CANADIAN ARCHITECT AND BUILDER

FINE & INDUSTRIAL ARTS · DECORATION · FURNISHING · CONSTRUCTION · SANITATION · ENGINEERING

VOL. XIII.—NO. 11. NOVEMBER, 1900 { PRICE 20 CENTS $2.00 PER YEAR.

INDEX TO ADVERTISEMENTS

In the "Canadian Architect and Builder."

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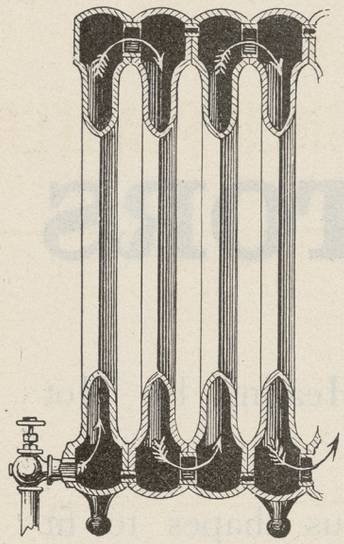

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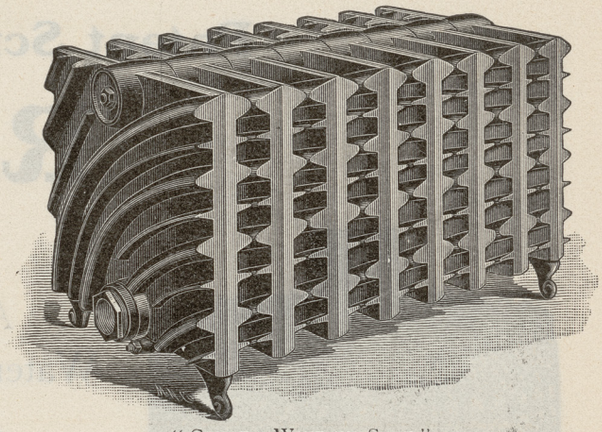

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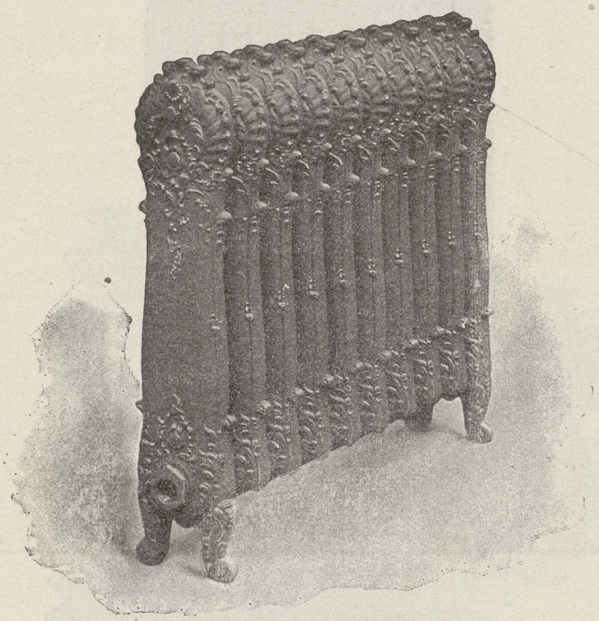

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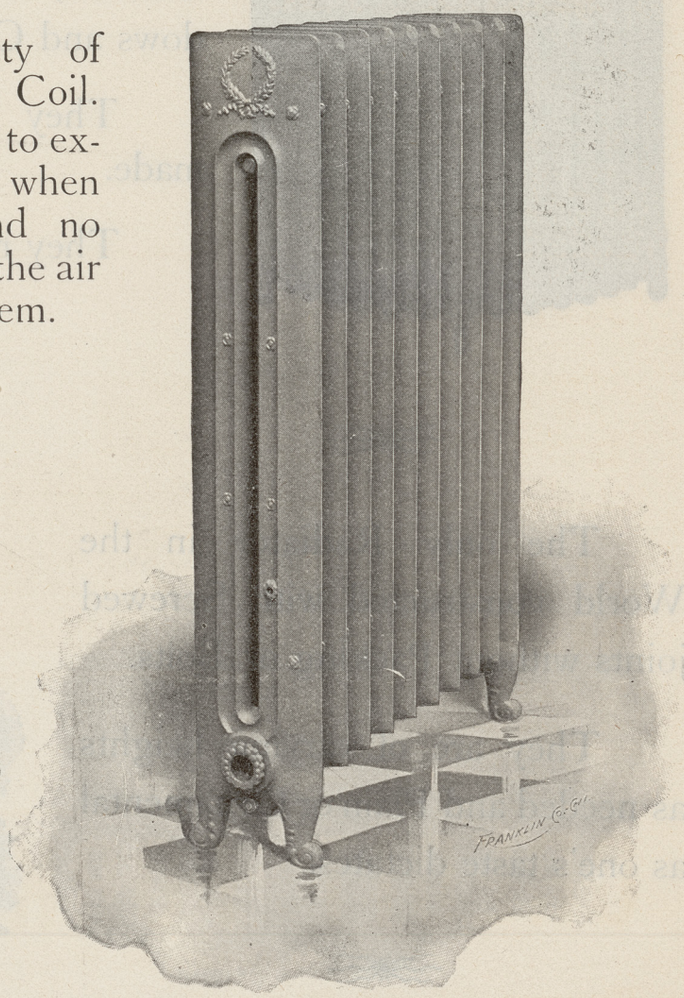

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FIGHTING FIRE IN HIGH BUILDINGS.

In Ainslee's Magazine, former Chief Bonner of the New York fire department, has an article on fire fighting, in which occurs the following passage:

"The steam fire engine, while very complete in all its appointments, has almost reached the limit of its useful capacity as an all-round apparatus for general use. The engine of the present day is also deemed inadequate on some occasions to combat successfully with fire in these tall buildings, when great power and forcing capacity are required, and the question of an auxiliary plan, with an abundant supply of water, has been brought before the city authorities for consideration. The plan suggested is the underground pipe system supplied with high pressure service, and laid expressly to withstand the severe strain likely to be placed on it in any section of the city, and is recommended as the most feasible auxiliary to the present system. With this plan of underground pipes, tested to a high pressure (such pressure to be maintained by pumping machinery) and an abundant supply of water, either cistern or salt, we could not only cope with any fire that might occur in the highest of our office buildings, but with those as well that are used for warehouse and mercantile purposes. There is an imperative need at the present time for just such a system in many sections of our city to enable the department to cope more successfully with fires."

The firm of Wallace Bros., Sussex, N. B., has done a large amount of building in that locality. In recent years they erected the Sussex Academy, which cost $6,000, the Sussex exhibition building and annex, the brick block in which the bank has been located and many residences. Business has been increasing with them steadily, and the firm's name is now well known.

LEGAL.

A CASE UNDER THE WORKMEN'S COMPENSATION FOR INJURIES ACT.—A machine, perfect in itself, is, if applied to some purpose for which it is unfitted, defective within the meaning of section 3, subsection 1, of the Workmen's compensation for Injuries Act (R.S.O., ch. 160.)

To state in the defence that notice of the accident has not been given, and that the defendants intend to rely on that defence, is not sufficient. Formal notice must be given in accordance with the provisions of section 14 of the Act. In deciding this particular point the Court applied one of its previous decisions (Cavanagh vs. Park, 1896) reported in the Ontario Appeal Reports, Vol. 23, page 715. In that case the Court held that the provisions of Section 14 of the Workmen's Compensation for Injuries Act, 55 Vic., ch. 3, an Ontario Statute, are not complied with by merely setting up as a defence that the notice of action relied on by the person bringing the action is defective, or that person against whom the action is brought must give formal notice of such an objection not less than seven days before the hearing of the action if he intends to rely upon it.—Canada Law Journal, Vol. 36, page 421.

THE INTERPRETATION OF "OWNER" UNDER THE MECHANICS' LIEN ACT.—Upon an appeal from the judgment of a county judge, reversing his judgment, the Court of Appeal for Ontario held, that a person is not an "owner" within the meaning of the Mechanics' and Wage-earners' Lien Act, and as such liable to mechanics' lien proceedings for work done or materials placed upon land in which he has an interest, unless there is something in the nature of a direct dealing between the contractor and the person whose interest is sought to be charged. Mere knowledge of, or consent to, the work being done or the materials being supplied, is not enough; there must be a request, either of an express nature, or implied, from circumstances, to give rise to the lien. In this same case a judge of the High Court of Justice held, that sections 41 and 42 of the Act, limiting "the cost of the action under the Act" to twenty-five per cent. of the amount of the judgment, besides actual disbursements, do not apply to the costs of an appeal from the decision of the judge or officer trying the action. The Court appeared to think, without however so deciding, that the costs of such an appeal are within the scope of section 45 of the Act.—Canada Law Journal.

EMPLOYER'S LIABILITY ASSURANCE.—A firm of contractors brought an action against an employers' liability assurance corporation to recover part of the premium paid by them to the corporation for an employers' liability policy which had been cancelled, and also for indemnity under the policy in respect of a workman's claim which arose while it was in force. The facts, shortly stated, were these: The defendant, corporation, had its head office in London, England; its chief office in Canada, at Montreal; its chief agency for Ontario, at Toronto, and a local agency at Hamilton. The local agents of the company, without authority from anyone, upon the request of the assured firm, and after some correspondence with the chief agent for the company in Ontario as to other changes, which had been refused to the knowledge of the assured firm, altered an employer's liability policy which had been sent to them (the local agents) for delivery to the assured firm. The alteration consisted in making the policy comprehend the workmen at a place other than those places named in the policy. After this alteration had been made the local agent handed the policy to the assured firm who paid him the premium. The local agents then sent the premium to the chief agent for Ontario, and advised him at the same time of the alteration made. The power to make any changes in the policy did not rest in the local agents, nor in the chief agent for Ontario, but only in the manager and Chief Attorney for Canada, who was not notified of the alteration. The trial judge held that the defendant company could not be held to have authorized the alteration and were not bound by the contract as altered. (1900, Ontario Reports, Vol. 31, page 666).

EFFECT OF A MECHANIC'S LIEN ON MORTGAGE INTERESTS.—The following points have been very recently decided by a Divisional Court with respect to the effect of a mechanic's lien on mortgage interests in the property.

In order to find the interest of a mortgagee in an action to enforce a mechanic's or wage-earner's lien under the Mechanics' and Wage-Earners' Lien Act, such a mortgagee must be made a party to the action within the 90 days mentioned in section 24, subsection 1; otherwise the lien absolutely ceases to exist as against such interest. The decision on this point follows the decision in the cases of the Bank of Montreal vs. Hoffner, reported in volume 10 of the Ontario Appeal Reports, page 529, and of Cole vs. Hall, reported in volume 13 of the Ontario Practice Reports, page 100. Wide and comprehensive as is the language used in subsections 35 and 36 of the Act, it was not intended to make so radical a change in the procedure as to enable a claimant (plaintiff), who has not constituted his action with the necessary parties, and who cannot make them parties after judgment on a reference as to incumbrances on the property, to bind them by serving them with a notice of trial under those sections.

In this same case the court also held, one of the judges dissenting, that a mechanic's lien attaches to the increased value, if any, in priority to a mortgage, as soon as lumber, which is to be used in the construction of a building upon the land, is placed upon the land, and before the lumber is incorporated into the building. And when the lumber, paid for by the mortgagee out of advances under his mortgage, was removed by the owner to a mill to be planed, and the mill-owner sold it to satisfy his charges and paid the balance to the mortgagee, the Court held, that at most the act of the mortgagee amounted to a conversion of the lumber, or proceeds of its sale, to his own use. The Mechanic's Lien Act provides no machinery enabling the Court to assess damages against anyone in such a case, so as to give lien-holders the benefit of the amount of such damages.

BUILDING STONE QUARRIES OF NEW BRUNSWICK.

THE Northumberland Stone Co., of Shediac, N.B., of which Mr. W. B. Deacon is manager, has been turning out some good stone this year which is attracting considerable attention. The quarries are on the coast at Buctouche, Kent Co., N. B., and have good shipping facilities by both water and rail. The stone is an olive green freestone, and is said to have no sand pockets and is not affected by iron rust. A large ten tenement building standing in front of the Governor's gardens in Quebec was constructed of this stone last year by the contractor, Mr. Simon Peters, under the supervision of Mr. R. Findlay, architect, of Montreal.

Another quarry in that vicinity is that of C. Pickard at Sackville, who ships a light brown stone, making a specialty of large dimension material. This is thought by some to be one of the firmest freestones in Canada. Mr. Pickard has a cube of a size 3″ × 3″ which, in a test at McGill University, was partially crushed when undergoing a horizontal crushing pressure of 81,000 pounds. This stone was used in the construction of the new Mount Allison residence at Sackville and in the new Science Building at Truro. Considerable has been shipped to Ottawa this year. Mr. Pickard has a letter from Messrs. Burke & Horwood, architects, of Toronto, which is a good recommendation of the stone in quality and color—also one from Messrs. Rhodes, Curry & Co., of Amherst. A modern ball-bearing derrick, with lifting capacity of 25 tons, has just been placed in the quarry.

Quebec was recently the scene of another land-slide, which fortunately was not attended by injury or loss of life. This was due to the fact that the accident occurred at an early hour in the morning. Four hundred feet of the cliff at Levis gave way, bunging Commercial street a depth of twenty feet.

Still pursuing its experiments in the line of seeking to diminish fire risks by every possible contrivance, the British Fire Prevention committee recently made another test, from which some interesting results were obtained. On this occasion a match-board partition was filled in with silicate cotton (slag wool), and the flames were allowed to come in contact with one side. The fire burned for three-quarters of an hour—the temperature rising from 300 degrees Fahr. to 1,800 degrees Fahr. This was followed by the application of water for two minutes on the outside, and one minute on the inside. After reaching a temperature of 1,365 degrees Fahr. in twenty-eight minutes, the fire broke through the upper part of the partition. In forty minutes, with a temperature of only 1,450 degrees Fahr., the upper part of the partition was on fire in several places, and at these points no slag wool could be seen. Inside, the boarding was consumed, as were also some of the studs passing from the outside to the inside. On the outside, where it was protected by the silicate cotton, the boarding was not affected, although the temperature at the last was 1,725 degrees Fahr. These results were at least interesting.

FRENCH POTTERY.

ACCORDING to Engineering, the total value of porcelain made in France is about thirty-three million francs (£1,320,000); of this goods to the extent of 12 or 13 million francs are exported to various countries, England being the principal customer. The manufacture of the high quality faience was introduced from England into France at the beginning of the century; during the last forty years the industry has been very widely extended. The total production of this class of ware in France is valued at twenty million of francs; naturally, the larger proportion of this is used in the country, but the volume of exports is relatively considerable. The making of hard faience is to-day of small amount, since the better class, with white paste and transparent glaze, has been made; now the industry is chiefly reserved for some classes of tiles, for stoves, and a few other uses.

PUBLICATIONS.

Churches and Chapels; their Arrangements, Construction and Equipment. By F. E. Kidder, C E., Ph. D., Architect, F.A.I.A. Second edition, New York; Wm. T. Comstock. 1 vol., oblong; 8vo.: cloth. Price, $3.

This work is much in line with books on Building Construction by the same author, and devotes a large amount of space to constructive features, although it does not neglect design, but gives over fifty plates of plans, elevations and perspective views of modern churches which have been erected by himself and other prominent church architects.

The jury appointed to enquire into the cause of the failure of the wall of a Presbyterian church in course of erection at Vankleek Hill, Ont., reported that the accident was due to the use of inferior material and the lack of proper bonding. The County Crown Attorney has expressed the opinion that the verdict should have stated positively who was to blame for the collapse.

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—THE—

CANADIAN ARCHITECT AND BUILDER,

A Monthly Journal of Modern Constructive Methods,

(With a Weekly Intermediate Edition—The CANADIAN CONTRACT RECORD).

PUBLISHED ON THE THIRD WEDNESDAY IN EACH MONTH IN THE INTEREST OF

ARCHITECTS, CIVIL AND SANITARY ENGINEERS, PLUMBERS, DECORATORS, BUILDERS, CONTRACTORS, MANUFACTURERS OF AND DEALERS IN BUILDING MATERIALS AND APPLIANCES.

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Prices for advertisements sent promptly on application. Orders for advertisements should reach the office of publication not later than the 12th, and changes of advertisements not later than the 5th day of the month.

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Contributions of value to the persons in whose interest this journal is published are cordially invited. Subscribers are also requested to forward newspaper clippings or written items of interest from their respective localities.

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Inspection of Elevators.

A COMMITTEE of the City Council of Toronto has under consideration the subject of the inspection of elevators by the municipality. Considering the number of accidents which have occurred, there appears to be need for such inspection. The number of elevators in use in the city is placed at 1,000 and the number of persons using them at 40,000. Presuming this estimate to be approximately correct, it will be seen how great is the liability of accident if the mechanism of these elevators, and the competency of the persons who may be placed in charge of their operation, is not placed under proper supervision and control.

Soldiers' Memorials.

Fitting public recognition has been made of the services rendered to Canada and the Empire by the members of the first Canadian contingent who recently returned from South Africa. Without doubt a hearty welcome home also awaits the members of the second contingent on their return. But what of the brave lads who laid down their lives in defence of the flag? It is not too early to consider what steps should be taken to express in the form of permanent and suitable memorials the nation's undying appreciation of their valor. While public enthusiasm is aroused as never before in our history, this matter should receive attention. In addition to a National memorial at Ottawa, there should also be memorials erected in the principal cities of the various provinces of the Dominion. Toronto probably could not do better than erect a permanent memorial arch on the site of the temporary one at the entrance to Queens Avenue through which the soldiers passed on their return to the

city. Such a memorial would form a fitting contrast in character to those already placed in Queen's Park to commemorate the death of the volunteers who fell in action at Ridgeway and in the Northwest Rebellion. It would also add interest and dignity to the approach to the Park and Legislative Buildings. The designs for the memorials should be obtained by competition, limited or otherwise, as might be considered conducive to the best result.

German Cement Combine.

FOLLOWING the example of their British confreres, the German manufacturers of Portland cement propose to organize a combine to restrict the output to the average quantity sold during the past three years with a fixed allowance for improvements and for new factories. The present output of the German factories is about six and a half million tons, while the consumption amounts to only four millions. New factories are also being built, with a capacity of two and a half millions. The British, Canadian and American manufacturers are thus likely to be saved from the price-cutting competition which must have resulted from the efforts of the German manufacturers to dispose of their large surplus production in the foreign markets.

Students' Competitions.

ATTENTION is called to students' competitions, particulars of which are printed in this number. The busy season is about to close. The long winter evenings are almost here. The students' opportunity for study and self-improvement is at hand. The student who is alive to his future interests will make profitable use of his time and opportunities this season. It is by placing one's effort's alongside those of others, that one is able to judge of his knowledge, abilities and progress. Every architect should feel an interest in his students. One way of manifesting that interest would be to call their attention to these competitions and encourage them to enter. Will every Canadian architect who may read these lines lend his co-operation in this direction? If so the success of the competitions will be assured.

The Teaching of Drawing.

AMONG the international congresses held in Paris during the last summer was one on "The Teaching of Drawing," which opened on August 29th and closed on September 1st. As the result of a full discussion of the subject, first in separate sections and afterwards in full assembly, the following conclusions were reached. (1.) That drawing should be made a compulsory subject in general education. (2.) That the initiative of the teacher and the individuality of the student should be encouraged to the fullest degree possible. (3.) That the artist and workman should be brought into closer contact by the former devoting greater attention to the requirements of the trade for which he designs and by providing for the latter a more liberal art education. (4.) That the architect requires a more scientific training and the engineer a more artistic training in order that the two professions may work in closer contact with each other.

Opportunities for Trade Expansion.

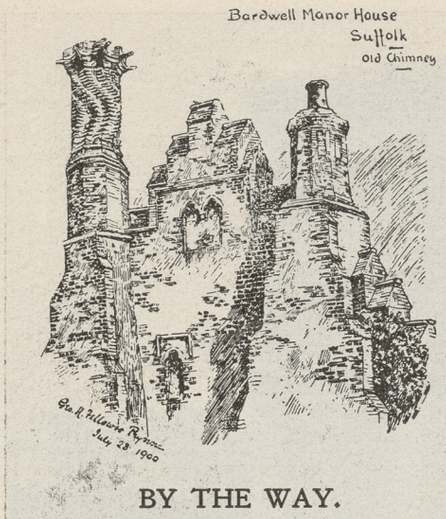
THE return of the Canadian contingent from South Africa reminds us that the war is now drawing to a close and although it may be some time before it is entirely over, trade there is just beginning to resume its former shape. There is little doubt that as soon as security to those commercially engaged can be depended upon, a very considerable expansion in trade may be expected. Tariff rates in the two states which have recently been annexed to the British Empire were formerly almost prohibitive, so that when this new field can be added commercially to that already known in Cape Colony and Natal, the market should be one worth enquiring into. Another change in the Empire is to be made on January 1st., when the Australian colonies are to be federated into one Commonwealth which will necessitate a revision of tariff rates as each colony had its own tariff. It would therefore probably be a suitable time for persons interested in the expansion of trade to enquire into the chances to be found in this field for Canadian products.

Shingles.

IT has been interesting to watch the struggle for popular favor between the different varieties of shingles. Our observations lead to the conclusion that the white pine shingle is losing ground, and that its field is gradually becoming more limited. In the western part of Canada, for instance, preference is given to the red cedar shingles, while in eastern Canada the white cedar shingle is largely used. In Ontario the white pine shingle may be said to still hold the market, but even in this province it is meeting with severe competition from other varieties. One of the reasons for this encroachment on the white pine field is the comparatively lower price of cedar shingles. Another reason which has been advanced is that the quality of the white pine shingle is deteriorating, and that even the clear butts sometimes have worm holes in them. It is unlikely that the manufacturers of white pine shingles will endeavor to materially improve the quality of their production, as the high price of pine stumpage makes it necessary to convert into shingles only that portion of the logs which will not make merchantable lumber. It is a significant fact also that the red cedar shingle as now manufactured is a much better article than that which was submitted to the eastern trade a few years ago.

Storage of Explosives.

THE disastrous explosion which recently occurred in a wholesale drug warehouse in New York, has called attention to a source of danger which appears to have been to a large extent overlooked. True, the building regulations of most of our cities contain a regulation prohibiting the storage of any considerable quantity of explosives within specified districts. Such a regulation appears to have existed in New York, but its enforcement was not properly looked after, and the present disaster to life and property is the result. This occurrence should lead to an investigation by the municipal authorities of Canadian cities, to learn if the provisions of the building by-laws in this particular are being observed. The liability of insurance companies for damage arising from explosions of this character also enters into the question. We observe that the standard insurance policy in New York provides that the insurance companies shall not be liable for loss caused by explosions of any kind, unless fire ensues, and in that event for the damage by fire only. The plate glass insurance companies have refused to assume liability for damage to windows within the area damaged by the explosion. It will thus be seen how important are the interests hinging upon the proper enforcement of regulations for the prevention of storage of explosives within the central districts of towns and cities.



BY THE WAY.

THE Assessment Department of Toronto estimates that there are now in that city only 630 vacant houses, and 131 vacant stores, as compared with 3,311 vacant dwellings, and 648 vacant stores in 1896, and that to meet the requirements of population 1,200 houses must be built next year.

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THE multiplicity of strikes and their far reaching effects upon the welfare of the persons immediately concerned as well as upon the industrial progress of the Dominion, necessitates the adoption of legislation which would be effective in putting a stop to this method of settling disputes between capital and labor and such scenes as were recently witnessed at Valleyfield. Compulsory arbitration on similar lines to the New Zealand law seems to be the best solution of the question.

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I AM pleased to note that the teaching quality at the Toronto Technical School is being improved. Mr. Barrett, a capable young architect, was recently appointed instructor in Building Construction. Mr. Banks, whose skill as a modeller is well known in Toronto, has been engaged to give instruction in modelling. If the services of equally well qualified teachers can be procured for the other departments the school may be expected to do much better work in the future than in the past.

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THE authorities of Queen's University, Kingston, have issued an invitation to architects to submit plans and designs for new buildings to cost about $150,000. It contains the usual clause that the said authorities do not bind themselves to accept any of the plans submitted. No provision is made for the appointment of an expert to judge the plans. The matter has been brought to the attention of the Ontario Association of Architects who will try to enlighten the authorities regarding the conditions which should govern competitions of this kind. No self-respecting architect should have anything to do with the competition in its present form.

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THIRTY TWO granite columns each 54 feet long, by 6 feet in diameter, and weighing about 160 tons, are to form a feature of the construction of the cathedral of St. John the Divine, New York city. The rough blocks of granite from which these columns are made, each measure 67 feet long, 8½ and 7 feet cross section, and weigh 310 tons. The corners are roughly dressed off by hand, after which the block is placed in a lathe 86 feet in length, having a swing of 6 feet 6 inches by 60 long, fitted with eight cutting tools, each of which takes a cut 3 inches in depth. These cutters reduce the diameter of the block by 24 inches at one passage over its surface. Six weeks are required to dress and polish each column.

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THE Builders' Journal refers to the foolish custom still prevailing at Freiburg, in Germany, of offering a reward of five shillings and a good dinner to the steeple jack who will climb to the top of the tower of the Minster, a height of 400 feet. This performance forms a feature of the celebration of the birthday of the reigning Grand Duke of Baden. In the ascent the men have to leap from stone to stone, and as the space between these is considerable in some cases, it will be seen what an idiotic practice this is ; one miss and the man would be dashed to the ground. When the top is reached a pistol is fired and then the descent is made. Three men went up the tower the other day, and one of them performed acrobatic feats on an iron bar fixed about half-way up.

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THOSE who have studied the methods of the trades unions have noticed that the chief object sought to be attained by them is to secure for their members the highest possible renumeration for the least amount of skill and labor. The working hours have been reduced from ten to nine ; again in many cases from nine to eight. This rate of progress is too slow however, for some of the more advanced thinkers on this subject, in which class deserves to rank the Rev. S. S. Craig, a representative of what is called the People's Party. This gentleman in an election address delivered in Toronto, is reported to have said : "He was glad to see the eight hour working plank. But he wanted something more ; he wanted a four hour working day and the taxation of land values would produce a four hour working day. Then our wives and our daughters would not have to leave their homes to work for a living, and everbody would have full opportunity for work." Isn't it the opportunity to escape work that is being sought for ?

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A GENTLEMAN who has recently visited Sydney, C. B., has been telling me of the wonderful development which has taken place in that town since it became known that the Dominion Steel Company had decided to establish extensive works there. Property which before was considered to be of little value, has enormously advanced in price ; indeed it is stated that owners do not apparently know how much to demand, and the prices asked are in many instances ridiculously high. The Bank of Montreal is said to have paid $8,000 for a site sufficient for a new building on one of the principal corners. The number of stores and high class stocks therein is said to be entirely out of proportion to the requirements, as the majority of the new population which has been brought into the town, in consequence of the operation of the steel company, principally consists of the laboring class, whose wages are small and who therefore can purchase only the cheaper class of goods. After a time, when the works are constructed and put in operation, a larger proportion of skilled workmen will be employed at higher wages, but even then it is considered doubtful if many of the new establishments which have been started will find it possible to do a profitable trade.

The Keizer Brick Machine & Mfg. Company, of Winnipeg, are applying for incorporation.

ARCH OF TRIUMPH, PARIS.

CANADIAN SOLDIERS' MEMORIALS.

BY request a number of gentlemen prominent in artistic, military and business circles have kindly sent us a brief expression of their views in regard to the desirability of immediate action being taken to erect suitable memorials to the memory of the Canadian soldiers who fell in defence of the Empire in South Africa. These opinions are appended as follows:

GENTLEMEN,—I have your valued favor of Nov. 8th and have read the accompanying proof of the proposed article in relation to a Memorial of the participation of Toronto in the South African War, and in reply have to say that I think it is desirable that while the public is alive to the question, some means of recognition should be adopted. Your article doubtless will provoke discussion, and enable those interested to form a better opinion than could be done off hand without greater consideration than I have been able to give to the question.

It has occurred to me that the men who sacrificed their lives in this War, should especially have recognition, and whether the Arch is erected or not, the portraits of these men who went from Ontario, should be placed in the Parliament Buildings.

I know that in some cities of the United States, the representatives who perished in the War of the Rebellion, have been honored in the way which I have indicated—thus, in Harvard College there is a Memorial Hall devoted entirely to this purpose.

Yours very truly,
EDWARD GURNEY.

SIR,—Replying to yours of yesterday's date, I quite approve of the "Soldiers' Memorial" exactly on the lines that you suggest. I think it is the duty of the citizens of Toronto to in some satisfactory manner permanently commemorate the men who went to South Africa, and I think no better form could this memorial take than a permanent archway where the temporary one was erected at the end of Queen Street Avenue. Appreciating the honor you do me in asking my opinion, believe me,

Yours truly,
JOHN I. DAVIDSON.

Toronto Nov. 10, 1900.

DEAR SIR,—I was very pleased to receive a few minutes ago, your circular letter respecting a permanent arch to be erected in Toronto as a fitting recognition of the services that Canada's sons have rendered to the Empire. I would suggest, however, that a better and safer location than the one you mention would be at the College street end of the avenue. Queen street being such a thoroughfare, I fear the same difficulty in preserving it would occur as what happened to the fence around Osgoode Hall, where every corner of the stone pillars was broken off by hoodlums loitering around in that vicinity. I think the arch should be of substantial stonework, and as it would be at the very entrance of Queen's Park, that a statue of Her Most Gracious Majesty, the Queen, should adorn the top of the arch. I am quite sure if the ladies of Toronto would take this matter up, they would carry it through to a successful issue, as they have never yet failed in any undertaking of a loyal and patriotic nature. Wishing you every success and assuring you of any assistance I can possibly afford,

Yours faithfully,
J. M. DELAMERE,
Lieut.-Col. Com. Q.O.R. of Canada.

GENTLEMEN,—Replying to your letter of the 8th inst., enclosing copy of article referring to a suitable memorial for our Canadian boys who have died for the Flag in Africa, I would say that I am in sympathy with the idea, and think that some recognition should be made in the shape of a memorial in the Queen's Park. They certainly have done their duty well and faithfully, and we are under a deep debt of gratitude to them.

Yours faithfully,
A. E. KEMP.

DEAR SIR,—I am heartily in accord with the proposition to erect a memorial to those Canadians who gave their lives for the cause of freedom in South Africa, and as a Canadian artist I am jealous that the memorial shall be a fitting tribute in its aspect as a work of art. I approve of obtaining designs through competition, but only on condition that a competent jury is appointed to decide on the merits of the designs. The Toronto Guild of Civic Art is organized for the purpose of arranging such matters, both as to how designs should be submitted and the appointment of fit persons to pass judgment upon them, and I hope the arrangement of the purely artistic portion of the work will be entrusted to that body. I would suggest, as a practical step to take, that the Guild be asked to look into the matter, and prepare several alternative schemes with the approximate cost of each. Speaking as a member of the Guild, I believe immediate action on their part would result from such an invitation from the Red Cross Society, who have initiated the idea.

Sincerely yours,
G. A. REID.

INDIAN ROAD, TORONTO, NOV. 13TH, 1900.

DEAR SIR,—I wish to assure you of my sympathy with your proposal to erect a memorial to members of the Canadian Contingent who fell in South Africa. Some memorial should be

erected and it is time now to make suggestions. But as regards the especial memorial you propose—an arch over Queen's avenue—I hesitate to express unqualified agreement. If it were intended to raise a memorial to troops returned from victory, such an arch as they might march under on the day of their return would be a suitable memorial; the present custom for temporary decorations and precedent for permanent structures suggests it. But as an erection in honor of the dead, it seems, whether innately or from custom, inappropriate.

I offer this criticism of the particular proposal made, but hope, and indeed cannot doubt, that the general idea will meet with approval from everybody.

Yours truly,

W. A. LANGTON.

94 KING ST. WEST, TORONTO, Nov. 12th, 1900.

DEAR SIR,—I think the proposal to erect a permanent memorial to our Canadian Soldiers on the site of the temporary triumphal arch is a very good one.

But I hope if this work is undertaken at all it will be done as well as they did their's.

An important opportunity like this of permanently recording a great event in our country's history should be thought out as well as we are able, so that there will be no risk of belittling either the deeds of our soldiers, or a site so valuable with a mean erection.

The Guild of Civic Art was formed I believe to advise upon these matters and I hope they will see that the project is dealt with in a large enough manner, and not leave us with a monument like something adrift from a graveyard.

Yours truly,

EDEN SMITH.

CANADA LIFE BUILDING TORONTO, Nov. 13th.

DEAR SIR,—I have read your suggestion that an arch should be erected at the foot of Queen's Avenue to commemorate the bravery of the Canadian troops in South Africa. I heartily approve of the suggestion. The co-operation of the colonies with the mother land marks clearly an epoch in our history, and no more appropriate form of monument could be erected than an arch. The position is an admirable one, and I think the Ontario government should unite with the city in erecting an arch that would reflect credit on our country and city.

Yours truly,

JAMES L. HUGHES.

TORONTO, Nov. 13th, 1900.

GENTLEMEN,—I duly received your favor enclosing a circular with reference to the proposed memorial to those of our volunteers who were killed and wounded in South Africa.

I agree with your idea that a permanent memorial arch should be erected on the site of the temporary one at the entrance to Queen's avenue, and shall be pleased to subscribe to a fund for that purpose, providing the matter is dealt with promptly.

Yours truly,

J. O. THORN,

Honorary Captain, Quarter-Master, 2nd Regiment Queens' Own Rifles of Canada.

TORONTO, ONT. Nov. 14, 1900.

DEAR SIR,—Our society having heard from Mr. Reid, our President, of the intention to erect an arch to commemorate the death of our soldiers who fell in South Africa, heartily endorse the suggestion, and would advise that all our architects and artists be invited to send designs, and that judges appointed by the Guild of Civic Art select the most artistic and suitable for the purpose.

Yours truly,

ROBT. F. GAGEN,

Secretary Ontario Society of Artists.

TORONTO, Nov. 14, 1900.

DEAR SIR,—Relative to your suggestion regarding a memorial to be erected in honor of the brave Sons of Canada who have laid down their lives in defence of the Empire in South Africa, I think there cannot possibly be two opinions upon the advisability of erecting some permanent and suitable monument in recognition of their services.

What is done, however, should be done well. The monuments now existing in Queen's Park commemorating the death of those who fell at Ridgeway and in the North West Rebellion, are not, in my opinion, worthy of the deeds which they commemorate. Any monument which may be erected to the memory of those who fell in South Africa should be one in which we can always take a pride in pointing to. I think the suggestion of an arch, at the entrance to Queen's avenue is a good one, and it would add, as you say, interest and dignity to the approach to the Park, as well as commemorate in a most fitting manner the services of the Canadians who fell in South Africa.

Yours truly,

W. C. MACDONALD, Lieut.-Col. 48th Highlanders.

TORONTO, Nov. 14, 1900.

Honor the brave! Who desires to do otherwise? But in taking steps to perpetuate the deeds and memory of Canada's brave sons, let us not be carried away by sentiment, as the stern, stubborn facts of ways and means will confront us sooner or later.

All honor to the Red Cross ladies who are desirous of erecting a memorial arch in College avenue, as to which, the suitability and site, there would likely be little contention if we were assured that the amount required would be forthcoming, and the result be satisfactory. Let us not attempt too much for fear we fail. Past experiences should make us cautious. How much are we prepared to expend and what we are likely to accomplish, should be our first consideration. If we find a memorial arch is out of the question why should not the City Hall be the receptacle of a bronze Commemoration Panel, or one in relief, or of a piece of statuary. In mentioning the City Hall as a suitable place, might we not look forward to this building becoming the treasure house of such mementos as we may erect from time to time, either in marble, stone or bronze, a building visited by thousands of tourists annually, and a building so well adapted for the purpose.

There is no doubt that if anything is to be done now is the time, and why, I might ask, should this not be a Provincial monument? The position of Toronto is central, and the site most desirable, whether in or out of doors. Toronto, no doubt, will contribute most of the funds, but other sections of the Province should not be debarred from contributing their quota to a monument in which they are as much interested as ourselves.

R. Y. ELLIS.

TORONTO, Nov. 1, 1900.

"From the earliest times to the present day the deeds of kings and heroes have been recorded in arches of stone. The Propylea at Athens, the arch of Constantine at Rome, the arch of Triumph at Paris, the Washington arch in New York, and the marble arch in London are familiar examples of this fact. These memorials have been the means of perpetuating the memory of men and events which would otherwise have passed into oblivion. Such commemoration, recording the gratitude and appreciation of the nation, incites to great deeds and emulation in those living and in generations yet unborn. These memorials fix in the mind the sacrifices of a people on the altar of patriotism as nothing else can. They become objects of patriotic pilgrimage, and from them emanate influences which contribute to the fostering of national ideals which make for the upbuilding of the nation.

Canada has taken her place among the nations of the earth, and has demonstrated that she is an integral part of the British Empire. Shall we not record the deeds and the daring of her gallant sons? Shall we allow the names and the sacrifices of our fallen comrades to be forgotten? They have not died in vain, for their blood has cemented the structure of the British Empire.

The city of Toronto, as becomes the capital of the great province of Ontario, is adorned with statues and memorials of Ontario's illustrious dead. Shall we not rise equal to the importance of the occasion and erect a Provincial Arch of Triumph to her victorious sons, and to record for all time the names of the gallant dead who fell in the defence of the Empire and in the sacred cause of civil and religious liberty in South Africa.

I propose the formation ot a committee to be composed of representatives of the Red Cross Society, National societies, the military element and representative men in Ontario to take the matter up and bring it to a successful issue.

G. STERLING RYERSON.

DEAR SIR,—In reply to your article re Soldiers' Memorial, I agree that some steps should be taken to express our gratitude for the sacrifice those brave boys made in giving up their lives for our country, and no more fitting monument could be erected to their memory than a permanent arch at the entrance to Queen's Park avenue.

I would therefore suggest, if this idea finds favor, and it surely must, that the architects and artists of Toronto be requested to

submit designs (with specifications as to cost). These designs to be placed on exhibition and competent judges apppointed—judges above approach and reproach—to select the best and most suitable one. Then a fund might be started by the citizens to defray expenses.

Yours truly,

McGILLIVRAY KNOWLES, R.C.A.

DEAR SIR,—I regret that owing to press of business I have been unable to answer earlier your letter of 8th inst. I sincerely hope that an enduring monument of some character in honor of the work of the Canadian Contingent in South Africa will be erected, but I should regret if it took the form of an arch unless a large sum of money, somewhere between $25 and $50,000 could be raised, which I think is out of the question. In any event I do not think that an arch at the entrance to the avenue in question would be desirable. A bronze statue in the uniform worn by the Canadian Soldiers in South Africa would, in my opinion, be much more readily accomplished in view of its cost.

Yours truly,

B. E. WALKER.

TORONTO, November 17th, 1900.

Dear Sir,—I am much obliged for your letter of the 8th, instant with accompanying proof of the article which is to appear in the November number of the "Canadian Architect and Builder." I am quite in accord with the suggestion made therein and am glad to observe that a movement is already on foot in Halifax for the perpetuation of the memory of our soldiers who fell in South Africa, by some fitting memorial.

Yours very truly,

F. W. BORDEN.

Ottawa, 19th November, 1900.

ARCHITECTS' AND ENGINEERS' NEW ROOMS.

The Ontario Association of Architects from date of 15th Nov., are going to have a local habitation, in pursuance of plans laid before and endorsed by the last convention. The second floor of Nos. 94 and 96 King street west have been rebuilt by Messrs. Darling & Pearson, and adapted to the requirements of architects' and engineers' association rooms—to be used for the furtherance of the interest they have at heart—the personal intercourse, interchange of ideas, and criticism of methods, which makes for that atmosphere in relation to these matters which mark the larger centres, which broadens and refines as opposed to narrowing isolation.

The entrance from the street is not all that was promised. Existing leases prevented the carrying out of the terra cotta front for the present, but passing through a massive oak door and ascending an oak stairway, at the landing is entered the lobby, or ante room, common to both engineers and architects. This is an effective square hall, twenty feet wide with unique prismatic ceiling light. The woodwork, including impost of large cove to ceiling, is all white, excepting a tint on the cove, a strikingly effective wall paper in green and blue, yellow, and red mahogany doors, with old brass furniture. From this ante room (which is to be furnished as a comfortable common meeting ground or 20x40 feet; architects' room, 20x20 feet; Engineers' room, 20x19, all members) are five doors, giving access to assembly room, a lavatory filled up in marble; a cloak room with sink and gas range, and large enough on occasions for serving luncheon or dinners. The assembly room will seat 125, is finished in white enamel, except high dado of sheeting covered with crimson burlap for tacking up drawings on exhibition. A raised dais and blackboard marks the speakers' end. The ceiling is a segment of a circle supported by heavy cambered beams.

The architects' special room has three windows looking on to King street; it has a great mantel, a book case with leaded glass doors, a fixed seat and desk, shelf and picture mould carried entirely around the room, giving continuity to the whole effect. The finish of woodwork is an antique green stain, harmonizing with reddish brown wall paper of bold pattern. Massive oak table and chairs, chosen for comfort most of all, black iron dogs set in brown tile hearth, with Turkish rug on the floor and warm curtains on the windows, completes the furnishing of the room.

The lighting of the entire floor is by electricity and is made very effective, especially in common lobby with its eight ceiling drops.

The members are earnestly urged to make use of the rooms on all possible occasions. The furnishings are not yet complete, but it is the intention that their homelike character will make the rooms a congenial place of meeting—to have on their tables and shelves such periodicals and books as will illustrate the world's architecture and art, and keep the members in touch with it.

Branch Office of the CANADIAN ARCHITECT AND BUILDER, Imperial Building.

MONTREAL, November 16th, 1900.

CANADIAN SLATE.

Since 1893 the production of slate in Canada has gradually been decreasing, and one by one the different quarries have closed down until now there is not a slate turned out in the whole Dominion. This regrettable state of affairs was brought to a climax last May when the quarries of the "New Rockland Slate Co." were shut down. Their quarries have been the only ones working for the past two years, and as the slate turned out has almost invariably been of a uniform good quality, it is with regret that we draw the attention of our readers to the fact, and trust that soon we may hear of their starting work once again. These quarries are situated in that portion of the Province of Quebec commonly called the Eastern Townships, and have given employment to over 80 hands almost continuously since their first opening in 1864. In 1882 the company re-formed under new management, and in 1886 constructed a tramway to connect the quarries with the Grand Trunk Railway, a distance of over four miles.

The United States has recently opened up quite an extensive export trade both with Great Britain and Australia, and it is a great pity if this field for slate cannot be held in the near future by Canada.

The United States in 1898 produced for home consumption slate valued at $2,353,465, and exported $1,370,075 worth, of which $1,213,377 went to great Britain. Surely this market is worth gaining.

There have been some improvements in slate quarrying of recent years, chief and foremost being the use of the channeler, a machine which takes the place of blasting—a process which has always been more or less objectional as it shatters and wastes a good deal of otherwise good slate. The slates from the Rockland quarries have always worn well and have proved of superior quality, and compare most favorably with the best Welsh and Pennsylvania slates. The chemical composition is as follows:

Silica S_1O_2,	65.39
Alumina	15.97
Ferrous Oxide	4.66
Lime and Magnesia	3.66
Potash and Soda	6.93
Maryonous Oxide	0.39
Loss by Ignition	3.26
	100.26.

This analysis shows at a glance how rich the Rockland slate is in the valuable constituents of a slate, viz., the silicates of iron and alumina, and if sufficient slate of the highest grade can be found, we can see no reason why an export trade could not be obtained both with Great Britain and Australia, and also probably South Africa.

FIRE-PROOFED WOOD.

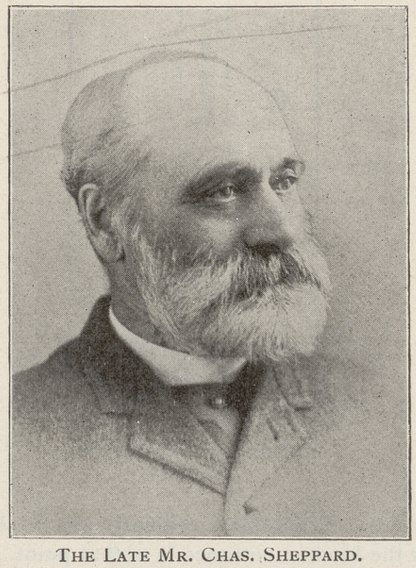
The Electric Fire-proofing Company are at the present time erecting buildings near Montreal in which wood is to undergo a process whereby it will become non-inflammable. The result is obtained by forcing sulphate and phosphate of ammonia into the wood by hydraulic pressure, and has been found very satisfactory in so far that the wood only carbonizes and fails entirely to ignite. This non-inflammable wood has been used to a large extent on nearly all the more modern U. S. warships, and in a

report from the Naval Constructor to the Secretary of the Navy' in March, 1899, he says, after testing for eight months: "That so far as is known there is no better process of fire-proofing wood in use than that now employed by the Electric Fire-proofing Company, and its continued use, for the present at least, is advised."

The science of fire-proofing has of late years been carried to a point not dreamt of ten years ago, and at last architects are beginning to understand that no structure should be called fire-proof unless it is so in every respect. It is almost as sensible for a farmer to build a fence and have the gate open as for a man to build a large building only partly fire-proof. Architects should be more careful of their reputation than to allow a building not completely fire-proofed to be designated a fire-proof structure. Only a small portion, the underside of a steel beam or a single column, unprotected, might cause serious loss to almost the whole building. This fire-proofed wood forms the last thing necessary in fire-proof materials, as there is brick and terra cotta for the walls, porous terra cotta and concrete for the floors and partitions, encasing steel if necessary, and now there is non-inflammable wood for doors, sashes, and fixtures. These materials if employed in a scientific manner, ought to make a completely fire-proof structure, that is, one that is capable of standing a severe fire and water test.

OBITUARY.

One of the landmarks of the building industry in Montreal has recently been removed in the person of the late Mr. Charles Sheppard, whose portrait accompanying this article will be re-



THE LATE MR. CHAS. SHEPPARD.

cognized by a wide circle of acquaintances. Mr. Sheppard came to Montreal in 1860 and entered into co-partnership with Mr. Henry Bulmer as manufacturers of building brick. They acquired large tracts of land in the east end of the city, and from a modest beginning their establishment grew to be the largest and most extensive of its kind in the Dominion. The firm of Bulmer & Sheppard continued until 1885, a period of twenty-five years, and then Mr. Charles Sheppard purchased Mr. Bulmer's interests, carrying on the business alone until failing health about three years ago decided him to retire from active pursuits. Since that time his two sons, George J. and Edmund, both well known to the community, have conducted and succeeded to the business. Mr. Sheppard passed away on the 12th of October, leaving a sorrowing widow (who had but a few short weeks before celebrated the anniversary of their golden wedding) and his two sons.

His death removed from amongst us one more of the staunch men of the old school—a man of honor and probity. One of the most touching tributes to his memory was a handsome pillow of flowers which his numerous employees placed upon his grave, bearing the inscription "Le Maitre." Mr. Sheppard was always ready, in an unassuming way, to assist the needy, and an appeal to him always met with a substantial response.

THE GRANBY ENAMELWARE CO.

The popularity of porcelain enamel iron for all sanitary ware has tempted the Granby Enamel ware Company, of Granby, Que., to start manufacturing enamel baths and sinks. The first baths turned out were slightly defective, both in the flow of the enamel and also in the finish to the edge of the rim, but in the baths now turned out these defects are being overcome. The market for these goods is very extensive in Canada, and we wish the company success in their venture, they being the first as far as we are aware in this line. We trust that the firm will bear in mind that it is indispensable to success that every detail should be carried out with the greatest care, and that no defect should be found in their first quality goods. It is often what may appear a trifling blemish that is the cause of dissatisfaction, and this soon ultimately turns what might have been success into failure.

MINES OF THE PROVINCE.

The following is a summary statement of the yield of some the mines in the Province of Quebec for 1899, that may be of interest.

Nature of Material	No. of Men Employed.	Gross Value.
Bog iron ore	800	$40,000
Asbestos	900	581,667
Asbestic		17,069
Slate	75	30,119
Flagstones	9	3,500
Granite	60	14,780
Cement	50	31,130
Lime	250	140,000*
Bricks	1200	600,000*
Building Stone	350	250,000*

*Estimated.

The asbestos came chiefly from Megantic and Richmond Counties, the slate from New Rockland, (the quarry at that time was working), flagstones from Dudwell, granite from Stanstead, where there are three quarries, and from St. Philippe, where the Laurentian Granite Company's quarries are situated. There is also work started at Mount Johnson, in Iberville County, where a dark grey granite of good texture has been found. The cement came from Hull and Longque Pointe near Montreal, while the bricks came chiefly from Montreal, Laprairie and St. John Deschaillons.

THE P. Q. A. A.

The Province of Quebec Association of Architects will have a special general meeting on the 15th of January, 1901, in Montreal. Object: Amendments to by-laws and election of an auditor to replace Mr. C. Dufort, who is now a member of the council. Members wishing to amend any article of the by-laws should send in their proposal of amendments to the secretary before the 15th of December next.

THE NELSON MONUMENT.

This monument, erected nearly a century ago to commemorate the battle of Trafalgar, has recently undergone repairs, under the direction of the Munisinatic and Antiguarian Society, and thus restored, was recently unveiled by Lord Strathcona.

NOTES.

Mr. James Ballantyne, the well-known plumber, has recently admitted to partnership Mr. R. F. Oilvy, under the firm name of Ballantyne & Co.

A memorandum recently found in the desk of ex-City Building Inspector Lacroix is said to prove that he retained over $7,000 in fees for building permits, which should have gone into the city

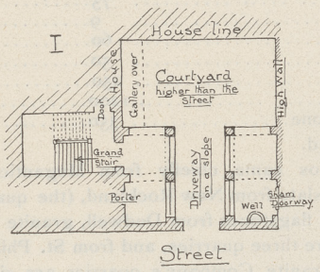
DECISION OF AN IMPORTANT COMPETITION.

Last year the corporation of the town of Levis, province of Quebec, advertised for competition plans to be submitted by civil engineers for the best system of "Waterworks," and "Sewerage" for the town of Levis. Recently the judgment has been given in an elaborate report which indicates a careful and conscientious study of the different plans submitted. The judges were, Charles Baillairge, ex-engineer for the city of Quebec; Chas. E. Gauvin, C.E., Quebec, and Jeremiah Gallagher, C. E., director of Waterworks, city of Quebec, who have awarded the first prize of one thousand dollars to Robert Surtees, C. E., Ottawa, and the second prize of five hundred dollars to Messrs. Berlinguet and Lemay, architects and civil engineers, Quebec.

The parlor of a suburban house is hung with a pale green paper having conventional figures in pale ivory of flambeaux surrounded by garlands powdered regularly upon it. The heavy curtains that separate this room from the hall are dark green velours, through which the dull red finish of the plastered walls in the hall forms an agreeable color contrast. On the parlor floor is a heavy Wilton carpet of a floral pattern, roses on a green ground, while an Oriental rug is thrown on the polished floor in the hall. The furniture is of forest green oak in the quaint style, delicate in outline yet picturesque in form. The upright piano, in a case especially designed to correspond with the other furniture, is also forest green oak. In the hall, Flemish oak has been used for the chairs and the table and mirror frame, a pair of stag horns serving as a hat rack. A tall clock in one corner of the hall is cased in Flemish oak.

SELF CONTAINED HOUSES.

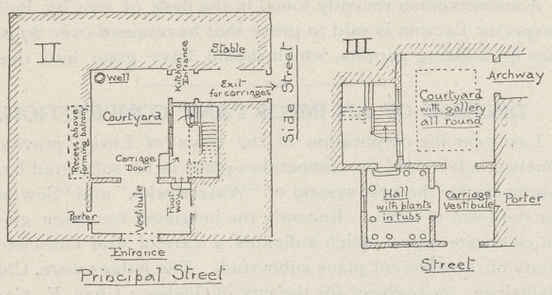
A WALK through the streets of a French or Italian town interests the imagination more than a similar excursion among the rows of houses in an English or American city where ground is precious. Everything is to the front with us. We live on the street, and even in our detached houses there is little in the block plan of the house which is of interest to the dwellers in the house which is not also in evidence to the passer-by. It is different in the southern countries of Europe. Here the highest ideal in domestic architecture is that a house should be self-contained. The more pretentious the dwelling the more it turns its back upon the street and



expands towards internal courts and gardens, free from observation, free from noise, dust and glare; and, though in the south of Europe they are apt to court shade, the same mode of planning can—which interests us most—be made to invite the sun by avoiding a look-out to the north.

The interest of the streets is increased rather than lessened by this method of building, for there is still a façade in most cases; only, instead of a flight of steps there is an archway, of which the gate usually stands open, affording glimpses of interior courts which appeal not only to the imagination but to the eye, as picturesquely diversifying the monotony of street scenery.

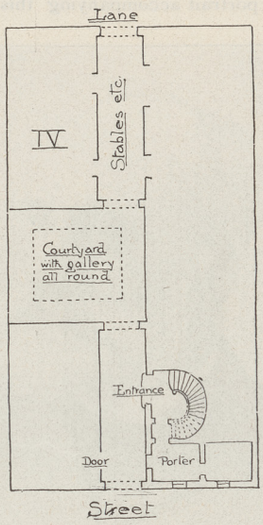
Verona is peculiarly rich in the variety of prospect thus afforded as one walks the streets. The first six plans here shown were hasty sketches made to note merely variety of entrances in that city; but there are added notes of such other keys to the plan as were



apparent to an unobtrusive observer, and the general scheme of the house is fairly clear.

No. 1 is obviously an interesting peep to the passer-by, as seen through the 8 or 10 foot archway. There is room for much perspective effect in the three lines of arcading backed by the open court beyond. The variety is enhanced by the fact that the driveway slopes and that the steps underneath the arches differ in number The stair is seen through an open archway beyond. There is usually no door to such a stairway; indeed there is no object in having a door for the porter is on guard, there is no exposure to the weather, and in winter the temperature out of doors is milder than that in the house. In an inn the formality of a door even at the top of a stair is often dispensed with; every man's room door is in direct communication with the street. By dint of an open fire place or a cement stove he maintains a little fortress of warmth against the cold world without, and his boots which have lain the night in the icy corridor outside are cold indeed when he takes them in again in the morning. This plan is one of the simpler arrangements; the house surrounds the court yard only on three sides, and there is no exit but the entrance, so that carriages must turn in the court and come out as they went in. The resident of a house of this description would be surprised if asked to step 5 feet across the sidewalk to his carriage, and no doubt would be astounded if he saw some of our good houses where the extent of slat walk to be traversed to get to a carriage on a rainy night is nearer 50 feet than 5.

No. II shows a larger plan in which the house surrounds the court and there is an exit to a side street. Indeed self-contained houses are usually to be found upon a corner lot where they get the advantage of a side street for the second entrance. It would perhaps be better to call this a second exit, for it is usually kept closed except on occasions when there is a procession



of carriages. Tradesmen evidently use it also in this case, as the kitchen entrance is at that point.

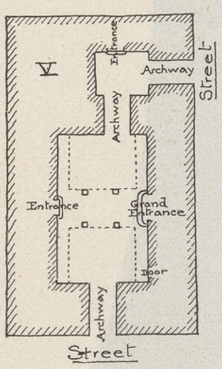
No. III appears to be the entrance of a very handsome house which has not only the second front and exit, but gets light for the hall and staircase by a return on the main front. The hall with plants in tubs makes a beautiful approach to the stairway. There is recorded in the sketch book from which these plans are taken a note upon the effect of trees or shrubs set out in a court yard with the gloom of an arcaded recess behind them. The view from the street through the hall to the staircase is probably intentional as the door to the hall from the vestibule is much larger than is necessary to mate the second door leading to the staircase, but its size just suits the needs of the raking view. The three steps at the staircase door are well placed to add interest to the vista.

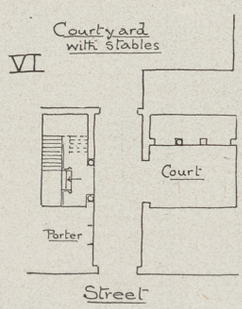
No. IV is chiefly interesting as a variety of plan in which the driveway runs through the block. The distance from front to rear, measured approximately by pacing, was 130 feet. The wall on the right gives in plan a long drawn out appearance to the driveway which does not appear in execution, when the archway in the rear is seen as a distant object separated from the first archway by a field of light. The archway is 12 feet wide and the façade about 65 feet.

No. VI has a long archway, but a small court on the right admits light just at the doorway and breaks up the tunnel-like appearance that the archway would otherwise have. The absence of any probable utility for the shallow colonnade on the far side of the court and the fact that it is on the side where it will be seen, suggest the supposition that it is there for that purpose—to further relieve the monotony of the entrance.

No. V is a palace, dated 1668, in which a large court is obtained without much loss of room for the dwelling, by carrying the upper structure across the court on columns. There is plenty of room to drive between the entrance and the next pair of columns, and the height of the superstructure is about 20 feet. The main mass of building is evidently one room deep—room opening into room no doubt in the manner of the time—but passage ways are provided by carrying enclosed galleries, as shown by dotted lines, from the front and back parts of the building to the central portion which rests upon the columns.

No. VII shows a Parisian residence of the best class. Here as is common in Paris the second driveway opens on the same street as the grand entrance, but there is no danger of confusion; the entrance is more imposing than the exit and the latter is kept closed except on state occasions. The house of course extends over both

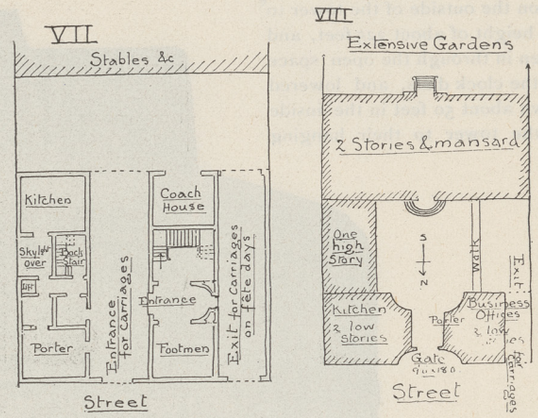




openings, the full width of the lot. This is a plan for a building site which runs only to the middle of a block. If the block is shallow and the site runs through to the other side it seems to be preferred in Paris to place the the stables at the entrance and the house on the other street with its front inwards towards the court. There is none of our abhorrence of stables, and no doubt the stables are so well kept that there is no cause for abhorrence. The smaller class of houses, which have no stables and not even an entry for carriages, still make the most possible of the inside of the lot. A Parisian house of modest pretentions still attains to the dignity of facing upon ground of its own by maintaining a garden behind upon which some of the principal rooms look and where the freedom of low windows and an external verandah or gallery of some kind may be enjoyed.

No. VIII represents the British Legation at Paris, which extends entirely through a deep block so that it has not only a handsome entrance front and court but, in the true palace style, a more imposing front looking south upon a garden with no limit but a distant street. This is a splendour so remote from every-day life as to chill interest, but it is wholesome to enjoy contemplating the great problems for they do come occasionally and are apt to be abused from the very habit of not rising above the ordinary.

No. IX, which is the residence of aristocracy in a country town, is perhaps more like the sort of large treatment that would suit our needs. It is a model of quiet dignity. The front, somewhat important from the arrangement of its parts, though quite plain, has the entrance court to itself. A little lower and a little withdrawn is the service department looking into the service yard, which a lofty iron fence, like a rood screen, cuts off, while adding to rather than detracting from the

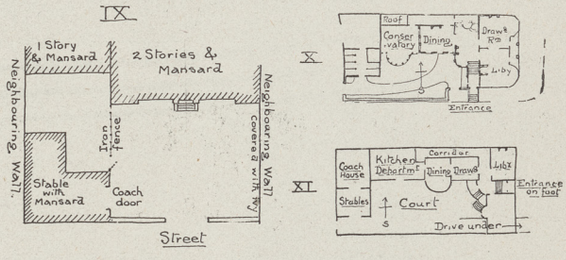


effect of its space. No doubt there is a garden on the other side of this house.

It is interesting to find that the principle of self-contained house planning was adopted by H. H. Richardson in two large houses in Chicago, shown in Nos. X and XI. Both these houses stand on corner lots. Mr. Glessner's house, No. XI, is an obvious case of getting a south aspect for a house which would, if facing the street, look north and east. The east aspect has been preserved for the library and a bedroom over the driveway, but the other rooms are made to face inwards to the court and the sun, while the street front is occupied in the most marked manner by a corridor.

In No. X, a house for Mr. Franklin McKeagh, the lot is a corner lot facing south and east so that the recess in plan does not alter the exposure but is designed for its own sake; for the advantage of a certain retirement from the street and for the increased exposure to light on the front side.

It is worth noting in conclusion that a study of foreign plans of this sort shows what a gain it would be



to the plan, how much more freedom we should have in using both fronts for living room purposes, if custom allowed the kitchen department to be put in the basement.

W. A. LANGTON.

Five bronze tablets have recently been placed in the entrance to the Massey Music Hall, Toronto, in memory of the founder, the late Hart. A. Massey, and his eldest son, Chas. A. Massey.

An historical tablet has recently been placed by the Canadian Club on the site, at No. 191½ King street west, of the Home District School, the first building used for school purposes in Toronto.

METHOD OF HOISTING A SET OF LARGE BELLS.

TORONTO, Nov. 18th, 1900.

Editor CANADIAN ARCHITECT AND BUILDER.

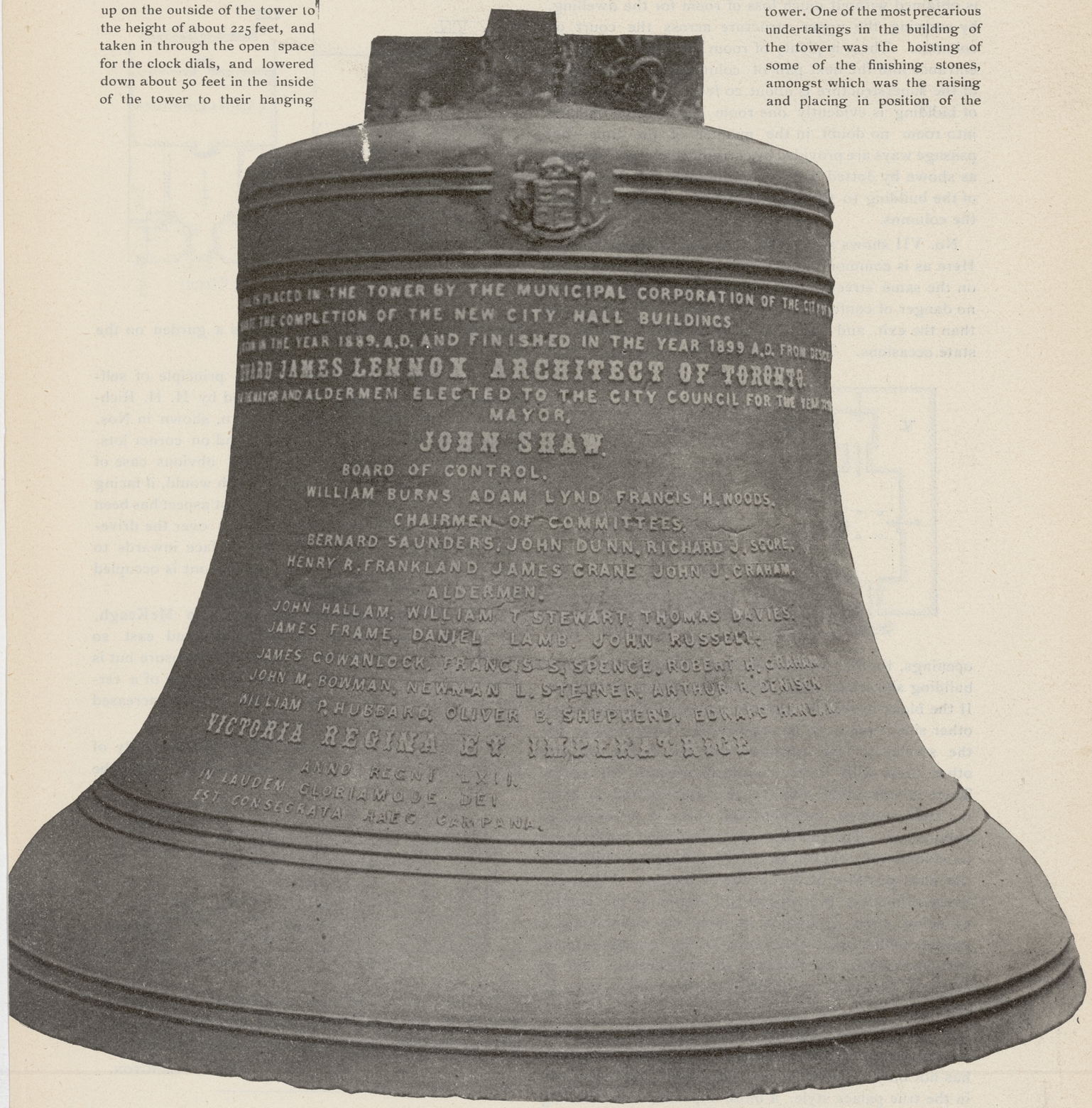
SIR,—In answer to your request for information and a description of how the bells are to be hoisted into place in the tower of the New City Buildings, Toronto, I send you the following memos and accompanying section and plan to better illustrate my description.

There are to be three bells; the largest weighs 12,000 pounds and the other two 3,000 and 2,000 pounds respectively.

The bells have to be hoisted up on the outside of the tower to the height of about 225 feet, and taken in through the open space for the clock dials, and lowered down about 50 feet in the inside of the tower to their hanging position, which will be about 6 feet above the sills of the large open belfry windows.

In arranging for an undertaking such as the hoisting of these bells, (especially the large one), quite a problem had to be faced, for it must be borne in mind that it is a very unusual undertaking, if, indeed, it ever has occurred before that a bell of the weight of the large bell, viz., 12,000 pounds, had to be hoisted up on the outside of a building to the height that this bell has to be hoisted, before it could be delivered down into its resting place. All this trouble and expense is incurred for the reason that the contract for the clock and bells was not let in time so that other provisions might have been made for the placing of these bells. I do not, however, fear for the success of the undertaking.

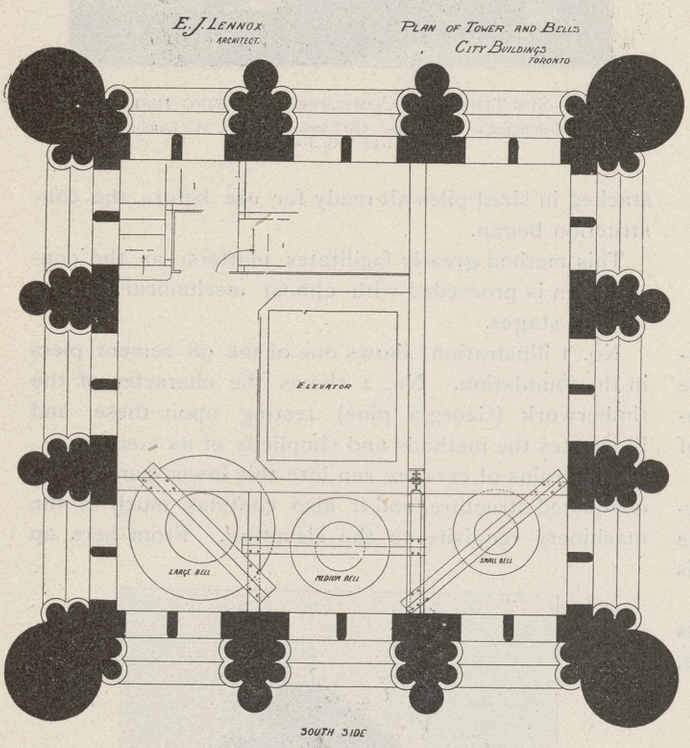
I would also draw your attention to the fact that when the large 6-ton bell is hoisted it will not have been the heaviest load that has been raised to the top of the tower. One of the most precarious undertakings in the building of the tower was the hoisting of some of the finishing stones, amongst which was the raising and placing in position of the four large Gargoyles, each of which weighs 14,000 pounds, and when placed project out 9 ft. 6 in. beyond the face of the angle buttresses of the tower, and tail in on the wall about 6 feet, making the total length about 15 feet. But in the hoisting of the gargoyles I used the derrick and tackling that I had especially



THE LARGEST OF THREE BELLS TO BE PLACED IN THE TOWER OF THE NEW MUNICIPAL BUILDINGS, TORONTO. HEIGHT OF BELL, 6 FEET; DIAMETER, 6 FEET 8 INCHES; WEIGHT, 12,000 LBS.

designed and constructed for the purpose of carrying on to completion the construction and finishing of the tower. I merely mention the fact to show that the weight of the large bell is not to be feared in connection with the hoisting, but the great difficulty is in having to undertake the hoisting of such a weight as this with appliances and tackling that can only be temporarily erected for the purpose. After a good deal of consultation between the clock and bell contractor's foreman, and sub-contractor, who has undertaken the contract to hoist the bells, and myself, the following plan has been decided upon:

At the top of the tower opposite the south dial will be erected a shear-legged derrick firmly planted on heavy timber base, on projecting ledge of tower, and anchored in at foot so that it will not shear out, but so formed that it will not retard the inward movement of the derrick. The head of the derrick will hang out from the face of the tower far enough to allow the bell to be hoisted clear of all projections. At the head of the derrick will be fastened the hoisting sheave rigged up with two $\frac{5}{8}$-steel wire cables, each capable of sustaining 10 tons. These cables will extend from the top of the bell while on the ground, up to the hoisting sheave and down to the drum of the hoisting engine which will take in the slack. The top of the derrick will be anchored back at head to keep it in its outward hanging position. To the head of the hoisting derrick will be fastened another steel



wire cable brought back into tower through sheaves and down to a crabwinch; this cable will be used for drawing in the head of the derrick. At a few feet below the level of the height that the bells are to be hoisted up to, before they are hauled into the tower, will be a strongly constructed, projecting platform erected to receive the bells. The platform will be anchored back into tower, projecting just far enough so that the bell when being hoisted will pass quite close to the edge of same. There will also be properly rigged-up on the inside at the top of the tower a hauling in hemp cable, capable of sustaining at least a weight of 10 tons. On the ground at the foot of the tower will be erected a steam hoisting engine and drums.

The process of taking up each bell will be, that it will be hooked on to the hoisting sheave at end of cable hanging down derrick and steadily and carefully hauled up by the hoisting engine until it reaches a height of several feet above the level of the projecting platform. Then the head of the derrick will be hauled in until the bell hangs over the platform, when it will be gently lowered down on to rolling skids, and pinched into the required position.

The bells having reached this position it will be an easy job to lower them down into their place with overhead tackling hung from beams in the top part of the tower; they will then be blocked up into position until they are bolted up to the heavy framework of steel beams, when blocking will be removed and they will hang clear fastened to beams.

In conclusion, I might say that every precaution is to be taken; the scheme has been carefully thought out, and I have no reason to think other than that the bells will be carefully landed and swung safe and sound into their position without accident.

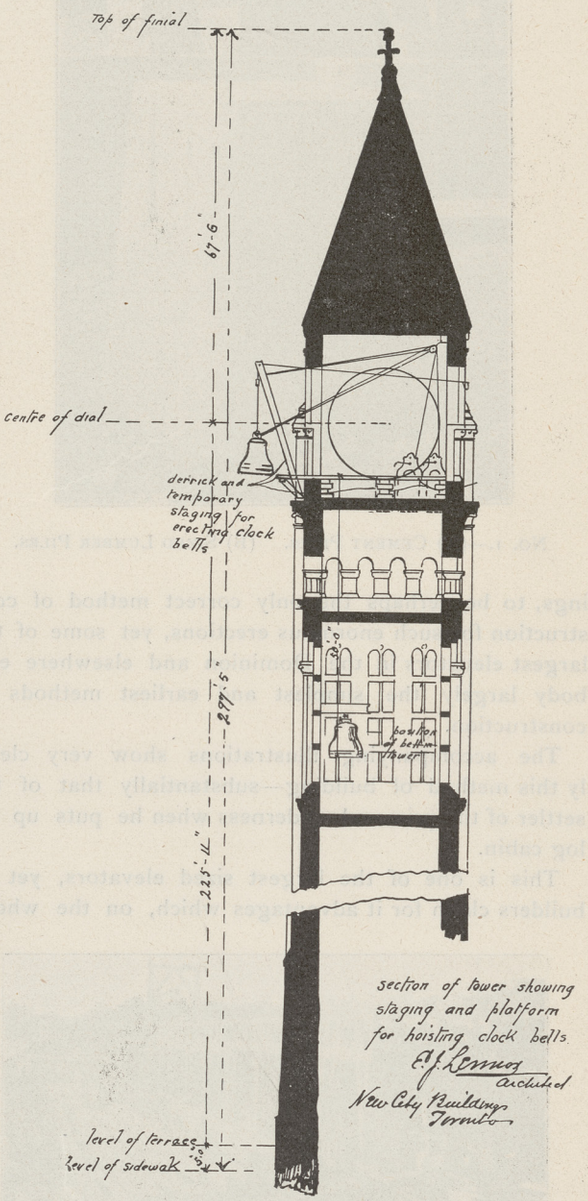
Yours sincerely,

E. J. LENNOX,
Architect.

ENGINEERS' CLUB OF TORONTO.

The meeting of the Engineers' Club for November was held at the new club rooms which have recently been fitted up at 94-96 King street west. About thirty members were present. Reports of several committees were received.

Mr. T. B. Speight tendered his resignation as treasurer, owing to



the fact that he expected to be absent from the city for several months. Mr. Canniff was appointed as his successor.

The following committees were appointed:

Finance Committee—Messrs. H. F. Duck, Jas. McDougall and A. F. McCallum.

House Committee—Major Gray, R. J. Parke, and A. B. Lambe.

Library Committee—Messrs. W. T. Jennings, W. H. Patton, and W. A. Clement.

A resolution of thanks was voted to the proprietors of the Rossin House for providing a room for meetings of the Club during the past year.

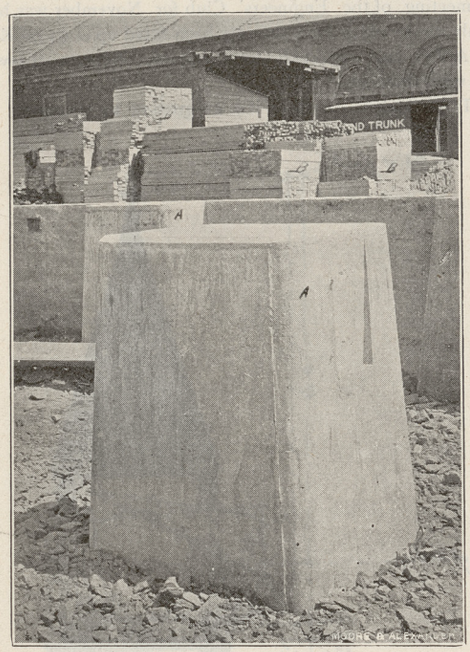
Notice was also given of several proposed amendments to the Constitution which will come up for discussion at the next regular meeting.

The Canada Asphalt Paving Company has been incorporated, with headquarters at Montreal. The capital stock of the company will be $50,000. The incorporators are Messrs. R. L. Dillon, J. St. G. Dillon and A. P. Dillon of Montreal, and James A. Pearson, A. W. Godson and J. H. Denton of Toronto.

METHOD OF CONSTRUCTING A WOODEN ELEVATOR.

The erection of a modern elevator is a task of no little magnitude, and entails many different principles of construction.

Though the steel framed elevator is now commonly used and seems to the architect of other modern build-

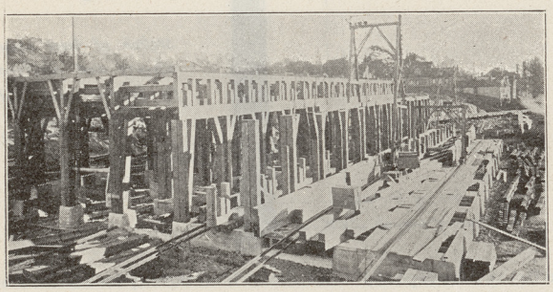


No. 1.—(A) Cement Piers. (B) Sized Lumber Piles.

ings, to be perhaps the only correct method of construction for such enormous erections, yet some of the largest elevators in the Dominion and elsewhere embody largely the simplest and earliest methods of construction.

The accompanying illustrations show very clearly this method of building—substantially that of the settler of the primeval wilderness when he puts up his log cabin.

This is one of the largest sized elevators, yet its builders claim for it advantages which, on the whole,



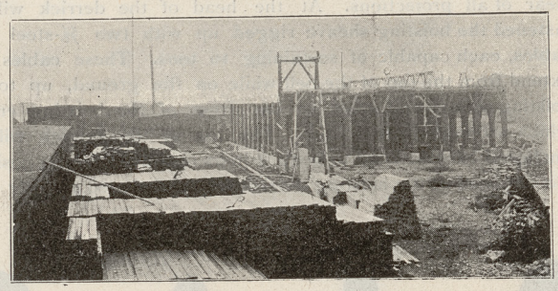
No. 2.—Shows Tratelling Cranes and Method of Erecting Trusses.

cannot be surpassed by any other character of building. It is much cheaper than the steel building in material, and its cost in erection is far below that of the other. Its rigidity is remarkable, and the dangers from side thrusts are entirely obviated.

Grain in bulk, wheat particularly, asserts great side thrust, being in reality a semi-fluid, and acting similar to water. A glance at illustration No. 5 will show how entirely this force must be overcome, the building being so bound together by its own divisions and bins as to be incapable of crushing, and bulging being impossible.

The illustrations are from photographs of the work upon the new I.C.R. elevator in St. John, N.B., and show very clearly the character of construction, method of operation, and, by the dates in the corners, the progress upon the work. This building was erected by Mr. J. A. Jamieson, of Montreal, who is perhaps the best known elevator builder in Canada, and has the reputation of being a most up-to-date contractor and designer in this line.

While the foundation was being prepared a mill was being fitted up with machinery immediately adjoining for the cutting up of the lumber into the various sizes required. This work was completed and the lumber



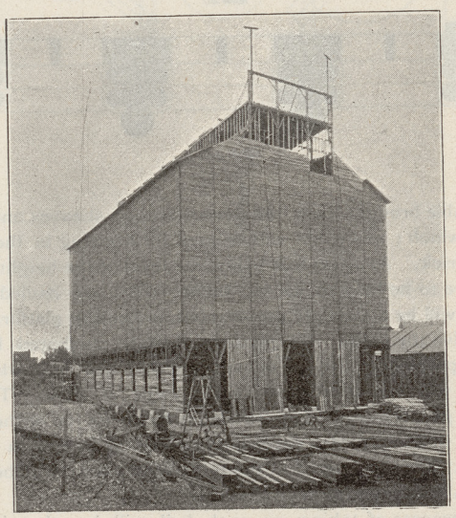
No. 3.—Sub-Timbering Complete—Planking just Begun.
(A) Mill belonging to the Works. (B) Sized Planking. (C) Lumber Slides—fitted with Rolls

stacked in sized piles all ready for use before the construction began.

This method greatly facilitates matters, as the construction is proceeded with almost mechanically in its various stages.

No. 1 illustration shows one of the 98 cement piers in the foundation. No. 2 shows the character of the timberwork (Georgia pine) resting upon these, and illustrates the methods and simplicity of its erection.

The trains of cars are run into this lower part of the completed structure, and it also contains much of the machinery requisite to the elevating. From here up



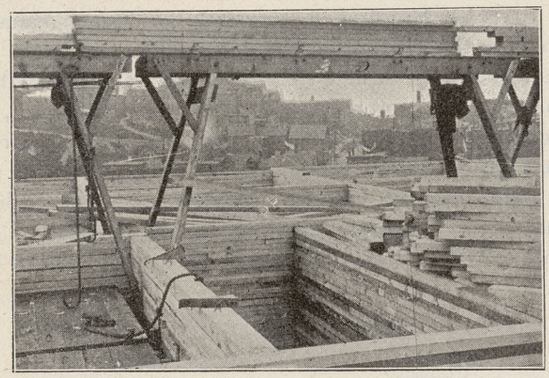
No. 4.—Illustrating Sub-Timbering, Plank Mid-Structure, aad Timbering of Superstructure.

to what might be termed the clerestory, the entire structure is of 2x7 spruce planking, laid on the flat and spiked every few feet alternately near the opposite edges with 5-inch wire nails.

No. 3 shows the first few courses of this planking laid, and shows the lumber carriers, made up of a series of horses fitted with rolls, which may be seen more clearly in No. 5. The lumber is elevated to these

carriers at one end (the farther end in No. 3), and is then shoved along horizontally to its desired position. As the structure rises layer by layer, the carriers are elevated accordingly as often as necessary, being so designed that they interfere none whatever with the work, as is shown in No. 5. This is a peculiarly designed carrier and a most effective one.

No. 5 also illustrates the platforms for the workmen and the character of their supports in such a way as to be almost needless of explanation. The wedge brackets can support the platforms at any height as the work



No. 5.—(A) Wedge Brackets. (B) Wedge Brackets in Service Supporting Platforms. (C) Movable Platforms. (D) Lumber Slides in Position. (E) Rolls.

proceeds, and these are raised as fast as the planking rises.

Close inspection of the picture shows that cross and longitudinal layers of plank lap alternately. This view is taken at a height of 60 or 70 feet from the ground.

No. 4 shows the exterior of the planking when completed, the perpendicular lines being the ends of the cross planking. It is now ready for the galvanized iron covering which makes the outside finish.

A. B. PICKETT.

OCT. 31ST, 1900.

THE INTERCEPTING TRAP.

THE Builders' Journal, of London, reproduces the correspondence lately published in these columns on the above subject, and comments thereon as follows :

"Our readers will probably be astonished, not so much at the diversity of opinion, as at the backward state of sanitation in our great colony which these reports appear to indicate. True, our sanitarians have not yet discovered the best method of ventilating sewers, for indeed ventilation, whether of rooms or sewers, appears to be the most difficult subject with which the modern engineer has to deal; yet we thought by this time it was a generally accepted principle that the house-drainage system should, as far as possible, be separated from the main sewerage scheme. But apparently the Canadian system in the past has been to ventilate the main sewers by means of "breathers" or gratings at ground level in the front gardens, and it is hardly surprising, therefore, that our Canadian confreres are desirous of altering a condition of things that is both dangerous and unpleasant. At the same time to make the soil pipe the means of venting the sewer air does not by any means lessen the danger, for only the water seals of the water-closets and gulleys prevent the ingress of sewer air into and round about the house. If, as several of the writers point out, the tops of the soil pipes are frequently choked by frost, any pressure of the sewer gas will force the water seals and enter the house. This new evil would probably be worse than the original trouble. If the sewers are to be ventilated, they must be ventilated below the disconnecting trap, so that no possible danger of sewer gas forcing its way into the house system may be apprehended.

ILLUSTRATIONS.

SKETCH FOR SUBURBAN RESIDENCE.—J. RAWSON GARDINER, ARCHITECT.

RESIDENCE, ROSEDALE, TORONTO.—BEAUMONT JARVIS, ARCHITECT.

CHURCH OF ST. CLEMENT, BROOKLYN AVENUE, TORONTO. BOND & SMITH, ARCHITECTS.

MEN-WAH-TAY LODGE, ROCK LAKE, O. AND P. S. RAILWAY. W. H. WATTS, R.C.A., ARCHITECT.

AN ATTEMPT TO BRIBE ARCHITECTS.

The following correspondence has been forwarded by Messrs. Burke & Horwood, architects, of Toronto, in the hope that its publication may deter other manufacturers from adopting a like foolish line of policy. The words underscored were underscored by the United States firm who are the authors of the proposition.

(COPY).

RACINE, WIS., 11—1—1900.

MESSRS. BURKE & HORWOOD, Toronto, Ont., Can.

GENTLEMEN: We note through the different contractors' journals, that you are designing and constructing many buildings. We believe there is much of mutual interest in our profession and line.

We wish to inform you and make you familiar with our entire system, so that in the planning and construction of your work you can recommend some of these devices which seem most practical, and for every building that is equipped through your recommendation and plan, you are to receive 5% on the contract price.

We would be pleased to have your views regarding this plan. We now have two or three hundred architects working with us, and we propose interesting the majority of the leading architects of the entire country. You can give us the name of the parties with whom you are dealing, or furnishing plans, and we will correspond with and give them all the information possible, and with your consent refer them to you, as a disinterested party as to your views on the subject.

Hoping to receive a favorable expression from you, we are

Yours very truly,

RACINE FIRE ENGINE & MOTOR CO.

R. B. SIGAFOOS, Pres.

We are not members of the Fire Apparatus Trust.

(COPY).

THE RACINE FIRE ENGINE & MOTOR CO., Racine, Wis.

DEAR SIRS,—Yours of the 1st inst. is received, asking us for our views regarding certain statements in your communication.

In the first place, we have to state that you are making a great mistake in offering a commission. No reputable architect will have anything to do with such a proposition; it is entirely against all the best traditions of the profession.

Second—an architect who accepts such a commission cannot be a "disinterested party."

If your goods are what you claim for them, they should carry their own recommendation without the necessity of a bribe to the man who should, of all others, judge by the merits of the article he is recommending, from an entirely unbiassed standpoint.

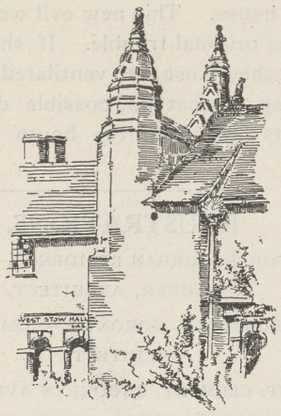
Our advice to you would be to send out no more such offers to the profession, if you want to retain the good will of all right minded architects.

Yours truly,

BURKE & HORWOOD.

Architect—"We've settled about the design for the drawing room. Now, as to the study; how do you want that finished?"

Nurox—"I seen in a newspaper once about a study in black and white that was very artistic. Suppose you gimme one o' them?"—Philadelphia Press.



NOTES ON THE FIRE AT PARIS, ONT.

In answer to enquiry, Mr. John Kay, architect, of Paris, Ont., has kindly supplied the following notes on the recent destructive fire in that town :

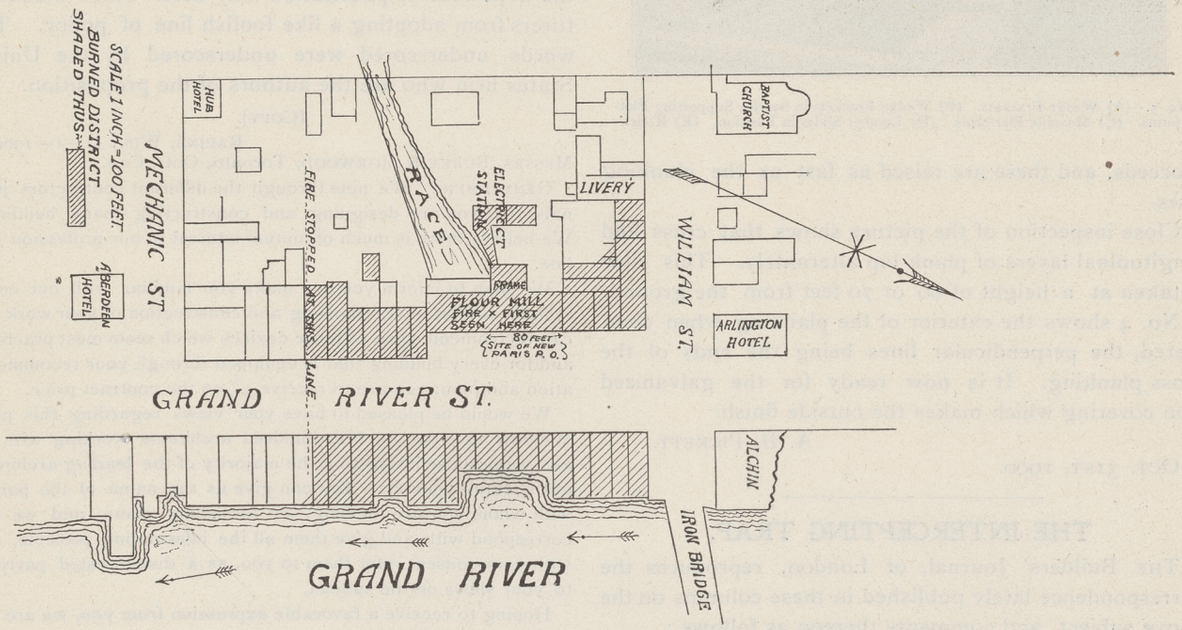
"As to our big fire on the 12th inst., it started in Mr. Meldrum's flour mill, a frame building 150 feet long by 45 feet wide, posts 30 feet high; posts 8 feet apart, 12 × 12 ; beams and posts in centre, 12 × 12 ; joists, 4 × 10 ; shingled roof with a cupola, 10′ × 14′, 6′ high on top of ridge, with louvres which acted as a chimney. This caught fire, and in a short time the flames were everywhere—first breaking the glass and leaping up the clapboards. I never saw a better constructed fire with a gale from the west estimated at a 50 mile gait.

The fire blew across the street and the plate glass melted and ran like molasses. The stores along the east side of Grand River street were first class—some roofed with slates, but mostly metal (Garry iron) laid on tarred felt ; plate glass windows. Patton's hardware store was next the mill on the north side. Kegs of nails were fused into one solid mass. The embers flew across the Grand River, and set on fire the dwellings on the opposite side of river. The floor of William street iron bridge 130 yards long was on fire in many places ; a bucket brigade managed to save it. The mill in question was built 50 years ago and the building sites are few (the lower town where the fire occurred being in a hollow with hills around three sides and the river on the east,) and buildings were close up to the mill in front and on each side. The heat was so great that the water thrown with 80 lbs. per sq. inch seemed to go up in steam before it had a chance to put the fire out.

The town by-law forbids the rebuilding of such a structure as this mill. Brick and stone can only be used in walls. Paris previous to 1832 was called the Forks of the Grand River, since then it has been Paris. The mill in question was built in 1842 about 10 years before the railway reached the place. I am safe in saying that every building burnt on the 12th of September has been erected since the mill was built.

Paris has had fires in stores but the firemen managed to keep the fire within the walls where it started. In Randal's block there were three different fires without much damage to brickwork. This time, however, the lintels are so burned that the whole front will require to be taken down and rebuilt on new timbers.

Find enclosed a sketch showing position of burnt buildings. Already men are at work clearing out the cellars. Brick walls will take the place of lath and plaster partitions. Although lumber and hardware is dearer, money is cheaper. On the whole I am of opinion the fire was a blessing in disguise. A fine new Post Office, Custom House and Inland Revenue Building will occupy the site of the old mill. Pressed brick fronts with stained mortar will supersede the Princeton bricks. More vaults will be built—the contents of some of the so-called fireproof safes were worthless. Prism glass will be used to throw the light to the rear of the stores. The new buildings will have a proper grade corresponding with the centre of Grand River street. Before the fire the sidewalk would be level with the door sill of one building while next door the sill would be 8 inches above the sidewalk, and so on, giving the streets a very unseemly appearance.



Sketch Showing Burned District at Paris, Ont.

PERSONAL.

The sympathy of a wide circle of friends is extended to Mr. John H. Tilden, president of the Gurney-Tilden Co., of Hamilton, who has recently been bereaved of his wife.

Mr. P. W. St. George, city surveyor of Montreal, has tendered his resignation on the ground that he can no longer put up with the interference and discourtesy of the Road Committee. Mr. St. George has been in the employ of the city of Montreal as deputy city surveyor and city surveyor for a quarter of a century.

STUDENTS' DEPARTMENT.

C. A. & B. STUDENTS' COMPETITIONS.

The publishers of the CANADIAN ARCHITECT AND BUILDER invite architectural students and draughtsmen resident in Canada to submit drawings in the following competitions:

STUDENTS' COMPETITION FOR A PORCH.

A plan, section and perspective sketch are required. Explanatory detail sketches of certain portions may also be included.

The subject is an entrance porch to a city house of 35 feet frontage facing south or east on a 50 ft. lot. The porch to be large enough for use as a verandah, and yet not to cover all the front windows, as it is desirable to have the sunshine enter the parlor by at least one window.

The porch may be of wood, brick or stone or combinations thereof and may have flat or sloping roof.

STUDENTS' COMPETITION FOR ENTRANCE DOOR, VESTIBULE AND VESTIBULE DOOR.

A plan, and section are required and elevations of both doors.

Explanatory detail sketches of certain portions may also be included.

The subject is the entrance from the above mentioned porch. Light may be obtained for the vestibule from a window on one of the walls not occupied by the doors, or from the entrance door or wall in which the door is placed.

The vestibule must be large enough to accommodate a fair sized hat rack and an umbrella stand.

Drawings must be made with pen and perfectly black ink on white drawing paper or cardboard. No brush or color work will be allowed. Drawings should be so arranged as to admit of photographic reproduction in the illustration pages of the CANADIAN ARCHITECT AND BUILDER. The size of each page is 7x10 inches. No set of drawings must occupy more than two pages.

Competitors must send in their drawings, prepaid, under motto marked "Students' Competition," and addressed to "the publishers of the CANADIAN ARCHITECT AND BUILDER, Confederation Life Building, Toronto," prior to 5 o'clock p.m. of the dates set for the competition, viz; 1st competition, Thursday, 27th December, 1900; 2nd competition, Monday, January 28th, 1901. Each set of drawings must be accompanied by a sealed envelope bearing on the outside the author's motto and enclosing a card giving his full name and address.

The merits of the designs which may be submitted in in these competitions will be judged by a committee of the Ontario Association of Architects, whose decision shall be final. For the benefit of competitors, the judges will be requested to give a detailed criticism of each design.

Three prizes are offered in each competition as follows: To the winner of 1st position, $10; to the winner of 2nd position, $5; and to the winner of 3rd position, one year's subscription to the CANADIAN ARCHITECT AND BUILDER.

The right is reserved to publish any or all of the drawings.

NOTE—Competitors are required strictly to observe and comply with the above instructions and conditions.

EXHIBITION OF ARCHITECTURAL DRAWINGS.

THE members of the Toronto Architectural Eighteen Club have made all arrangements to hold their first annual exhibition from January 26th to February 9th, 1901, at the galleries of the Ontario Society of Artists, King street west.

The above Club joined the Architectural League of America nearly two years ago and have been working on having an exhibition of American and Canadian drawings ever since. The success of the exhibition is assured; not only has every American club promised to give every assistance, but also many of the leading architects and the following gentlemen have kindly consented to look after the Eighteen Club's interests in their various cities: Adin B. Lacey, Philadelphia; N. Max. Dunning, Chicago; Chas. D. Maginnis, Boston; Edwin G. Gardin, St. Louis; Gustave W. Drach, Cincinnati; Julius F. Harder, New York; John T. Comes, Pittsburg; Percy Ash, Washington; Prof. Newton A. Wells, Urbana.

Beside the various drawings which the Eighteen Club will receive from individual architects and draughtsmen from the United States and Canada, there will be an exhibit of circuit drawings of the Architectural League of America consisting of about one hundred and twenty-five of the best drawings made during the year. An illustrated catalogue will be issued and distributed free to Canadian architects, and it is the desire of the Toronto Architectural Eighteen Club, that every architect in Canada will send in his name and address to Ernest R. Rolph, secretary, Bank of Commerce Building, King st. Toronto, as it is only through the medium of this publication that they can be reached, and for that purpose have inserted an advertisement on page vii.

The above Club is issuing a special circular with all information re this exhibition, along with invitations to all Canadian architects and draughtsmen to contribute drawings, and it is hoped there will be brought together the best collection of Canadian work ever seen.

THE TORONTO HOTEL.

THE announcement is made that the financial arrangements necessary to insure the erection of the proposed Toronto Hotel, have been completed, and that contracts for the construction of the building have been awarded. The plans for this important building have been prepared by Mr. Henry Ives Cobb, of Washington. The building will front on King, Victoria and Colborne streets, the main entrance being off King street. There will also be a second entrance off Victoria street. These entrances open into a rotunda 80x90 feet. The remaining frontage on both these streets will be fitted up as shops. The general dining room, banquet hall, assembly room and state apartments will occupy the first floor. On the succeeding five stories will be sixty bed-rooms with forty-two bath-rooms. The total cost of the land, building and furniture is placed at $1,500,000. Aside from the public need which this building will supply it promises to form an important addition to the architectural features of the city, and a help in maintaining values of business property east of Yonge street.

J. C. Killam & Co., of Moncton, N. B., who have secured the contract of strengthening, readjusting and covering the Memrancook bridge are now at work upon it. This firm makes a specialty of bridge building and have built quite a number in Nova Scotia and New Brunswick. They built the Long Creek bridge in Queens County, N. B., last summer.

THE BUILDER

[THIS DEPARTMENT IS DESIGNED TO FURNISH INFORMATION SUITED TO THE REQUIREMENTS OF THE BUILDING TRADES. READERS ARE INVITED TO ASSIST IN MAKING IT AS HELPFUL AS POSSIBLE BY CONTRIBUTING OF THEIR EXPERIENCE, AND BY ASKING FOR PARTICULAR INFORMATION WHICH THEY MAY AT ANY TIME REQUIRE.]

For the Carpenter and For the Mason.

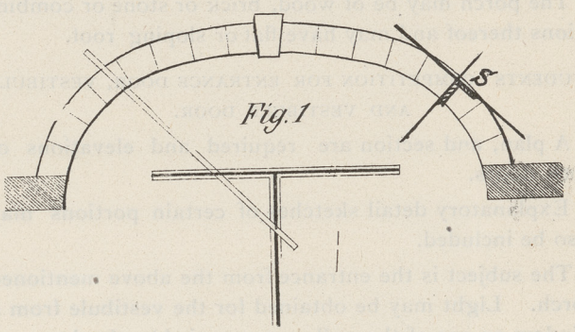
BOTH carpenter and mason are often confronted with problems in arched work. The first, because it is his duty to make all centers and frames required to be built even or round, the second, because it will be necessary for him to obtain the proper bevels and lines for forming the voussoirs and key-stones of his work. The construction of centres may safely be left for future consideration, providing the manner of obtaining the outlines of the work be fully grasped by the operator. It is generally the carpenter who prepares all the paterns for the mason, and who lays out the radial lines and the curves for both exterior and interior, but there are occasions when the mason is compelled to obtain the lines for himself. The following illustrations are arranged to suit both craftsmen.

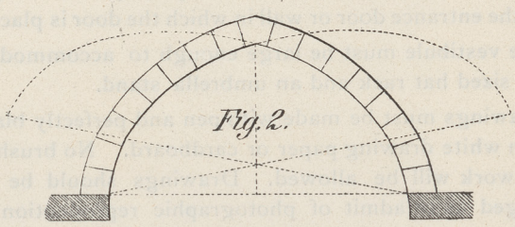
Elliptical Arches.

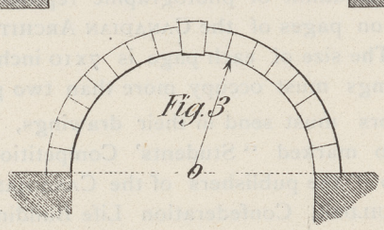
AT Fig. 1. an arch is shown which is semi-elliptical, and is drawn by means of a trammel, or by aid of a string, as has been described in this department in previous issues. The arch is divided into sections or blocks of the proper size, and this is done by first dividing the curve into any desired number of equal spaces, then, wherever the joint is required, first draw a tangent to the curve from which square draw a line touching the joint where the joint is wanted, and this will give the proper radial line as shown at s. Fig. 2 shows a Tudor gothic arch formed by two parts of an ellipse. The manner of getting the curves for this arch is shown by the dotted lines, where the two rampant semi-elliptical arches are displayed. The curves are obtained by the same method as described in Fig. 1, and the lines of joints are found by the same method as shown in the previous example.

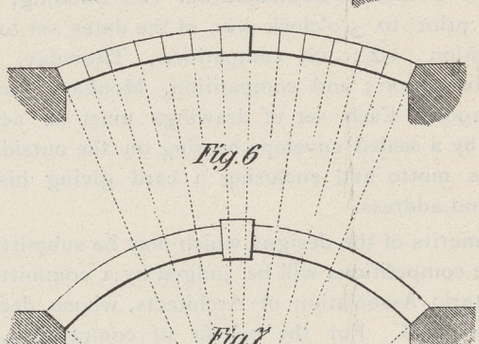
Semi-Circular and Segmental Arches.

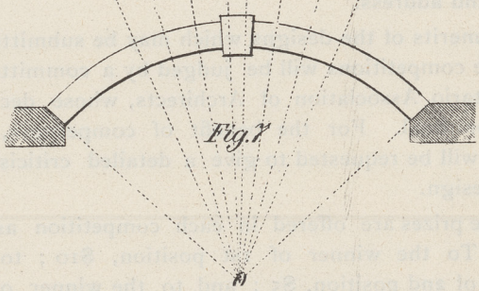
TO DRAW the lines for a semi-circular arch is a simple matter, as all the radiating lines for joints and for the keystone are drawn from a common center, o, Fig. 3. The springing line is also a radial line, being on the same plane as the center o; the illustration explains itself. Segmental arches are more difficult to lay out than semi-circular ones, as the center from which the curves and radial lines are drawn is outside of the area of the arch and its chordal lines. A method of finding the center of any segment is shown at Fig. 4. Let A B C be any three points in the arch, all we have to do is to connect A B and B C by straight lines. Then from the center of A B, and from the center of B C, square down until the lines intersect at D, as shown, then the point D will be the center of the circle of which the arch is a portion. Thus, if we make A C the points from which the arch springs, and square up from the center X, and measure the height of the arch to O, we will have the three points through which the arch will cut. This method is, perhaps, better shown in Fig. 5, where a h b show the width and height of arch. The curves c d are











drawn from the center a b, and the line c d g is drawn through the points c d. The curves e f are drawn from the center a h, and the line e f cuts through the center of the required circle at g. Two segmental arches, drawn from one center o, with different radii, are shown at Figs. 6 and 7. The joints and springlines are also

shown. Fig. 8 exhibits an equilateral gothic arch. This is described by two equal radii from the points o o, as centers, and jointed from the same points. Lancet gothic arches are drawn with a greater radius, having as centers points beyond the center, o o, with he lines of the curves starting from the points as shown in the diagram. A much flatter gothic arch is shown at Fig. 9, the centers for the curves being within the span of the arch, as shown at o o. Gothic arches of any degree of acuteness may be obtained in the manner shown at Fig. 8, it only needs to use a greater radius when making the curves. The same also applies to

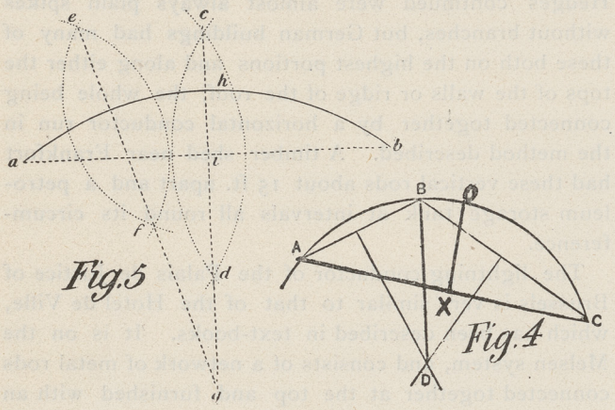


Fig.5

Fig.4

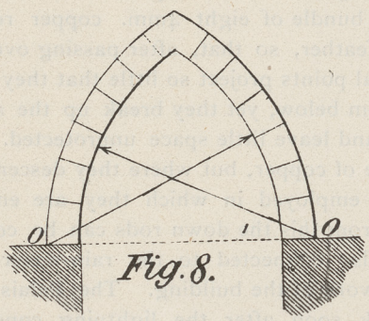


Fig.8.

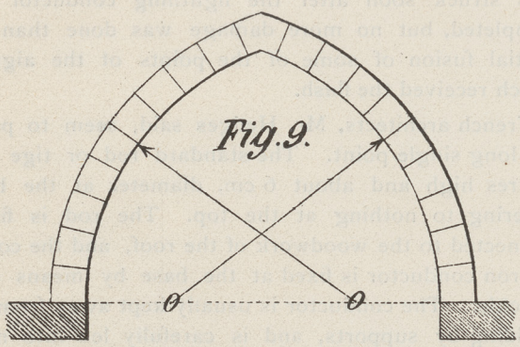


Fig.9.

flat arches; the nearer the radius is to a semi-circle the flatter the arch will be.

Other Arches. BESIDES the arches we have illustrated, there are many others, among which may be mentioned, flat arches, of which there are various styles, and which are used over square top sash and door frames, and for lintels over open fire-places, and other similar purposes. There are also various kinds of Moorish or horseshoe arches, and of arches with semi-circular soffit, and a gothic outline outside, also rampant or raking arches, skew arches and arches that are inverted, as well as relieving arches. There is also an arch called the winged auch, in which the voussoirs are continued on horizontal line of the spring to some distance beyond the face of the inside wall or jamb. The different styles of arches and the manner of working them, and obtaining the lines for their construction, will form ample material for further comment. There are other classes of work, such as forming arched windows in circular walls that will surely be of interest to those engaged in the construction of buildings. To the carpenter, a thorough knowledge of lines pertaining to such work as has been described in these pages, is indispensable, for on him devolves the duty of laying out pretty nearly all the work of a constructive nature about a building.

THE LATE G. H. WALLACE.

THE death of Geo. H. Wallace, contractor and builder, of Sussex, N. B., is to be deeply regretted in the trade, which loses thereby one who has been eminently respected at all times and who took an active part for many years in the building up of his province.

THE LATE G. H. WALLACE, SUSSEX, N. B.

The deceased was a native of Nottingham, Eng., where he was born in 1827. He received a good education, and at an early age entered the army, in which he served some years in both Scotland and Ireland.

In 1848 he came to Canada and settled in Sussex where he worked at his trade as a carpenter and builder. In late years he was a justice of the peace, a stipendiary magistrate, and in 1879 was made collector of customs, which latter office he filled until his death.

Four children survive him: Mrs. A. D. Sharp, of Campbellton, Mrs. Quigg, of Boston, and two sons, F. W. and W. H., who comprise the present firm of Wallace Bros., contractors and builders.

A new factory, 100 x 560 feet in size is in process of construction at Walkerville, Ont., for the Ontario Bridge Works. The structure will be a steel frame, fireproofed, and will cost $20,000. The company will employ 150 workmen in the manufacture of steel bridges, roofs and building material.

Attention is called to the announcement in this issue of the Imperial Varnish Company of Toronto. This company are manufacturers of high grade varnish for architectural and other purposes. Architects and others of our readers who have occasion to specify or use this material would do well to look into the merits of this company's goods.

According to Leslie's Weekly the Chinese are a nation living in brick houses in a land without a brick-making machine. All the millions of homes in the thousands of walled cities are built of brick, and every brick made by hand. These bricks are made by labor costing but 10 cents per day, still they cost more than our machine brick made with labor costing 25 times as much.

THE PROTECTION OF PUBLIC BUILDINGS FROM LIGHTNING.

MR. KILLINGWORTH HEDGES, who has been advising on the re-arrangement of the lightning conductors on St. Paul's Cathedral, recently read a paper on the above subject before the Royal Institute of British Architects. He quoted from a paper read before the same Institute by Col. the Hon. Arthur Parnell in 1884, in which an analysis of a number of disasters to buildings fitted with lightning rods showed that there were 828 separate instances of mechanical force, as against only 228 of heat, exercised on various substances by lightning. Mr. Hedges also repeated Dr. Lodge's statement that the problem does not end with the actual rod, owing to the large difference of potential existing between the conductor and earth, however well the two are connected. He expressed himself in agreement with Dr. Lodge as to the oscillatory nature of the discharge, and expressed the view that the side flash was the result of self-induction in the conductor. On one matter, however, Mr. Hedges' theory was somewhat remarkable. He considered that when a discharge occurred at one point between the thundercloud and earth, a corresponding discharge occurred in the reverse direction at another point of the cloud. He referred to these as the "downward" and "upward" discharges, and stated that he had frequently seen in Colorado "upward" flashes arising from the ground! In connection with available reports and statistics of lightning accidents, Mr. Hedges regretted that no official reports of this nature had been published since that of the Lightning Rod Conference in 1882.

Not the least interesting part of Mr. Hedges' paper was a description of the lightning conductors attached to several important buildings abroad. On the Notre Dame Cathedral, in Paris, the main conductors are three in number, each of the two on the towers commencing at a massive wrought-iron terminal rod about 20 ft. high and 4 in. square at the base. To this a wrought solid iron rod about 1 in. square is secured by straps, and run in lengths, jointed at intervals, over the roof and outside the tower to the ground. This rod is supported about 7 in. from the lead roof and stonework by stanchions insulated by half-round stone or porcelain insulators secured by shackles. At a later period a copper strip had been connected to each of the conductors at the roof and run independently to the ground below. The spire has an elaborate finial with numerous points and this appears to be connected to earth in a similar manner, and also to the crest running along the ridge of the roof. The speaker considered this method of protection to be a source of danger at present. The flash received by one of the main rods had two paths open, one by the old iron conductors and a second by the new copper band. The current could be prevented from dispersing over the lead roof by the insulators of the conductors, and owing to the resistance of the joint would consequently jump from the central rod to the small copper one.

On the Cologne Cathedral he considered the protection far more advanced than that of Notre Dame. Stranded copper cables are used, run through galvanised iron stanchions with flat feet by which they are bolted to the stonework. To avoid galvanic action, the eyes of these supports are bushed with lead. They keep the conductor about 7 in. away from the structure so that the cable can be stretched tight by tightening screws and not run round projections. A somewhat similar arrangement is used for the horizontal conductors which run each side of the roof and are kept away from it. The terminals of the lightning rods, Mr. Hedges continued were almost always plain spikes without branches, but German buildings had many of these both on the highest portions and along either the tops of the walls or ridge of the roof, the whole being connected together by a horizontal conductor run in the method described. A timber shed near Frankfort had these vertical rods about 15 ft. apart and a petroleum storage tank at intervals all round its circumference.

The lightning conductor of the Palais de Justice of Brussels is very similar to that of the Hotel de Ville, which has been described in text-books. It is on the Melsen system, and consists of a network of metal rods connected together at the top and furnished with an aigrette or bundle of eight 4mm. copper rods spread out like a feather, so that, after passing over the roof, the terminal points project so little that they can hardly be seen from below, yet they break up the area of the buildings and leave little space unprotected. The conductors are of copper, but where they descend a special iron box is employed in which they are embedded in zinc, and from this the down rods can be continued in iron and also connected to the rain-water pipes and other ironwork of the building. The Palais de Justice was struck soon after the lightning conductor was completed, but no more damage was done than the partial fusion of some of the points of the aigrette which received the flash.

French architects, Mr. Hedges said, seem to prefer the long single point. The standard rod or tige is 6 metres high and about 6 cm. diameter at the base, tapering to nothing at the top. The rod is firmly connected to the woodwork of the roof, and the copper or iron conductor is fixed at the base by means of a shackle. The conductor is usually kept away from the building by supports, and is carefully led into moist earth—or, in the case of rock foundations, it is connected to a network of wires running for a considerable distance under the surface. Where a well can be used, the earth connection is prepared by plaiting up galvanised iron strips to form a basket, which contains a sort of grapnel, the latter being attached to the conductor and the basket being filled with coke and lowered into the water.

The method adopted in most American cities at present, the speaker continued, is the employment of a round iron rod about half-an-inch in diameter, extend-

ing from the ridge of the metal roof about 4 ft. above the top of the chimney or other elevated projection, its lower end being connected to a piece of iron in the form of a saddle, soldered to the metal roof. To this the top of each rain pipe is joined, or, where the gutters are below the roof, special tinned iron strips connect the two. It is said that each rain-water pipe 4 in. diameter is equal in capacity to an iron rod 9-16 in. diameter. The connection between the pipe and the earth is made as follows: Above the elbow portion, a galvanised socket is fitted, and to this is soldered a flat bar which is led directly to the nearest water pipe or to the earth. The form which seems to give the best results, he said, is constructed of a pipe driven into the ground so that its perforated end rests in moist earth; its upper end is left about 6 in. below the surface, so that it can be watered artificially or by rain. To assist the collect on of moisture a larger sleeve is placed outside, furnished with a perforated top and set flush with the gutter. With slate or wooden roofs, bands of tin plate or galvanised iron are often placed underneath the slate covering on the rafters of the roof, being connected at the top with the "air terminal" conductors, and below with the gutters and rain-water pipes as previously described; in the case of a Mansard roof the sheet metal or flushing is also connected to the system.

Mr. Hedges was called in, in 1898, to report on the condition of the lightning conductors of St. Paul's Cathedral. He was informed that they were put up in the year 1872, having taken the place of the original system erected under the advice of the Royal Society about 144 years ago. The conductors were throughout of ½ in. stranded copper. Four of these conductors passed from the iron supports of the cross down the outside of the dome branching into eight conductors which were cross-connected by the railing of the gallery. Lower down they were united together and carried down to the ground. Each tower had two conductors with a cross connection, and there was also a single conductor passing over the ridge of the choir to earth on either side. In the metallic connection with the cross there were several iron straps passing down inside to the level of the gallery, where the ends apparently disappeared in the stonework. This, in Mr. Hedges opinion, constituted a danger. The statues on the three sides of the building were not protected. The earth connections were also most unsatisfactory. These had originally been laid in a brick sewer passing around the building but in alterations since executed, earthenware pipes had been laid within the sewer, the brick sewer being no longer employed, and the conductors were therefore left either resting on the top of the earthenware pipe or placed within them so that they were insulated from earth. The joints were in all cases wrapped and not soldered.

The plan of re-arrangement recommended by the author, taking into consideration the large amount of copper cable already disposed about the building, was to run three new cables from the metal-work of the framework supporting the cross to the roof of the dome (making interconnection with the iron supports of the structure); there connecting them with the eight existing conductors and reuniting them at the base of the dome to the existing system, which was to be increased by running a new ½-in. seven-ply copper cable on the top of the parapet entirely round the building. From this horizontal conductor, aigrettes, consisting of five pointed copper rods, were teed at intervals by means of special brass boxes tinned inside, into which the cable was placed, the aigrettes first secured by binding, and the whole united by running in hard solder. Great difficulty was found in securing new earths. One set of conductors was united to the hydraulic main supplying the power to the organ, and the other to the 8-in. water main. This connection was made by cleaning the outside, then wrapping the strands of the conductor around it, and then enclosing the whole in a metallic clamp which was filled with molten lead and screwed up tight. An additional earth was made by means of a perforated wrought-iron pipe furnished with a steel shoe, which was sunk to the requisite depth to secure moist ground. The stranded conductor was dropped into the pipe, soldered to a lead cap on the top, and shielded from electrolytic action by wrapping it in a lead tube. The pipe has a bend at the upper end, projecting above the ground and closed by a plug so that water can be poured down. There are other earths of ordinary copper plate buried in a mixture of charcoal and broken electric light carbons, and the old system of eonductors, as well as the new, is attached to all the new earths. It is also proposed to establish connection with the ends of the rain water pipes where they look out of the stone walls, down which all the conductors are laid.

Mr. Jos. H. Williamson, who for nearly eighteen years has been the business manager of the Manufacturers' Advertising Agency, New York City, has severed his relationship with that company to connect himself with the old established Viennot Advertising Agency, No. 524 Walnut street, Philadelphia, as its business manager. Mr. Williamson will be glad to welcome his many friends at any time at his new address, either at the office in Philadelphla or at the New York office of the Viennot Agency, No. 127 Duane street, Graham building,

MANUFACTURES AND MATERIALS

SHINGLE STAINS.

70 KIRBY ST., BOSTON, MASS., OCT. 22, 1900.

EDITOR CANADIAN ARCHITECT AND BUILDER.

DEAR SIR,—We are glad to see your approving notice of the beauty and utility of stained shingle roofs, in editorial on page 186 of your October issue, but very sorry to see you giving the same approval to the hap-hazard stains that are made on the ground to suit each job. That part of the editorial tends distinctly toward the cheapening of building materials, to their injury.

We have been making shingle stains for nearly twenty years, having been the originator of this article, and as chemists who have made a study of the subject for all that time and longer, we have reason to believe ourselves more competent to speak upon it than any architect, however well equipped he may be in his own profession, or yourselves, whose ability in your profession is undoubted; because it is our profession and not yours.

For these twenty years we have tried to make an article which could not be improved upon for quality, and have guaranteed every gallon put out. We have used the most expensive and carefully selected pigments, ground them in our own mills, formulated them in our own laboratory, and compounded them in our own works; and yet the gentleman who penned the editorial in question appears to think that any painter, acting under the direction of any architect, can make a good enough shingle-stain by stirring color into a vehicle, without knowing with any accuracy what the color is, chemically, or whether the vehicle is one that will benefit the wood. Would he take the same position regarding paint, or varnish, or other materials?

We know from many analyses that these "mixed-on-the-job" stains are nine out of ten of them hap-hazard; with vehicles of kerosene or other worthless and inflammable petroleum product and pigments stirred in with a paddle without grinding. The use of these stains, by architects (and others) who do not realize that a true and good stain requires as much care and experience to make as a good paint, has given shingle-staining in general a doubtful reputation among the undiscriminating, and we dislike to see a journal of your standing giving encouragement to such things "on the ground of cheapness." Hoping that you will see the propriety of our protest, we remain

Yours truly,

SAMUEL CABOT.

[The portion of the article which referred to the use of "mixed-on-the-job" stains, was not an expression of opinion by the writer, but a statement of the opinion expressed to him by an architect.—EDITOR C. A. & B.]

MANUFACTURING NOTES.

The Canadian Litholite Company, of Owen Sound, has been incorporated with a capital of $50,000.

A large deposit of clay suitable for the manufacture of paving bricks has recently been discovered at Wabigoon, Ont., and a brick manufactory will be established there.

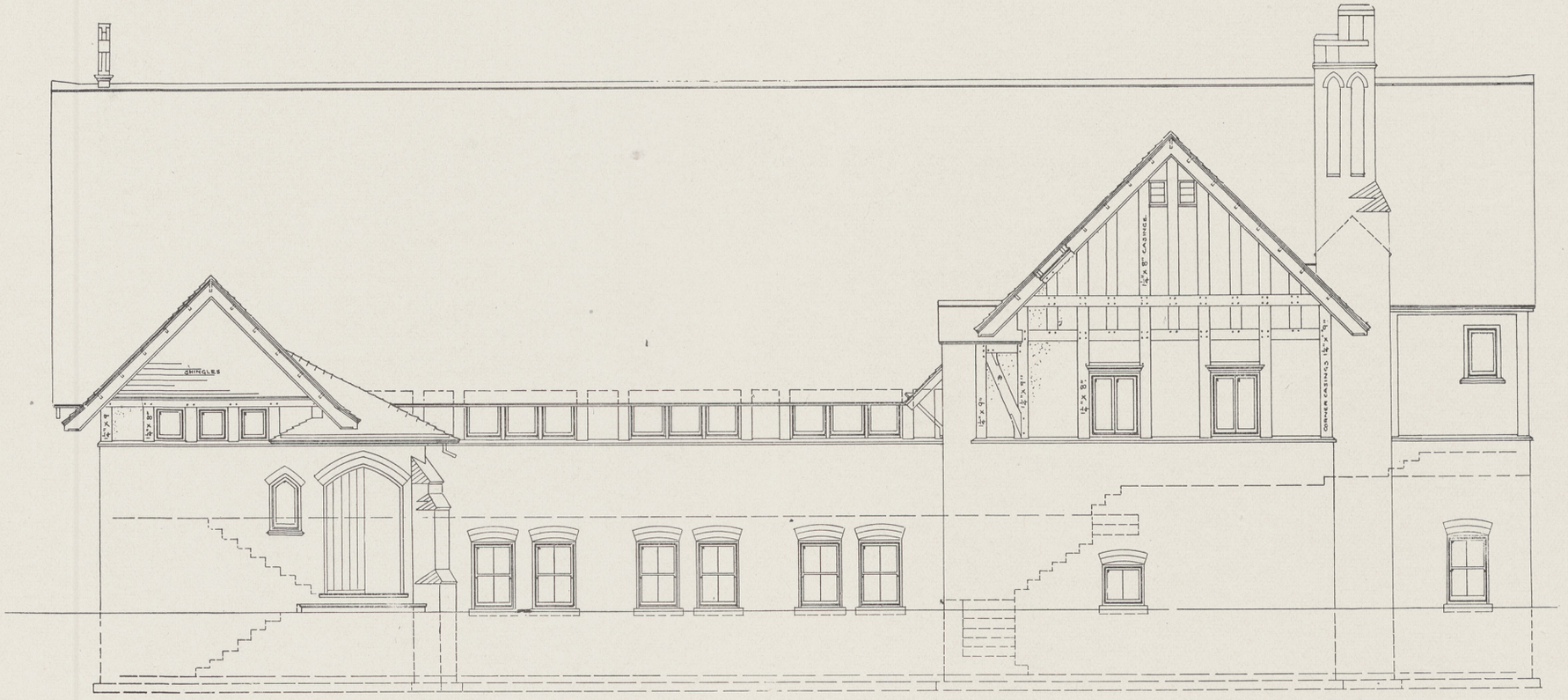
Inducements in the form of a bonus of $2,000 and an excellent water privilege are being offered by the citizens of Tamworth to secure the removal of the cement works from Marlbank to that town.

A syndicate represented by Messrs. S. F. Mackenzie, G. H. French and J. Jeffries, has been organized to develop an extensive deposit of terra cotta and pottery clay on Salt Spring Island, near Vancouver, B.C.

Application for incoporation has been made by the Imperial Sand, Brick and Stone Company, with a capital stock of $200,000. The company controls a valuable manufacturing patent process. The head office of the company will be in Toronto. Mr. Chas. D. Warren, president of the Trader's Bank, will be president and managing director.

MEN-WAH-TAY LODGE, ROCK LAKE, O. & P. S. RAILWAY.
W. H. WATTS, R. C. A., ARCHITECT.

SUPPLEMENT TO
CANADIAN ARCHITECT AND BUILDER
NOVEMBER, 1900.



SOUTH ELEVATION

RESIDENCE ON ELM AVENUE, ROSEDALE, TORONTO.

BEAUMONT JARVIS, ARCHITECT.

SUPPLEMENT TO
CANADIAN ARCHITECT AND BUILDER
NOVEMBER, 1900.

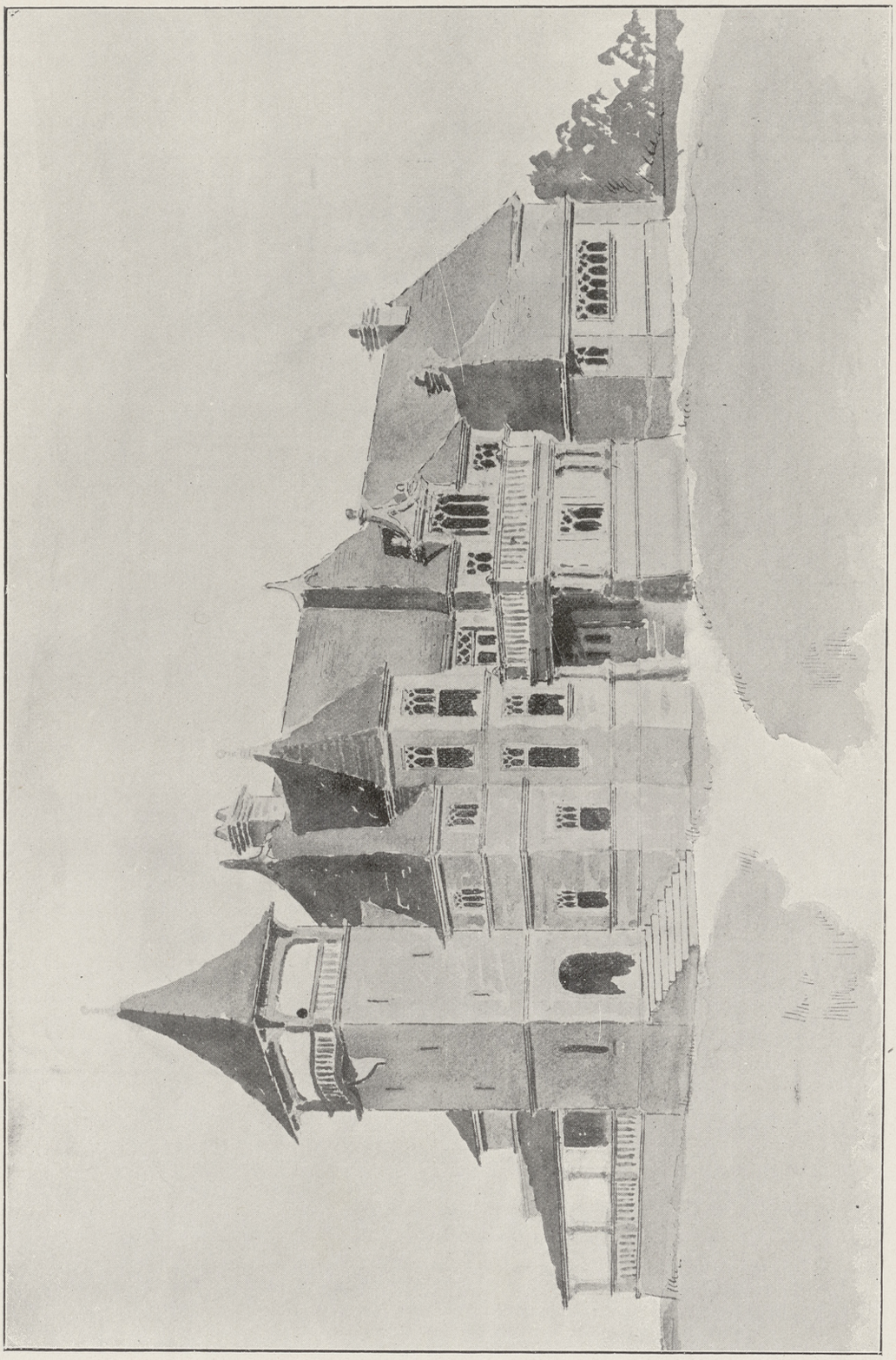
WEST ELEVATION.

CHURCH OF ST. CLEMENT, BROOKLYN AVENUE, TORONTO, ONT.

BOND & SMITH, ARCHITECTS.

THIS PAGE RESERVED EVERY MONTH FOR WORK DONE BY MEMBERS OF THE ARCHITECTURAL EIGHTEEN CLUB, TORONTO.

SUPPLEMENT TO
CANADIAN ARCHITECT AND BUILDER
NOVEMBER, 1900.



SKETCH FOR SUBURBAN RESIDENCE.

J. RAWSON GARDINER, ARCHITECT.

SUPPLEMENT TO
CANADIAN ARCHITECT AND BUILDER
NOVEMBER, 1900.

Architects.

Legal.