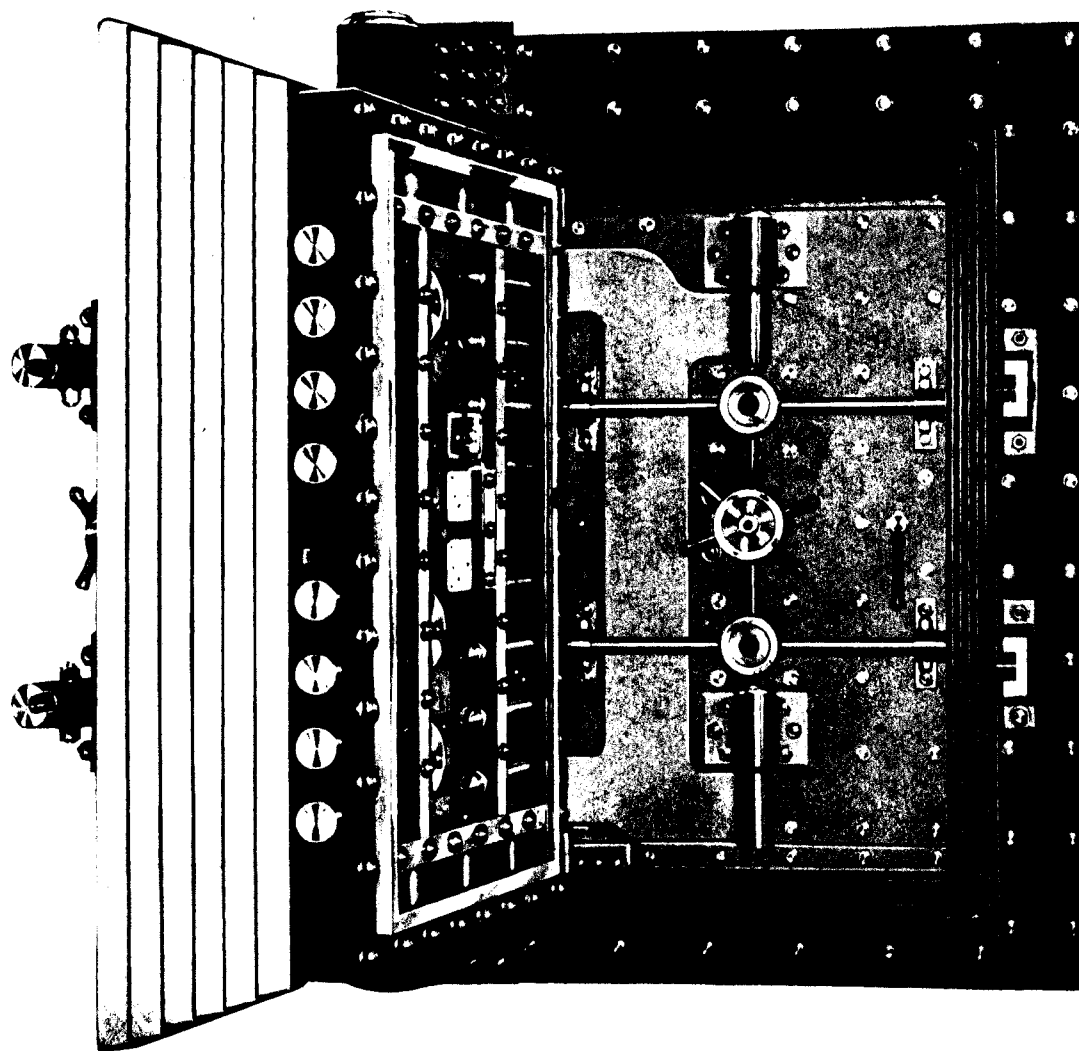
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One of the stately Bronze Electric Light Standards in the Vestibule of the King Street Entrance is Illustrated

MURRAY-KAY LIMITED

36-38 King St. W.

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WEIGHT 50 TONS

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The BANK of MONTREAL, Winnipeg
 AND
The ROYAL TRUST CO., Winnipeg

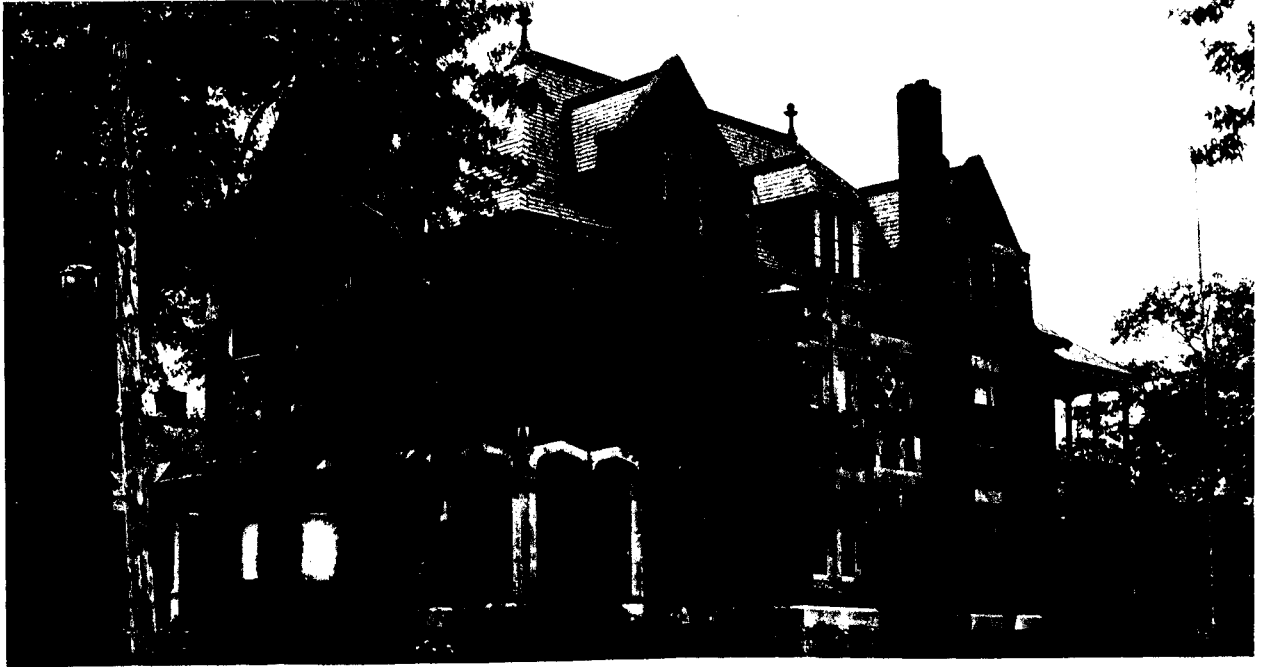
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Residence of W. W. Butler, Cote St. Antoine Road, Montreal.
Robt. Findlay, 10 Phillips Place, Architect.



Masonic Temple, Dorchester Street, Montreal.
David R. Brown, Architect.

The Montreal buildings shown on these two pages, once more demonstrate the possibilities of Don Valley brick in any class of construction where a particularly rich effect is desired.

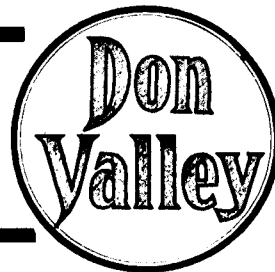
In each of these cases the judgment of the architect in specifying Don Valley brick has been more than justified by the results obtained through its use.



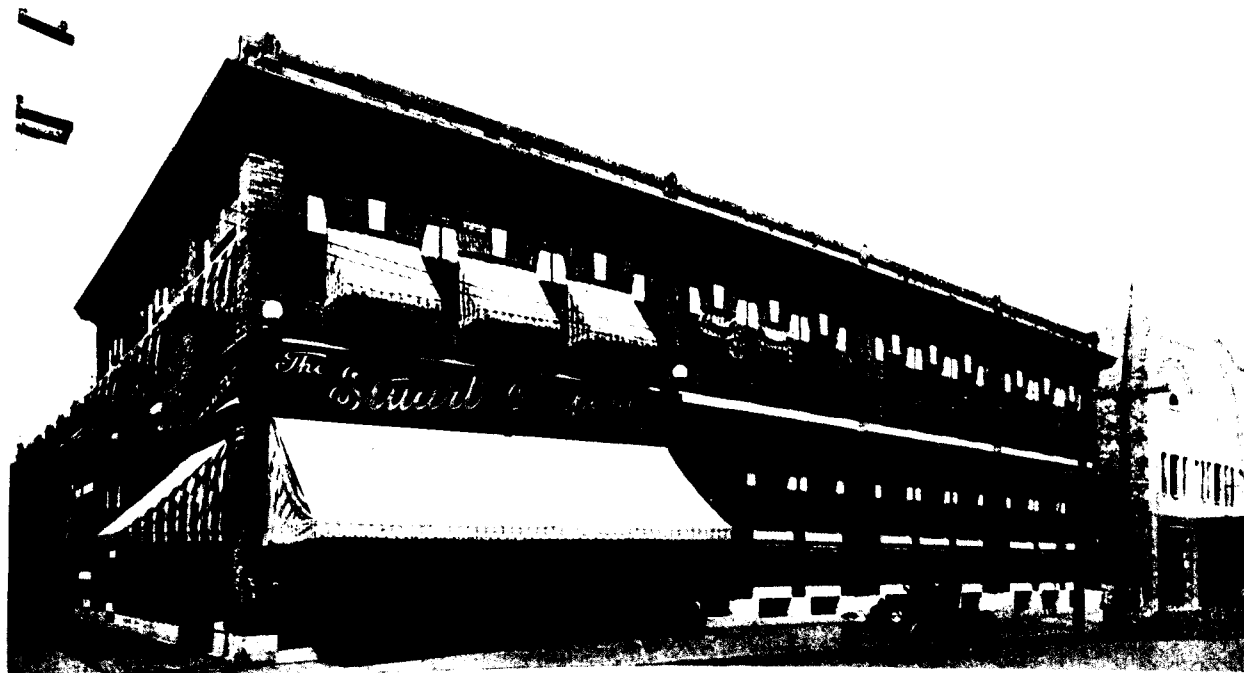
Residence of Geo. B. Fraser, Murray Ave., Westmount, Montreal.
David Brown, Architect.

Montreal Agent
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DON VALLEY



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Montefiore Club, Guy Street, Montreal.
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BRICK WORKS

Head Office
36 Toronto St.
TORONTO



*Bank of Toronto, Head Office,
Correspondence Department.*

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Board Room, Bank of Toronto.

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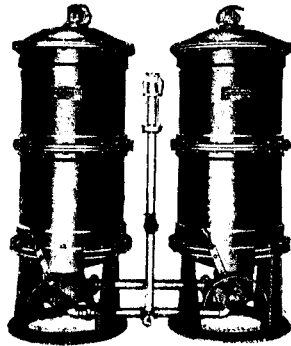
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Toronto

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HOWARD CLOCK IN ENTRANCE UNION DEPOT, WINNIPEG.

THE E. Howard Clock Company have been making tower clocks for over seventy years; examples of their work being the clocks in some of Toronto's best known firehalls.

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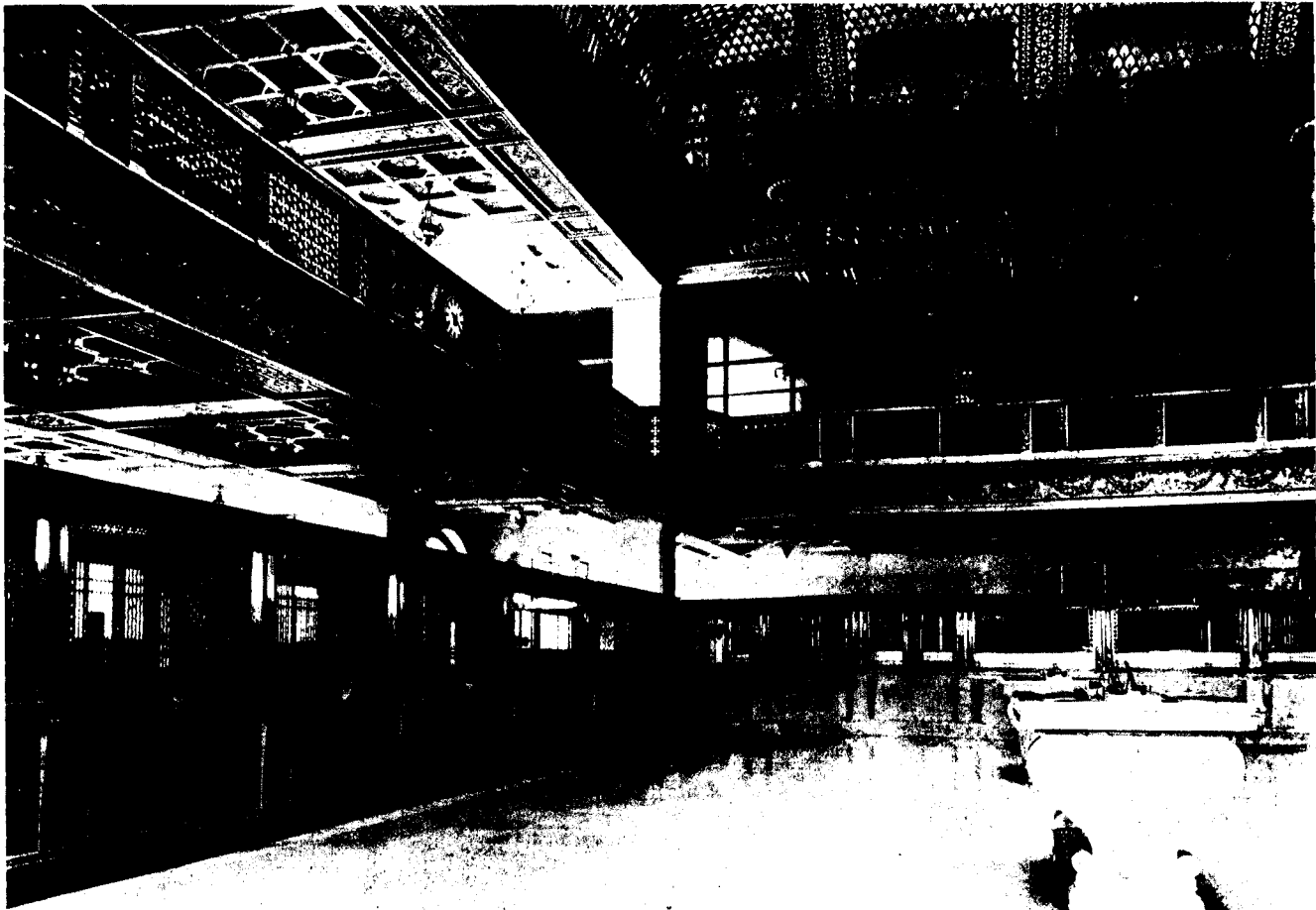
This same equipment has also been installed by the E. Howard Clock Company in the "Evening Telegram" Bldg.; Nurses' Home, at Toronto; The T. Eaton Co., Toronto and Winnipeg; The Canadian Pacific Hotel and Depot; The Canadian Northern Terminal; Royal Bank of Canada, Winnipeg, and the Hudson Bay Company's stores at Calgary.

THE E. HOWARD CLOCK COMPANY

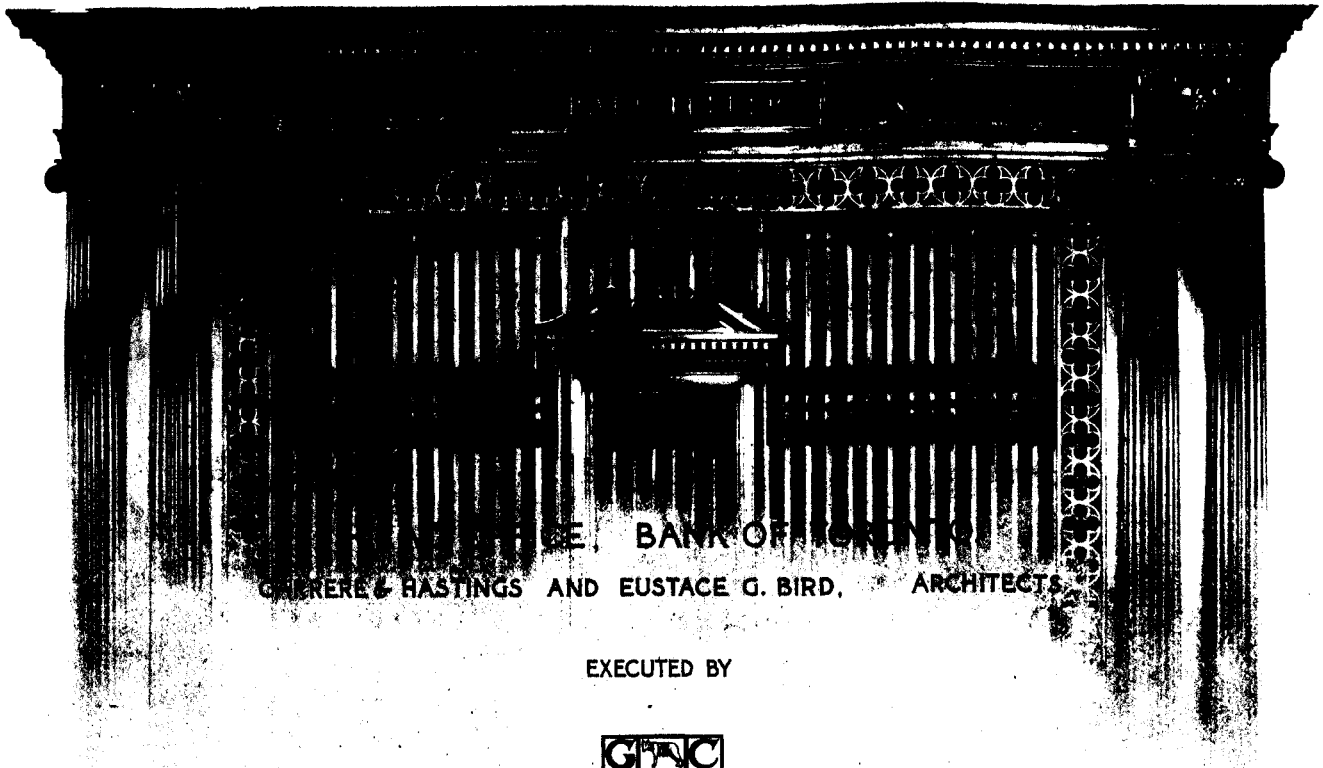
BOSTON, MASS.
373 Washington St.

NEW YORK, N.Y.
67 Maiden Lane

CHICAGO, ILL.
31 North State St.



BANKING ROOM



THE BANK OF TORONTO
 GERRARD & HASTINGS AND EUSTACE G. BIRD, ARCHITECTS

EXECUTED BY



THE GORHAM CO ARCHITECTURAL BRONZE
 FIFTH AVENUE NEW YORK.

BANK SCREEN DETAIL

CONSTRUCTION

VOL. VI

No. 9

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

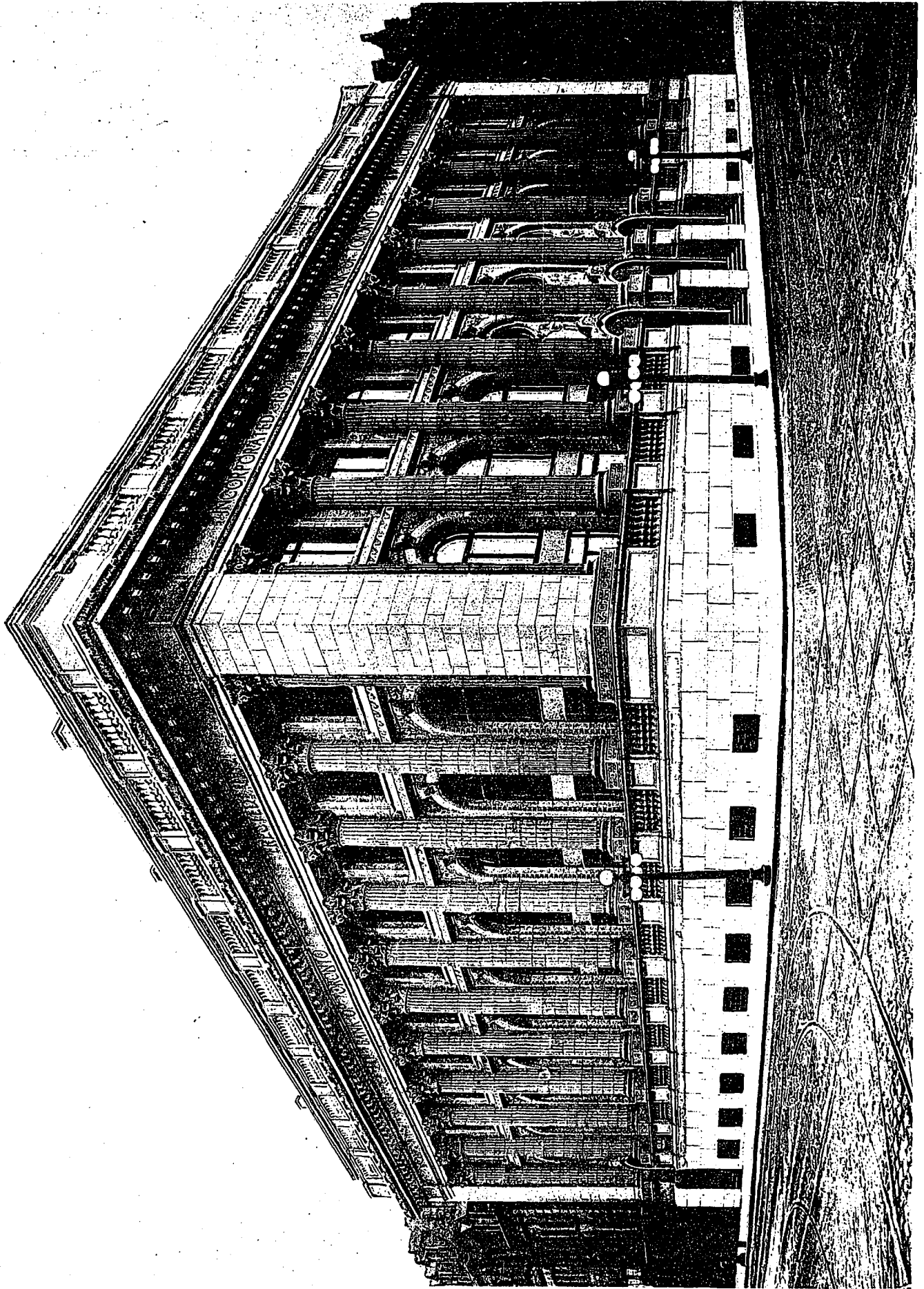
BRANCH OFFICES :

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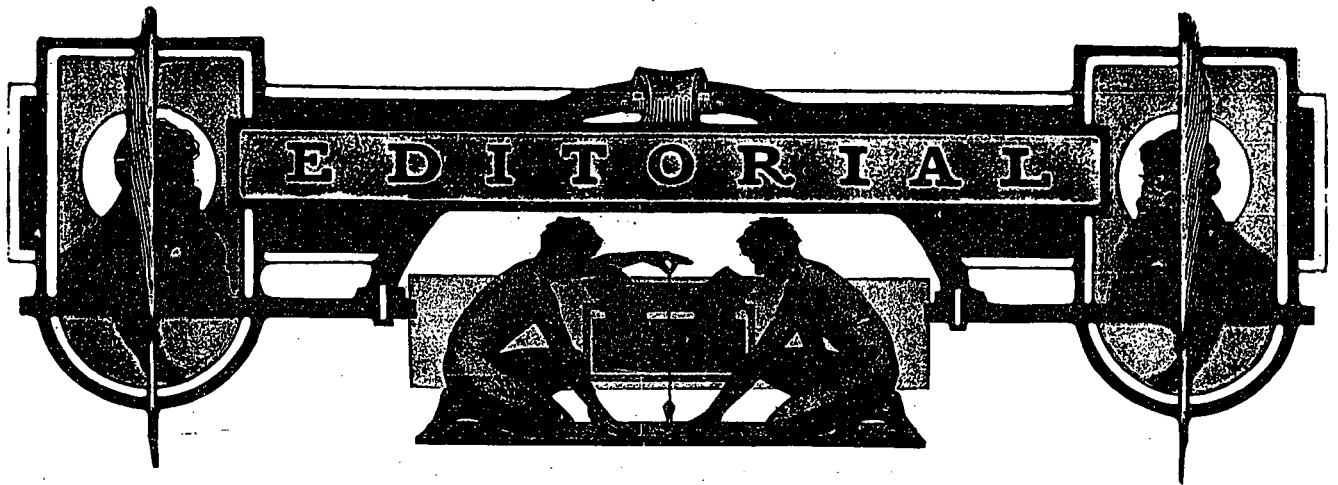
WINNIPEG

CHICAGO

NEW YORK



THE BANK OF TORONTO, TORONTO.
CARRERE & HASTINGS AND EUSTACE G. BIRD, ARCHITECTS.



Q *The cathedral spirit of to-day which will produce edifices rivalling the better examples of the middle ages.*

THE AGE of cathedral building in Europe has been and always will be a remarkable epoch to the artist world. We have grown to recognize that period as one of monumental growth in the ecclesiastical world and can scarcely believe that our modern tendencies could permit of structures which would rival the glories of the middle ages. Still the tendency is towards democracy and the cathedral is a democratic institution. The people look upon the church as an expression of truth and wish it to embody their feelings for everything that is noble and inspiring. They are awakening to the realization that a beautiful home, a lofty edifice, an ornate structure, is essential to the free worship of God. Once imbued with this spirit nothing can prevent the places of worship in the new world from surpassing the wonders of the old. There are evidences already that we have entered into an era which demands cathedrals of the most inspiring type. Ever since 1875 the cathedral desire has gradually spread and to-day the following cities are building or contemplating the erection of such a structure: Toronto, Halifax, New York, Baltimore, Albany, Denver, Detroit, San Francisco, Cleveland, Los Angeles, and Washington. These buildings are universally planned by and erected under the supervision of the same architect, which gives to the ensemble a harmonious feeling. Unfortunately the large cathedral in New York was started and partly built in Romanesque, only to be completed in Gothic. The reason for such a calamity is attributed to a change in the personnel of the building committee, who dismissed the original architects and called upon another to do the impossible. The final result cannot help but remain an eyesore for ages. The edifice at Pittsburgh, on the other hand, is a dignified example and well known for its harmonious effect in design and color. Polychromatic decorations are becoming more generally used and helping to create beautiful churches which will compare favorably with the fine examples of our European brethren.

Q *The Bank of Toronto—Its successful career in commercial activity and its architectural value to the City of Toronto.*

THE BANK OF TORONTO, illustrated in this issue, is one more example of Canada's progressive spirit. Artistic in design, thoroughly practical in plan and pleasing in its decorative sculpture, it is representative of the wealth, taste and thrift which is bringing the Dominion rapidly to the front. This edifice, along with the other notable structures recently erected, shows a decided advance in the architectural merits of our buildings and promises a vast improvement in the artistic appearance of our cities.

No institution produces so many ornamental structures as the bank. When one stops to consider that there are some thirty chartered banks, many of which have upwards of three hundred branches, and increasing every year, an idea is obtained of the wonderful growth in this field. Taking into account the keen competition of the various companies in making their respective buildings the most attractive and homelike, it is readily seen that their design and planning must be treated with considerable study.

The banking field of Canada is entirely in the possession of corporations chartered by the Dominion Government. Such an act bars all foreign and British banks unless they take out a Canadian charter and otherwise conform to the banking laws of the Dominion. It is interesting to note that while all other countries are excluded to a certain extent in the establishment of banks in Canada, still many of our companies are represented in England, France, Mexico and the States.

The Bank of Toronto is the oldest bank in Canada with head office in Ontario, having been incorporated in 1855. The bank opened for business in July, 1856, with a paid up capital of £27,435. The progress of the bank has always been steady, and by the year 1871 its capital exceeded \$1,000,000, which figure steadily increased until to-day it is \$5,000,000, with reserved funds of \$6,176,578.

Among the men of marked ability who have contributed of their experience and skill to the upbuilding of this institution was the first president, J. G.

Chewitt, who was succeeded in turn by Messrs. Cameron, Wm. Gooderham and G. Gooderham. In 1911 Mr. Coulson was elected president, which office he now holds. His unusual ability and untiring efforts are mainly responsible for the bank's high standing at the present time. The management of the bank has ever been conservative, but yet progressive, and has extended its operations throughout the Dominion as the requirements of business demanded. At the first and for some years, the branches of the bank were all in Ontario and Quebec, but with the opening up of New Ontario and the Western Provinces, many new branches have been opened in these sections as well as in the older provinces.

The city of Toronto may well be proud of this new structure, which stands as the resultant of a long cherished ideal. It is the home of a large institution and is worthy of the great and distinctive business it represents. As a work of art it is destined to take its place as one of the notable structures of the present time. The sculptural decorations embellishing the main façades are carved in marble representing Canada in agriculture, industry, science, etc., and show the wisdom in the selection of the sculptor. It is worthy of note that while the architects represent one of the strongest organizations in America, every drawing was done in Toronto under the direction of Eustace G. Bird, the Canadian member of the firm.

South American States a rich field for art—The progressiveness of their people—Civic improvement brought to a high state of perfection.

A SERIES of articles on the South American countries which are appearing in the Sunday "New York Times," teem with practical information for the architect and student. The author is General Rafael Reyes, ex-president of the United States of Colombia, a man well versed in the life and art of these nations. He refers to the high standard of culture and æsthetic refinement of the educated Brazilians, whose qualities find expression in their many public institutions and in the artistic embellishment of their principal cities. The greatest improvement has been in beautifying the city of Rio de Janeiro, which in the short space of seven years has been completely transformed into an artistic centre. Sao Paulo has become also one of the most magnificent cities of the western hemisphere. It has extremely wide paved streets, attractive homes and well designed public buildings. Among the prominent structures are the Government Palace of the State, Palace of the Elysian Fields, Municipal Theatre, etc.

In speaking of the Argentine Republic, the point is emphasized that this country is still in its infancy and the opportunities are as great to-day for the man of all professions as they were twenty years ago. Surely no city can boast of a greater advance in the

civic improvement than Buenos Aires, with its open and attractive Plaza De Mayo, the Plaza Hotel and the Colon Theatre. Progressive and friendly, this country is bound to become a great factor in the progress of the world and will help maintain a sense of justice between the various Southern States.

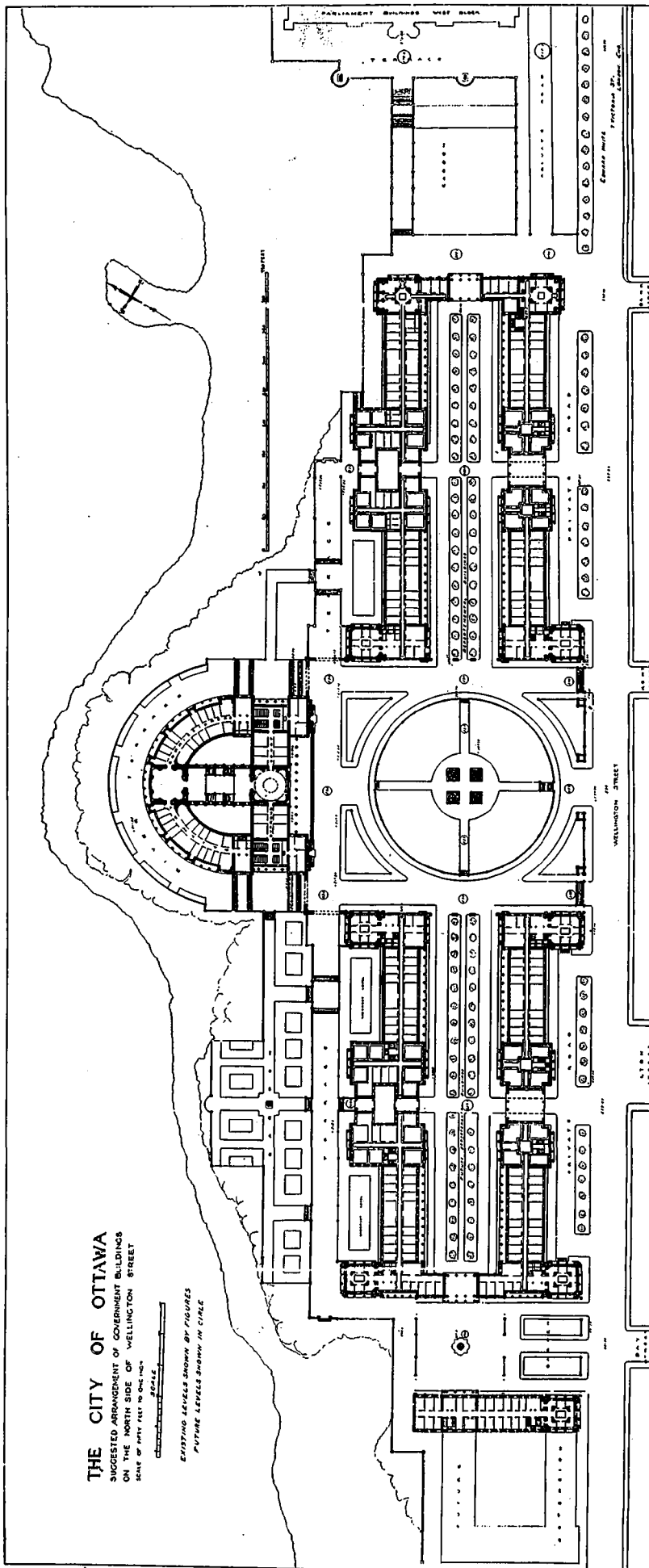
Uruguay assumes the same relationship to South America as Switzerland does to Europe. Of small territorial extent and population, its people may justly claim to have attained a degree of civilization and progress equal to that of her more powerful neighbors. Approaching the Uruguayan coast, a delightful impression is made. The capital, Montevideo, is built in the form of an amphitheatre, with handsome modern edifices and gardens. The scene is more effective upon entering the gates of the city, where are seen broad avenues, wide squares, artistically designed parks, and monumental sculpture work. In appearance the more important avenues with their native foliage may be likened to the summer effect of the Bois de Boulogne at Paris, and the winter of Buenos Aires.

The registration of architects in England—Terrible disasters daily argue in favor of such an action—Need is also felt in Canada.

UNIVERSAL consideration is being given to the registration of architects in England. C. McArthur Butler, secretary of the Society of Architects, wrote a strong appeal in order to stir up public opinion, which seems to be a necessary course, no matter how excellent a reform may be in itself. One of Mr. Butler's arguments is the multiplicity of the architect's duties, which are those of a lawyer, chemist, surveyor, engineer, builder, sanitary expert, etc.

Mr. Butler says: "Mistakes in other professions can be buried or otherwise consigned to oblivion, but architectural mistakes are always with us. They will go on being perpetrated so long as it is possible for unqualified persons to assume the title of architect and under that disguise to bring disgrace on the profession and the nation by plastering our landscape and streets with such hideousities and banalties as may be seen on every hand."

The argument applies to Canada also. Within the last week or so startling headlines appear in our papers: "Frightful disaster at Peterborough; five bodies already recovered from the ruins;" "Garage block falls while in construction;" "Fifty-three persons missing; terrible disaster when houses fell in;" "Two buildings in Montreal collapse;" "Church collapsed, two men injured." Dozens of similar notices could be cited to show the loose manner in which our modern structures are being erected. Is there not a need of some action upon the legislative side which will prevent so much loss of life and general suffering? Protection must be given against the untrained artist whose knowledge of building construction is lamentable. It is due both the profession and the people.



The Government invites architects to submit preliminary sketch designs in competition for the erection of certain buildings, which are to be included in the scheme for the development of complete Departmental and Courts Buildings. The ground floor area of the Departmental Buildings must cover a space of about 200,000 superficial feet. It is the intention to build at once a certain portion of this complete scheme, viz., the Supreme Court, the Exchequer Court, the Railway Commissioners Court, and the necessary offices in connection with these courts, also a block or blocks of Departmental Buildings covering a ground floor area of about 100,000 superficial feet and providing about 500,000 superficial feet of floor area.

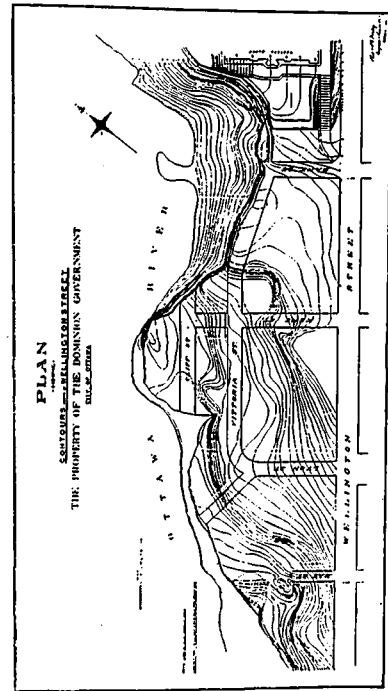
The Dominion Government has appointed T. E. Collcutt, Past President of the Royal Institute of British Architects; J. H. G. Russell, President of the Royal Architectural Institute of Canada, and J. O. Marchand, A.D.G.F., and a member of the R.A.I.C., as assessors to draw up the conditions and instructions to competing

architects and to select from the preliminary sketches, six designs, the authors of which are to be invited to submit final designs and each of the five unsuccessful architects submitting designs in accordance with these conditions shall receive a honorarium of \$3,000. The competition is restricted to architects who are British subjects, practising in the British Empire.

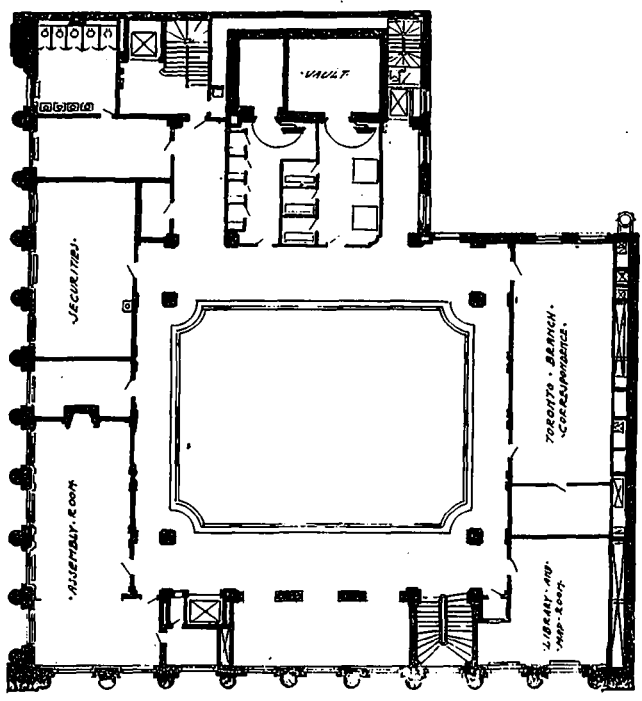
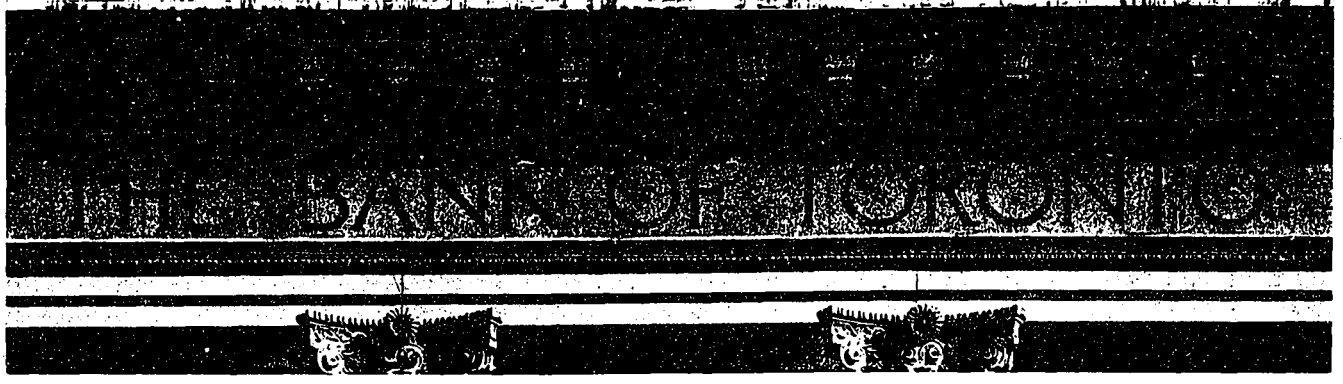
The designs in the first competition must be delivered in Ottawa by 12 o'clock noon, January 2, 1914, addressed to the Secretary of the Department of Public Works.

The author of the design placed first in the final competition shall be employed by the Government for the work to be done at once, provided that he can satisfy the assessors as to his possession of sufficient experience and ability to undertake and carry out the work to a successful issue.

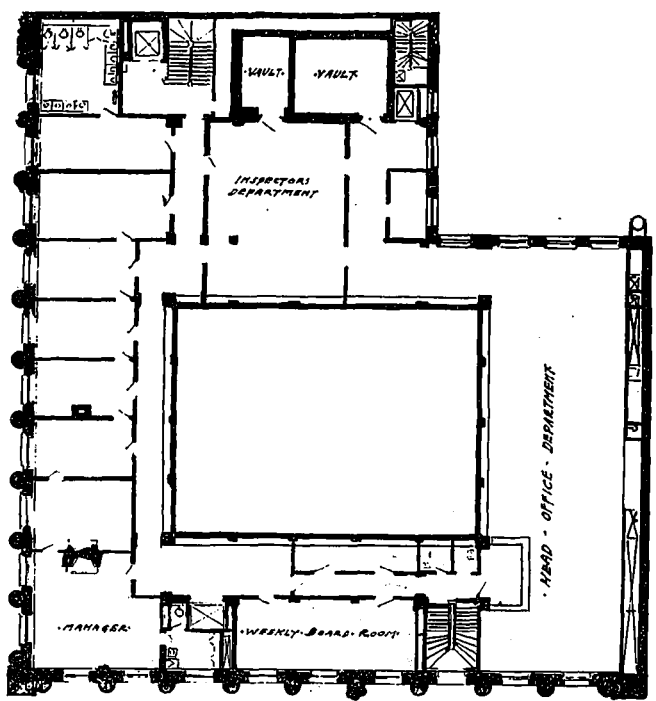
All enquiries regarding the competition should be addressed to the Secretary of the Department of Public Works, Ottawa, Ont., typewritten on plain paper.



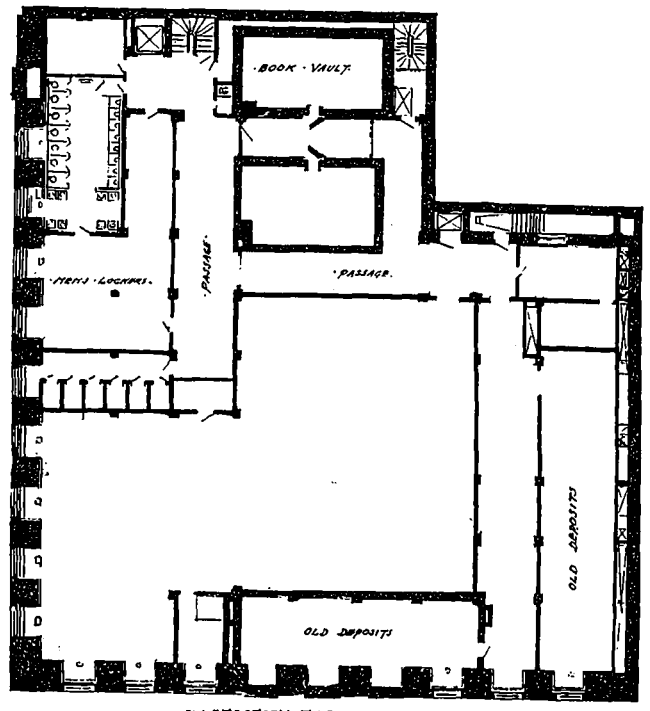
PLANS SHOWING SCHEME FOR NEW DEPARTMENTAL AND COURT BUILDINGS FOR THE DOMINION OF CANADA, IN OTTAWA, ONT.



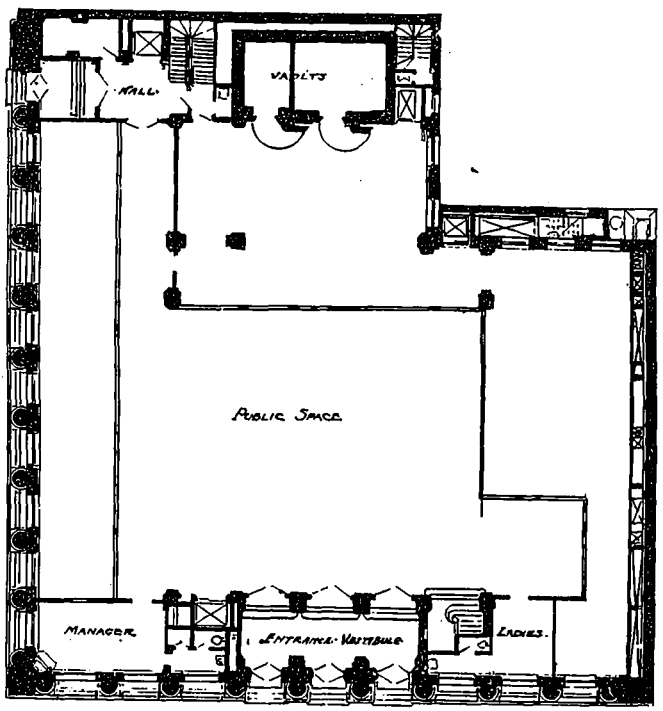
MEZZANINE FLOOR PLAN.



FIRST FLOOR PLAN.



BASEMENT FLOOR PLAN.



GROUND FLOOR PLAN.

THE BANK OF TORONTO, TORONTO.
 CARRERE & HASTINGS AND EUSTACE G. BIRD, ARCHITECTS.

The Bank of Toronto, Toronto, Ont.

Carrere & Hastings and Eustace G. Bird, Architects.

ONE more monumental structure in marble and bronze bespeaks the rapid progress of Canada's commercial life, especially in the Province of Ontario. The Bank of Toronto not only houses adequately one of the large chartered institutions of Canada, but depicts as well the constant betterment in all phases of architecture. It stands as a cherished ideal clothed with decorative and costly art, in perfect harmony with the life of the institution within. When we stop to realize that this structure is one of many which have sprung up within the last few years throughout the Dominion, it would be impossible to foretell the vast improvement in architecture which will occur in the next decade.

The banking institution is one of the most potent incentives to art. Catering to all classes and profiting from the earnings of the people, each corporation strives to make its local bank the most artistic and home-like. As a result no expense is spared in decorating its façades and main banking space in a utilitarian and attractive manner. As the banking field of Canada has some thirty chartered banks, many of which have upward of three hundred branches, it is readily seen that buildings of this nature are erected quite frequently. With a keen desire to better existing conditions there is always considerable care manifested in the design, and the present standard, which surpasses by far the past, will have to give way to a future style even more artistic, practical and sanitary.

The Bank of Toronto has at present 116 branches in Ontario, Quebec and the West, many of which are located in handsome and commodious buildings erected by the institution from time to time to meet the growing demand for accommodation. The first office occupied in Toronto was a small one on Church street opposite St. James Cathedral, but in 1862 the building at the corner of Church and Wellington streets, which has accommodated the bank during the intervening half century, was erected. Some ten years ago the need for enlarged premises was again foreseen, and the property at the southwest corner of King and Bay streets purchased.

Rising four stories above ground, the ensemble of the new bank presents an appearance of stability and richness. The two main façades frankly express the character of the work for which it

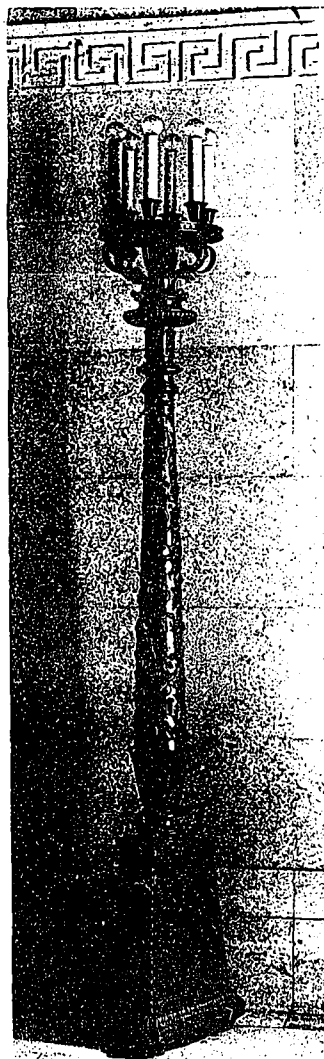
has been built. Enriched by large attached columns extending throughout three stories, it stands as an example of unusual dignity in the business world. The exterior tends to create a feeling of unity brought about by subordinating the entrances—which are extremely rich in treatment. Following classical motives, the work stands forth as an index of the people's desire towards the beautiful. The light pink Tennessee marble used throughout the exterior treatment adapts itself to the style and general surroundings, and will always maintain the general warmth of the present structure.

The corner piers are elements of strength and simplicity which lend to the ensemble an impression of stability as well as forming an appropriate framework for the rich window and entrance treatment. The sculpture is worthy of considerable study and may become in time one of the few illustrious examples of the present era.

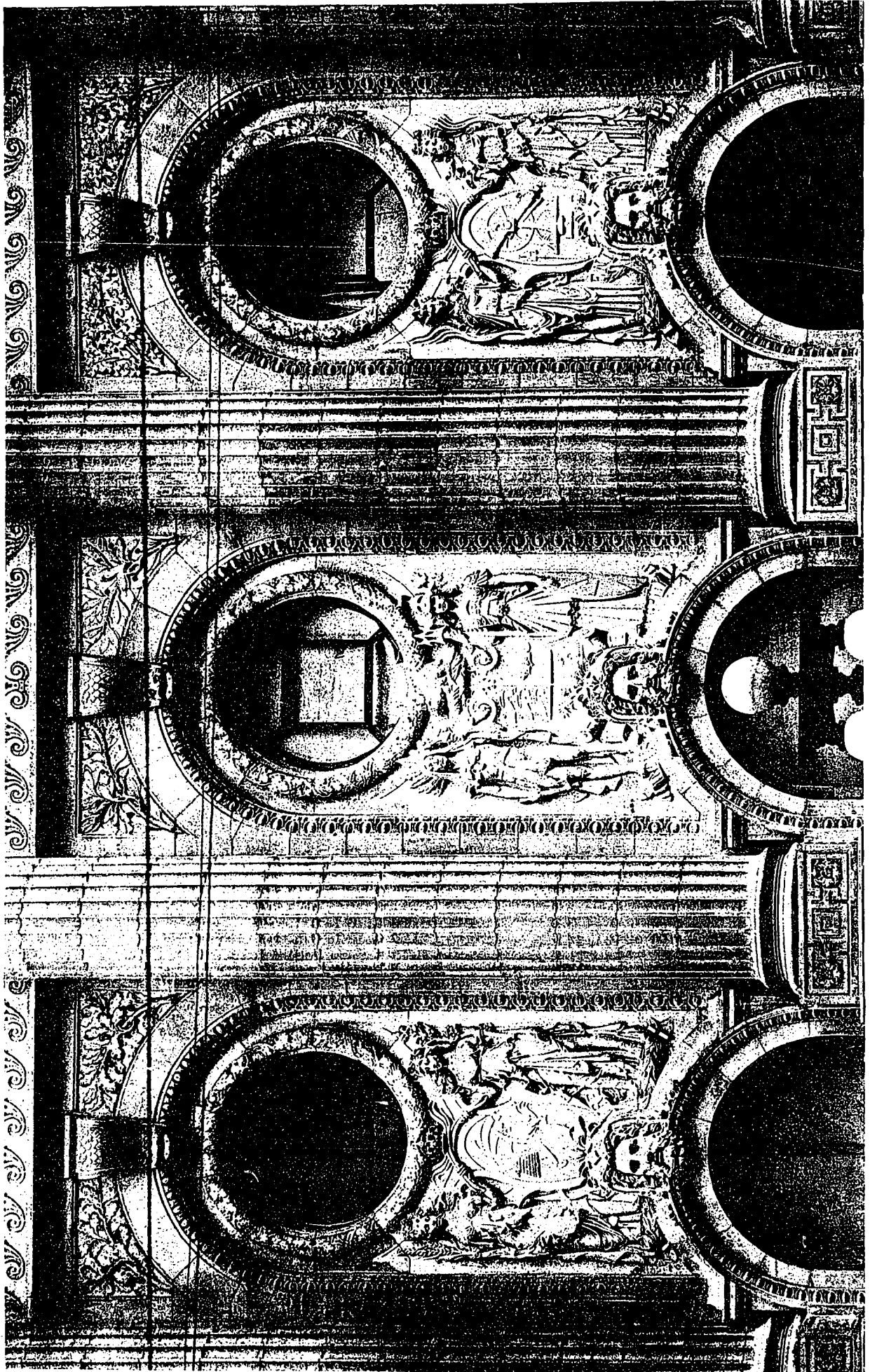
Over the middle entrance on King street is carved the civic arms of Toronto. The former coat of arms of the Province of Ontario rests between the figures of an Indian and Britannia. Beneath are the words "Intelligence, Industry and Integrity." The group to the left is symbolical of the agricultural pursuits of Canada. A shield containing the plow, scythe, beehive and rooster is graced on either side by figures which carry grain, fruit and flowers. To the right is depicted the mechanical pursuits with the scientific shield separating two figures with fire-brands and having the word "Enterprise" beneath.

The building is entered from King street through three cast bronze double-faced door grilles which lead to the main banking room through the vestibule, and from Bay street to the elevator lobby and large public space. These entrance doors are swung on steel pivots with bronze bushings and operated with ornamental lever handles which control concealed bolts. Directly inside of the panelled grilles are light single-action doors with large panels of clear glass encased in cast bronze frames. The three double doors leading from the vestibule into the main banking space have glass panels set in ornamented bronze chased on both sides.

One of the charming bits of architecture is the main vestibule. Designed throughout with Cenerre marble, it is a



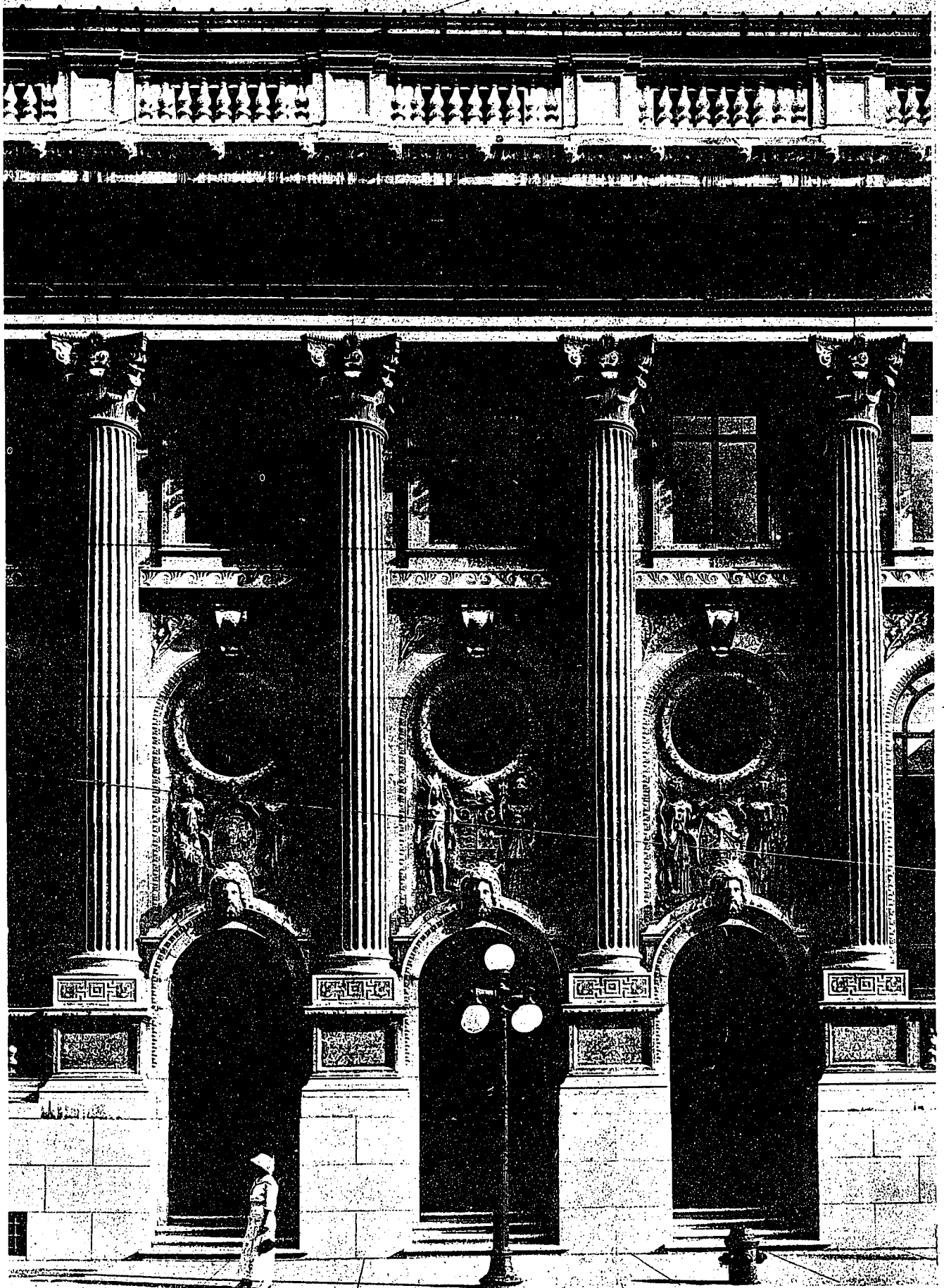
VESTIBULE STANDARD.



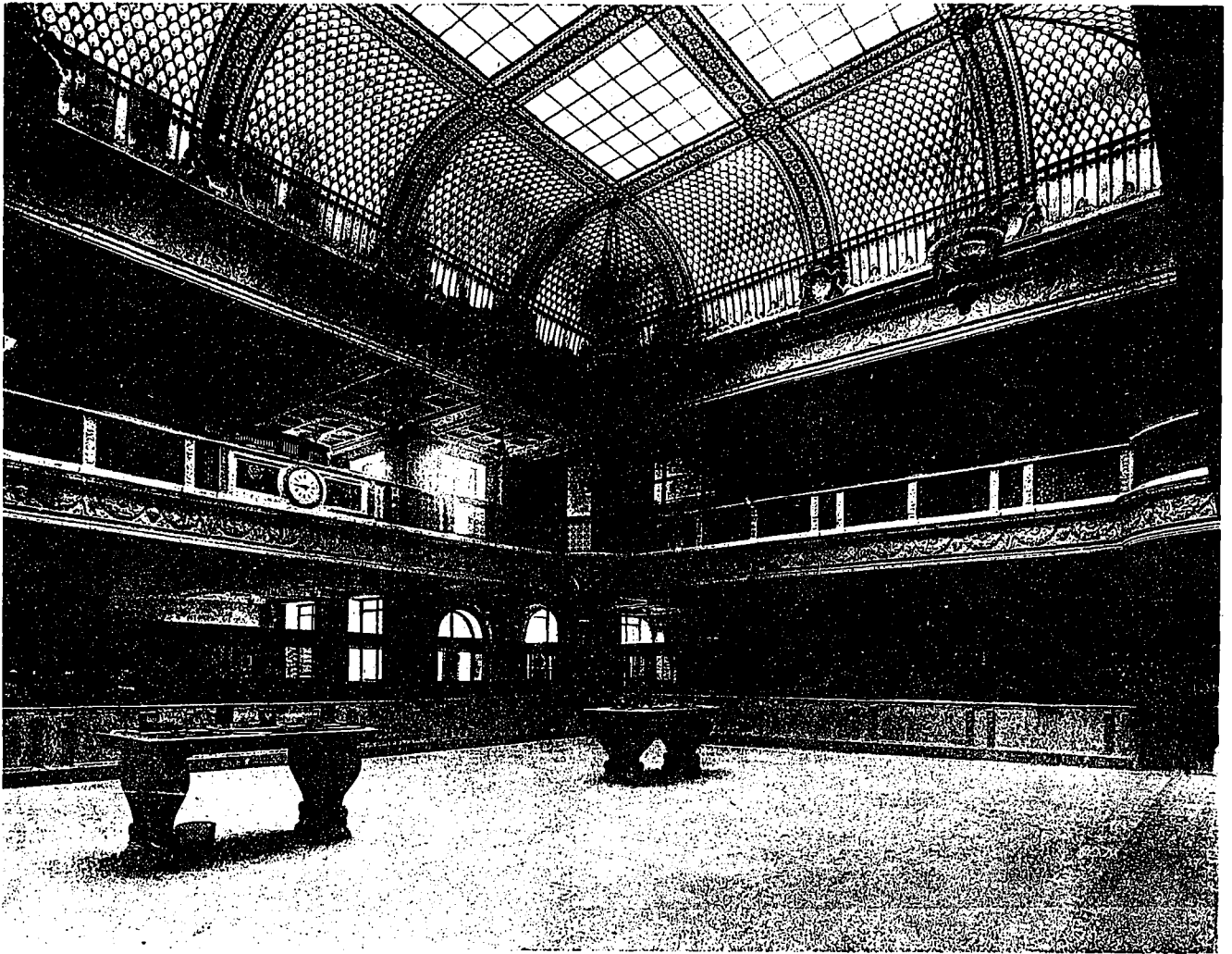
DETAIL OVER MAIN ENTRANCE.

THE BANK OF TORONTO, TORONTO.

CARRERE & HASTINGS AND EUSTACE G. BIRD, ARCHITECTS.



DETAIL OF MAIN ENTRANCE.
THE BANK OF TORONTO, TORONTO.
CARRERE & HASTINGS AND EUSTACE G. BIRD, ARCHITECTS.



MAIN BANKING ROOM.

harmonious introduction into the large space beyond. The ceiling is vaulted with richly ornamented soffits in the archways. At each end is a solid bronze standard of six lights with the detail in low relief hand chased.

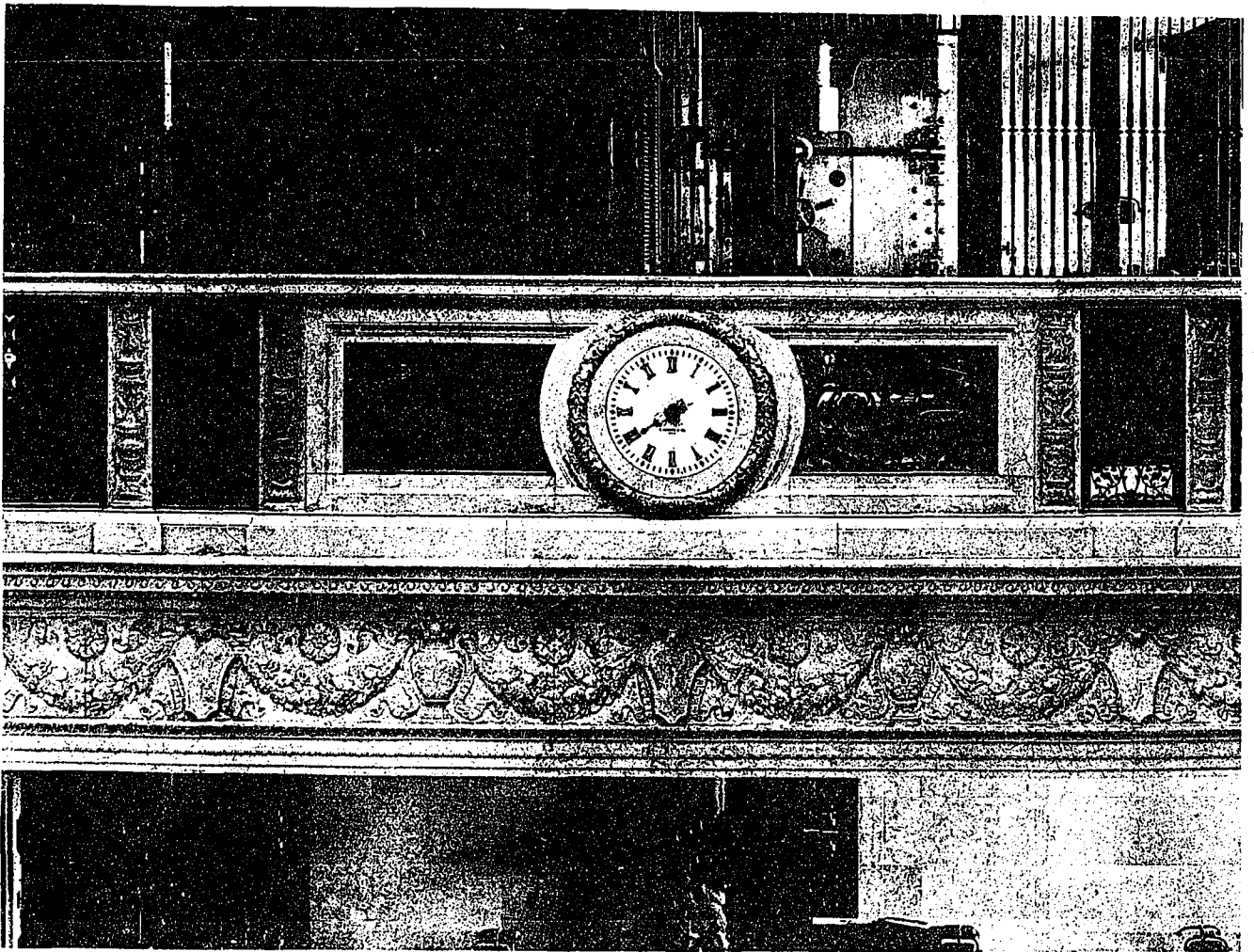
Unquestionably the greatest impression is made upon entering the public banking space. Spacious in every direction, rich in marble and bronze, attractive in tinted and decorative marbles, it creates a pleasing effect. The floor consists of large Hauteville marble squares surrounded on the street sides by an elaborate border made up of the following marbles—gray convent Siena, red Numidian, Jasper rouge and Hauteville. Counters have been planned around three sides of the large open space unbroken by any structural feature which only tends to give the impression of a larger area than really exists. The counters are of Vrdello marble harmonizing perfectly with the Botticino which decorates the wall surface.

This public room rises three stories, the second being a mezzanine floor and protected by a marble and bronze balustrade of extreme richness. Upon two sides are plain artistic clocks set in a circular band of marble which in turn are surrounded by bronze wreaths. The whole panel effect is enhanced by two elaborate bronze designs set on either side of

the clock. The frieze, exquisite in design and execution, adds to the ornamental panels of bronze directly above which are separated by delicately carved pilasters.

The third story, consisting of a dome of cast bronze and muffled cathedral glass, is the striking feature of a pleasing effect throughout. Constructed so that all supports are invisible from below, it lifts the eye upward to a field of pale amber whose outline is a white cathedral glass. The ribs and portions between are perforated and glazed with art glass. Weighing sixteen tons, the dome is supported with steel rods fastened to the trusses above and attached to the centre rings of the intersections of the main ribs carrying the entire upper portion. Above the dome and on a level with the fourth floor is a roof garden floor consisting of glass bull's eyes set in lead rings with concrete support.

Four sixty-light electroliers hang from the bronze dome. These semi-indirect fixtures have a centre bowl of Italian alabaster, specially carved, with a diameter of 3 feet 6 inches, while the metal crown of hand chased bronze finished in gold is 5 feet. The height from the bottom to the crown is 15 feet 6 inches. The balcony is lighted by eighteen alabaster ceiling fixtures finished in bronze and gold. Each one has six lights and in conjunction with the



DETAIL OF BALCONY RAIL, MEZZANINE FLOOR.

four large electroliers furnish a strong and wholesome illumination.

The main stairway leading from the banking room is executed in Botticino marble and double-faced cast bronze. This feature carries out the chaste and delicate character of the interior treatment. All structural parts are of wrought iron and steel designed to sustain a live load of one hundred pounds to the square foot in addition to the materials themselves. The stairway accommodating the Bay street entrance from the ground to mezzanine floor is of Botticino marble excepting the balustrade, which is of solid bronze. Above the mezzanine floor are wrought and cast iron risers, balustrade and tread supports with marble treads and bronze rail.

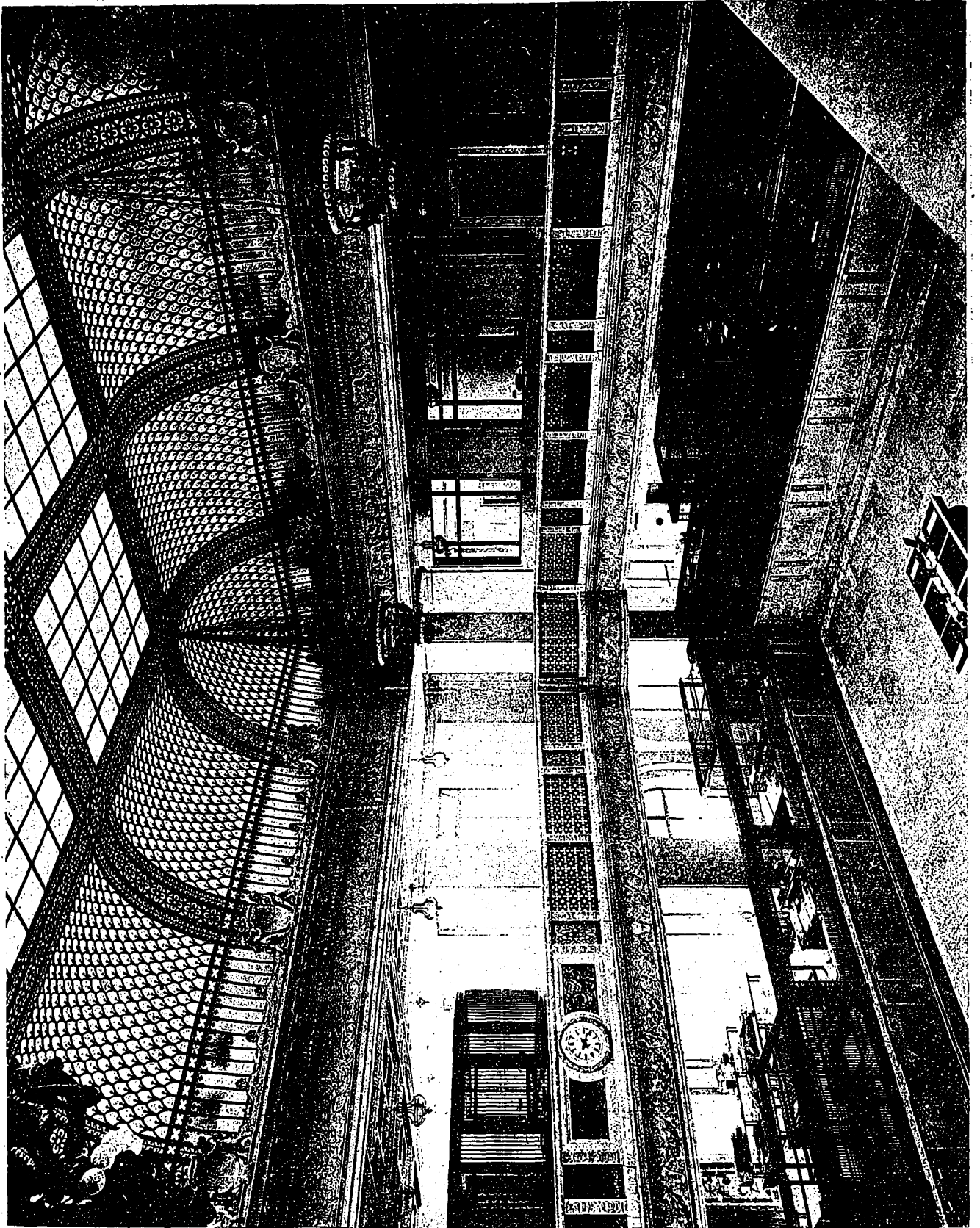
The large banking room windows, twenty-one feet high and six feet nine inches wide, are made of ornamental cast bronze panels, and the best British polished plate glass. Care was taken in order to secure the maximum amount of light which necessitated special heavy gun-metal sections in order to obtain the required strength. Fixed sash is used throughout excepting the two centre parts, which are arranged to swing inward. The casements have ornamental bronze hardware of a harmonizing chocolate bronze finish.

The assembly room is elaborately finished throughout. Above the base and floor border of

gold and black marble are French walnut panels carried to the ceiling and matched so as to lend a charming effect. Between the windows and directly opposite are hand tooled brackets of two lights each. The ceiling is enriched by a patterned design in moulded plaster which is relieved by lights in clusters of five, each one cast, hand-tooled and finished in Vernis gilt. Upon the floor is a red hand-tufted English carpet, nine by fourteen feet, covering an oak flooring of herringbone pattern and parquet border. The furnishings of the room consist of a French walnut table richly carved by hand and eighteen arm-chairs upholstered in red pigskin leather.

The weekly board room is also finished in French walnut. The walls are paneled, each division being practically square and making three divisions between the floor and ceiling. Oak strips and oak borders with narrow strips of black walnut around the edge make up the flooring, which is covered by a red hand-tufted English carpet, thirty-one by ten feet, with no design except a formal border pattern. The large table is of French walnut, also the chairs, which are upholstered in pigskin leather.

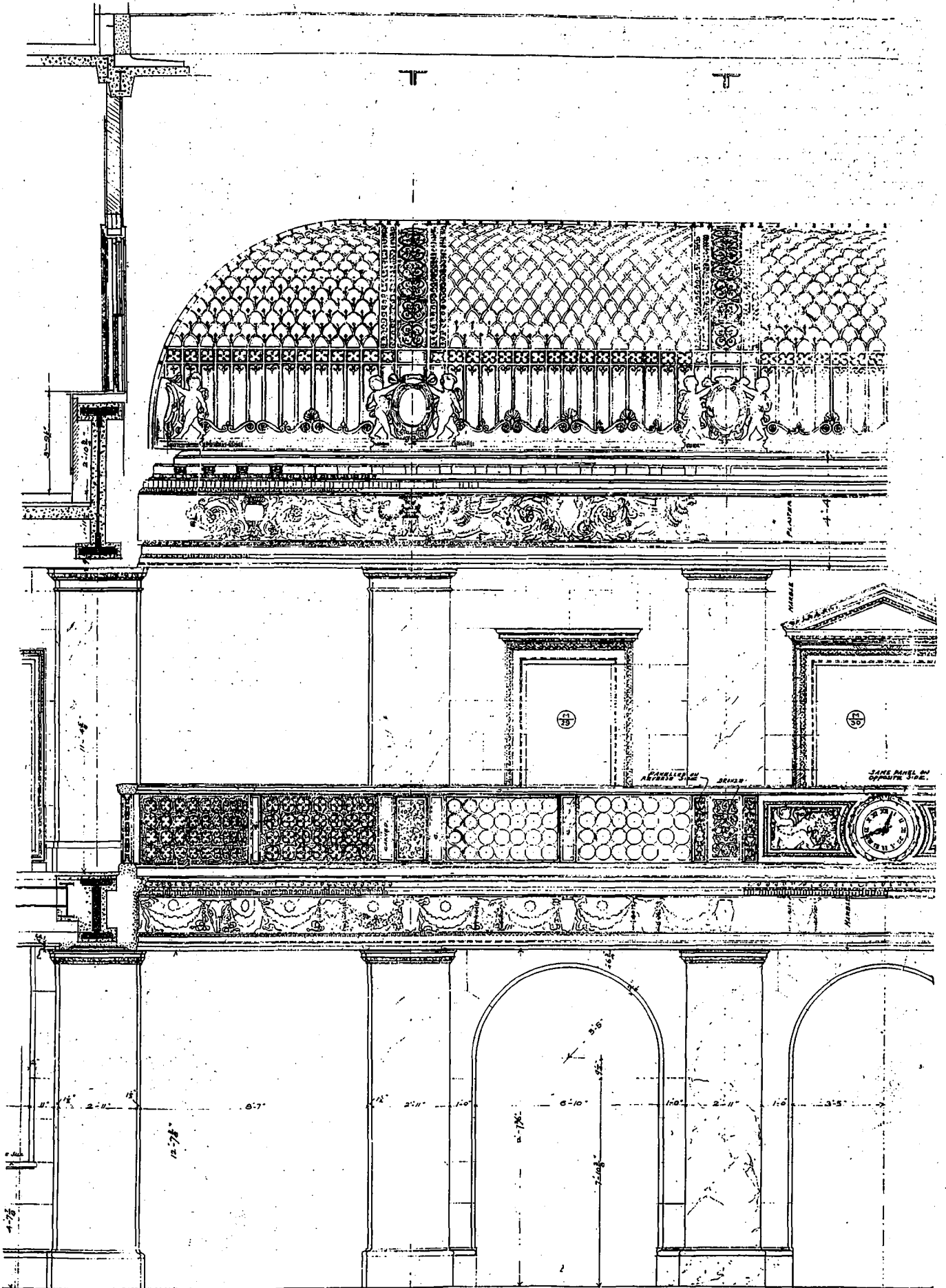
Other rooms are finished in quarter-cut oak floors with parquet borders, walnut dadoes, etc. The president's and manager's suites, however, are designed in quarter-cut Austrian oak, which material is used for the carved arm-chairs and settee. All



VIEW OF
MAIN BANKING
ROOM.

THE BANK OF
TORONTO,
TORONTO, ONT.

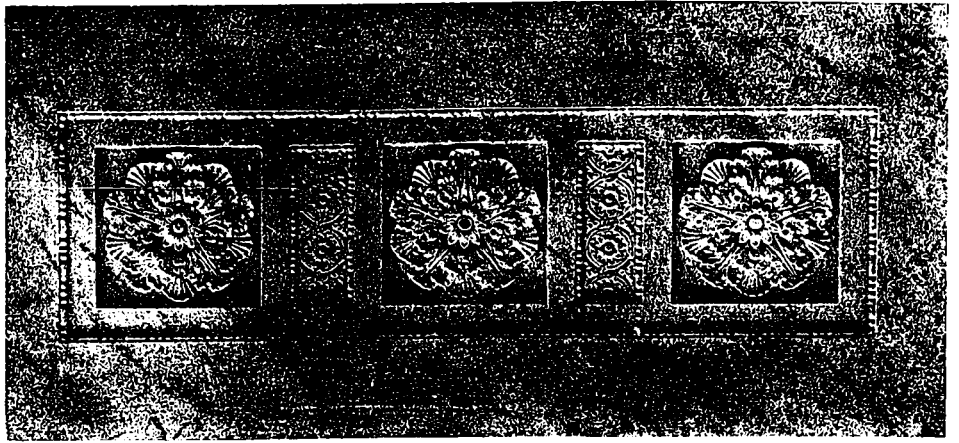
CARRERE & HASTINGS
AND
EUSTACE G. BIRD,
ARCHITECTS.



SECTION THROUGH BANKING ROOM LOOKING TOWARDS KING STREET
 THE BANK OF TORONTO, TORONTO.
 CARRERE & HASTINGS AND EUSTACE G. BIRD, ARCHITECTS.

fixtures are of hand-carved woodwork with a finish of gold leaf, the high lights being brought out by means of a polished finish with the shadows in a dull gold.

In the sub-basement is arranged the boiler room, engines, air cooling and purifying equipment, power house and engine room. The electrical equipment has been well established by means of a generating plant and auxiliary, the former consisting of four generators, two of 75 units and two of 25 units. The room itself is impressive in its cleanliness, the floor being of six-inch square red flint tiling and the walls of white enamel brick. Located at one side is a fifteen-foot switchboard of gray Tennessee marble. The loose cable work is eliminated by entering the feeders into a fifteen by three by four foot steel junction box where all cables reach their respective switches through bushed holes. Fifty-two telephones are established in the building, which are directly under the control of the bank's switchboard in a separate room that



DETAIL OF MARBLE PANEL.

provides also for the automatic air pressure messenger system.

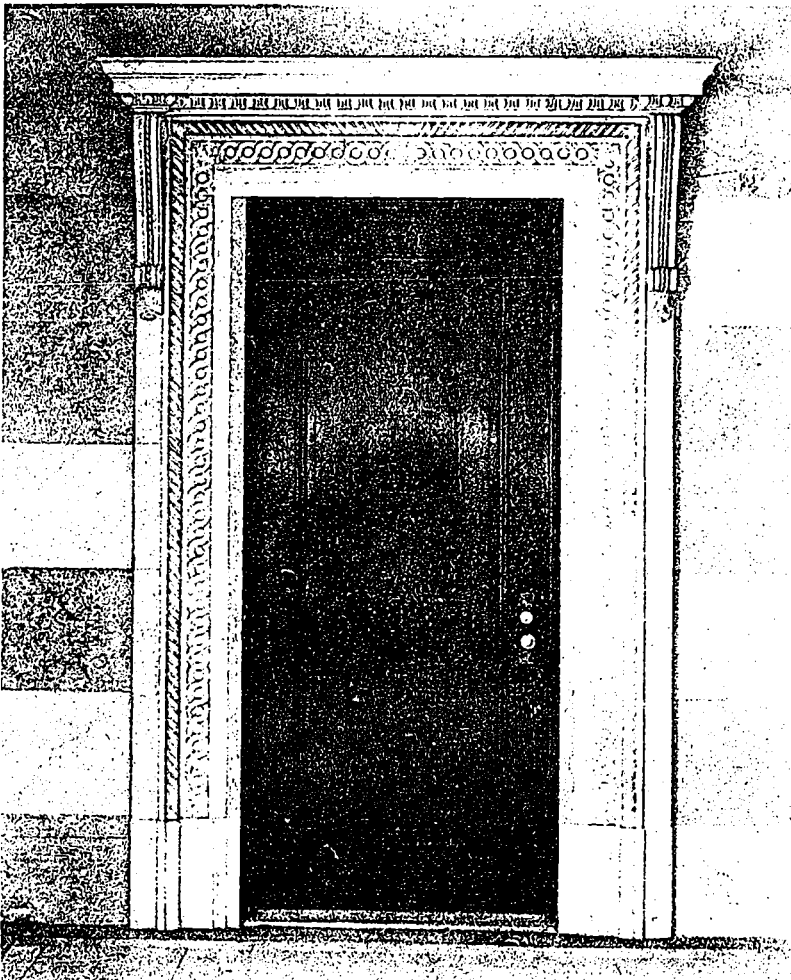
Seventeen clocks throughout the building are controlled by one master clock, guaranteeing an accurate time system. Two of the clocks are in the mezzanine balustrade and have marble dials sixteen inches in diameter. A solenoid switch from sixteen three-way, momentary contact, lock switches, controls the vacuum cleaning system which is placed in every room.

Concrete paving is used in the sub-basement with brick finish in boiler room and coal storage, cement elsewhere. The paving consists of a two-inch levelling course of concrete, eight inches of broken stone, two inches of coarse concrete screeded smooth, four inches of waterproofing, three inches concrete, and one inch of cement finish marked off in four-foot squares.

Special arrangement has been made for obtaining purified water and circulating same by means of a pump. The water passes through a filter upon entering the building, thence through a sterilizer where the water is heated and sterilized, after which it is automatically cooled.

Compressed air provided by a horizontal rotary blower operates the pneumatic tube system with its twenty-three stations. The capacity is thirteen cubic feet of air per revolution, and driven by a ten horsepower 400 r.p.m. motor.

Three passenger and one freight elevators have been installed. At the King street entrance is a hydraulic plunger elevator of two thousand pounds capacity and a speed of two hundred and fifty feet per minute with a twelve hundred pound load. The hydraulic elevator at Bay street has a capacity of twenty-two hundred pounds with a speed of three hundred feet per minute. Two dumb waiters are operated by a seven and one-half horsepower electric motor, one be-



DETAIL OF DOORWAY ON MEZZANINE FLOOR

ing used for service work, the other for a booklift.

Of unusual interest is the incinerator equipment for the destruction of worn-out currency. Located in the basement, it is built of steel with massive doors and smoke pipe. Directly inside the steel door is a cast iron heavily baffled door which opens into the reduction chamber measuring two and one-half feet in all directions and lined with fireclay blocks. Between this chamber and the next is a perforated arch through which small openings allow the products of combustion to pass and thence into a third chamber. The burner reaches twenty-eight hundred degrees of heat produced by gas with air supplied by an electric motor. A series of adjusting valves admit the necessary amount of gas and air for the work.

The boilers are provided with Dutch ovens in which the coal is coked before being admitted to the firebox, which eliminates all danger of smoke. A continuous flow of water is kept during the coking process in order to keep the coal from burning and all gases during the process are forced over the firebox, which aids in the work of combustion.

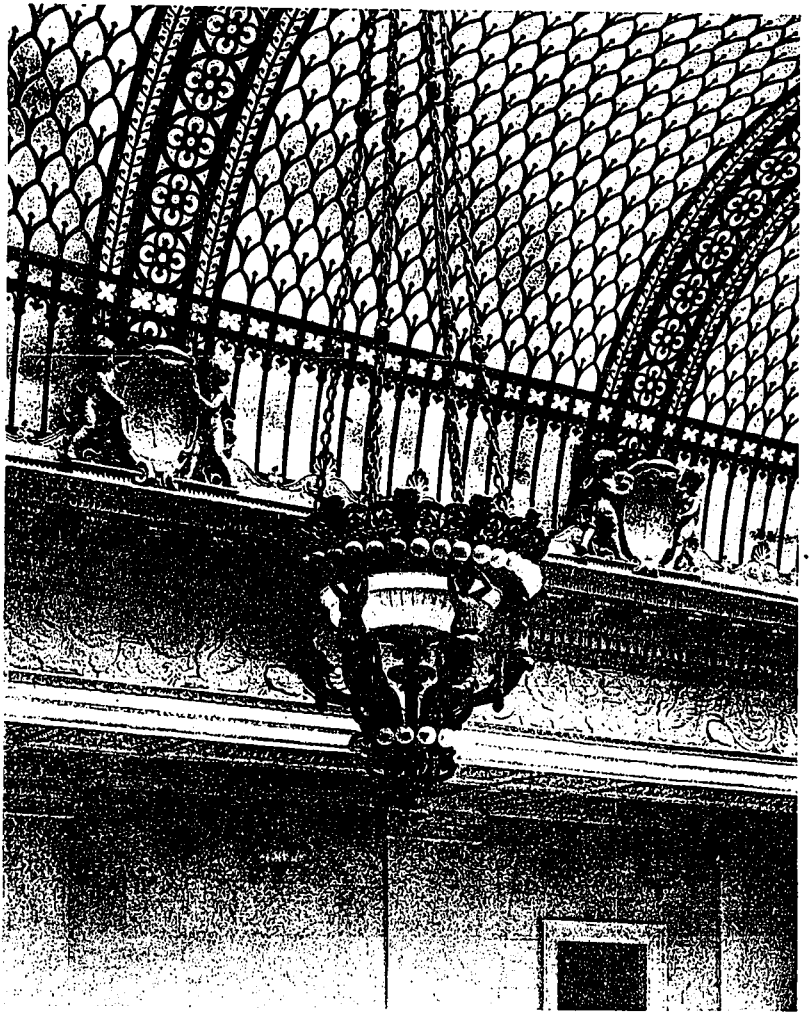
The engine equipment consists of two nine by ten-inch horizontal slide valve engines direct connected to the 25 kw. generators at 310 r.p.m.; also two thirteen by fourteen-inch horizontal slide valve engines direct connected to two 75 kw. generators at 275 r.p.m. The steam valves of these

engines are the straight line type scraped through and balanced against steam pressure by a heavy plate held away from the valve-seats by distance strips .002 in. thicker than the valve, thereby allowing it to move more freely. Double port openings in the valve allow the steam to enter the cylinder and exhaust quickly. The pistons are made as

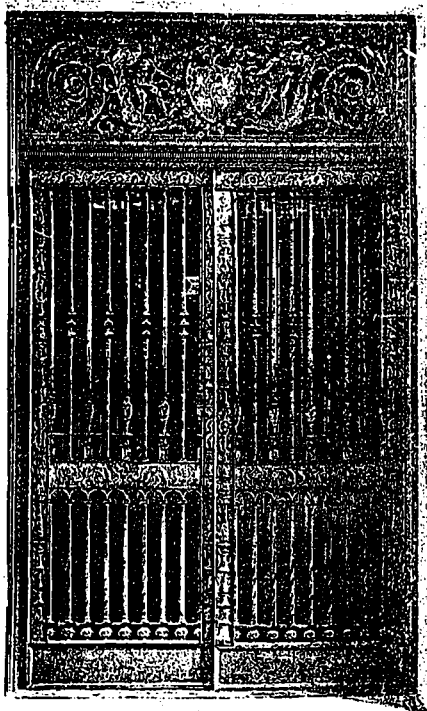
light as possible to prevent wear to the cylinder, and so that the piston may break before the cylinder or head in case of confined water.

The engines are equipped with governors, giving a throttling effect on light load and reducing range of temperature in the cylinder; also as the load becomes greater the initial pressure approaches full pressure in steam pipe, giving a steam distribution well adapted to economy in variable loads. The shaft bearings consist of interchangeable removable shells which may be adjusted while the engine is running. The oiling system consists of positively driven pump attached to the crank pin which draws oil from the base and distributes it through the pipes to the bearings. The regulation of these engines is one per cent. from light to full load.

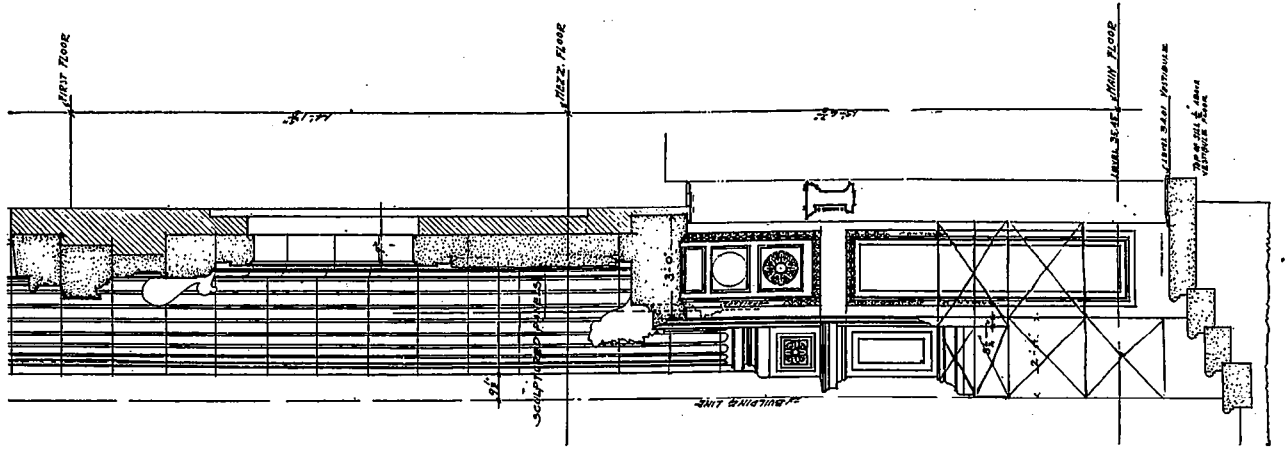
Woodwork upon the interior consists of white pine first quality for the sash; Georgia yellow pine comb grained for pulley stiles and mullions; white pine for linings and finished with oak; quarter sawn white American oak first quality for interior finishings throughout the basement, ground, mezzanine, first and second floors excepting the janitor's quarters, which have plain oak; quarter-cut white American oak first quality for all floors excepting janitor's quarters and second floor offices, which have plain cut red oak. The sleepers consist of three by four-inch chestnut pieces placed twelve inches on centres



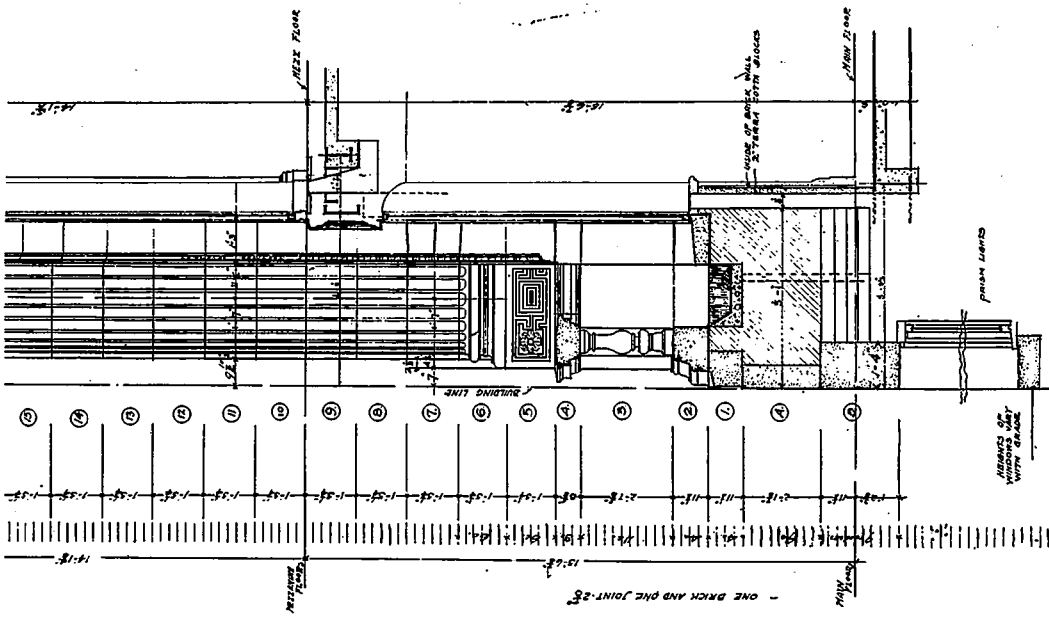
DETAIL OF ELECTRIC FIXTURE, MAIN BANKING ROOM.



BRONZE ELEVATOR GRILLE.



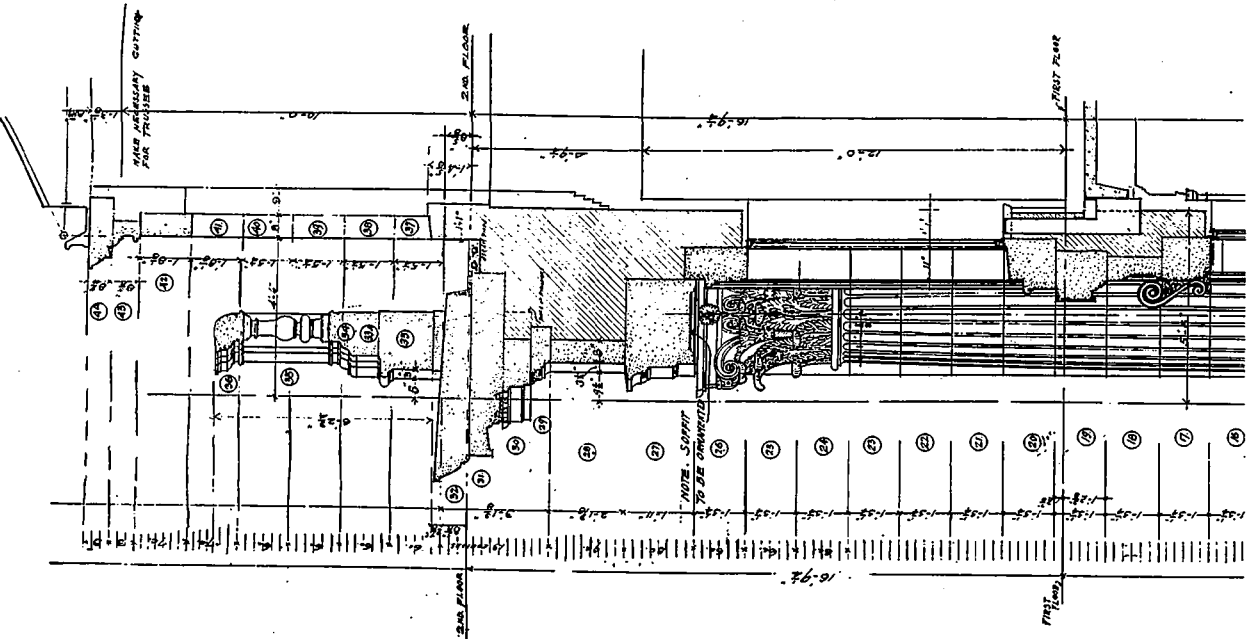
SECTION, BAY STREET ENTRANCE.



TYPICAL SECTION, LOWER PART.
EXTERIOR DETAILS.

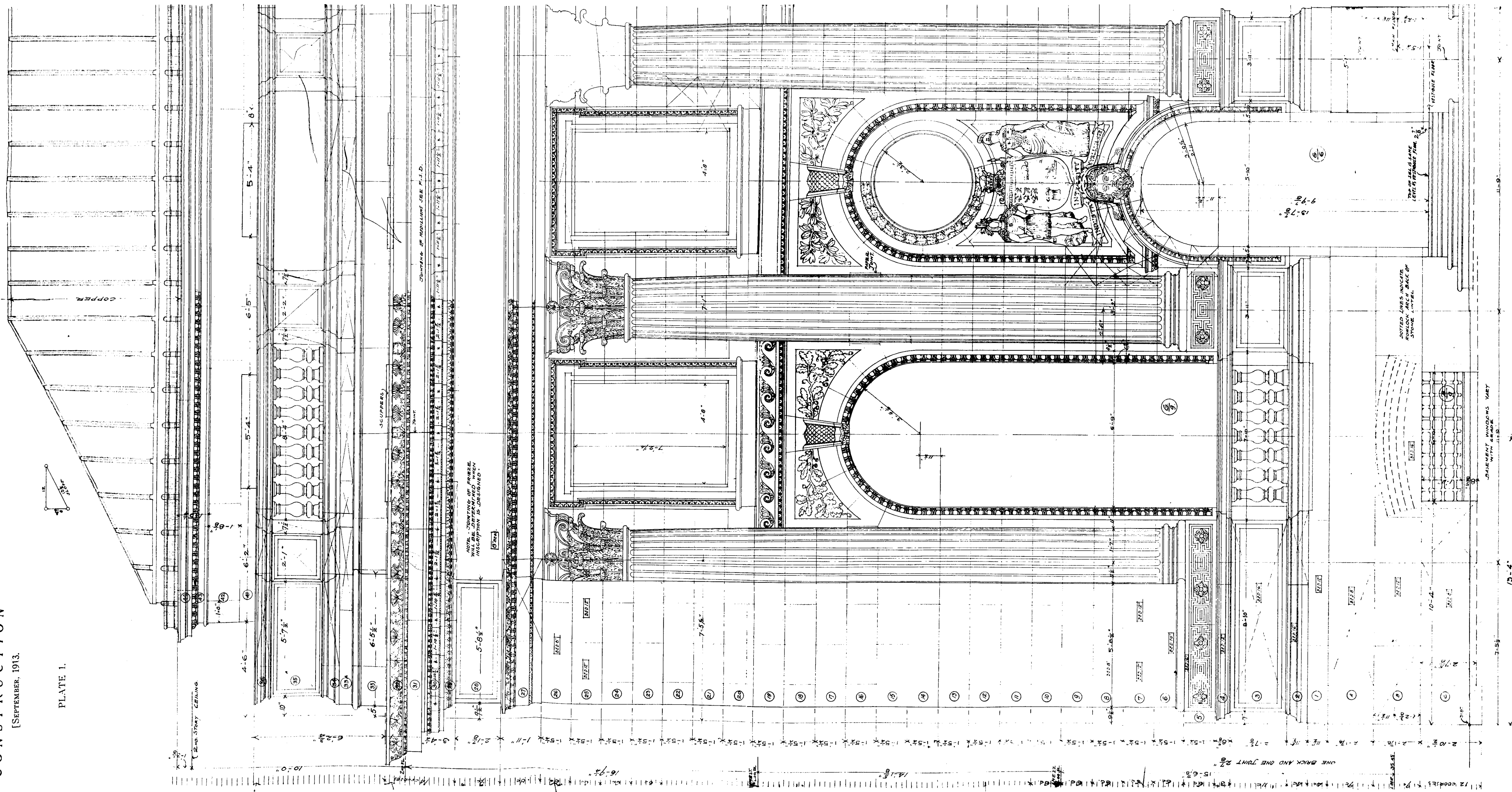
THE BANK OF TORONTO, TORONTO.

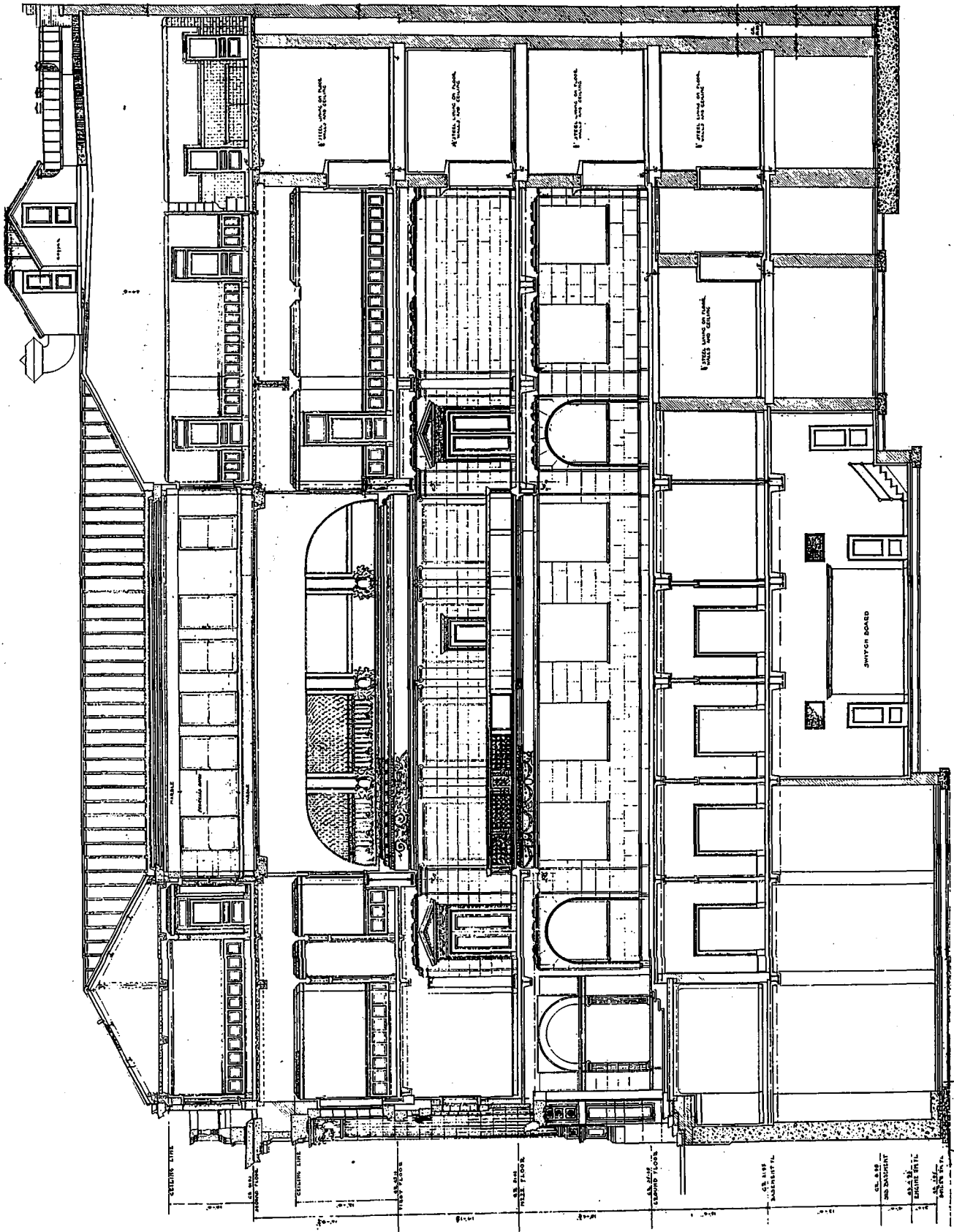
CARRERE & HASTINGS AND EUSTACE G. BIRD, ARCHITECTS.



TYPICAL SECTION, UPPER PART.

PLATE I.

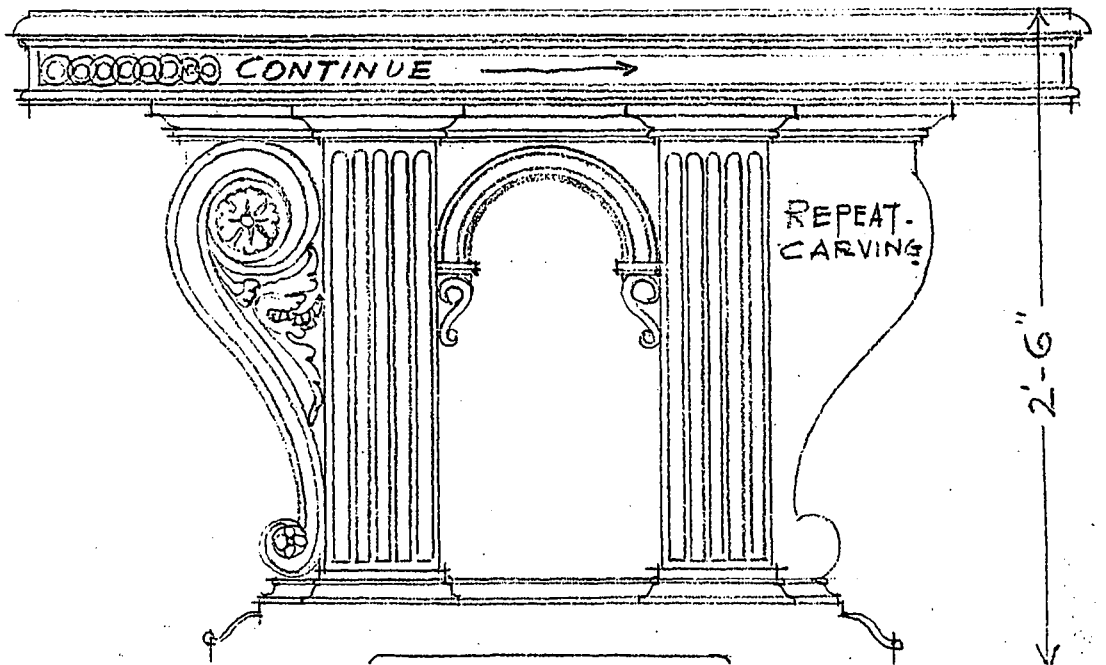
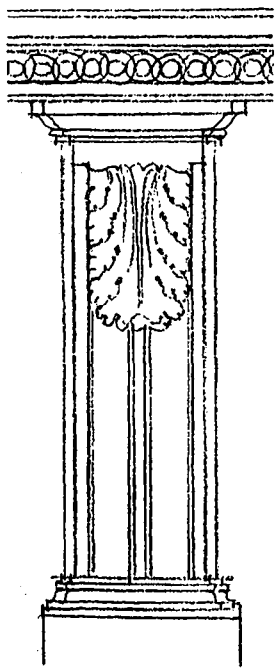
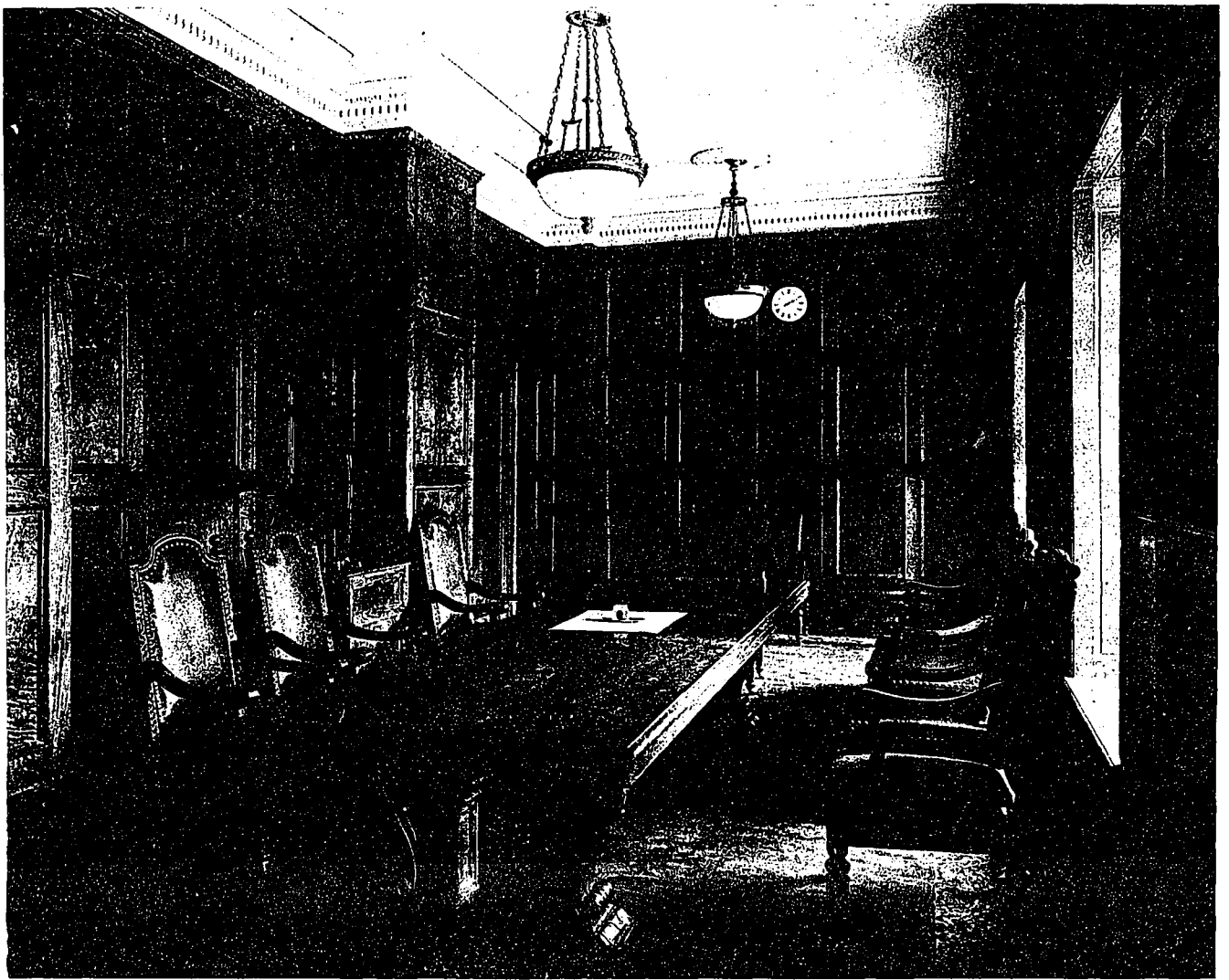




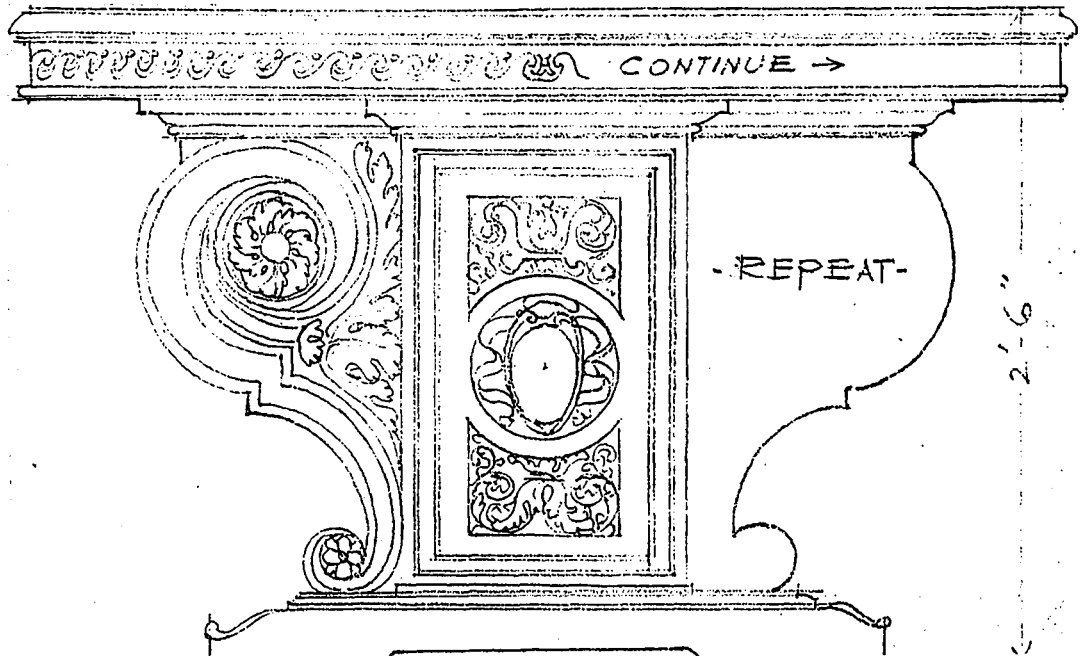
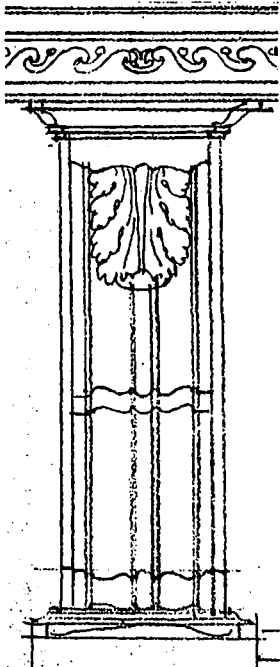
BANK OF TORONTO, TORONTO.

LONGITUDINAL SECTION.

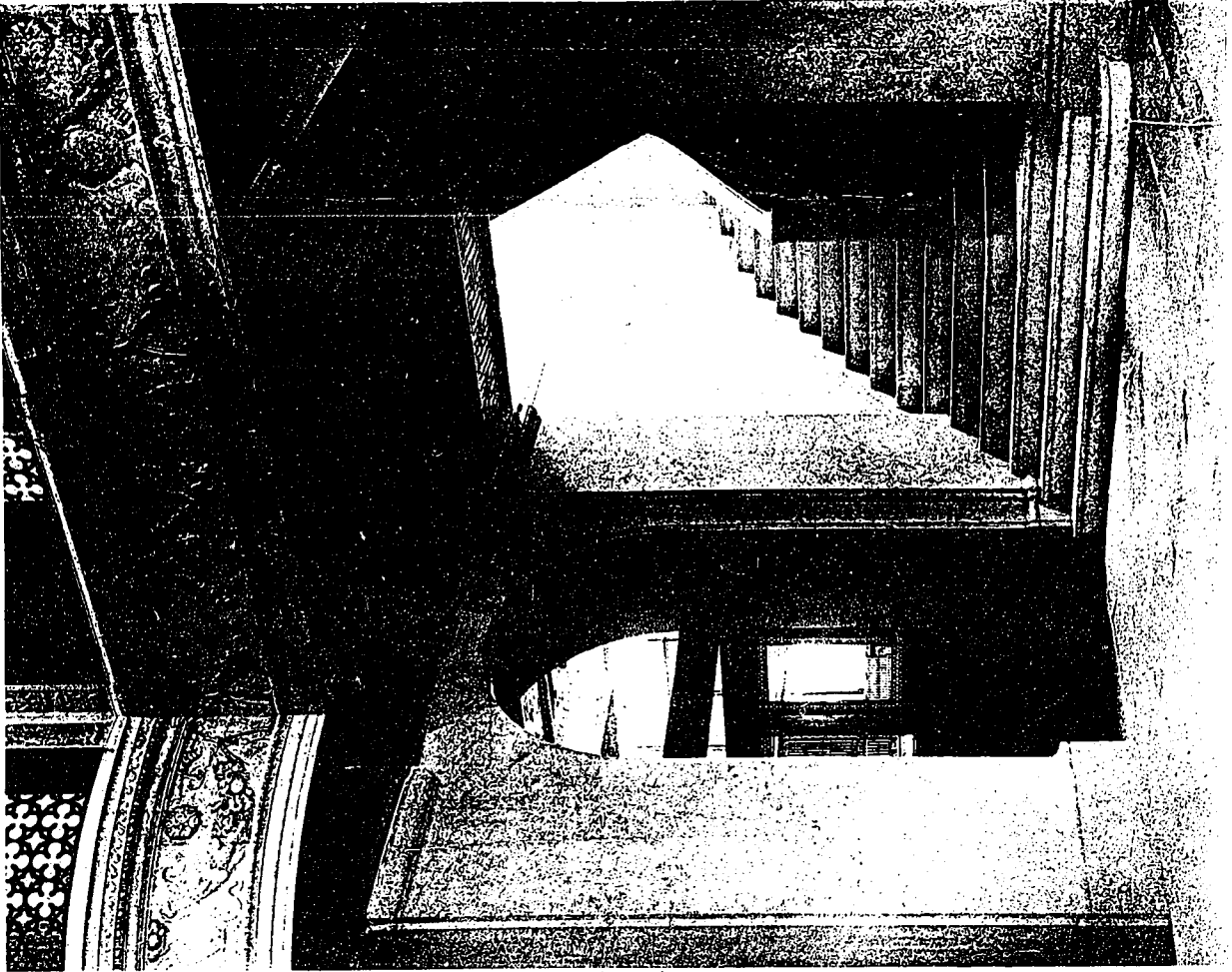
CARRERE & HASTINGS AND
EUSTACE G. BIRD, ARCHITECTS.



THE WEEKLY BOARD ROOM AND DETAIL OF TABLE.
THE BANK OF TORONTO, TORONTO.
CARRERE & HASTINGS AND EUSTACE G. BIRD, ARCHITECTS.



THE ASSEMBLY ROOM AND DETAIL OF TABLE.
THE BANK OF TORONTO, TORONTO.
CARRERE & HASTINGS AND EUSTACE G. BIRD, ARCHITECTS.

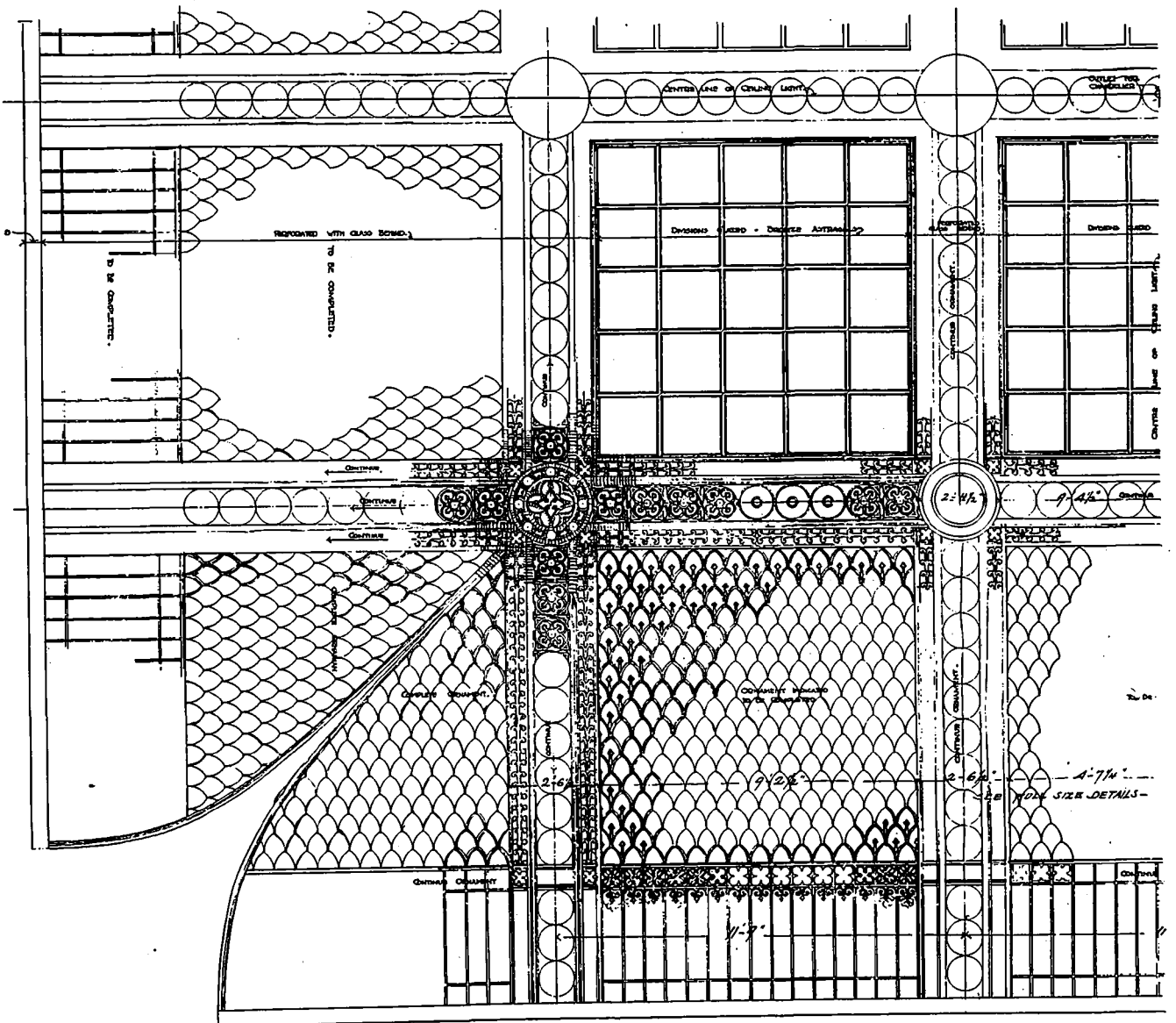
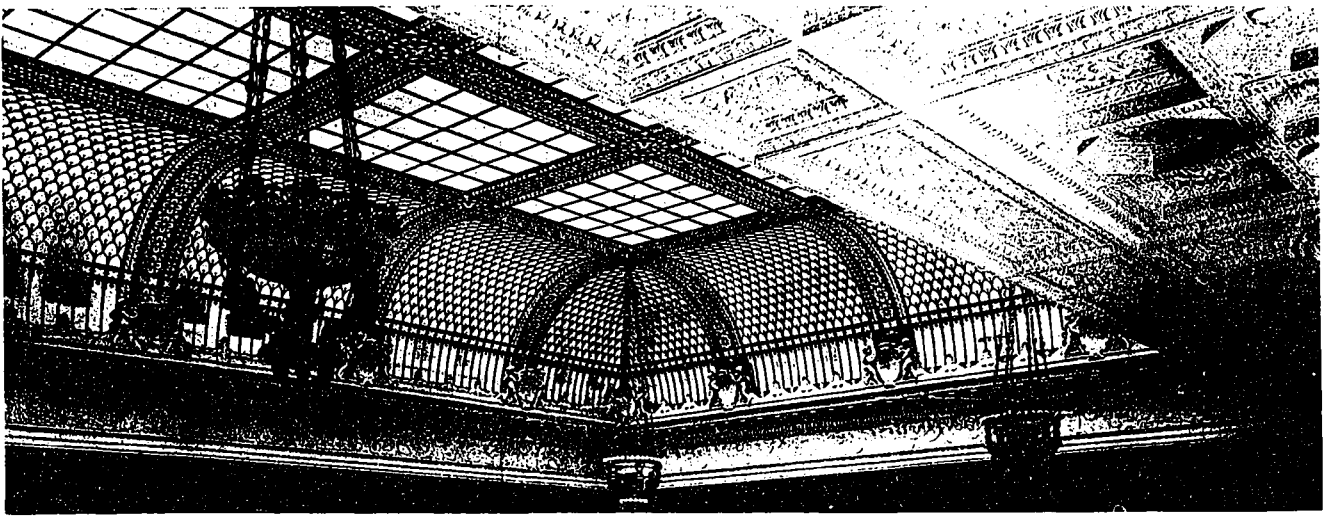


MAIN STAIRWAY.



MAIN BANKING ROOM.

THE BANK OF TORONTO, TORONTO.
CARRERE & HASTINGS AND EUSTACE G. BIRD, ARCHITECTS.



DETAILS OF BRONZE CEILING IN MAIN BANKING ROOM.

THE BANK OF TORONTO, TORONTO.

CARRERE & HASTINGS AND EUSTACE G. BIRD, ARCHITECTS.



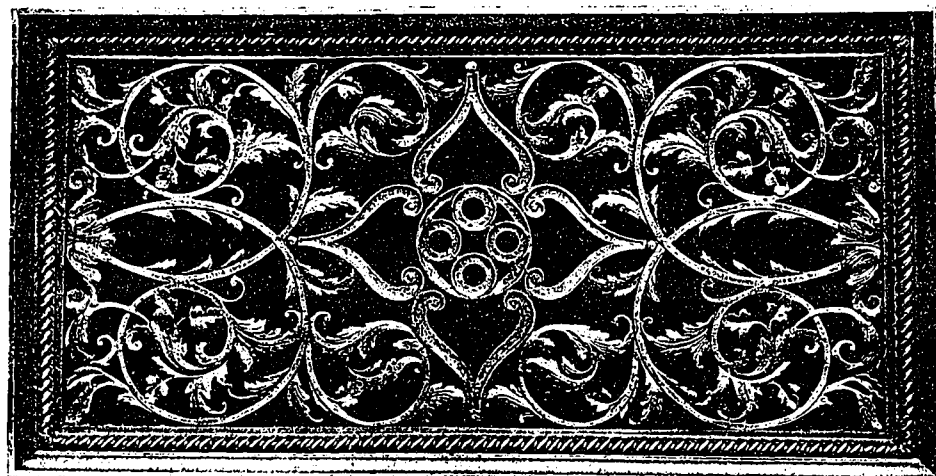
BRONZE DETAIL IN MEZZANINE BALUSTRADE.

properly framed about all openings and filled in with cinder concrete.

The exterior frames, excepting those of bronze and iron, are covered with heavy sheet copper. All door frames in the basement, sub-basement and leading to the roof, are kalameined with sixteen-ounce copper. Interior wood frames are one and one-quarter inch thick, the oak frames having a veneering of one-quarter inch. Doors leading to toilets are one and one-eighth inch thick, four feet six inches high with solid panels, and set ten inches above the floor. The doors to electric panel board and telephone junction boxes are one and one-quarter inches thick, paneled with a removable plate glass panel on back so arranged that a schedule of switches can be placed behind same.

A general wood base twelve inches high occurs throughout the building, arranged for running wires behind a movable member. Chair rails one and one-half inch by four inches are provided for all walls above basement, together with double picture moulding.

The manager's department on the ground floor, the assembly room and visitors' room, have seven-



BRONZE DETAIL IN MEZZANINE BALUSTRADE.

eighths parquet floor borders and fields of herringbone pattern. The general manager's, president's, vice-president's, weekly board, conference and directors' lunch rooms have seven-eighths by two-inch quarter-cut white oak strips with parquet borders two feet wide. All other floors throughout the building have white American oak strip flooring with oak strip borders and herringbone mitering at the angles, excepting the top floor offices, which are finished with plain oak strips without borders, and the janitor's department, of Georgia pine.

The space behind the counters on the ground floor and at the back of the mezzanine gallery are finished with nonpareil cork tiling one-half inch thick and cut in blocks of twelve inches square securely laid on a concrete bedding.

Suspended ceilings are constructed of one and one-half by one and one-half by three-sixteenths steel angles twelve inches on centres suspended from steel beams and concrete by hangers placed three feet apart. The general furring has one and one-eighth by three-sixteenths plate iron bars twelve inches on centres with cross bracing of steel angles.

All oak wood before being finished has been fumed, filled, stained, shellaced, rubbed down, varnished, re-rubbed with pumice stone and oil. Oak floors have been filled, finished with two coats, rubbed down, waxed and polished.

All glass is one-quarter inch British plate glass highly polished; glass for tank and fan houses, also facing the court yard, is wire mesh; glass in office doors and transoms is ground with marginal lines.

The standing marble for ashlar work is seven-eighths inch thick; floor marble one and one-eighth inch; slab work for wall linings seven-eighths inch; lavatory stalls and partitions one and one-quarter inch.

Terrazzo work consists of Siena, Numidian and white Italian marbles laid in cement mortar and rubbed to a glossy surface. The tile is set in Portland cement, grouted and pointed in Keene cement, cleaned and polished.

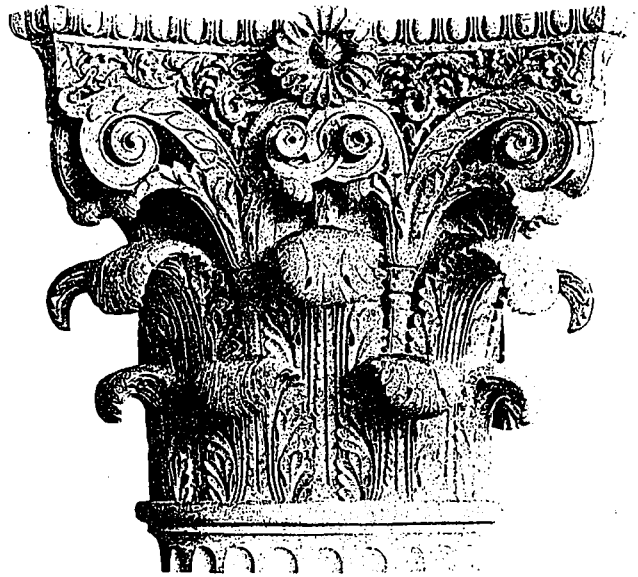
Ornamental bronze is used for the cove ceiling light over the public banking room, elevator grilles, main stairs and public stairs at Bay street entrance, balustrade around mezzanine well, entrance

door grilles and vestibule doors, basement window frames, fascias, and sash on first three floors. The bronze is composed of ninety per cent. copper and ten per cent. zinc.

The cove ceiling light is of solid cast bronze supported so as to allow the space between it and the roof free of material. In the main ribs the glass sheets are curved and designed to permit of a smooth surface to the back of the dome. At the back and around the edges is a sixteen ounce gutter reinforced with iron rods.

The window filling in partitions between the mezzanine gallery and the departments is of cast and wrought bronze. The frames, sills, transoms and mullions are of drawn bronze; the pilasters and ornamentation of cast bronze chased. The doors are of marble frames and jambs with bronze and British polished plate glass.

The four bronze entrance door grills, three on King street and one on Bay street, are of cast bronze, double faced, including the frames, transom bars and transom. The doors have corrugated cast polished bronze saddles reinforced with ribs and swing on steel pivots. Directly inside are light single action glass doors of gauge drawn bronze with reinforced brazed joints. The vestibule doors are of number



MARBLE CAPITAL, MAIN ENTRANCE.

edges with cross bars spaced three inches on centres. The ash hoist has double doors of one-quarter inch galvanized iron plate hung on brass hinges and safety guards, chain fastenings and device for operating the doors.

The gratings under the elevator shafts are of three-sixteenths by one and one-quarter inch bars spaced one and one-quarter inch on centres, bolted together at both ends. Corrugated steel fascias are provided at all floors in the elevator shafts, the metal inserted under the nosing of the saddles and finished at the ceiling level.

All exterior walls below grade are waterproofed in four layers except the pit and trench walls, which have six layers applied to outside surface of wall and protected by cement mortar one inch thick.

The building stands as an example of the best fireproof type, having steel frame floors of reinforced concrete, terra cotta partitions and copper roof laid on concrete supported by steel beams. The structure as it stands cost approximately \$1,350,000.



MARBLE FRIEZE IN MEZZANINE BALUSTRADE.

ten gauge bronze plate and cast bronze frames and edges with cast moulded panels around polished plate glass.

Basement windows on King and Bay streets have cast bronze window frames, including sills, with moulded hanging stiles and bed moulding; drawn bronze sash rabbetted meeting stiles reinforced.

Ornamental iron has been used for the guards to court windows and doors; grilles to openings leading to platform in engine room, window frames, stairs; ladders to roof; fascias at all floors in elevator shafts. All wrought iron has an ultimate tensile strength of fifty thousand pounds per square inch, and where ornamental is of heavy bars hand forged.

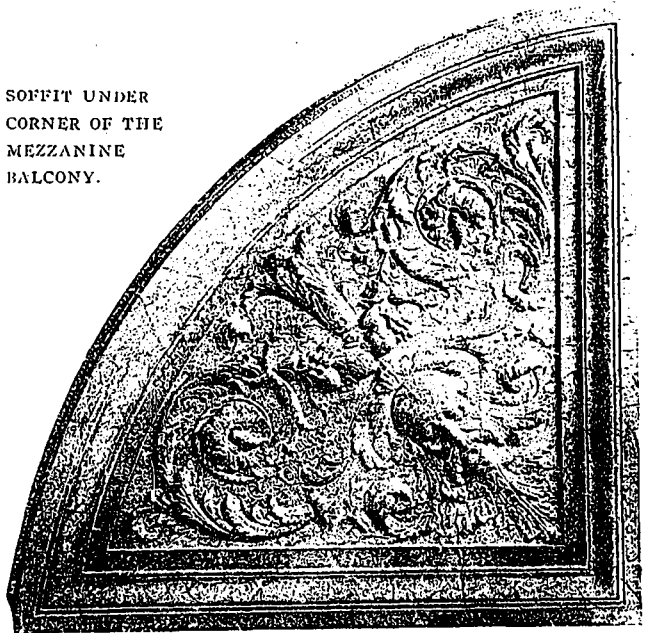
The guards to court windows and court doors are of one by one inch wrought iron, spaced four inches apart, let four inches into the masonry.

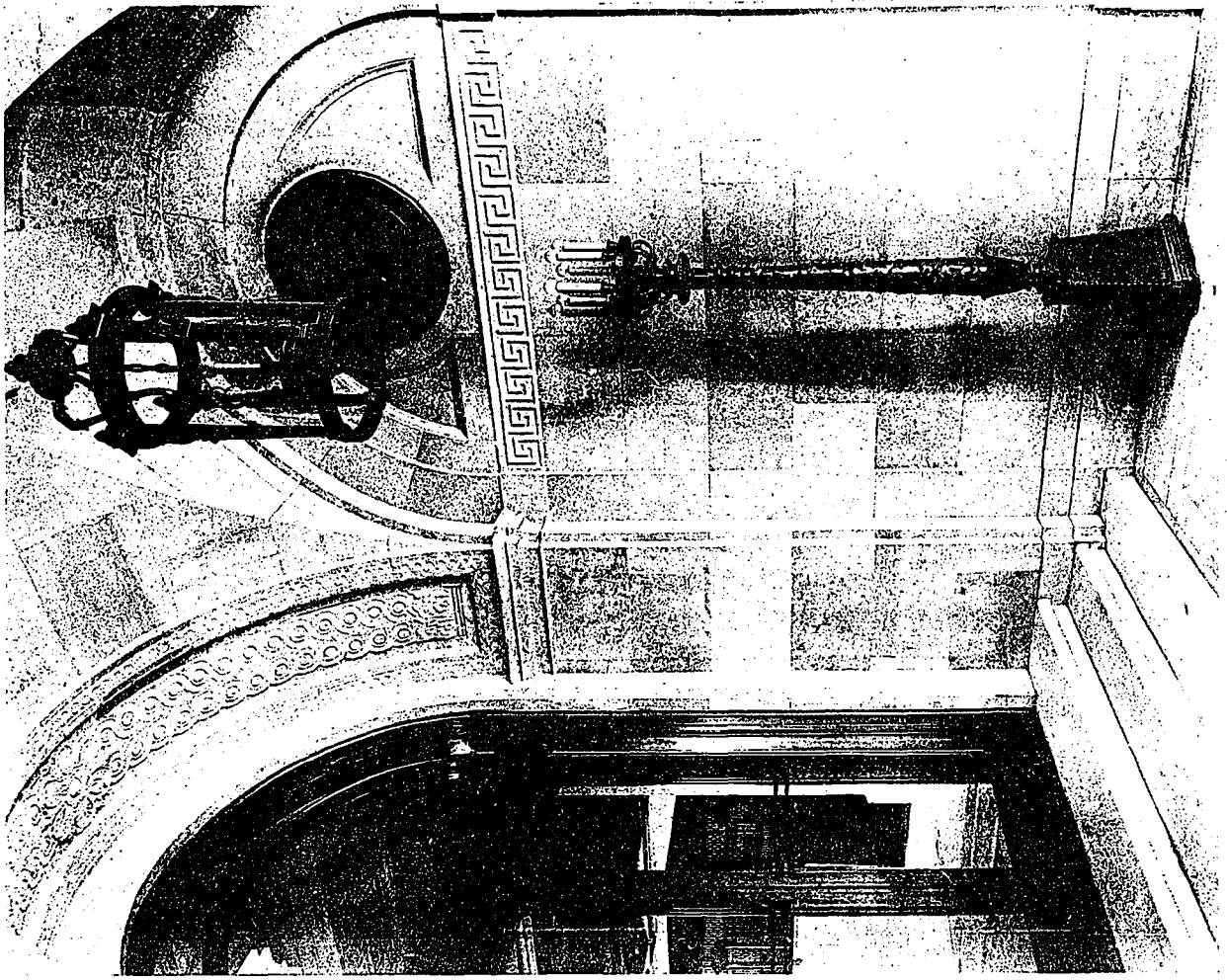
The iron windows are of wrought iron with one-quarter inch polished plate glass, and are complete with bronze hinges and fastenings.

Janitor's stairs run from the basement to top floor, and built to sustain a live load of one hundred pounds to the square foot in addition to the materials themselves. They have wrought iron strings, cast iron risers and one-eighth inch plate treads for marble support.

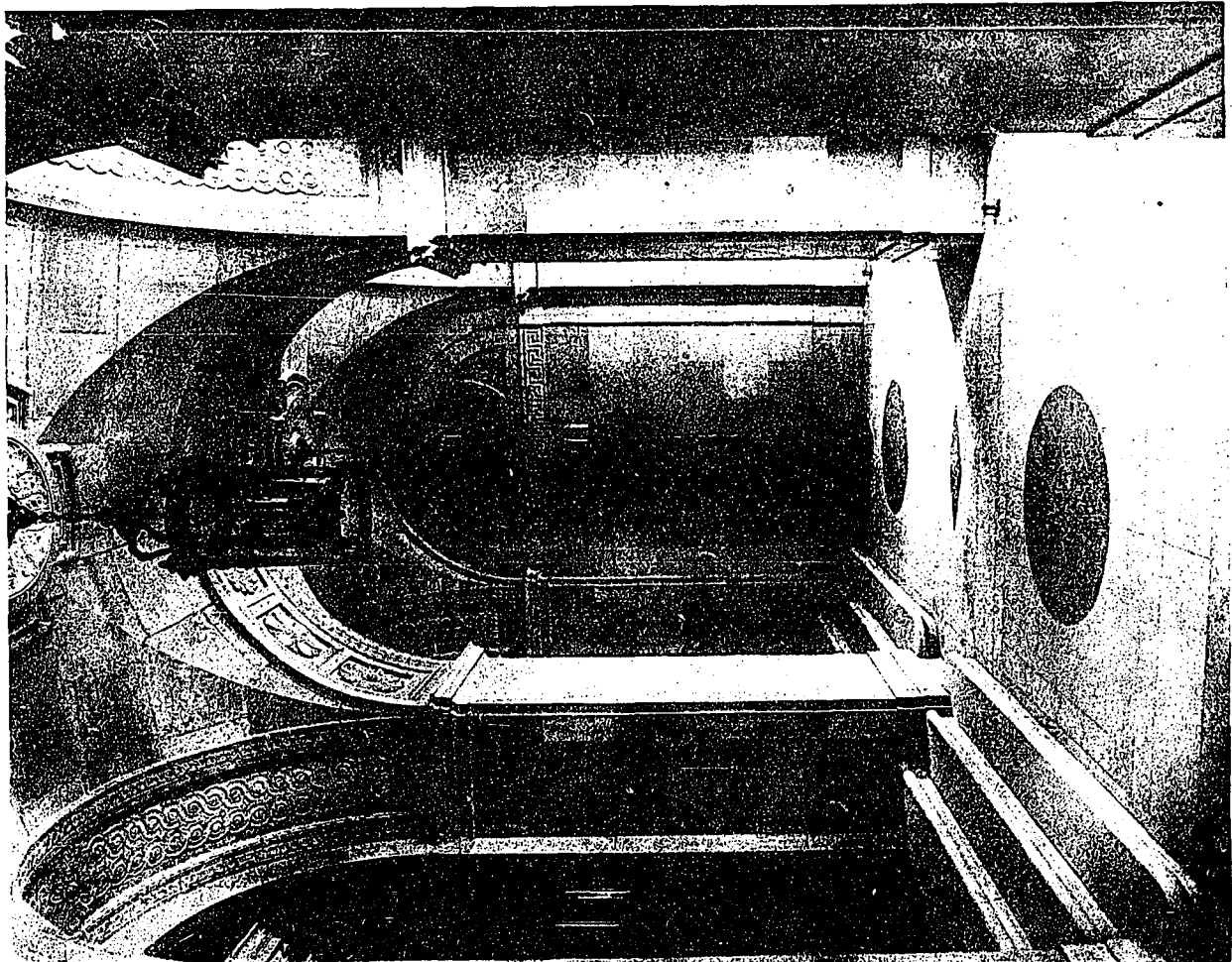
The iron doors at the entrance to court yard area are of three-sixteenths inch plate reinforced on all

SOFFIT UNDER
CORNER OF THE
MEZZANINE
BALCONY.



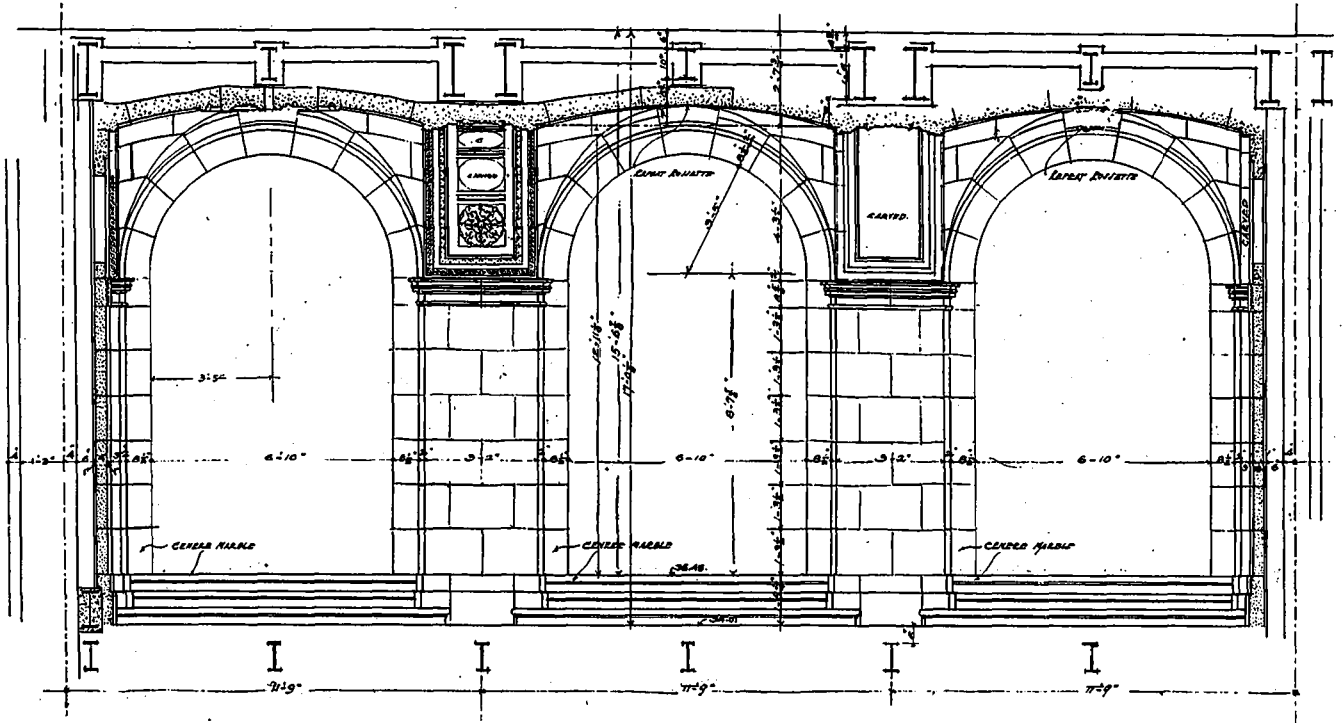


CARRERE & HASTINGS AND
EUSTACE G. BIRD, ARCHITECTS.

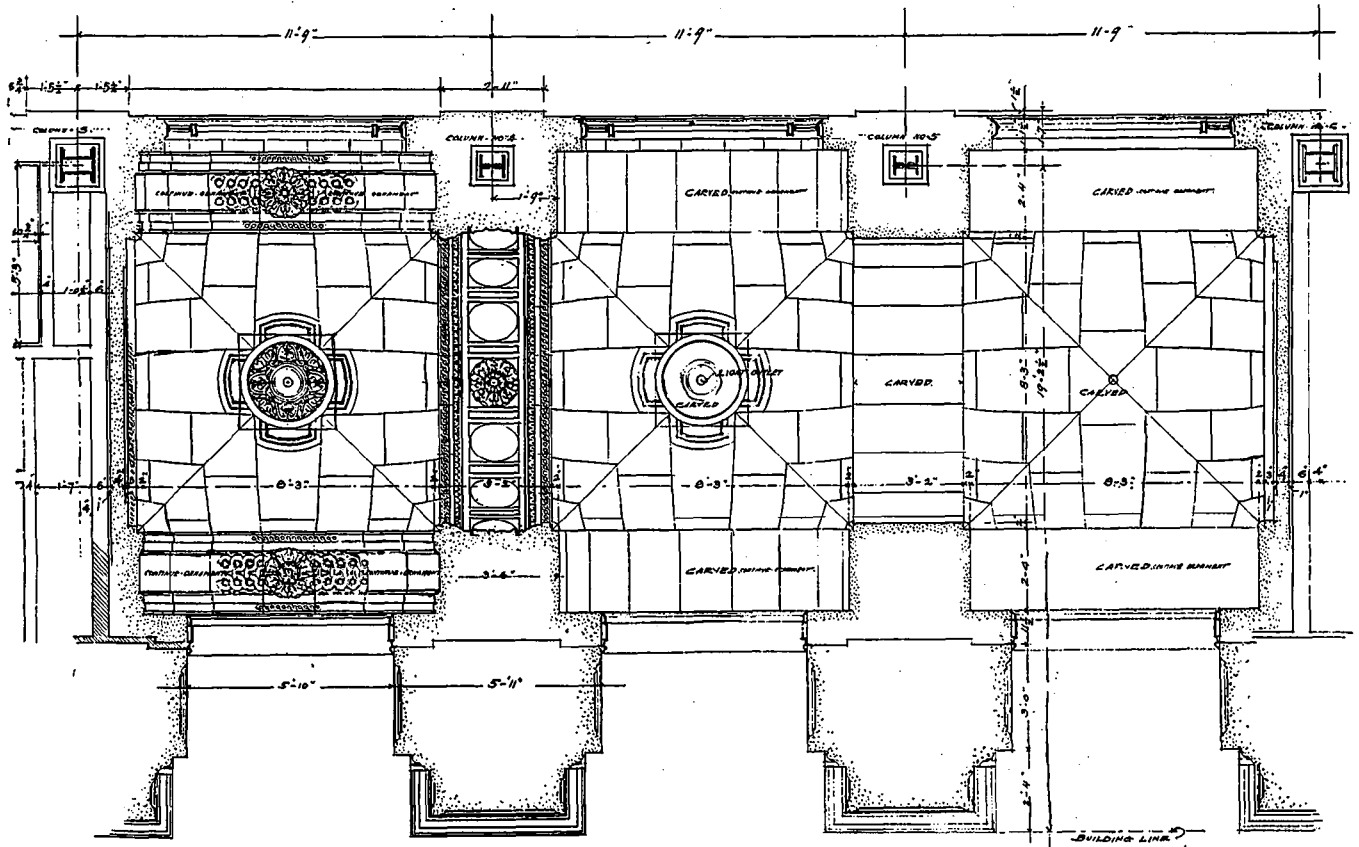


THE BANK OF TORONTO, TORONTO.

TWO INTERIOR VIEWS
ENTRANCE VESTIBULE



ELEVATION LOOKING TOWARDS BANKING ROOM

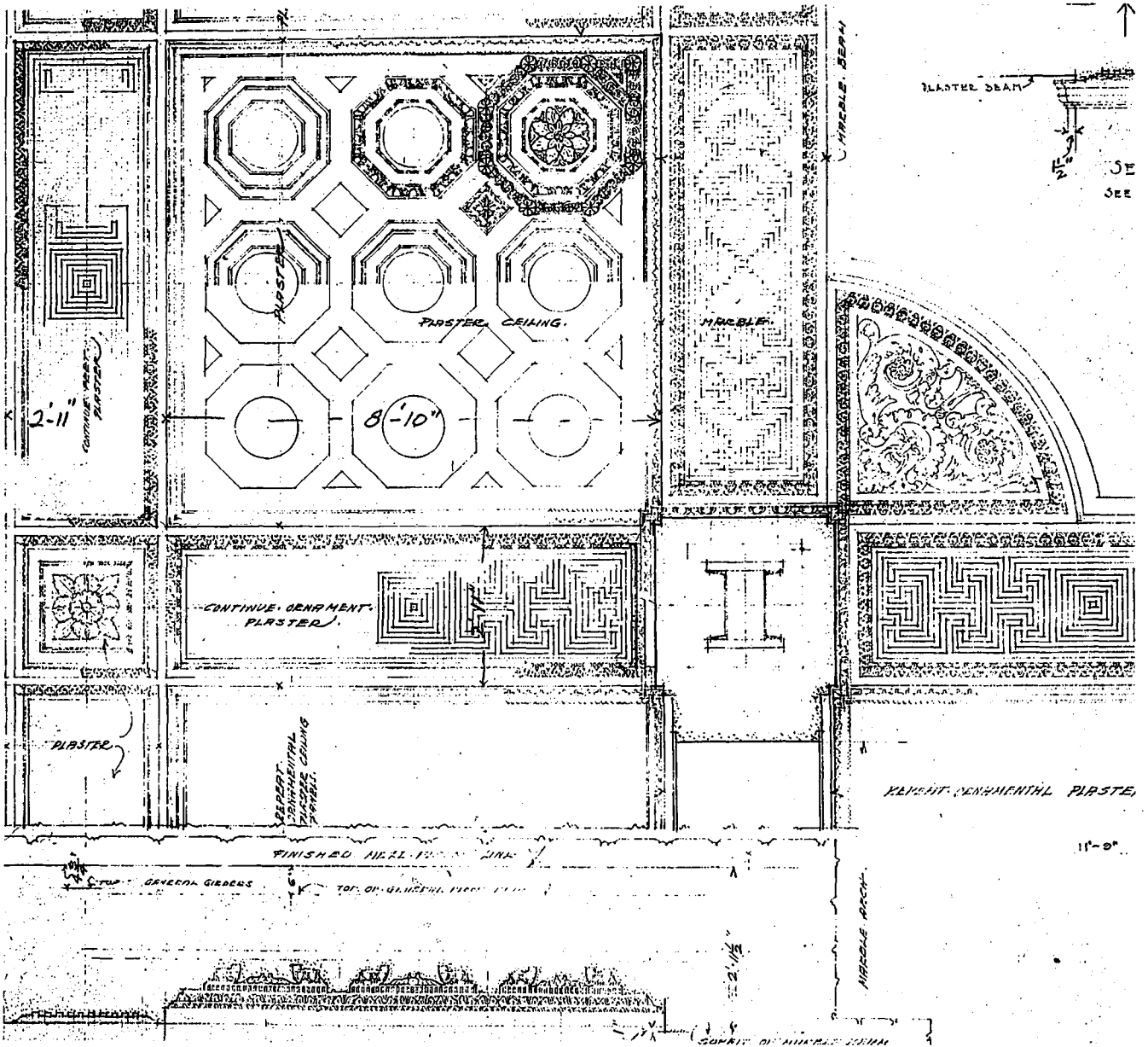
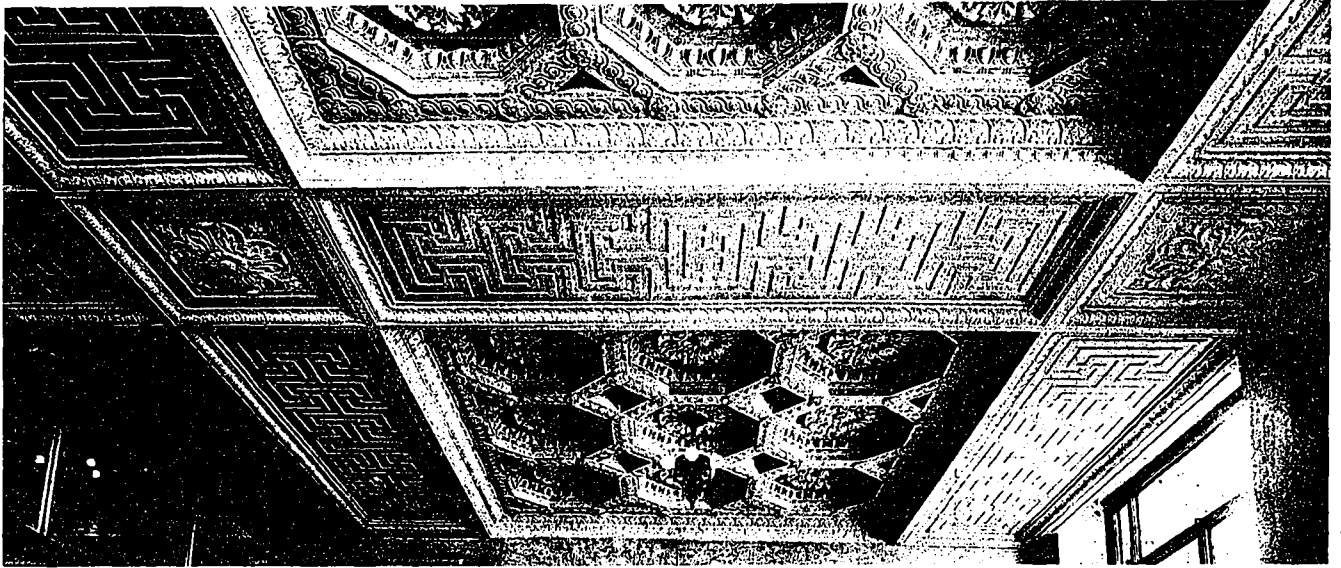


PLAN OF CEILING.

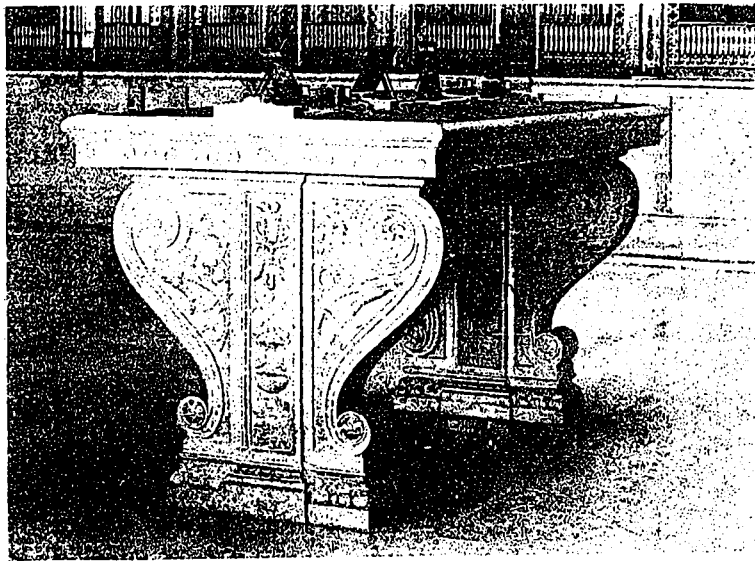
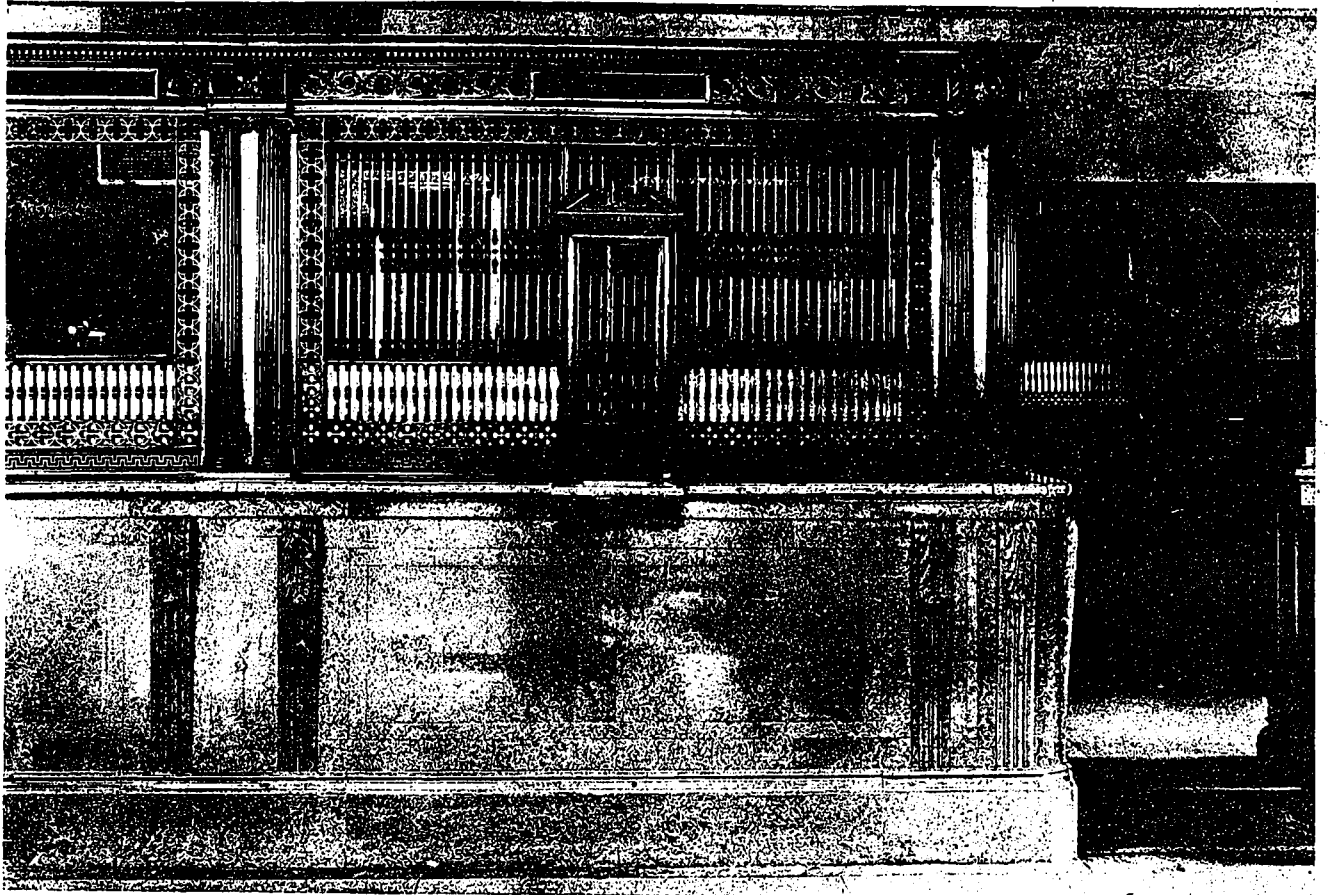
DETAILS OF ENTRANCE VESTIBULE.

THE BANK OF TORONTO, TORONTO.

CARRERE & HASTINGS AND EUSTACE G. BIRD, ARCHITECTS.



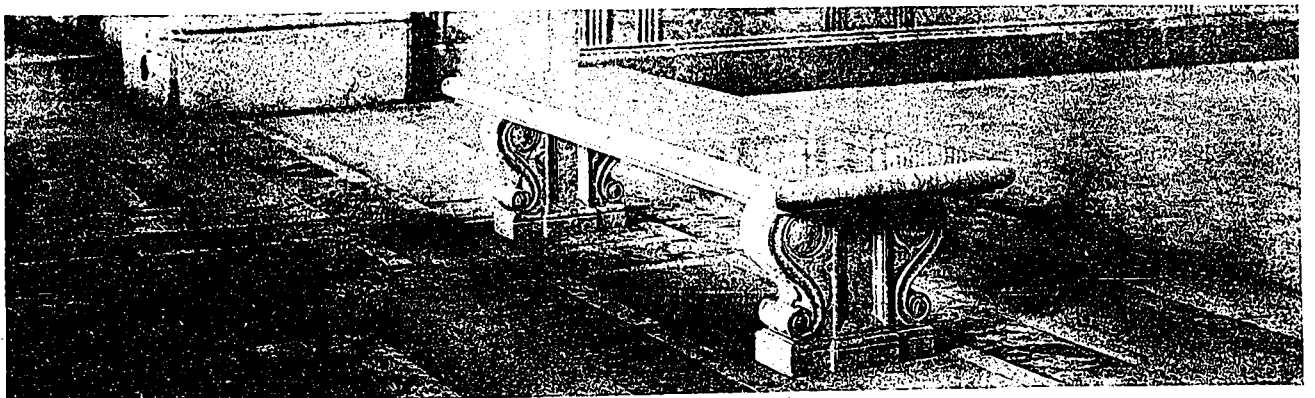
CEILING OF MEZZANINE FLOOR, MAIN BANKING ROOM.
 THE BANK OF TORONTO, TORONTO.
 CARRERE & HASTINGS AND EUSTACE G. BIRD, ARCHITECTS.

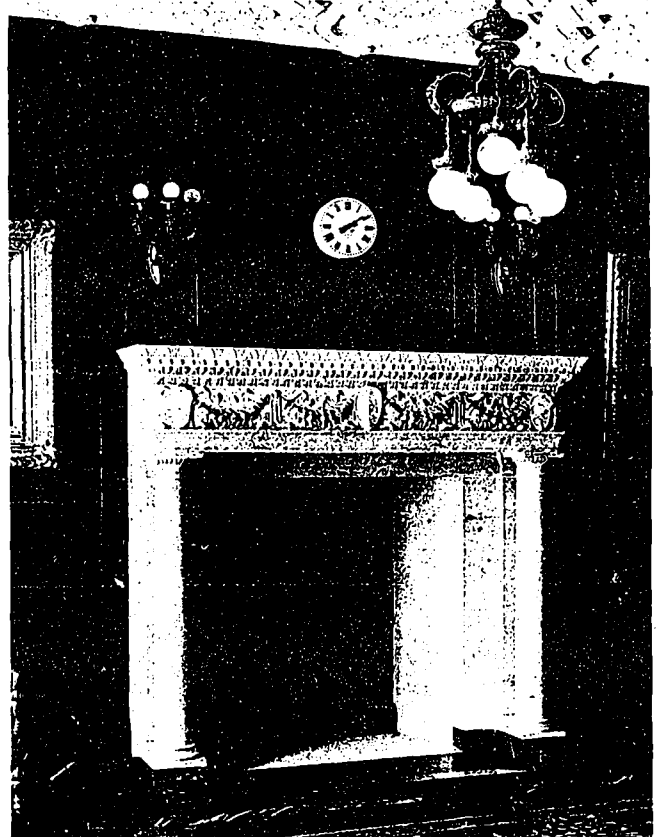
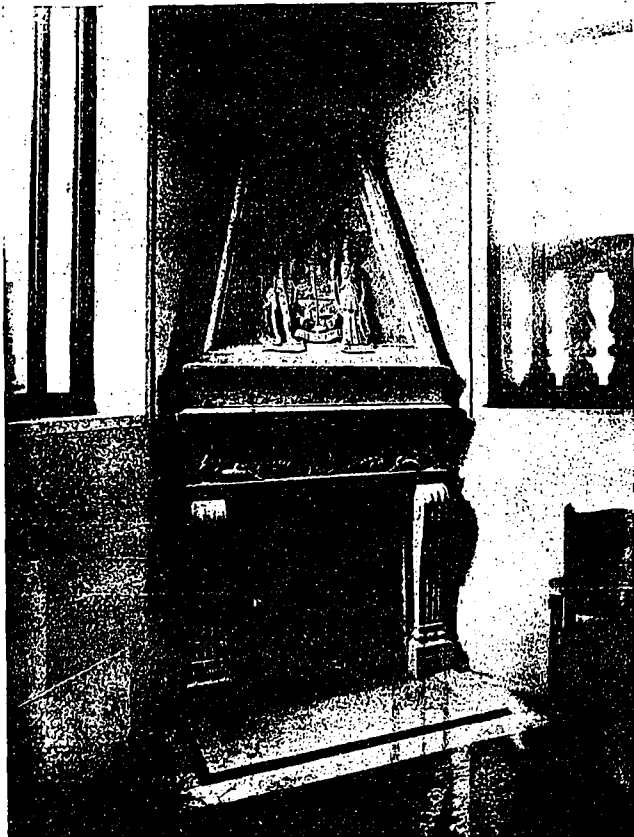
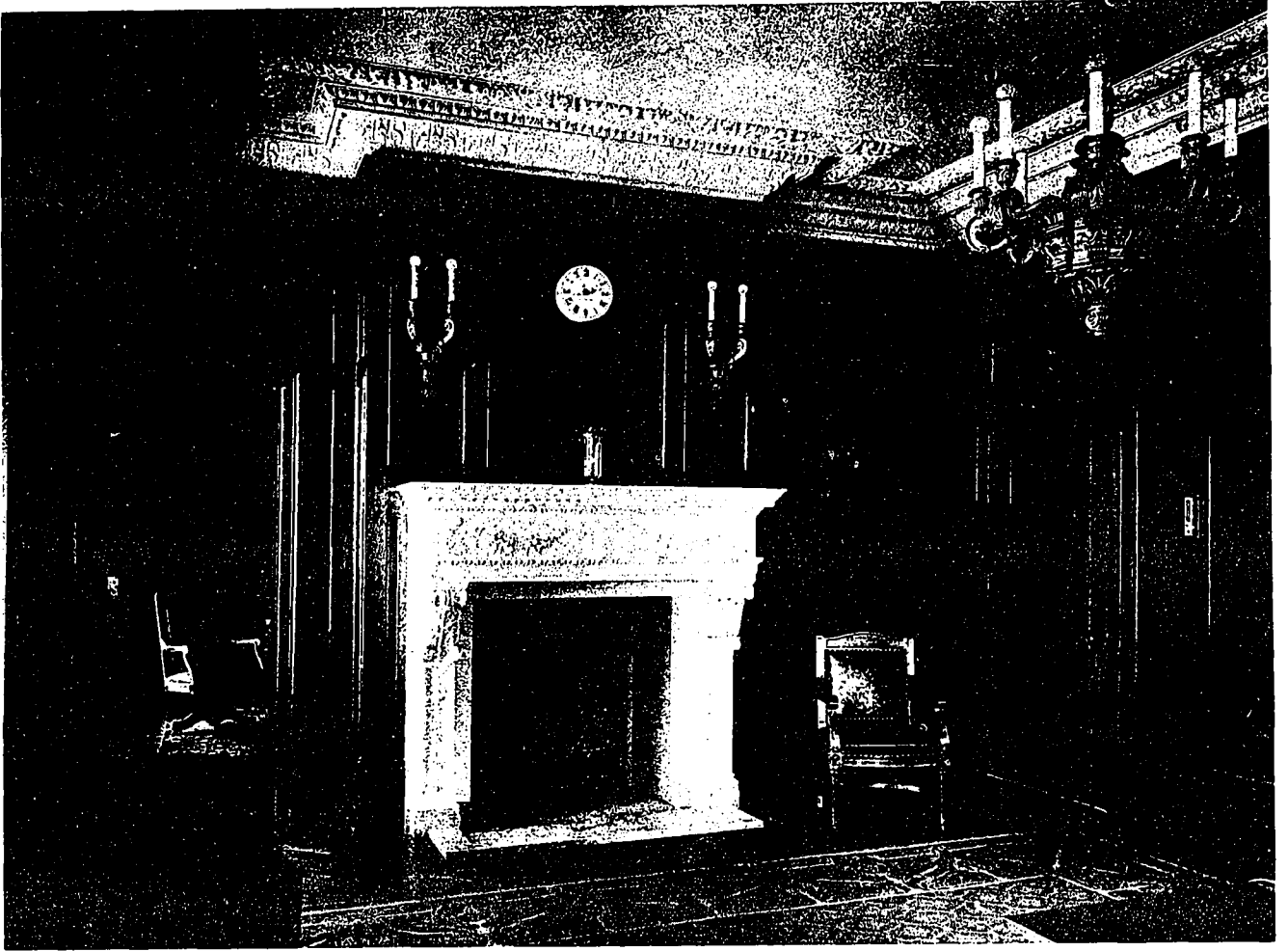


SCREEN
WRITING TABLE
AND
SEAT.

THE BANK OF
TORONTO,
TORONTO, ONT.

CARRERE
&
HASTINGS
AND
EUSTACE G. BIRD,
ARCHITECTS.



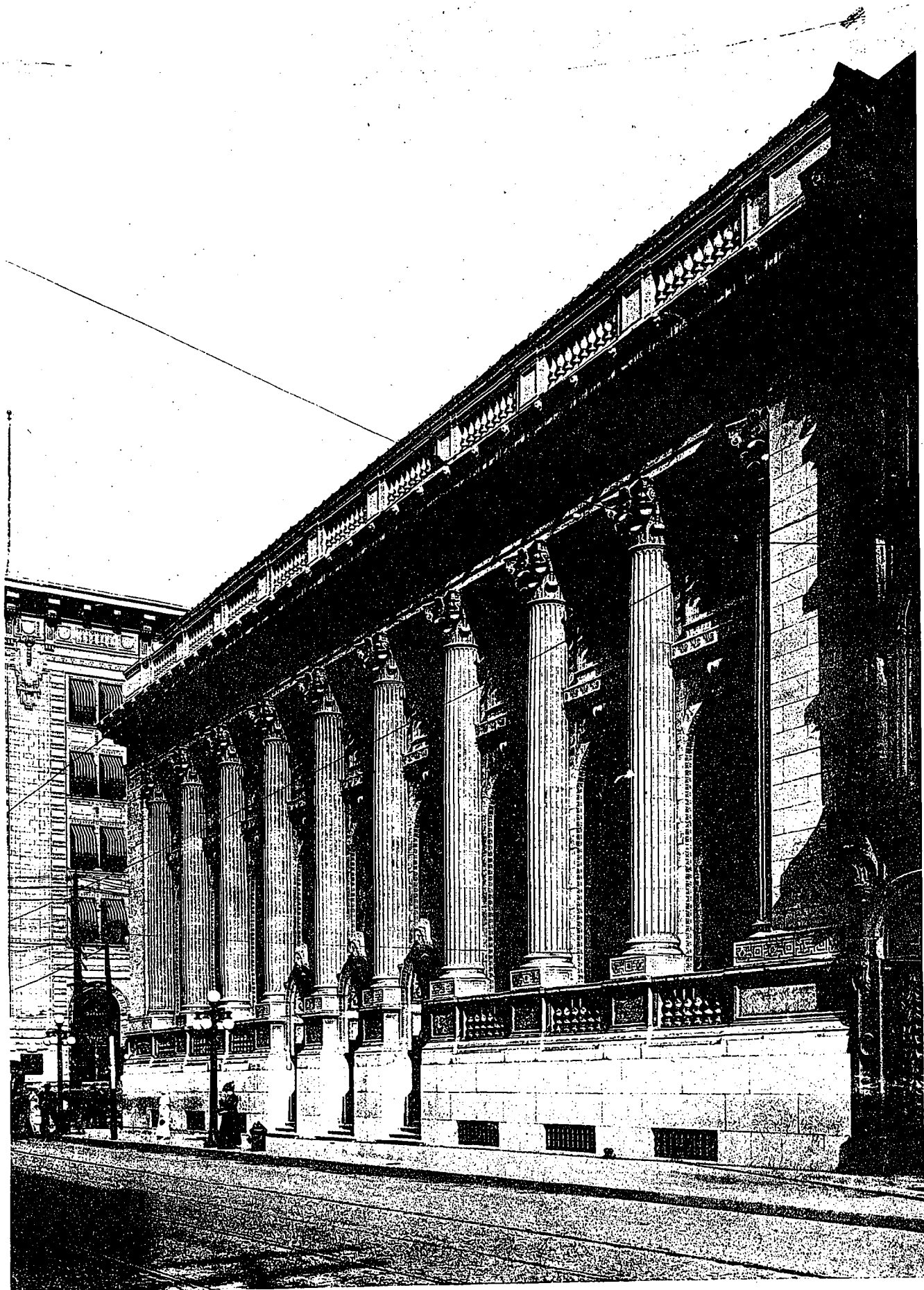


ASSEMBLY ROOM.

PRESIDENT'S ROOM.

MANAGER'S ROOM.

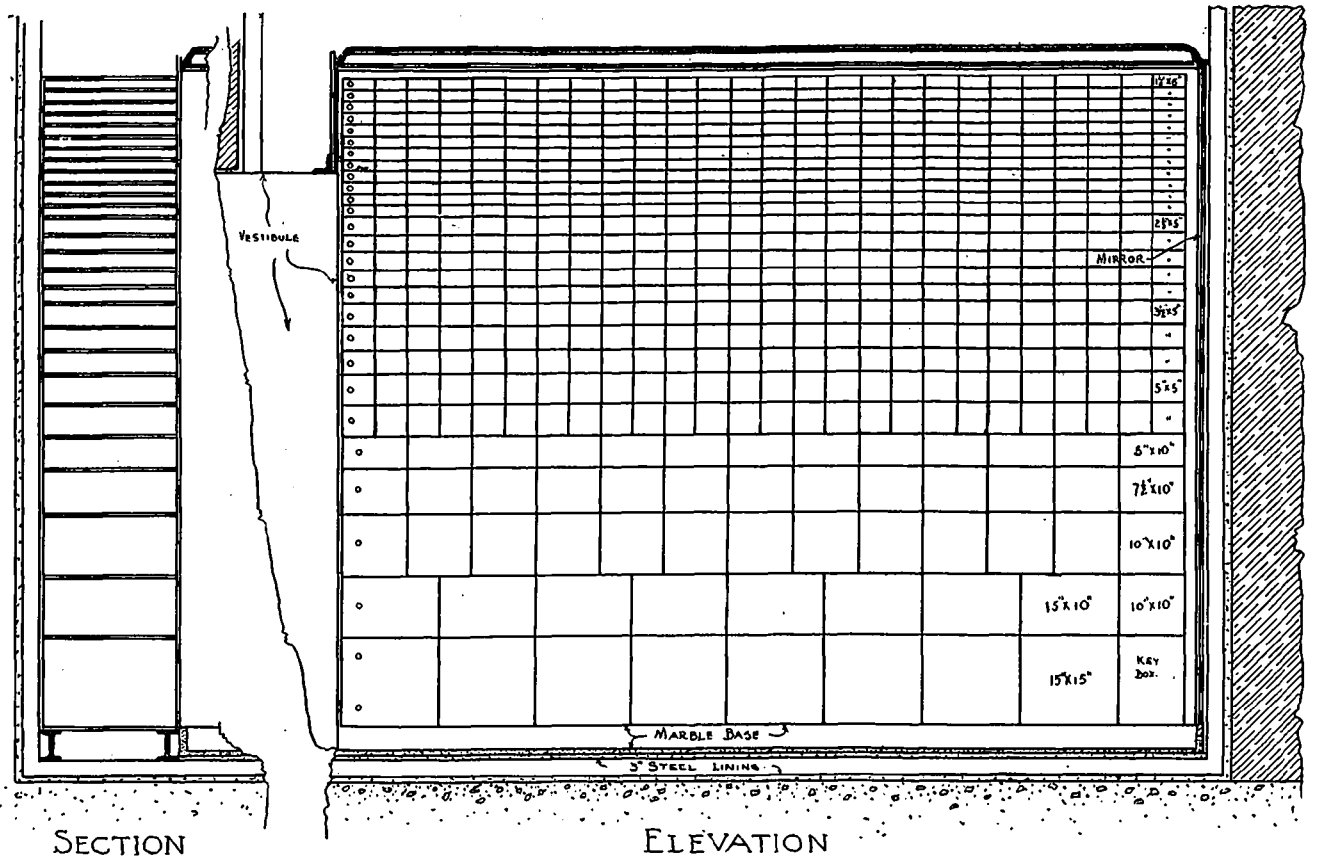
THE BANK OF TORONTO, TORONTO.
 CARRERE & HASTINGS AND EUSTACE G. BIRD, ARCHITECTS.



KING STREET FACADE.

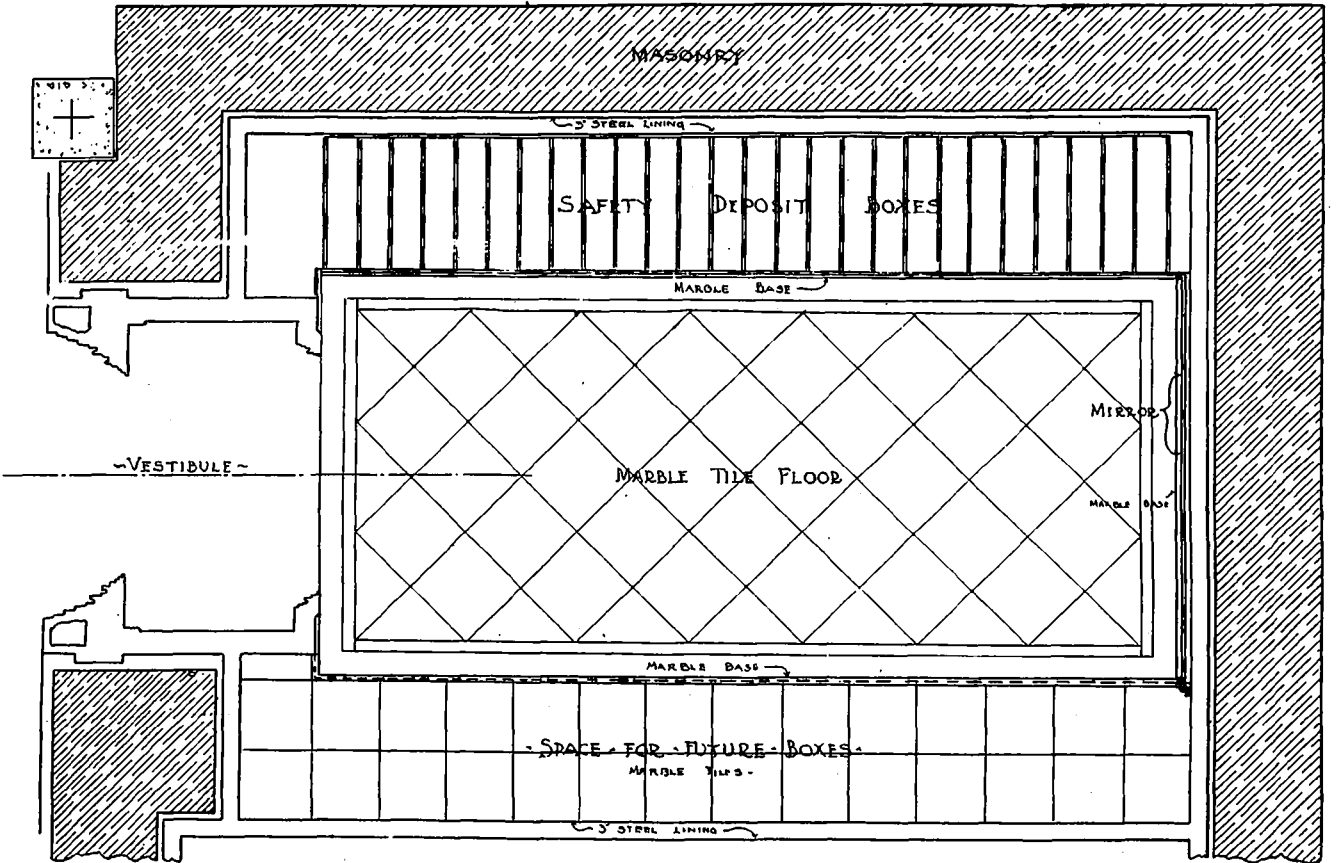
THE BANK OF TORONTO, TORONTO.

CARRERE & HASTINGS AND EUSTACE G. BIRD, ARCHITECTS.



SECTION

ELEVATION



PLAN

SAFETY DEPOSIT BOXES.
 THE BANK OF TORONTO, TORONTO.
 CARRERE & HASTINGS AND EUSTACE G. BIRD, ARCHITECTS.

Vaults, Bank of Toronto

THE VAULTS of the bank are located in the basement, ground, mezzanine and first floors.

All foundation work for the vaults is independent of the structural supports of the building, and consists of a six-foot bedding of concrete reinforced by cross layers of one and three-eighths bars six inches on centre. The aggregate weight of the vaults on each floor is four hundred tons.

The accompanying description of the manager's vault answers also for the safety deposit vault and the securities and cash vault. All sides of the vault, the tops and bottoms, are built up as follows: Outside layer of low steel; two layers of five-ply welded chrome steel, and a layer of low steel, each three-quarters of an inch thick—making three inches of metal. The exterior corners of the vault lining are formed with six by six by one and one-quarter inch steel angles forged solid into three members of crow's foot sections. Panels formed by the angles are filled with plates of low steel three-quarters inch thick. The four layers of steel are secured to each other by welded chrome steel bolts spaced twelve inches on centre.

The vestibule of the manager's vault shown below has outside single door and double vestibule doors, with clear walkway of two feet ten inches wide, three feet in depth, and six feet ten inches in height. The face of the vestibule is constructed of single solid cast low steel frame one and one-half inches thick, having returns at the sides, top and bottom. Stiffening ribs are cast across the pockets one inch in thickness. Lugs are cast on stepping section of the frame to receive the fastenings from the laminated frame. Heavy filets are cast on all inside corners and over the entire outside face, jamb stepping and all joints abutting the laminated frame. Total thickness of steel casting is seven and one-half inches over all.

The front frame of the laminated portion of the vestibule is formed of the following layers, which

make a total thickness of thirteen and one-half inches: One and one-quarter inch chrome steel forged solid; chrome steel one and one-quarter inch; low steel one inch; five-ply welded chrome steel one and one-half inch; low steel angles one inch; low steel one and one-quarter inch.

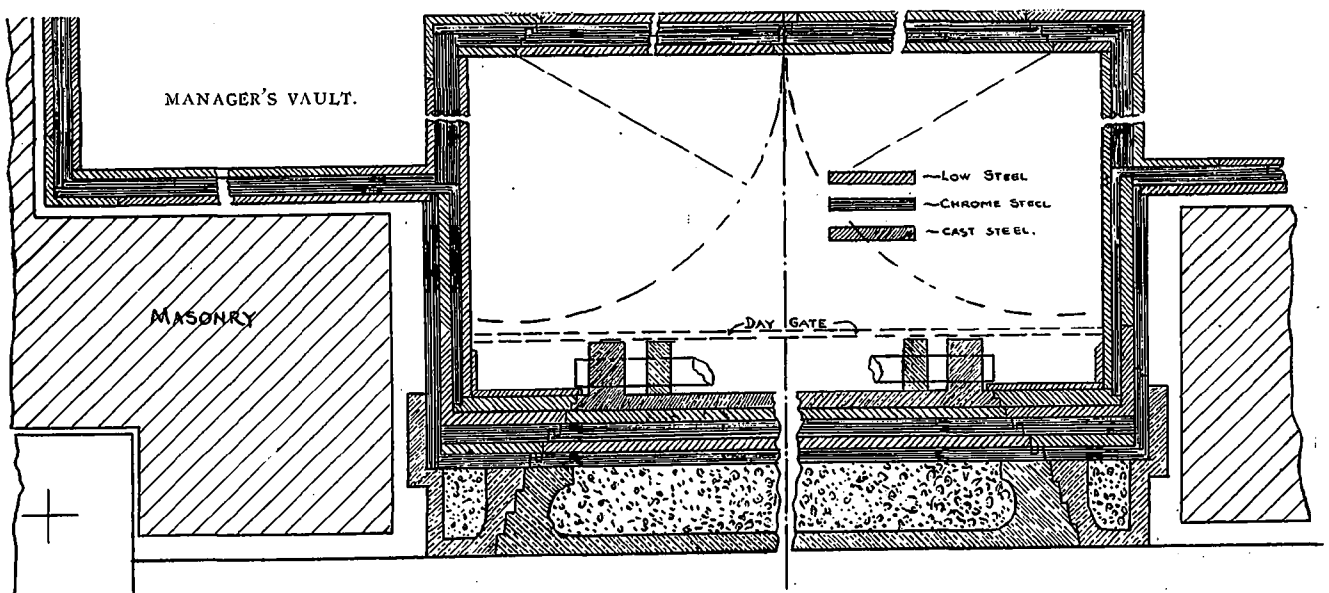
The inside frame of the vestibule is three and one-half inches, constructed with low steel one inch thick; five-ply chrome steel angles one inch; five-ply welded chrome steel three-quarters inch; low steel angles three-quarters inch.

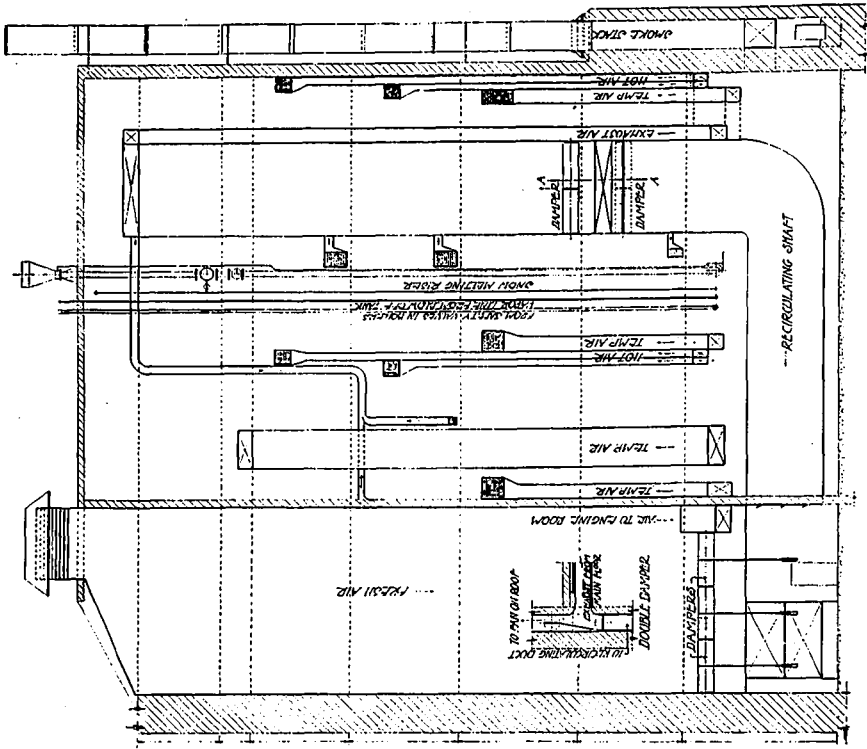
The body of the vestibule is built up of steel with a total thickness of four inches: outside layer five-ply welded chrome steel one and one-quarter inch thick; low steel one inch; five ply welded chrome steel one inch; low steel three-quarters inch.

The outside vestibule door of the manager's vault is thirteen and one-half inches thick. In addition to one and one-half inch facing of low steel with return flanges of six inches filled in with concrete containing two rows of hardened chrome steel laminated jail rods four inches on centres—one horizontal and one vertical—the door consists of cast low steel one and one-half inch; five-ply chrome steel one and one-quarter inch; one inch of low steel; five-ply chrome steel one and one-half inch; one inch of low steel; steel casting one and one-quarter inch.

The floor of the manager's vault consists of white veined Italian marble tiling, ground with hard cement and set in concrete.

In the safety deposit vault there are six hundred and twenty-nine boxes, ranging from fifteen inches in height, fifteen inches in width, twenty-six inches in depth to one and one-half inch in height and five inches in width. All boxes are built of one-quarter inch low steel plates, the interior finished dead black with doors of quadruple nickel plated and highly polished. The entire end of the vault is covered with a plate glass mirror set in a nickel plated frame. There is also a verde antique marble base.





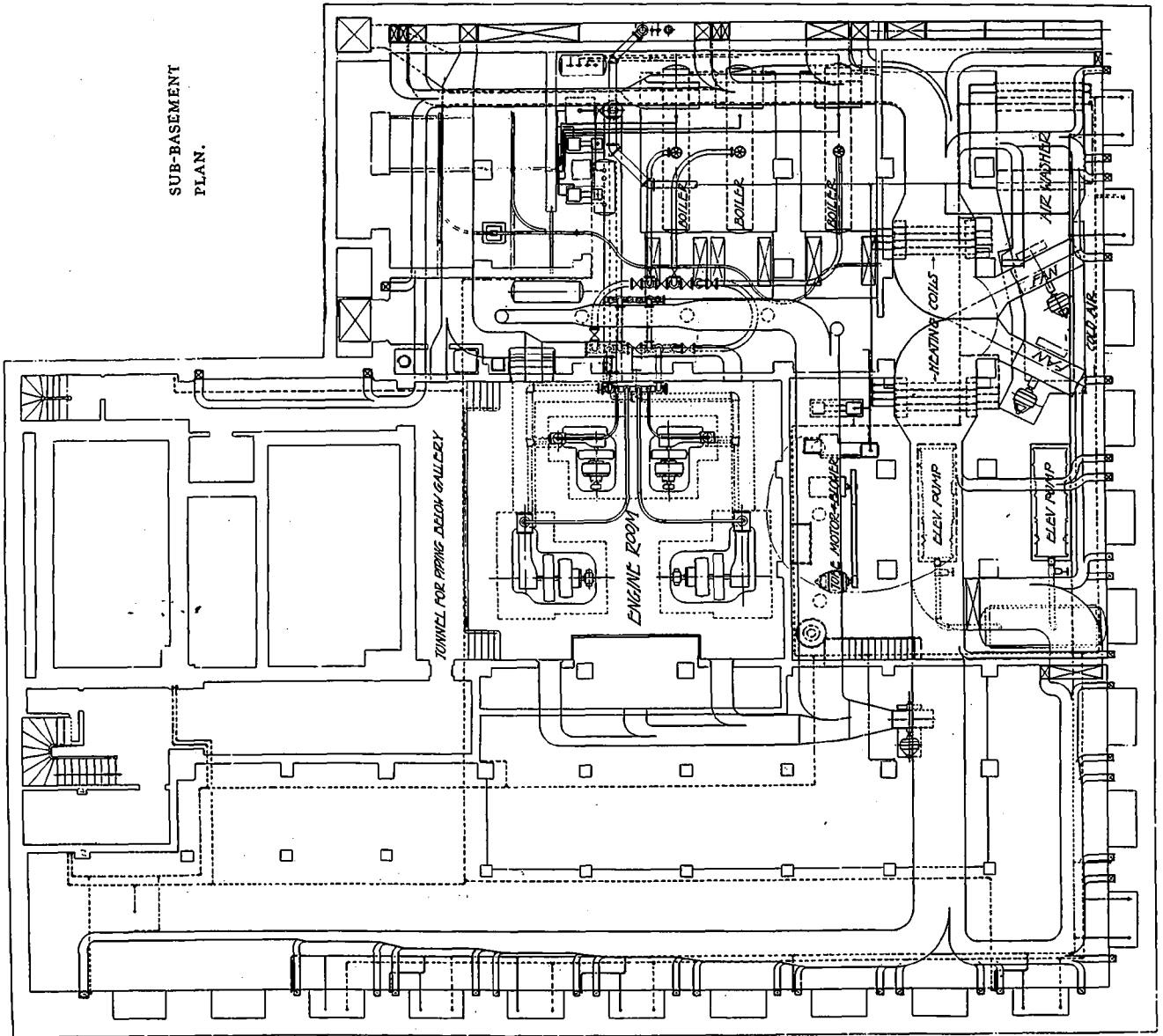
ELEVATION OF EAST WALL.

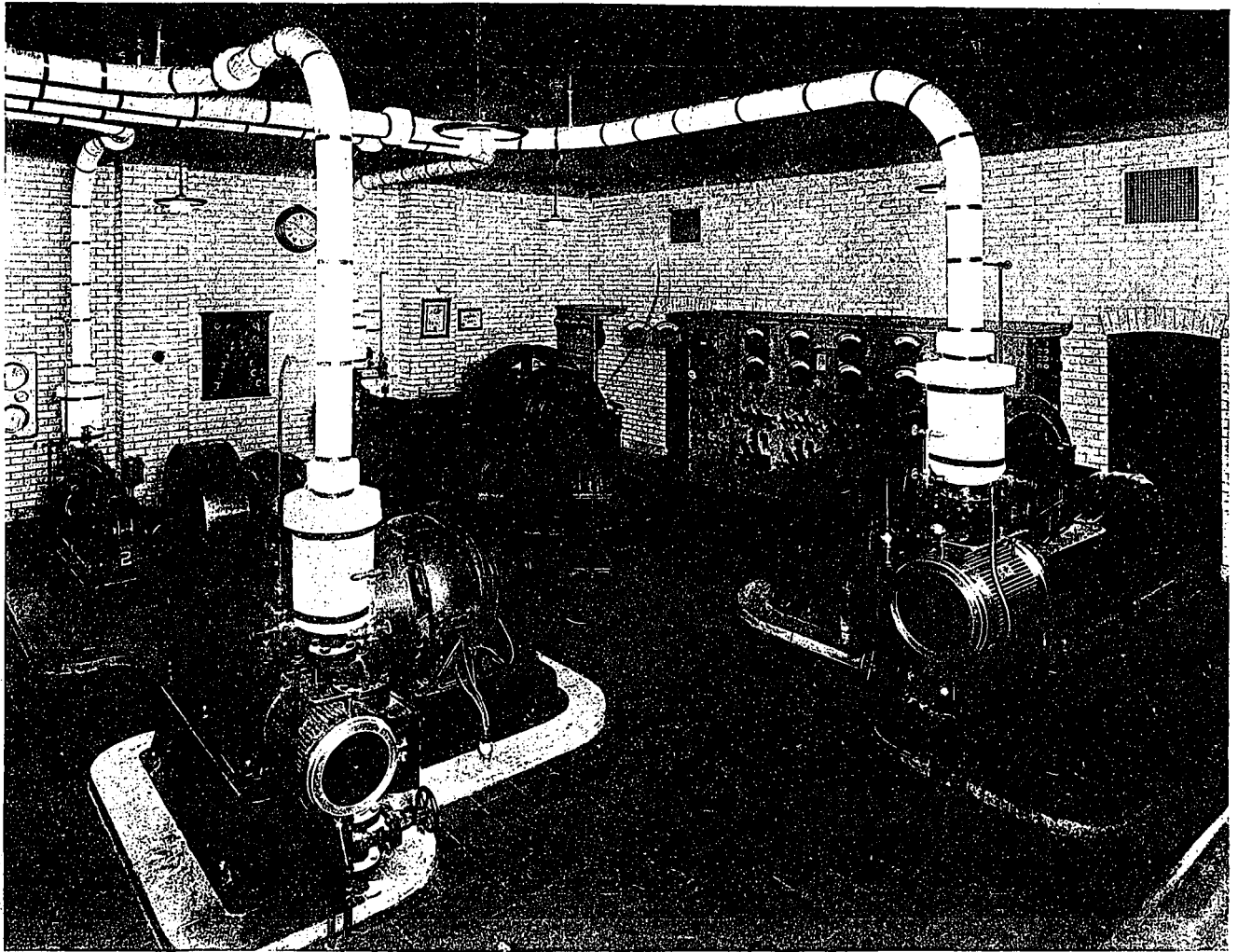
HEATING AND VENTILATION.

THE BANK OF TORONTO, TORONTO.

CARRERE & HASTINGS AND EUSTACE G. BIRD, ARCHITECTS.

SUB-BASEMENT PLAN.





Heating and Ventilation, Bank of Toronto

M. A. BOYD

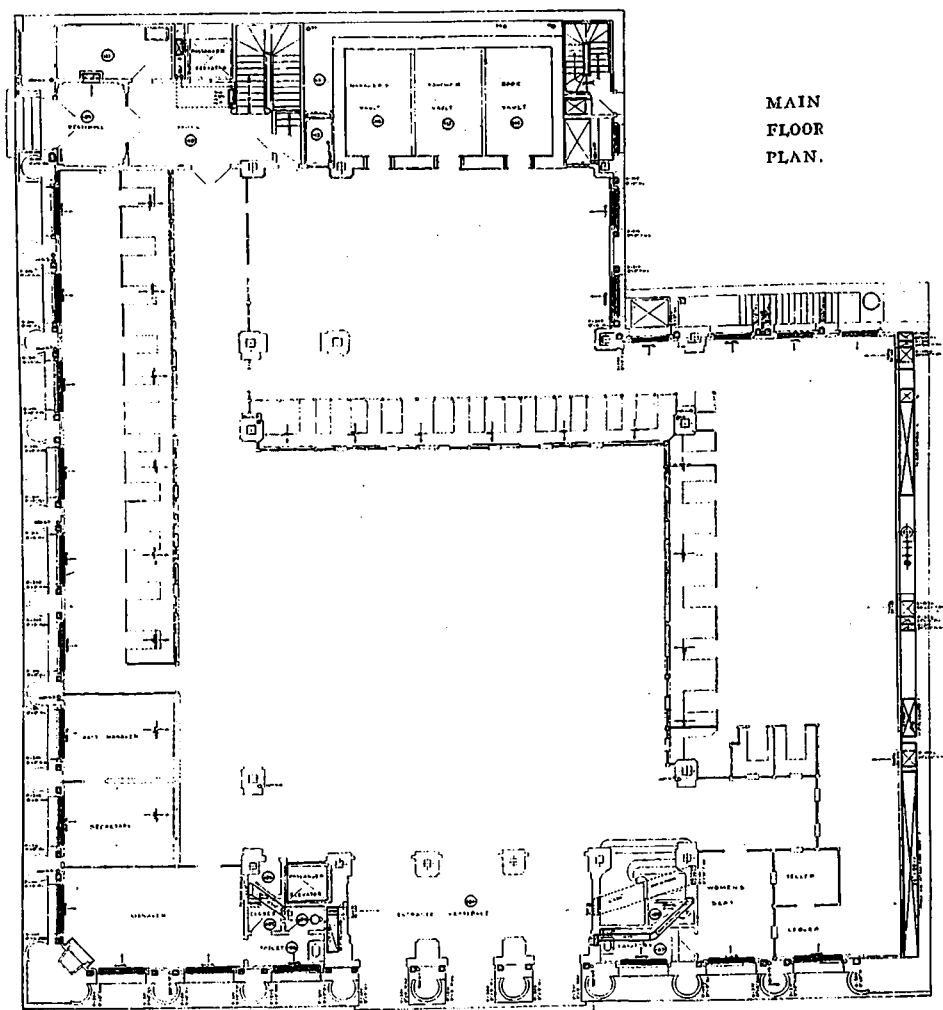
ONE of the cleanest and most attractive parts of the Bank of Toronto is the engine room, located in the sub-basement. The walls are of white enamel brick and the floor of red tile with a floor space of 1,800 square feet. The room contains four steam-electric units consisting of two 25 k.w. and two 75 k.w. direct current generators, directly connected to 10 x 12 and 12 x 14 inch side crank engines—the small units at 300 r.p.m. and the larger ones at 275 r.p.m. Steam pressure at the throttle valves approximates 120 lbs., the steam being supplied to the engines from a distributing header on west wall of engine room, pipes being made up with long radius quarter bends and joints of the vanstone type with copper gaskets. The piping is hung from the ceiling beams and braced to the walls to prevent vibration. Vertical separators are used to ensure dry steam.

With the idea of preventing all engine vibration from being communicated to the building, special care was exercised in the construction of the engine foundations. After the necessary excavation was completed, floor prepared, form work erected and waterproofing installed, a six inch bed of dry sand

was laid, forming a cushion for the foundations to rest upon. Upon the sand, for the purpose of keeping it dry, was placed several layers of tar paper. The concrete foundations were then poured, and a space of four inches maintained free between the retaining walls and the foundations proper, which space was also filled with dry sand, and the opening between the floor slab and foundation covered by the marble base around the engines.

Exhaust piping in connection with the engines runs in large trenches under the floor, which in turn are covered with tile and finished to match the rest of the floor, thus doing away with the dirty iron plates usually used. The trenches can be entered through openings in the engine room floor, or from the boiler room. Openings in engine room have covers made of tile set in iron frames, these covers can be removed if necessary by means of an iron ring set in the floor.

The exhaust steam after passing through an oil separator enters the feed water heater or passes into a ten inch vertical exhaust main which runs to the roof. Just below the second floor level a five inch connection is taken off the main for the direct heating system. A back pressure valve located in the main



just above the five inch connection controls the pressure on the heating system and also the back pressure on the engines.

In the boiler room next to the engine room there are three 135 h.p. water tube boilers, each being equipped with a Dutch oven furnace specially designed for the burning of soft coal without smoke. Each furnace is fitted with two magazine hoppers into which coal is dumped from a bucket travelling on an overhead I beam track; bucket is raised and lowered by an electric hoist operated from the floor.

Steam is taken from each of the boilers through a six inch connection feeding into an eight inch loop main made up of quarter bends with vanstone joints, and extra heavy flanged valves and fittings. The loop main feeds a double ten inch header from which two six inch connections feed the auxiliary header. From the auxiliary header is taken the steam connections for elevator, boiler feed, vacuum pumps; etc.

The high pressure piping has been laid out so that one half can be shut off for repairs, while the other half is in use and supplying the requisite amount of steam for running the plant.

From the boiler room one enters the pump room, where are located the air washer, main supply fans, vacuum heating pumps, tube dispatch blower, vacuum cleaner, elevator pumps, and stacks for indirect steam heaters.

The heating equipment of the building consists of

a system of direct steam radiators and coils, supplying heat to the second floor, toilet and locker rooms on the first floor and mezzanine floors, and to the basement. The greater portion of the building is heated by means of a hot blast system which also supplies fresh air for ventilation.

To accommodate the large fresh air supply, exhaust flues and the distributing systems in connection with the mechanical equipments of the building, a space two feet wide extending from top to bottom and across the entire width of the west wall, was partitioned off with tile walls. A space four feet deep was also allowed between the second floor and ceiling of the first floor for the concealment of ducts supplying air to the main banking room, pipes connecting the direct radiators on second floor, for the horizontal runs of the pneumatic tube despatch system, and piping in connection with the temperature control system. Horizontal runs of ducts and piping under

ground floor are concealed by a hung ceiling in the basement.

Air for ventilation and heating is taken in through a louvered inlet built on the northwest corner of the roof, which inlet is connected to a vertical brick flue twenty-five feet long and two feet wide running straight down to the sub-basement, at the base of which is a chamber built of black iron.

The air after leaving this chamber passes through a bank of Vento stacks two rows high and two rows deep, while the heater raises the air from the outside temperature to about 60 degrees in cold weather. After leaving the preheater the air enters and passes through the sprays of the washer. The spray nozzles are so formed that they atomize the water and produce a cloud of finely divided mist-like spray.

From the spray chamber the air and contained moisture enters the eliminated plates, which take out of the air all free moisture, and with this moisture almost the whole of the dirt and gases brought in with the so-called fresh air. The cleaned and moistened air is then free of the washer and is drawn through a single row of Vento re-heaters into the suction of the two main fans. As seen on the plan, these fans are set on piers, the air for the east fan passing under the fan on the west. Both fans discharge into a plenum chamber, in the east and west outlets of which are placed the main re-heaters which raise the air to the temperature required for heating.

These heaters are arranged one row high and four rows deep.

From these heaters a system of ducts is run that carries air to the various rooms to be heated. From the mains in the sub-basement branches are taken off and run to the rooms above in ten by ten inch chases left in the building walls. At the base of these vertical branches is a damper operated by a diaphragm motor controlled by a thermostat in the room above. The damper shuts off the hot air should the temperature of the room rise above the point desired or to that at which the thermostat is set. The temperature of the air just beyond the re-heaters is controlled by means of a by-pass under the vent stacks and by thermostatic control of the steam to the heaters. The thermostats are so arranged that while a constant volume of air is being delivered to the rooms above the rooms are not over-heated. The thermostats in the rooms are mainly used to throttle the hot air supply to the more sheltered parts of the building.

The general scheme of the supply system is the delivery of large volumes of air to the main banking room at the first floor level and also the ground floor, through registers in the sills of exterior windows in the mezzanine and the first floor offices, also through registers placed in the window sills.

A system of ducts and fans is installed for removing the vitiated air from the building. The toilet and locker rooms throughout the building are connected by a separate main to a fan on the roof.

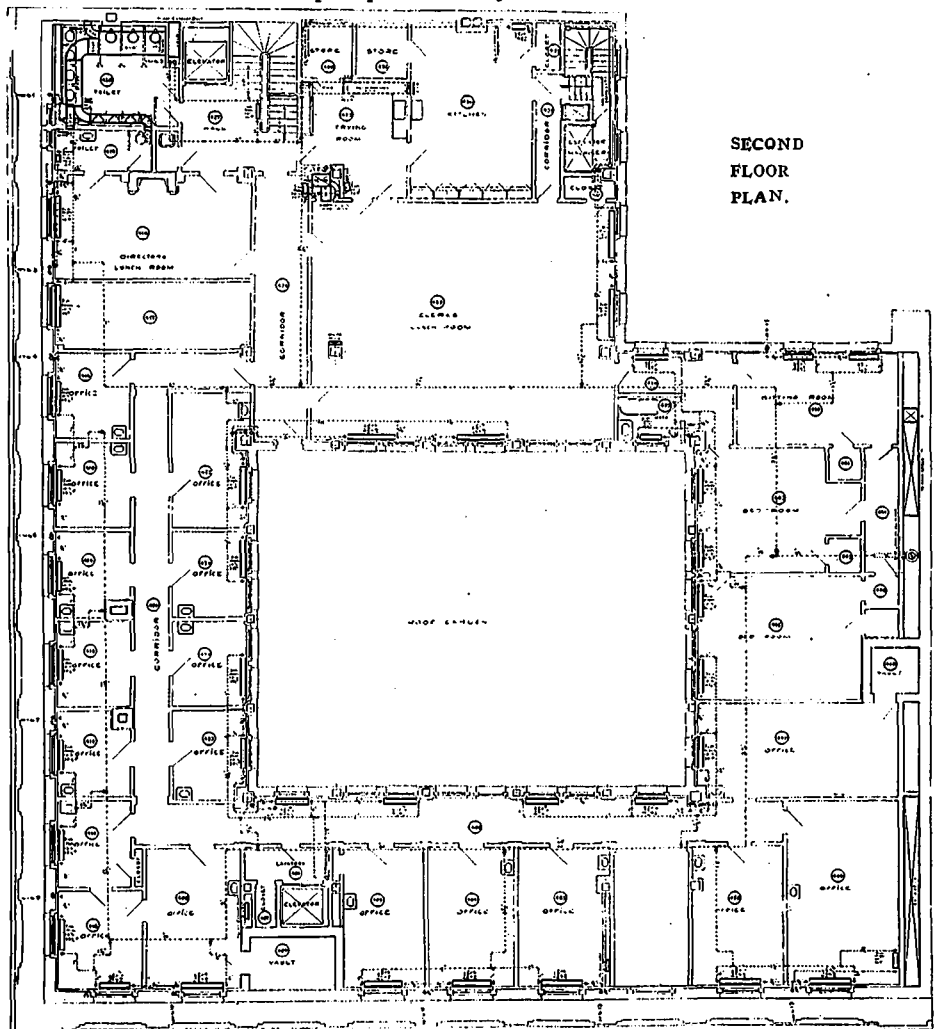
The large main ducts of the exhaust system are located under the ground floor, and follow the lines of the banking screen. Short vertical ducts connect the register faces of large size in the banking room screen to the horizontal exhaust mains, which are themselves connected to a vertical sheet metal flue twelve by two feet built in the chase on the west wall. This flue is run to the main fan or roof and is also connected by means of a large horizontal duct at the sub-basement level to the fresh air chamber of the supply system. By operating double dampers in the main exhaust flue, from a switch in the pump room, air may be re-circulated throughout the building. During the times when heat is required without ventilation and on very cold days, there is some fuel economy in re-circulation. A separate fan is used for supplying air to the engine, boiler and pump rooms in the sub-basement.

Fresh air is introduced into the engine room through registers in the wall above the switchboard; a supply outlet is also provided at the back of the board and tends to keep the fuses cool. The heated air is withdrawn from this room through registers located in the wall just below the ceiling and opposite the switchboard, which registers are connected to a flue running to the fan on the roof.

Fresh air for the boiler and pump rooms is discharged through vertical spouts connected to a main air duct hung from the ceiling slab. These spouts are fitted with adjustable nozzles. Air is withdrawn from these rooms through the furnace and smoke stack.

This method of ventilating the boiler room appears to be the most logical one, and gives entire satisfaction, affording an ample supply of air for ventilating purposes and ensures a positive draft for the furnaces at all times. Were a separate exhaust fan to be provided, a possibility would always exist that the supply fan might be shut down, in which case there would be a strong tendency to reverse the draft in the stack and draw all the furnace gases out into the boiler room.

The condensation from the direct radiation of the building is returned to the boilers by a vacuum system. Special pumps draw all air and condensation from these radiators, discharging into an air separating tank and feed water heater. The water is pumped directly into the boilers from this heater.



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A JOURNAL FOR THE ARCHITECTURAL
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Entered as Second Class Matter in the Post Office at Toronto, Canada.

Vol. 6 Toronto, September, 1913 No. 9

CURRENT TOPICS

J. CARLISLE PENNINGTON, of Windsor, Ontario, has removed his offices from the Boug building to the fourth floor of the new Labelle block.

* * *

IN A RECENT description of how German towns manage their business affairs, Count J. H. von Bernstorff says in regard to planning new districts: "In a modern German town new streets are not the creation of private enterprise. It is not the owner of the land who makes the plans for a new street, according to his own interest, but the town council plans the streets in accordance with the interest and needs of the whole population." Practical experience of the rule in Germany shows that land owners find it to their advantage to co-operate with the city authorities in the matter of town planning.

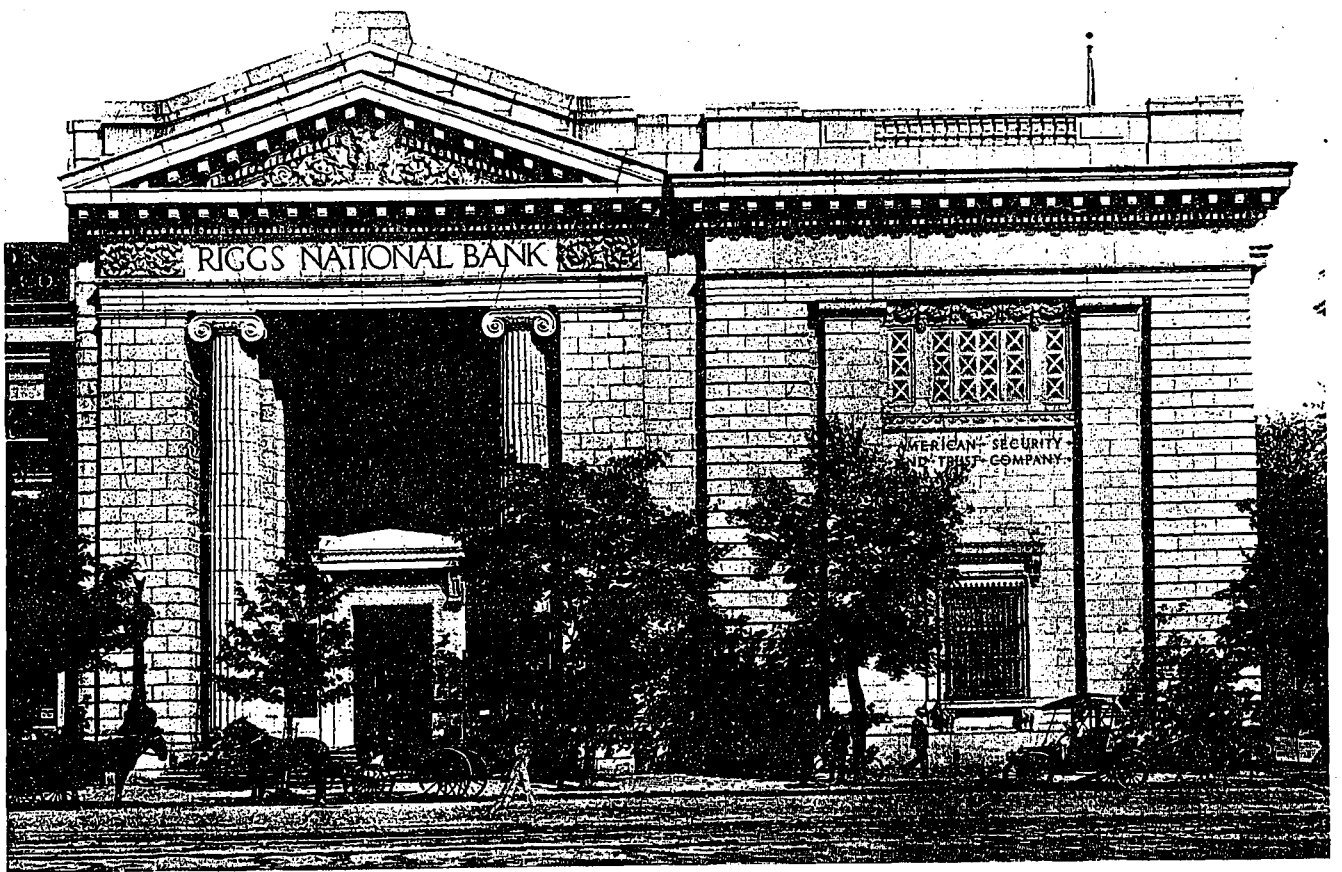
If they do not agree the municipalities possess the right of expropriation, which, as matter of fact, very rarely requires to be exercised. Moreover, German cities and towns have benefited greatly by the power of land purchase. Count Bernstorff instances the city of Frankfort, which, within the last ten years, has expended more than \$50,000,000 in the purchase of land. German municipalities are also able to impose special rates on property that has been increased in value by public works or by town extension.

* * *

A STRUCTURE unique among commercial lofts is to be erected at the northwest corner of Tenth avenue and Thirty-sixth street, New York city, by the Hill Publishing Company. The architects have provided a plan, probably not duplicated in that city or elsewhere, the windowless house being adopted because it was deemed that windows are unsanitary, as they endanger life through drafts, are noisy, and permit dust to sift into the lofts. The entire front of the building and its interior sides are to be entirely of glass. In fact, 78 per cent. of the walls will be of glass. It has been estimated that the structure will cost approximately \$600,000, the glass alone costing something like \$78,000. On the interior the glass will be a specially polished plate, and for the exterior surface will be a specially treated plate, that will not transmit heat waves into the interior, but throw them off like a stone. The entire building will be supplied with an adequate quantity of washed and tempered air from a ventilating plant. A duplicate system will also exhaust vitiating air and discharge the same above the roof. The system will be used to cool the air in summer and warm it in winter.

* * *

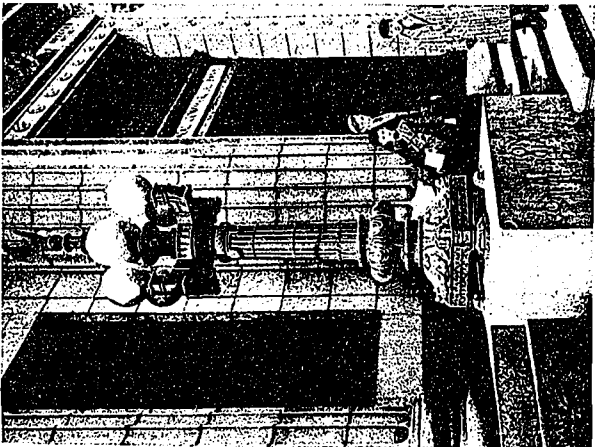
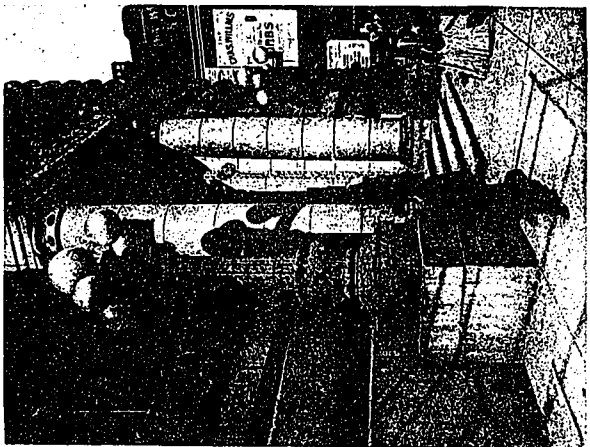
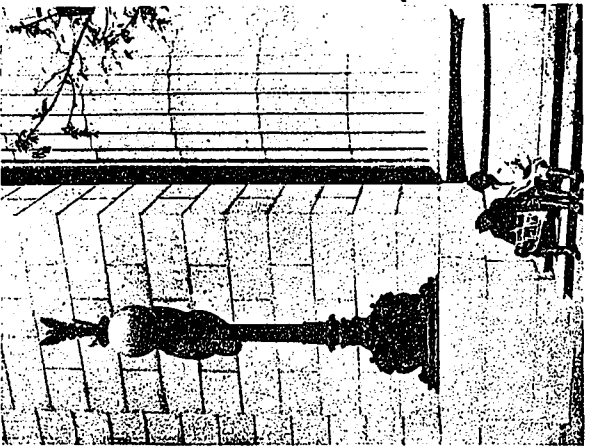
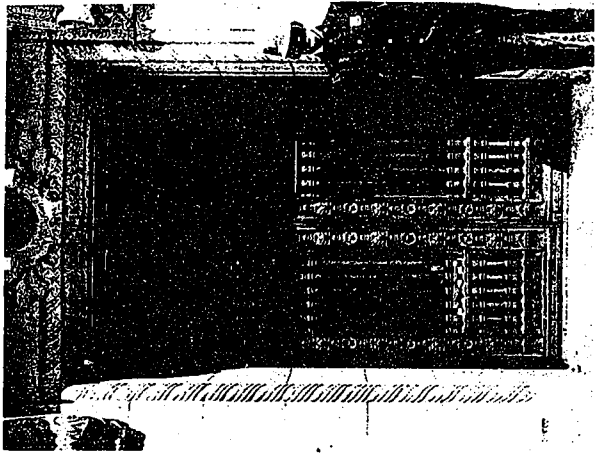
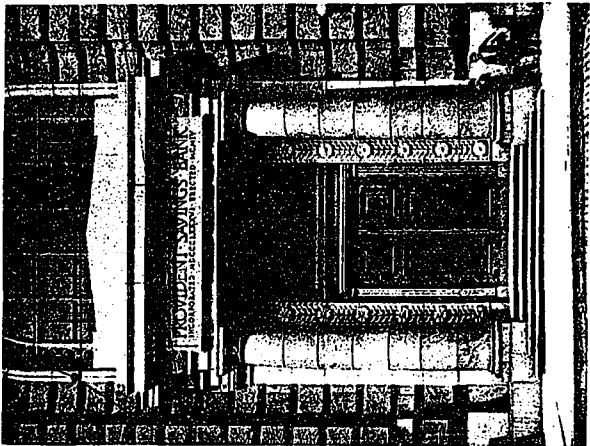
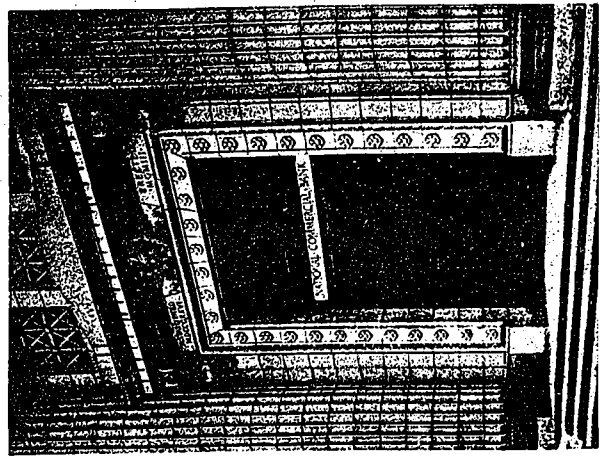
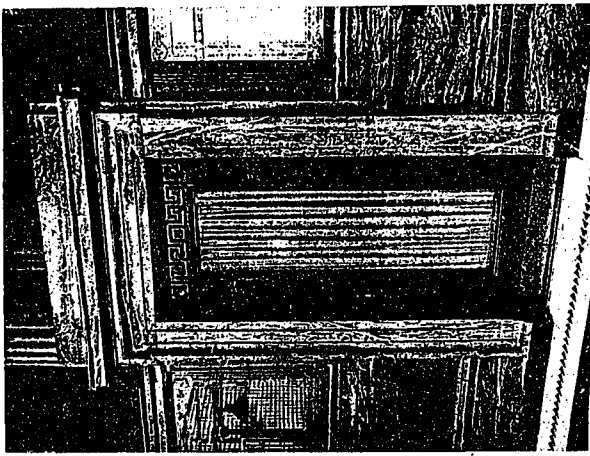
PUBLIC SPIRIT should be aroused in New York in behalf of St. John's, in Varick street, the demolition of which is now threatened. Some time ago the Corporation of Trinity Church decided that this old chapel of their parish had outlived its usefulness, but because of the public clamor the building was preserved and services are still held in it, though its share of the parish work has been transferred to St. Luke's, in Hudson street. The building has now been condemned for the widening of Varick street, under which the new Seventh avenue subway will be built. This much-needed improvement threatens to cut off the imposing portico and tower of the old church, thus destroying it entirely. Various plans to save the church have been proposed, and the simplest and best of them is to cut a narrow street on either side of it, connecting Varick street with St. John's lane and York street, back of the church. This would isolate the building and leave it as a permanent monument of old New York on an island of its own in the sea of traffic. London's experience with St. Clement Danes indicates that the traffic will not be discommoded by this plan. The church is nearly 100 years old, and is a fine example of church architecture.



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TWO BANKS AT WASHINGTON, D.C.

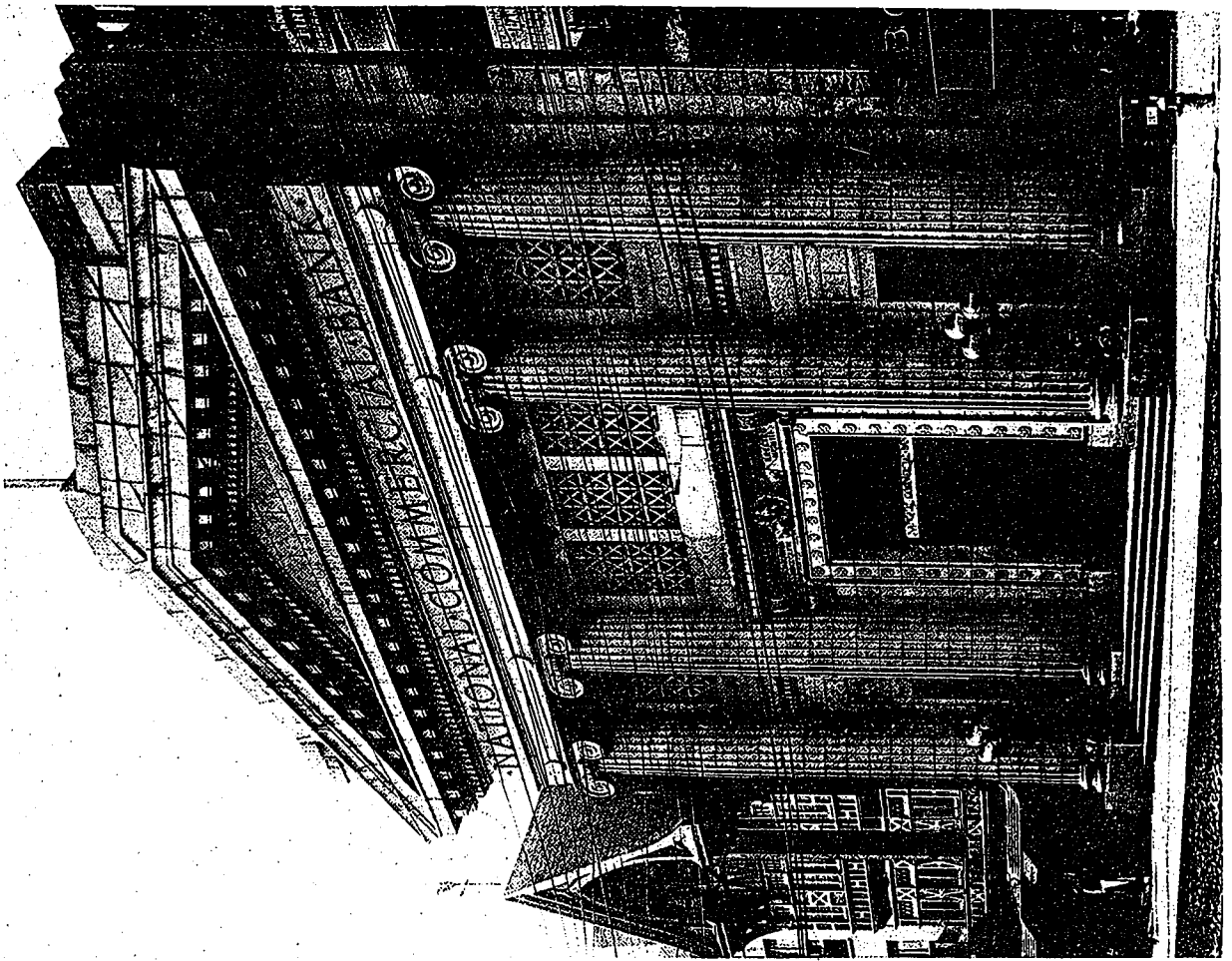
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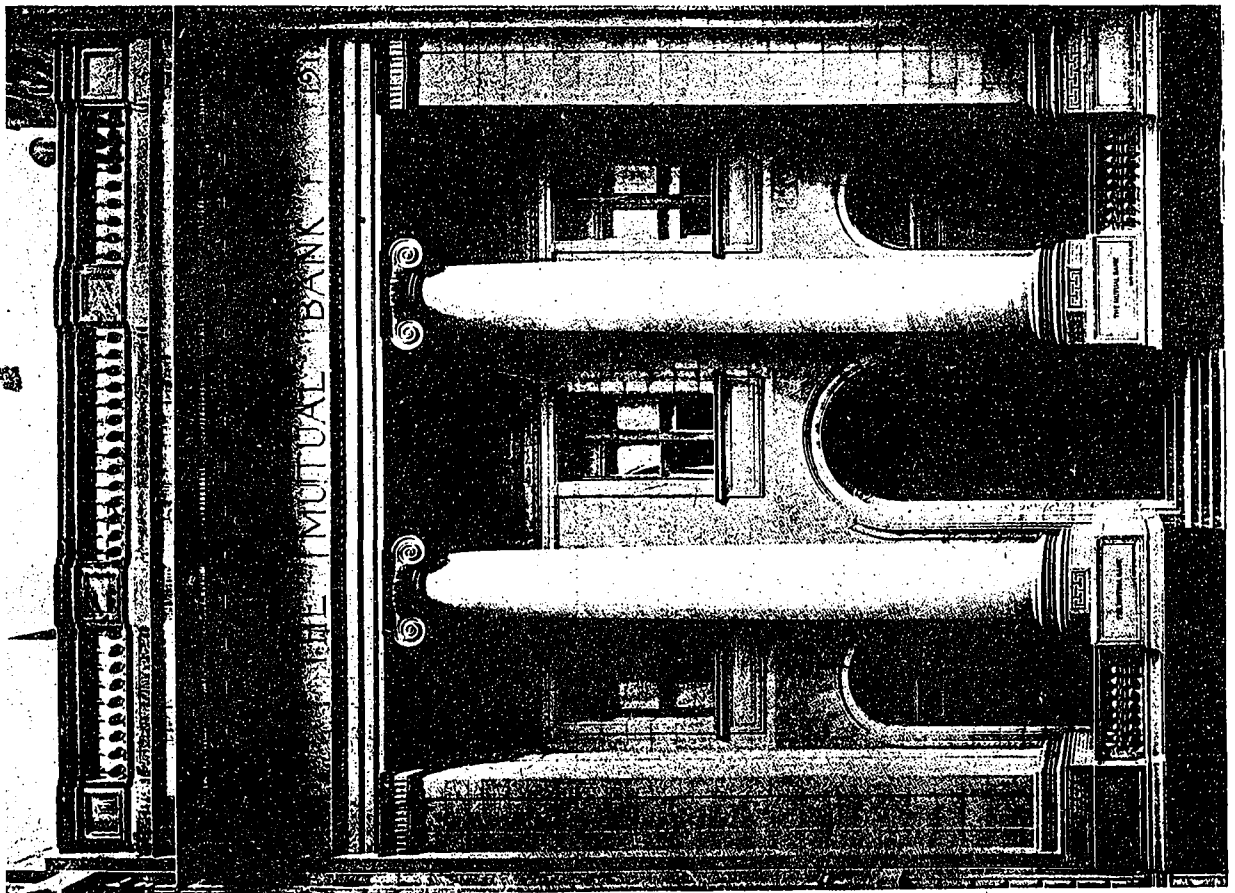
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FOUR BRONZE LAMP STANDARDS AND FOUR BRONZE DOORWAYS.

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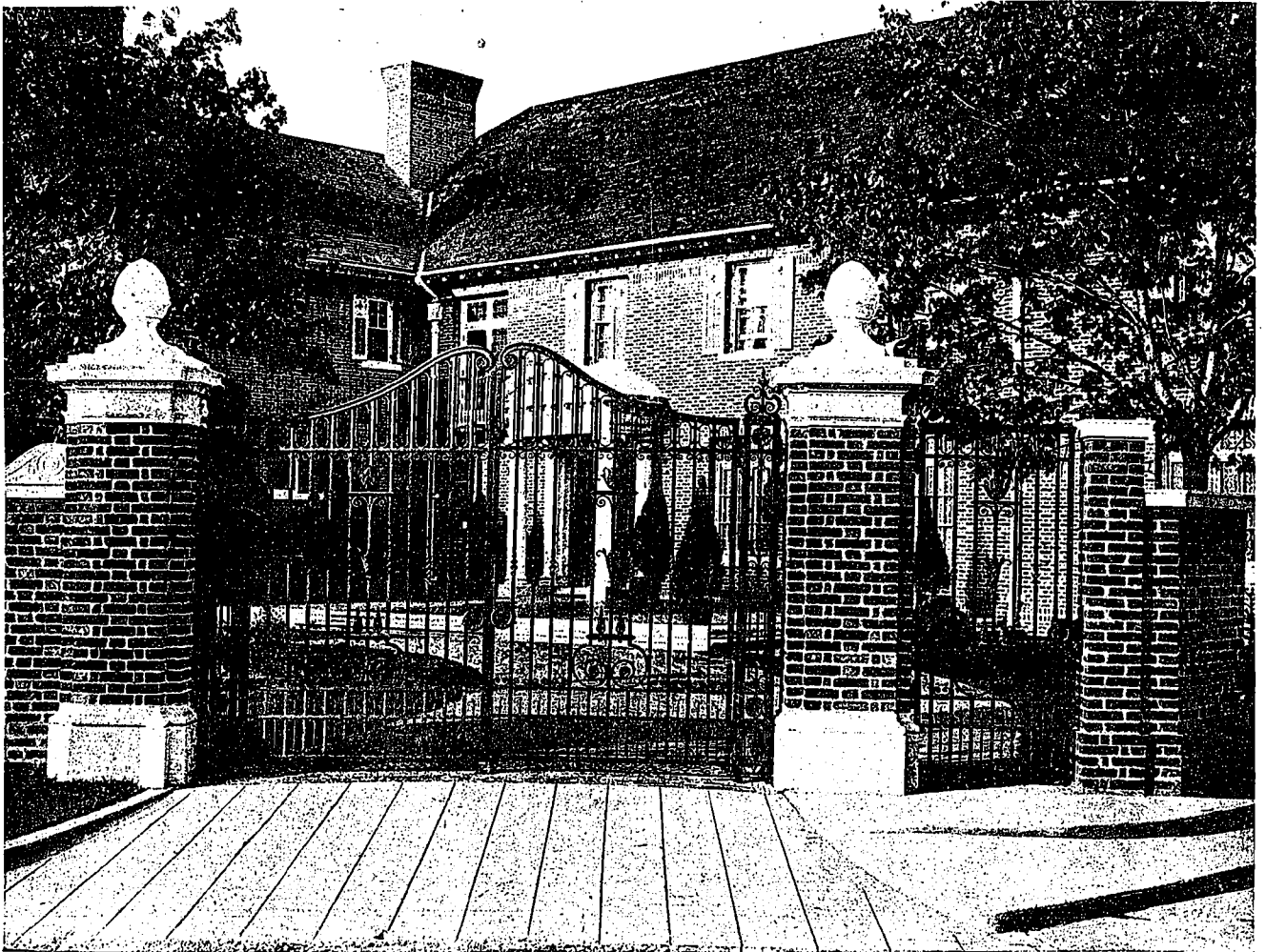


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BANKS AT NEW YORK AND ALBANY, N.Y.

From
Architecture.



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THE MATERIALS entering into a building are one of the essentials in producing a finished result wholly satisfactory to the designers themselves as well as acceptable to the criticizing layman. The companies responsible for the artistic and practical merits of the Bank of Toronto are as follows: Canadian Allis-Chalmers, Ltd., makers of architectural bronze and iron; Dancy, R. C., contractor for plaster ornamentation, Mycenaean marble and artificial stones; Don Valley Brick Works, makers of brick and porous terra cotta; the E. Howard Clock Company, producers of clocks—electric, secondary, tower and watchman; the Gorham Co., makers of ornamental bronze and iron work; Loomis-Manning Filter Distributing Co., makers of the Standard filters; Murray-Kay Limited, makers of lighting fixtures; Office Specialty Mfg. Co., producers of filing and record keeping equipment; A. B. Ormsby Co., Ltd., manufacturers of equipment for skylights, bronze windows, and copper clad doors; Otis-Fensom Elevator Co., Ltd., makers of elevator equipment; R.I.W. Damp-Resisting Paint Co., producers of damp-resisting paints; J. & J. Taylor, Ltd., manufacturers of vaults. A word of praise is due our advertisers who have materially assisted us in securing the data for this number. With such hearty

co-operation from all sources one feels that the work presented should not only do justice to the subject in hand, but also become a source of pride to those whose manufactured products helped the architect in effecting such a striking result. To superintendent Joseph D. Fennen is also due considerable credit for his hearty services.

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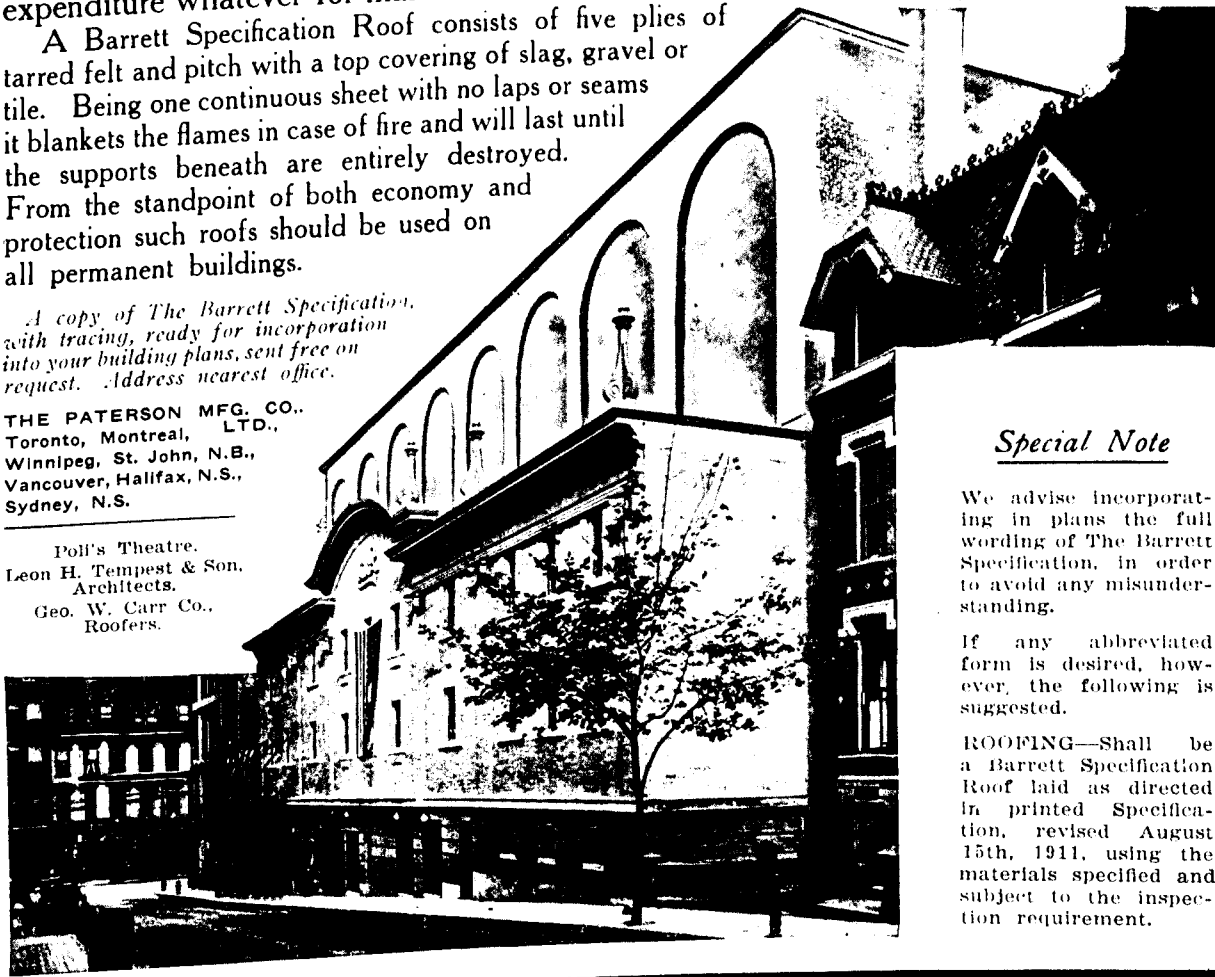
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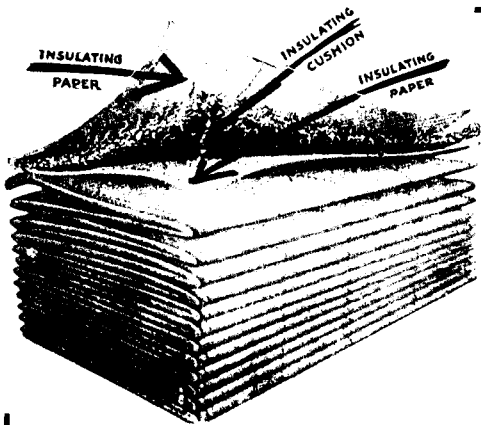


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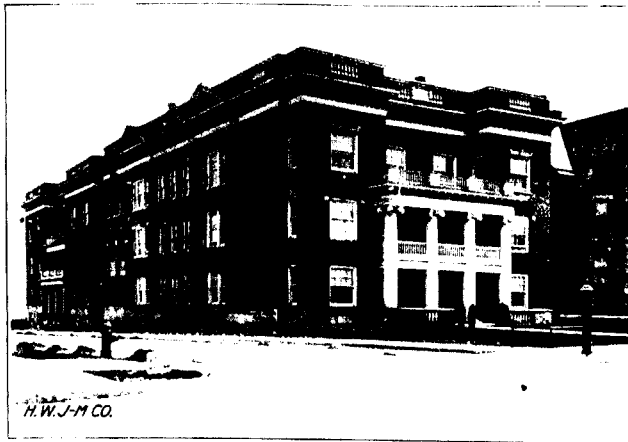
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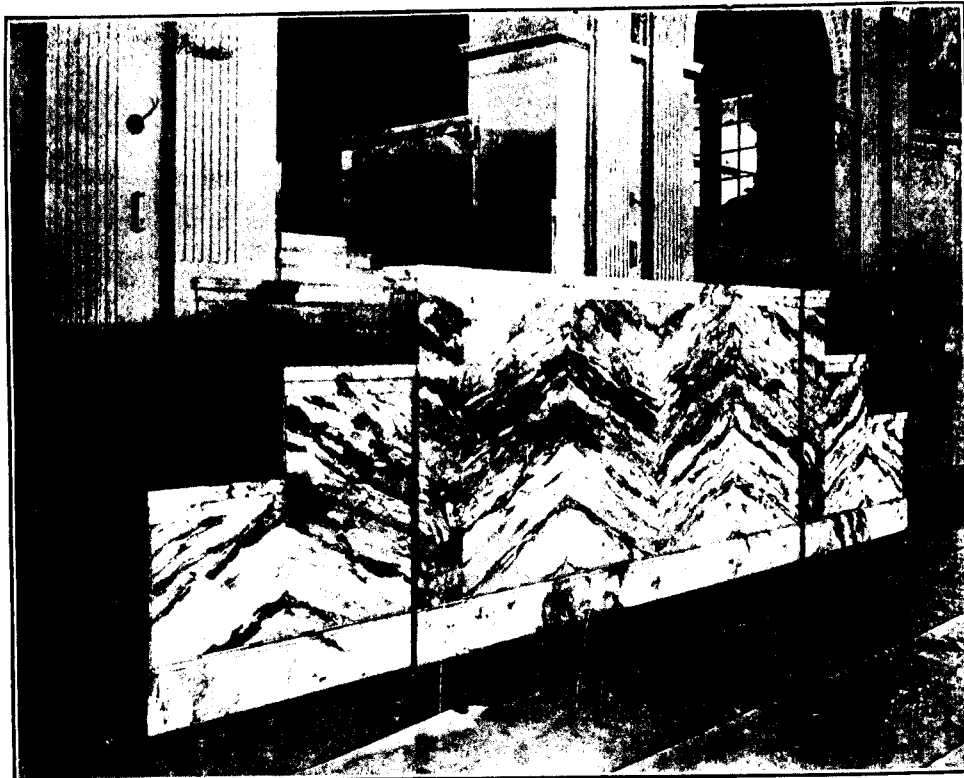


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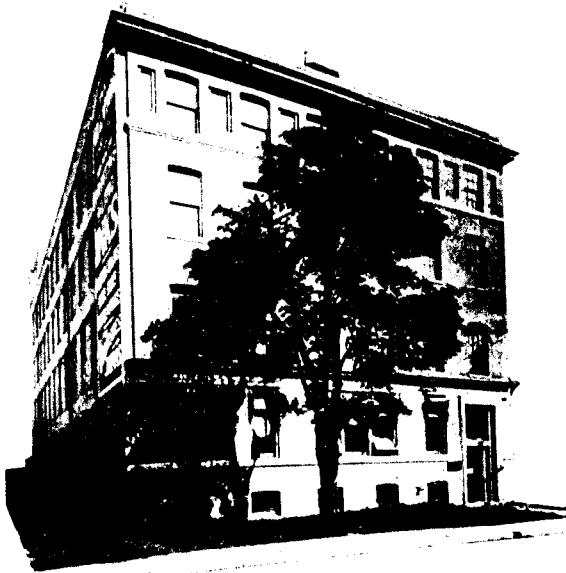
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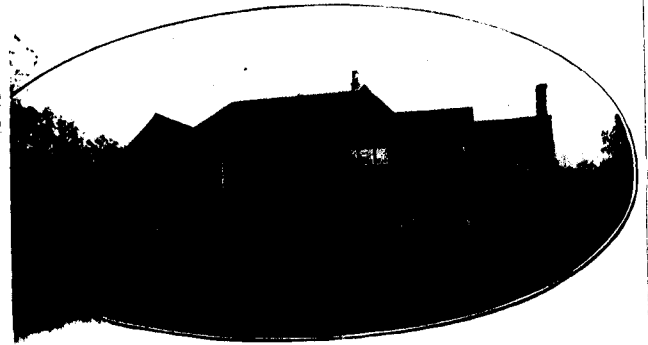
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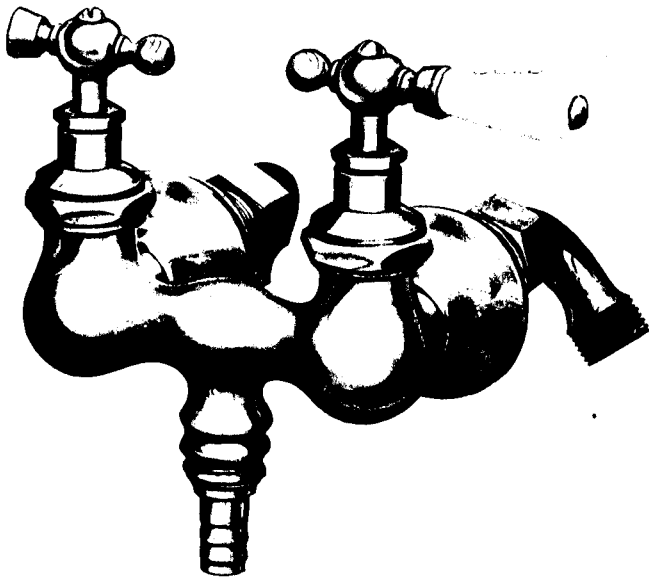
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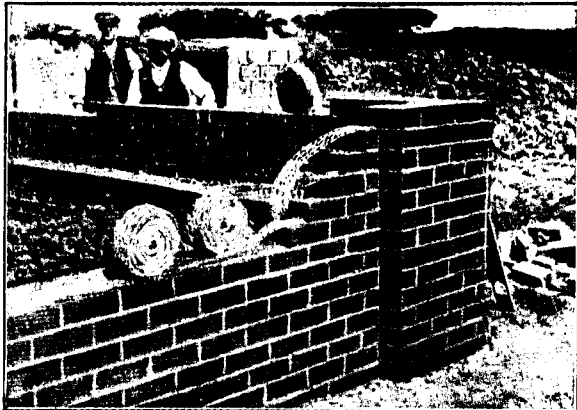
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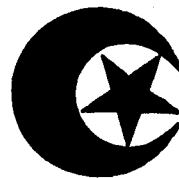
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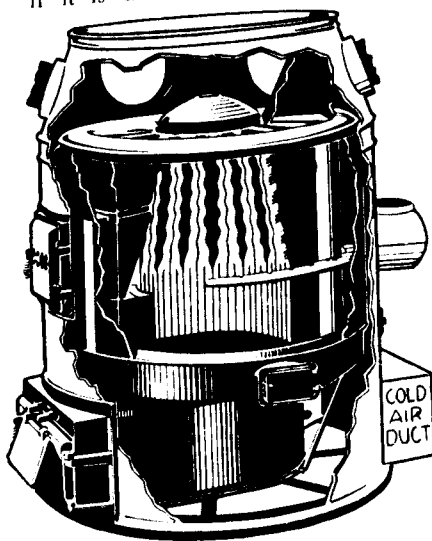
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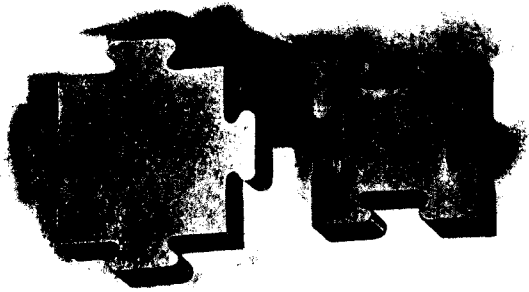
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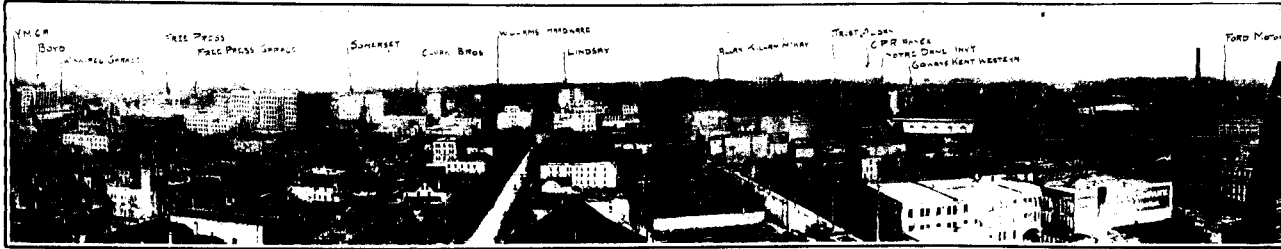
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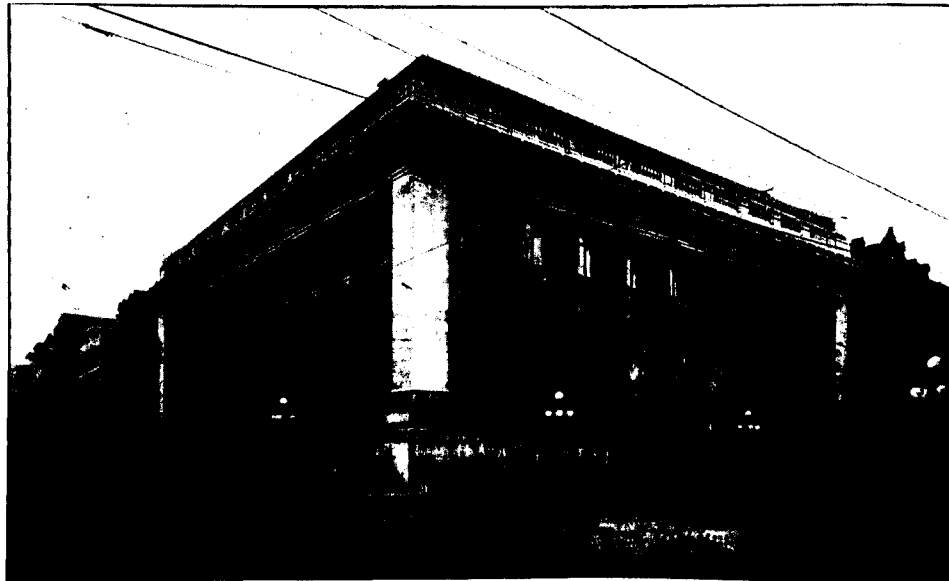
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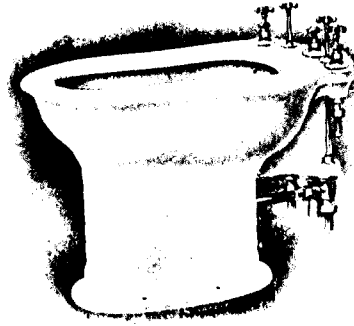


Fig. H026

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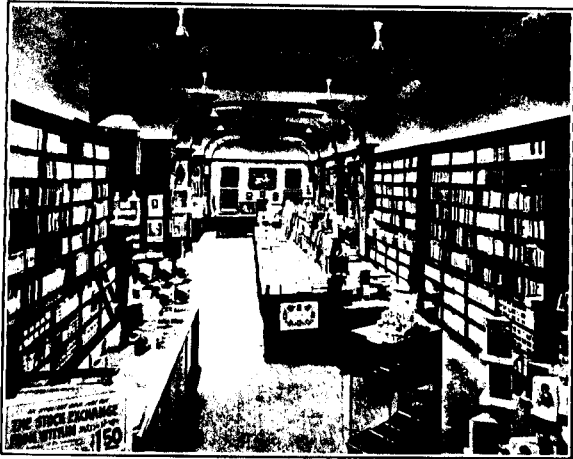
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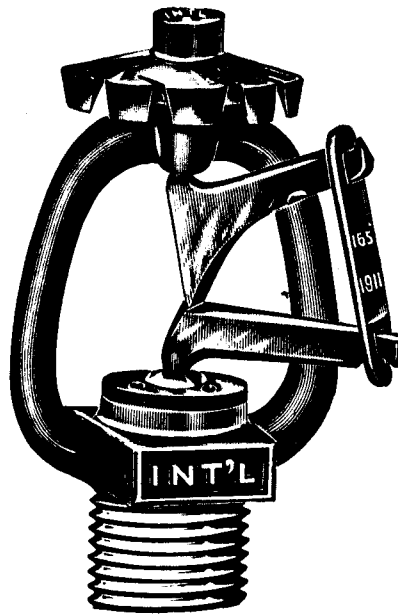
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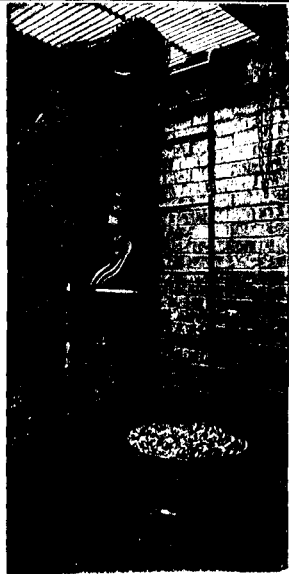
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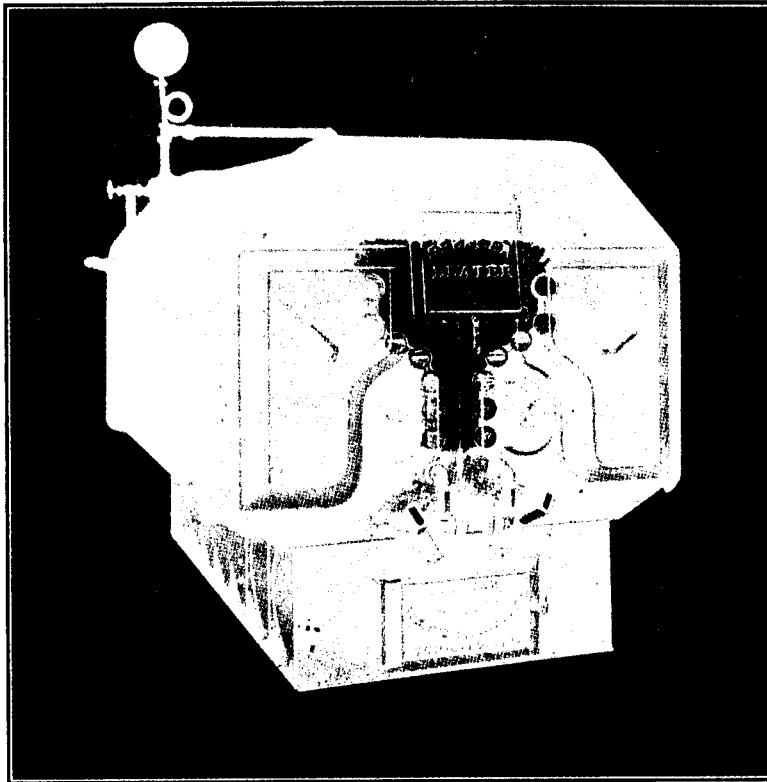
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Galt Art Metal Co. Greening Wire Co., Ltd. Metal Shingle and Siding Co. Noble, Clarence W. Pedlar People, The. Stinson-Reeb Builders' Supply Co. Trussed Concrete Steel Co.
- Laundry Tubs.**
Toronto Laundry Machinery Co.
- Leaded Glass.**
Hobbs Mfg. Co.
- Marble.**
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- Metallic Sash.**
Feather & Roadhouse. Hobbs Mfg. Co. Metal Shingle and Siding Co.
- Metal Shingles.**
Galt Art Metal Co. Pedlar People, The.
- Metal Store Fronts.**
Dartnell, E. F. Dennis Wire and Iron Works. Hobbs Mfg. Co. Metal Shingle and Siding Co. Pedlar People, The.

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Ornamental Iron Work. Canadian Allis-Chalmers, Ltd. Canadian Ornamental Iron Co. Dennis Wire and Iron Works. Meadows, Geo. B. Co., Ltd. Turnbull Elevator Co.	Refrigerator Insulation. Bird, F. W. & Son. Canadian Johns-Manville Co. Metal Shingle and Siding Co.	Sidewalk Lifts. Otis-Fensom Elevator Co.	Vaults and Vault Doors (Fire-proof and Bankers'). Goldie & McCulloch, Ltd. Taylor, J. & J.
Packing (Steam). Canadian Johns-Manville Co.	Radiator Valves. McAvity, T. & Sons.	Slate. Robertson Co., James B.	Valves. Canadian Fairbanks-Morse Co. Dunham, C. A. Co. McAvity, T. & Sons. Robertson Co., James B. Taylor-Forbes Co.
Packing. Canadian Fairbanks-Morse Co. Gutta Percha and Rubber Co. McAvity, T. & Sons.	Reinforced Concrete. Metal Shingle and Siding Co. Noble, Clarence W. Pedlar People, The. Trussed Concrete Steel Co.	Stable Fittings. Dennis Wire and Iron Works.	Ventilators. Feather & Roadhouse. Metal Shingle and Siding Co. Sheldons Limited. Pedlar People, The.
Paints (Steel and Iron). Brandram-Henderson Co. Canadian Bitumastic Enamels Co. Dartnell, E. F. Imperial Varnish & Color Co. International Varnish Co. Pinchin, Johnson Co.	Relief Decoration. Hynes, W. J.	Staff and Stucco Work. Canadian Johns-Manville Co. Hynes, W. J.	Wall Finishes. Berry Bros. Brandram-Henderson Co. Dartnell, E. F. Imperial Paint and Color Co. International Varnish Co. Pinchin, Johnson Co.
Paints and Stains. Berry Bros., Ltd. Brandram-Henderson Co. Canadian Bitumastic Enamels Co. Dartnell, E. F. Imperial Varnish & Color Co. International Varnish Co. Pinchin, Johnson Co. Robertson, James B.	Roofing Paper. Bird, F. W. & Son. Canadian Johns-Manville Co. Metal Shingle and Siding Co. Pedlar People, The.	Steam Appliances. Canadian Fairbanks-Morse Co. International Engineering Co. McAvity, T. & Sons. Sheldons Limited. Taylor-Forbes Co., Ltd.	Wall Hangers. Taylor-Forbes Co.
Perforated Steel. Greening Wire Co., Ltd.	Roofing. Asbestos Mfg. Co. Bird, F. W. & Son. Canadian Johns-Manville Co. Metal Shingle and Siding Co. Patterson Mfg. Co. Pedlar People, The.	Steam and Hot Water Heating. Dunham, C. A. Co. Sheldons Limited. Taylor-Forbes Co., Ltd.	Waterproofing. Ault & Wiborg Co. Bird, F. W. & Son. Canadian Johns-Manville Co. Dartnell, E. F. Mussens Limited. Pinchin, Johnson Co. Stinson-Reeb Builders' Supply Co.
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Pasters. Brandram-Henderson Co. Canadian Johns-Manville Co. Hynes, W. J.	Roofing (Tile). Dartnell, E. F. Metal Shingle and Siding Co. Pedlar People, The.	Steel Doors. Dennis Wire and Iron Works. Feather & Roadhouse. Mussens Limited. Ormsby, A. B., Ltd. Pedlar People, The.	Wheelbarrows. Mussens Limited.
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