

Entered at the Post-Office at Boston as second-class matter.

OCTOBER 14, 1899.



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WE are glad to hear of a contractor who is conscientious enough, as well as prudent enough, to call attention to what he thinks to be defects in the plans from which he works. The builder of a new school-house for the city of Hoboken, New Jersey, has formally notified the Board of Education that if he is compelled to finish the work in accordance with the plans and specifications, the Board must assume the responsibility for any accident which may occur, saying that, in his opinion, "the walls will not hold or sustain the floor-beams, especially when completed and filled with children, and may collapse at any moment." Of course, it is understood that we express no opinion in regard to the merits of the case, knowing nothing of the facts, and the architects of the building are reported to have said that, if there is any danger of the collapse of the walls, it is due to the neglect of the contractor to comply with the requirements of the plans and specifications in regard to anchors and other details; but, whether the contractor is mistaken in his views or not, and whatever may be the cause of the weakness which he thinks that he perceives, it is unquestionably better to give the alarm now than to wait until the lives of hundreds of children may be endangered. In fact, it would have been better still if he had given it before, as the third floor is already on the building, and it is not easy to strengthen walls after this point is reached. It is to be presumed that the contract plans and specifications showed the construction as it is now being carried out, and the builder would have done well to express his opinion of them before agreeing to carry them out. In fact, as contractors may be interested to know, the law says that a builder who contracts to erect a building in accordance with certain plans and specifications becomes responsible for the safety of the structure. He cannot protect himself by saying that he did not understand the drawings, the theory of courts being that a man who agrees to carry out certain plans and specifications is presumed to understand them, and cannot throw the consequences of his ignorance or mistakes on other people. Even the architect cannot be saddled with the results of the contractor's misunderstanding of the plans, or of errors in them which the contractor, with reasonable attention and skill, could have detected in time to have them remedied; the law assuming that the contractor and the architect are both experts in reading plans as well as in executing them, and that both are bound to use all their skill and knowledge to carry out the work entrusted to them safely and well.

IT is quite probable that the Dewey Arch in New York may be made permanent, by replacing it with one in marble, as was done with the Washington Arch, at the southern end of Fifth Avenue, some years ago. A subscription of fifty thousand dollars toward the cost has been promised, and it seems probable that all the money necessary will be raised without difficulty. The situation of the Dewey Arch is much less favorable for such a monument than that of the Washington Arch, but it is possible that this might be changed. Meanwhile, the designer of the arch, Mr. Charles R. Lamb, while pleased, naturally, at the public approval of his work, is modest enough to say that it is only a sketch, and that plenty of time should be allowed for studying the design before it is executed in marble; and the sculptors concerned have, no doubt, the same feeling.

MR. J. Q. A. WARD, the President of the National Sculpture Society, and the sculptor of the "Victory" group on the Dewey Arch in New York, has, we are glad to see, some ideas about the proper location of the permanent arch which ought to be heeded. To place a marble triumphal arch across a crowded street, nearly in front of a cluster of large hotels, with nothing but an open square to balance the composition on the other side, would be artistically most unfortunate, and, as a matter of convenience, the arch would be so much in the way there that we should expect to see it demolished within twenty years to make room for the traffic of the street. Mr. Ward suggests the middle of Union Square as a suitable site, observing that, in such a position, traffic might either pass through it or around it, as is the case with the Arc de l'Etoile in Paris. This is an excellent suggestion in every way. If it were not for retaining the attendant columns, which, in our opinion, add nothing to the effect of the arch, and might well be dispensed with, we should like to see Mr. Ward's plan slightly amended by setting the arch at the south end of the enclosure of Union Square, instead of putting it in the middle. Placed at the south, facing down Broadway, it would be much more imposing than in the midst of the shrubbery of the Park, and, situated in this way, in the middle of the busiest portion of the greatest street in the world, where the traffic must pass under its shadow, all the details of its sculpture would become impressed on the minds of millions of people, while it would be no more of an obstruction there than in the centre of the Square, and infinitely less so than it would be in Fifth Avenue. Another advantage in placing the arch at this point in Union Square is that it would form an admirable central motive for a group of monuments, extending on each side on the south border of the Union Square enclosure, to the limits of the present fence. A double colonnade arranged in this way, with the arch in the middle, and terminating at each end in a decorative mass, would give room for scores of statues, at the same time that it would form an incident, so to speak, of unrivalled magnificence in the course of Broadway. Even the Arc de l'Etoile, dwarfed, as it is, by the enormous expanse of pavement in the middle of which it stands, hardly commands the attention that would be called to a composition which entirely closed the vista of Broadway, as this would. To the suggestion that our triumphal arch ought to serve as a passageway for processions it may be replied that in this situation it would be far more useful than in the middle of the enclosure, or in Fifth Avenue. Any body of men, not too numerous, could form very advantageously, and at its leisure, in the Square, issuing southward through the arch to begin its progress through the city; while, with the arch in almost any other situation, the procession must be formed elsewhere, and the march under the monument would have no special significance.

THE Annual Exhibition of the Philadelphia T-Square Club will be held at the Art Club Galleries from December 16 to January 6. Architectural drawings in any rendering, photographs, and drawings, models and executed examples of work in the allied arts, will be received. Exhibits will be collected and returned, free of expense to exhibitors, in New York, Boston, Chicago, Cleveland, Pittsburgh, St. Louis, Detroit, London and Paris. The practice, which has been growing rapidly of late, of sending works directly from one exhibition

to another, is this year systematized, and some of the associations belonging to the Architectural League of America have arranged to give exhibitions at consecutive periods, forming what is called a "circuit," with the understanding that most of the exhibits sent to the T-Square Club will be forwarded, at the end of its exhibition, to New York, and thence to Chicago, and so on until they have made the round of all the exhibitions in the circuit, concluding with that at Pittsburgh, which closes June 30, 1900. The drawings will then, after eight months of wandering, be returned to their owners. Exhibitors who would like to have them back sooner may signify their wishes on their entry-slip, but it is evidently expected that a large proportion of the drawings will make the tour of the country in this way.

THIS plan of holding a series of exhibitions, all over the country, of the same set of architectural drawings, although it is much to be commended in the interest of draughtsmen and students of architecture, both professional and amateur, is a more important innovation than would at first appear. So far as the public is concerned, it would be hard to devise a more effective method of educating the taste of the community, and interesting all classes in the great art of architecture, and the fact that a large part of the exhibits in each place have been, or will be, shown elsewhere need not affect the local character of the display, which it is desirable to cultivate as far as possible; but it seems to us probable that the new system will lead ultimately to profound modifications of the existing methods of selecting and exhibiting architectural drawings. Obviously, the society or club which holds the first exhibition has the great advantage over all the rest of being able to show a collection of drawings entirely new to the public and the profession. No doubt this has been recognized, and it is likely that the T-Square Club, which has certainly deserved the honor of leading in the matter for this year, will be obliged, in subsequent years, to take a less conspicuous place; but a system of strict rotation among the clubs would not be altogether desirable or convenient, and there may be difficulty in adjusting the various claims. Again, the matter of the catalogue is likely to play an important part in the final adjustment of the new scheme. Many of our readers, and many more laymen, have probably wondered how far the expense of transporting drawings thousands of miles, hiring halls to show them in, and unpacking and repacking them, could be met by the entrance-fees of the lonely visitors who straggle absently through the exhibition-galleries on pay-days. The fact is that the entrance-fees form an insignificant item in the revenue of such exhibitions, almost the whole expense being defrayed by the advertisements in the catalogue. In many cases, exhibition catalogues are distributed to architects by mail all over the country, obviously with the idea of attracting advertisers by the promise of laying their announcements before the whole profession, instead of the score or two of architects who go to see the drawings; and, as this practice is growing, it seems to find favor with those who are counted upon to pay the cost. The practice of making exhibition catalogues into advertising pamphlets has its inconveniences, but, as the exhibitions could not be carried on without it, the committees having them in charge make the best of the matter; and, indeed, as the commission paid for obtaining advertising business sometimes constitutes a handsome addition to the income of the committeeman deputed to undertake this part of the work, personal interest aids professional zeal in making the catalogue as attractive as possible. With the various independent local exhibitions substantially combined, so to speak, into a single travelling show, the several catalogues hitherto printed would be, to a great extent, repetitions of one another, and, if sent out to the profession, would go to the same persons, so that, while the first catalogue of the series would be of great interest, the subsequent ones are likely to attract much less attention than they have hitherto. The committee of the T-Square Club has apparently thought of this, for it is announced that its catalogue will cost, sent by mail, sixty-five cents, which should pay for a very elaborate advertising pamphlet. It would seem that, instead of allowing the first catalogue of the series to swallow up, in a manner, all the others, it might be well to make one catalogue do for all the exhibitions of the circuit, adding supplements in each place to cover the local works; but this would involve a new set of difficulties, and it is probable that nothing but experience will show how to solve the problem satisfactorily.

THE New York Board of Fire-Underwriters deserves the thanks of the citizens of New York for its well-timed protest against a scheme to increase the water-supply available for fire-extinguishing purposes by conveying water to the city from the Ramapo River, in New Jersey, at an estimated cost of two hundred million dollars. There are indications that this gigantic project for the emptying of the treasury of New York into the pockets of politicians and contractors has been a long time in preparation. Mr. Bonner, recently the Chief Engineer of the Fire-Department, who has long advocated the introduction of a salt-water supply for fire-purposes in the mercantile district, which would cost less than a thousandth part as much as the Ramapo project, was retired about a year ago, and his place filled with some one "in sympathy" with the present system of municipal government. In addition to this, the idea was carefully disseminated that the underwriters, in view of the known inadequacy of the present water-service, favored getting a new fire-supply from the Ramapo. The protest just made public, which was signed by ninety-eight representatives of the insurance companies, sufficiently refutes this notion, and reduces the affair to a struggle between the taxpayers of the city and a powerful and greedy gang of politicians, who will not readily relinquish the prize which they thought was within their reach.

THE use of crude petroleum for keeping down dust extends every day in this country. It is well known that several important railways now have their road-beds sprinkled with oil, to the great advantage of passengers and freight conveyed over them, as the oil practically prevents all dust from rising from the ballast. For school-houses and public buildings a deodorized oil is used, the smell of crude petroleum being disagreeable, and this deodorized petroleum is found of great service. Quite recently, several towns in Southern California have employed the crude oil for treating highways, and it is reported that the results have been extremely satisfactory. On sandy roads petroleum is of little value, as it has not binding quality enough to cement the particles of sand; but on a clayey road, with a good foundation, it is found that the oil combines with the dust on the surface of the road, forming a sort of asphalt, elastic, but firm enough to resist the action of wheels. A road which had, in dry weather, a covering of dust averaging two inches thick, presented, after the application of the petroleum, "a surface as polished, clean and clear as an asphalt street." On macadam pavement the oil has an equally good effect, cementing the broken stone in place, combining with the surface-dust to produce an elastic finish, and making the whole road waterproof. In the California towns, the oil is applied to the roads in three doses. In the first treatment, sixty barrels of oil are used to the mile of road, a space eighteen feet wide being sprinkled. The oil must be applied hot, and the road itself must be warm and dry, the hottest part of a summer day being best for the application. If the conditions are favorable, the oil soaks immediately into the surface, without running into puddles. An hour or so after the first application, a roller is run over the surface. Some time later, a second treatment is applied, with twenty barrels of oil to the mile, and a third, with a similar quantity of oil, completes the saturation. After this, nothing more need be done to the road for several years. As petroleum is found very abundantly in Southern California, the cost of the treatment is moderate, averaging two hundred and fifty dollars a mile for complete saturation.

THE temporary decorations on the line of the Dewey procession in Boston have been assigned, so far as public buildings are concerned, to the care of the Boston Society of Architects, and various members of the Society have been deputed to act as advisers in regard to private decorations, one having charge of each of the principal streets. The excellent suggestion is made by the Society that the decoration will be more effective if each street shows mainly a single color, giving broad masses, Arlington Street, for example, being dressed in blue and white; Bowdoin Street in red; Tremont Street in green and white; Winter Street in yellow and white; Milk Street in blue; India Street in yellow, and so on, using these colors above the second-story windows, and keeping American flags or striped bunting at this level. With such trained skill as is available among the architects, the result of a little compliance with their advice should be extremely interesting.

SMALL MOTIVE-POWER SELECTION.

Doorway on the Rue Vernet, Paris: Paul Sedille, Architect. From *L'Architecture*.

PRACTICALLY all business buildings in cities require some power. A large number of these buildings are included in a class where the demands for light and power are so great that both can be more economically produced from an isolated plant than from any outside source, as has been shown by both computation and experience. There remain, however, a still larger number of buildings where the total light and power desired are not sufficient to warrant a complete isolated plant, and where the heating problem, being already cared for, is not to be considered in connection with the exhaust-steam from a possible engine. In cases of this latter class the light is usually provided for in a separate manner, and more than twenty horse-power is seldom required.

The practical problem of motive-power selection here presented is, then, to choose the most economical means of power-generation in small units. The machines available under the conditions named are commonly three: the steam-engine, the gas-engine and the electric-motor. A choice between the three methods of power-production must usually turn on their relative desirability, required space, cost of attendance and of fuel or energy consumed. In the matter of general desirability for most cases, the electric-motor ranks first, the gas-engine second, and the steam-engine with boiler third. The electric-motor, having a simple rotary motion, and no reciprocating parts, produces no vibration when properly balanced, and can be as properly placed at the top of a building as in the basement. This property is a decided advantage with many elevators, where the location of machinery over the shaft makes a material saving.

No gases, and practically no noise or heat are given off by the electric-motor, and this counts as a strong point as to unrestricted location and general desirability. Gas-engines transmit a decided tendency of vibration to their supports, radiate considerable heat, and usually produce an unpleasant odor. They are, therefore, mostly confined to basements or the first floors of buildings, and cannot be located in apartments used for business purposes. These limits to gas-engine locations often make it necessary to transmit their power from one part of a building to another by belts, which is no small objection in many cases.

The steam-engine is open to about the same objections as to vibration and heat as the gas-engine, but is nearly free from bad odors.

The vibration and heat-producing qualities are usually enough to fix the steam-engine in the basement, but in addition there are the requirements for steam which at a distance from the boiler are undesirable because of their required space, heat given off and condensation losses. The steam-boiler for the engine involves, of course, a slight risk and is often objectionable in a basement because of its heat.

In the matter of required space the electric-motor easily holds first place, not only because its over-all dimensions are much less than those of an engine of equal capacity, but from the fact that its nature permits its installation in unused spaces that are entirely impracticable for either gas or steam engines. For the same capacity the gas-engine requires a little more room than that for steam, but this slight

advantage in favor of the steam-engine is much more than offset by the requirements for boiler-space, so that the complete steam-equipment takes up much more room than either of the other two. Attendance-charges on the electric-motor are very light, being often limited during an entire day to the necessary starting and stopping. There are but three wearing-surfaces in an electric-motor, the shaft-bearings at each end and the commutator. The bearings are self-oiling, and carbon-brushes are now commonly used at the commutator, so that these points will often require no attention for days at a time. The caring for self-oiling bearings and carbon-brushes can usually be undertaken by a person with no particular mechanical skill after a single day's instruction. Gas-engines will not usually give satisfactory results in the hands of persons with no previous mechanical training, but commonly require some attention from a machinist or engineer. The average daily care is fully as much for a gas-engine as for a steam-engine, the boiler not considered. A steam-boiler must have attention and be fired at frequent intervals when in use, and in many locations a licensed engineer is required by law for the operation of all steam-power plants. Steam-power equipment obviously demands, therefore, more attention than that of electric-motors or gas-engines.

Considerations above pointed out are of varying weight, depending on the character and uses of the building where the machinery is to be located, and the amount and kind of labor necessarily employed about it for other purposes. While the items above enumerated are often difficult of proper estimate in dollars and cents, the remaining factor, that of cost for the materials or energy consumed by the power-giving machines, is usually capable of fairly accurate determination.

Taking first the case of the steam-engine and boiler: it is quite certain that the average plant under twenty horse-power capacity will consume not less than ten pounds of coal per horse-power hour delivered on the engine-shaft, and many small equipments are known to require a larger amount. Taking the cost of coal at four dollars per ton, which is a low estimate, since soft coal will not usually be tolerated in these small plants, the cost of coal consumed per horse-power hour is $(400 \div 2,000) 10 = 2$ cents. There is also a small water-charge. The quantity of gas required to develop a horse-power hour at the shaft in small gas-engines, under twenty horse-power capacity, depends on the quality of the gas used, but with average city gas twenty cubic feet per horse-power is a low estimate, especially for the usual case where the engine works on a variable load.

One dollar per thousand cubic feet is a lower rate than can usually be had for gas, but on this basis the cost per brake horse-power hour is $(100 \div 2,000) 20 = 2$ cents, or the same as that found for coal. There is also in this case a small charge for water to cool the cylinder.

Coming now to the electric-motor, energy must be procured instead of fuel, and this energy can be had in a large number of cities and towns throughout the country at a rate of 3.33 cents per horse-power hour delivered to the motor. Assuming that electric-motors under twenty horse-power capacity, working on the varying loads common in practice, will deliver, as mechanical power at the shaft, 83 per cent of the energy put into them, which is a low estimate for efficiency, the cost per horse-power hour of energy actually delivered by the motor is found from $3.33 \div .83 = 4$ cents.

This figure for electric energy is twice that found for either gas or coal, but the fact that all consumption of energy stops at the motor as soon as the switch disconnects it, and that the motor retains a high efficiency at partial loads tends to reduce this ratio. On fractional loads small gas and steam engines drop very rapidly in efficiency, and where loads are intermittent, as for elevator work, the coal consumed per brake horse-power hour from steam-engines becomes excessive. Even when in constant operation, the average load in these small plants is seldom more than one-half the full rated capacity for ten hours per day. Taking an average of one-half full load for ten hours, and basing results on the figures above found, the saving per day of fuel over electric-energy cost, in a plant of ten horse-power capacity, is found from $10 (4 - 2) (10 \div 2) = 100$ cents or one dollar per day.

How far one dollar will go toward paying for the undesirable features, additional room and extra-attendance cost involved in a gas or steam plant of above capacity must be decided on the facts of each case. The fact that, in most cities where electric energy is sold for power-purposes, electric-motors far outnumber gas and steam engines combined, in the sizes named, may be taken as an indication in which the advantage lies for the average case.

ALTON D. ADAMS.

VENTILATING THE ST. GOTHARD TUNNEL.—A method of ventilating the St. Gothard tunnel was described in this column several weeks ago. It consists essentially in forcing a current of air through it in a certain direction. In one of the railway tunnels near Genoa, however, a cheaper plan is now being tried, and is reported to be giving good results. On the tender of the locomotives a cylinder of 16 cubic feet capacity is placed, containing air compressed to 750 pounds per square inch. When passing through the tunnel the air is allowed to escape through a suitable nozzle, and in such a direction that it blows the smoke back of the train, and tends to force it out of the tunnel. Of course, the suction produced by the motion of the train interferes somewhat with the desired result, but, on the whole, the plan is a success. Another method of ridding this tunnel of smoke, but abandoned on account of its great expense, was to fill the cylinder with oxygen-gas, and supply it through pipes to the fire-box of the locomotive, thus effecting complete combustion and avoiding smoke altogether. — *N. Y. Evening Post*.

FOREST MANAGEMENT IN MAINE.¹—II.

From Chambord.

HERE is vastly more in the woods business and in lumbering than might be imagined by the uninitiated. In developing a township of land for the first time the first thing to do is to get a road to it. Along that road, as business is now carried on in the most progressive localities, is strung a telephone wire. Supplies and communication are thus assured.

Next comes, usually, improvement of the streams. Our smaller streams are generally rough and crooked. Rocks have to be blasted out of the channel, abutments built to run the logs round

sharp turns and keep them out of the swamps. Dams are constructed to control and prolong the flow of water. These improvements are costly. Some of them have a short life. They sometimes compel a concern to log heavily on a tract while they are there.

This is but a small part of the expenditure, however. On large lakes logs are towed more cheaply by steamer than by hand. Three steamboats of different sizes and patterns are employed to get past the lakes of the Rangeley system, and booms, dams and piers are needed at various points below. Again, several hundred horses are used in the woods work of the company by which I am employed, so that even in the small matter of harness no small amount of care is required to keep a supply in stock, to keep run of it in movement and to keep it in repair.

An Androscoggin logging-camp contains as a rule forty or fifty men. A woodworker and blacksmith are in every crew to supply it with tools and sleds. Two men manage the cooking, and often another has special charge of the stable and horses. The rest of the crew are divided up by the boss into squads; a teamster with a pair of horses and sled as the nucleus of each, and with him, to do the cutting, a crew of usually four men.

This crew, under present arrangements, works largely by itself. The boss of the whole crew gives it ground to work on, and spots out its main road. He tells the men in general terms what to cut, and visits them once a day to see that they are doing as they were told. Further than that, however, the men run their own work. A man of experience leads off, spotting his road and having a man to help him fell the trees. These two men also cut the log off at the top, cut the limbs off and roll or swing it to where it can be hitched onto by the team. The third man has to trim the knots close, bark the log if necessary, so that it shall drag easy, and, when the teamster comes along, help bind the load onto the sled. The fourth man, meanwhile, is ahead of all his mates, making a road by cutting out the trees and windfalls, filling up the holes, bridging brooks, etc. In our woods the men are mainly French-Canadians and immigrants from the British provinces, with some Yankees and a sprinkling of men from the northern countries of Europe. They vary much in experience and capacity. Good men, over and above board, are paid from \$20 to \$26 a month.

These are the men that the forester has to work with. This is the organization he will have either to utilize or modify in carrying out the purposes he entertains toward the forest. So far, this organization has been trained simply to rapid, clean cutting. It has had to get its lumber and get it cheaply, and that is all there is to it.

The forester, in cutting through our spruce woods, wants to leave a stock for reproduction and growth. This, of course, can best be left in the shape of young trees. No one is more interested than the forester in removing, and so saving, all dead timber that can still be used, and also any defective and declining trees. Usually, financial considerations will require much more to be taken, probably two-thirds of all the merchantable timber. If so, the forester is as interested as anybody in having that done thoroughly and well. It must be done economically, however, without waste of wood, and it must be done with as little damage as possible to the young growth which it is desired to retain. And right here, in the matter of saving and protecting the young trees to form a future stock, is where the forester meets his difficulty, both with the men he has in charge and with those who in turn are over him. The way ordinary lumbermen rip, smash and destroy young trees makes a forester sick at the stomach. And, on the other hand, the requirements imposed by his employers in respect to the amount of timber that shall be taken, the form in which it shall be got out and the expense of the operation make it often very difficult to do anything effective for the land. Not the least of the obstacles encountered is the logging-boss. As a rule, he is very efficient, but having up to the present been a despot in his own domain, he is often as opinionated and self-willed an individual as can be met with.

Nothing will convey so clear an idea of the problem involved as comparison and a brief record of experience. In the Adirondacks, under the lead of Messrs. Pinchot and Graves, now of the United

States Forestry Division, large tracts of spruce-land have been taken in hand, carefully surveyed and examined, and cutting work has been begun in accordance with a carefully-studied plan. The ground to be cut through there is traversed the summer before by the forester, and every tree that is to be cut is marked. The cutting itself is very strictly supervised, and no departure from the work marked out is allowed, except for the strongest reason. Lumbering methods in the Adirondacks differ somewhat from those of Maine. There is less road cutting. Timber is cut into 13-foot logs where it is felled, and dragged from the stump onto yards by one horse. Now Pinchot and Graves state, in their volume, "*The Adirondack Spruce*," that in this way they can take out of the forest just such trees as they want, and do practically no damage to the remaining growth. A statement of what they found to be the average stand at Dr. Webb's Ne Ha Sa Ne Park will make the matter clear. For spruce alone they found 158 trees per acre under two inches in diameter, 75 trees 2 to 6 inches diameter, 37 between 6 and 10 inches, and 31 trees 10 inches and over in diameter that would scale about 3,700 feet. In reference to these they state that the 31 trees per acre over ten inches in breast diameter can be cut out and yet leave practically all the 37 6 to 10 inch trees and the 233 of still smaller sizes to form, as they would, a good growing stock on the land.

In my experience of one year, under conditions outlined above, no such results were attained as that. First, as accounting for that, was the character of the timber-stand. Here, for instance, is the average stand of about fifteen acres calipered over on one particular tract. Spruce over four feet high and under six inches in diameter numbered here 64 per acre. Trees from 10 inches in breast diameter, inclusive, down to 6 inches numbered 29, and would scale, if cut, about 800 feet. Trees 11 inches and up in breast diameter numbered 47 per acre, and would scale somewhere about 8,000 feet. We have here a larger amount of merchantable timber per acre than in the Adirondacks. It is, however, due to size rather than to the number of merchantable trees, while the number of small trees ready to form the succeeding stand is far less than there. To the landowner, in consequence, the grown timber is of more concern proportionately than the small, and the forester's task of keeping the land stocked is, outside of the natural disadvantages, rendered more difficult.

Again, the forester's work was impeded by the business conditions. The lumber cut on the tract I speak of was to be used, all the largest and best of it, in the saw-mill. It was essential, therefore, in order that it might saw to advantage in filling orders for timber, that it be cut long. The logs were, in fact, cut as long as could be driven out of the stream, 35-40 feet. When a tree would make more than that it was sawed into logs. Now the heavy logs on rough ground required two horses, particularly as they were not being bunched up into small yards for a wagon-sled haul, but being dragged often a mile or more directly to the river. Now a road has to be cut out wide for two horses loaded with long logs to get through, and many young trees in consequence are sacrificed. Nor was that the only disadvantage. The weight of a big butt log was heavy for men to handle. It could not be moved far, but trees had to be laid in felling close to the road where the team could get at them, while stuff had to be laid crosswise to roll it on and keep it from bedding down in the snow. Thus, in thick timber along a road practically everything would be cut or smashed, and about all that was left would be in the strips between. Much of this could not possibly be helped under the conditions and within reasonable limits of expense. It is often the case that the thinner stands are left with the more promise of growth upon them.

Still, something could be accomplished, and that appears on all accounts worth while. Setting a general size-limit of 12 or 15 inches breast-high, according to the stand, the crews would go through a country, cutting out the dead stuff and the larger timber in a more or less bunchy fashion. On knolls and divides particularly exposed to winds they would be required either to cut everything or let everything stand. The ideal could not be accomplished anywhere. Some timber would be left above the size-limit, some that had no promise of growth in it. On the other hand, more than a third of the small stuff would be cut or smashed down. This, of course, would be hauled and used when large enough to be handled without loss, but it was material which we should have preferred to have grow. As a net result, we would leave usually from 1,500 to 3,000 feet of growing timber on the land.

This is descriptive of a first attempt. In large measure it illustrates how not to do it. It is clear to me that if we are to do anything worth while in forestry our organization in Maine must be tightened up. This is necessary in order to accomplish the purpose of forestry, to leave the land in good shape to grow, but I believe it will pay on the score of simple economy of wood and labor. In particular, if we are to leave our forests in shape to do their best in the way of wood-production, the choice of the trees that are to be cut must not be left to ignorant and shifting choppers, but the trees must be marked beforehand by some one who understands the methods and the purposes of the work. In my opinion, the logging boss and not the forester is the one who in the conditions of our business here can best do that work.

In adherence to the main purpose of this address, I cannot omit a brief reference to another and in itself a more attractive branch of the forester's business, tree biology and the theoretical grounding of forestry work. Take the matter of tree-growth, for instance, the measurement of producing capacity.

¹ A paper, by Austin Cary, A. M., Forester to the Berlin Mills Co., read before the Boston Society of Civil Engineers, May 10, 1899, and published in the *Journal of the Association of Engineering Societies*. Continued from No. 1241, page 6.

Each year's wood-growth of a tree is deposited in a ring surrounding on all sides its previous volume. The boundary of each year's growth is usually well marked, and the thickness can consequently be measured. In practice it is better to measure the rings in groups, say of ten each, beginning at the bark. The numbers of rings, taken at several log-cuts along the length of a tree, give us, with the diameter of each section, the means of computing the tree's growth for the last decade or for any preceding period. That gives us the individual tree. Hundreds of such computations, made on trees of different thrift and size, allow us to average, and, taken in connection with surveys of number and size of trees the country over, enable us to estimate the growth in a valley or a township.

From the same observations inferences of great value are drawn as to height-growth. If a tree, at the ground, has 200 rings, we know that it is, at least approximately, 200 years old. If 20 feet above ground we find 150 rings we know that the young tree consumed fifty years in growing to that height. So on up through the number of sections.

The facts are best represented in graphical form. Thus, a spruce growing on a piece of burned land at Moosehead Lake was cut down, leaving a stump a foot high. There were 98 rings in it. Fifteen feet above there were 77 rings in the section, showing that 21 years were consumed in growing that height. Ten and one-half feet higher there were 66 rings, and the same distance above 53. The tree, as cut, was 65 feet high, and, allowing 10 years of height-growth for the stump, it was grown in 108 years. These facts are represented in curve 1 on the diagram, which will need no further explanation.

The value of this method of representation will be best brought out by comparison. Curve No. 2, for instance, represents the height-growth of a spruce which grew in the neighborhood of the other tree, and in the same conditions, except those of soil. It was standing, in fact, on a bed of rocks. No. 5 is the curve of a white-pine which grew up with the first spruce, and was of the same age. It shows the rapid production of that species.

Curves 3 and 4 are still more interesting. They represent the growth of spruces which stood in mixture with hardwood in forest whose history had been unbroken for centuries, which had trees of every age and size. Young trees starting in such conditions have to bear shade; they grow slowly for many years, and only perhaps after a century of struggle do their tops get out into free sunlight. And the point is that our spruce can survive and retain its vitality through a long course of such treatment. The tree represented by curve No. 4, for instance, at 125 years of age was only 15 feet high, and contained probably less than one cubic foot of wood. Yet, even by that treatment, the vitality was not crushed out of it. Getting finally free from suppression, it began a height-growth equal to that of young trees which never had been suppressed.

Now, study of our spruce-timber shows that the bulk of it has come to us through some such history as this. Knowledge of this gives us an important rule for guidance in management. That is, that young spruce in our woods, no matter if they are thin-crowned and seedy-looking, yet retain their vitality, and if in our cutting we will at the same time protect them and open them to the light, they will reward us for it. This is one great advantage of our spruce. The species is remarkable in this respect.

Last in this line I will present some figures on the volume growth of spruce-trees, illustrating what that is in percentage and actual amount. The trees taken for observation ranged from 7 to 14 inches in breast diameter. They were 340 in number, and observed results have been arranged and evened by drawing curves. Inspection of the last column, the amount of yearly growth in wood, shows that growth steadily increases as the tree grows larger; that up to the largest size here represented there is no slack. From this point-of-view trees of this size are not ready to cut.

Growth of spruce on thrifty spruce-land on the Kennebec River, Maine, in volume and per cent. From third report of the Maine Forest Commissioner:—

GROWTH LAST TEN YEARS.

Breast Diameter.	Volume of Tree.	In Diameter, Inches.	In Per Cent at Compound Int.	Yearly Growth in Cubic Feet.
7 inches.	6 cubic feet.	1.1	4.3	.26
8 "	8 "	1.15	4.1	.33
9 "	10.5 "	1.2	3.7	.39
10 "	14 "	1.23	3.25	.45
11 "	17.5 "	1.23	2.9	.51
12 "	21.5 "	1.23	2.6	.56
13 "	26 "	1.22	2.4	.62
14 "	31 "	1.2	2.2	.68

The column next preceding shows the percentage that the year's growth bears to the volume of the tree in the different sizes. Here the course of the figures is the other way. According to the table, a quarter of a cubic foot on a tree 7 inches in breast diameter amounts to 4.3 per cent, while twice as much wood on a tree 11 inches through amounts to but 2.9 per cent. Here the forester is checked by financial considerations. The larger he lets his trees grow the smaller is the rate of interest earning on his capital.

Much might be brought out in this connection. I will draw only the practical inference that one prime object of the American forester, who will be required to gain as rapid returns as possible, must be to change over the stand as nature gives it to him, with its large

trees and comparatively small rate of accretion, into a thick stand of smaller timber more quickly growing and reproducing. That is particularly applicable to spruce when it is to be used in paper-manufacture.

For the present, however, all these matters will be secondary in the mind of the working-forester. Conditions vary through the country, and everywhere investigation and instruction have their field. But the man who, in conditions similar to those of Maine, is bent directly on the task of bringing forestry actually to pass, will endeavor to secure first the right financial conditions for his work, and secondly to so organize woods-work that it will carry out his purpose toward the land in lines both simple and plain.

I wish to present one more topic, a topic of an engineering nature. Men of your training do not have to be told that topography determines very largely the course of all woods-work. Neither do you require to have explained the usefulness of a topographical map. Every lumberman is a topographer in a sense. Clear knowledge of topography is essential to the man who, from a central point, directs the conduct of a large business. So far in the lumber business each man has learned his own topography by cruising, and has carried it in his head. The limitations of this system are evident. Such knowledge is inaccurate in the first place. Then it is likely to be forgotten, and it cannot be conveyed to another man. The loss is particularly evident when one manager drops out of a business and his successor has to acquire his knowledge of locality all over again.

In the autumn of 1896 I had the good fortune to be sent by the Hollingsworth & Whitney Co., of Waterville, Maine, to make what I suppose is the first genuine topographical survey ever made of a New England timber-township. The results, in the shape of a contour-map and a model, proved so much of a satisfaction to the company and its superintendent that other concerns were led to desire the same thing. Thus I have been employed to survey in all about 125,000 acres. I think, furthermore, that in the economy of the spruce forests of New England topographical mapping has come to stay. A brief description of the methods employed in this work, developed as they have been in the work itself, with the aid of such hints and helps as could be got from outside, may be of interest to members of the Society.

The basis of the height-work is levelling. If possible, connection is made with points known from railroad-levels or otherwise, giving thus elevation above sea; then a line of levels is run over roads, or whatever else may be the best route to run on, to the ponds and other suitable marks, well distributed through the township to be surveyed. From the points so determined by level I work off with aneroids, returning for correction as often as may be to some accurately known point. Two aneroids are usually carried; a thermometer is read with them as often as necessary, and changes of pressure due to the weather are recorded meanwhile by a barograph run by an eight-day clock located at the main camp.

The low accuracy of aneroid measurement is well known, but when carefully used with the aid of the accessories noted above, the aneroid suffices entirely for the purpose. A timber-land manager does not require to know, for instance, exactly how high a given mountain is. The approximate relation of things is what he wants. The areas of valleys, the positions of streams and divides, the shape and steepness of the land, the grade of future roads,—these are essential points. Then the passes and their neighborhood often require especial looking over, because it is sometimes very desirable to haul timber from one drainage to another, if that can be done without too much uphill work. In getting at all these points a land level has frequent use, in addition to the aneroid, or, better still, an Abney clinometer.

In these surveys the land has ordinarily been blocked up ahead of me into mile squares. It was a great advantage if, when the lines were run, marks were left every quarter-mile. Then one could locate himself quite accurately on a line by pacing and without going very far. These marks serve also as the starting-point in examining the interior of a lot. For instance, after having traversed the lines of a lot, noted the crossing of brooks and divides, taken the height of essential points and noted or sketched whatever topography could be seen, I might start from the middle of one side to run a line across the lot. In doing this I often use a staff compass with 3-inch needle and folding-sights, but perhaps more frequently a common pocket-compass with needle less than 2 inches long held in the hand. Indeed, direction can sometimes be held more closely with the latter instrument. For instance, a man climbing over the *débris* left by cutting or shoving his way, head down, through dense thickets of young fir, loses direction in the course of a few rods. Now if he has a compass in hand he will stop and look at it. He will do so less often if he has to set a staff, level his instrument and wait for the needle to come to a stand.

Meanwhile distance is kept by counting steps. Six or seven years ago, when I first tried to keep run of distance in this way, in retracing old woods-lines, I found I required about 2,400 steps to the mile. Later on, either because with practice I became longer gaited or because, without knowing it or meaning to, I discounted more, the number required became less. I found at one time that I was using 2,200, and finally I got down to 2,000 to the mile. There I expect and desire to stay, because at that rate notes plot so readily. In field sketches and in final maps I have so far used a scale of 4 inches to the mile. On that scale, at 2,000 steps to the

mile, 100 steps are two-tenths of an inch, and a half-inch square, or a piece of ground 250 steps on a side, constitutes 10 acres.¹

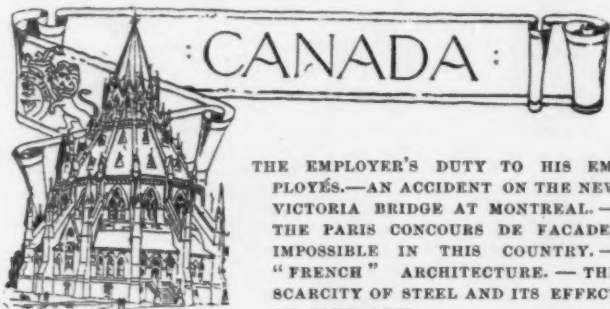
By one who has practised it, measurement by pacing can be made, even in rough land and bad walking, much more accurately than would be supposed. One travels along, looking at the country, keeping his count in some back corner of his mind. Every hundred passed is marked down or scored by breaking an elbow in a tough twig carried in the teeth or hand. When a brook is passed or a change in the land occurs note is taken, the barometer read and the count begins again. Steps taken to get round obstacles are not counted, and on strong slopes discount is made. On very steep ground, indeed, steps taken are not a guide to distance, and judgment has to be resorted to in order to fill in the count. As first remarked, however, long practice enables a man to reach greater accuracy than would be supposed. Thus, I am seldom out over 400 steps from the 2,000 in crossing a lot. The count tells me when a line is approached, and enables me to pick it up with certainty, though it may be blind. Then I go right or left till I hit a quarter-post, and so ascertain the variation from the true compass-course. By this means locations are made with considerable accuracy along the whole line.

What has been said makes it evident that a pedometer in just this kind of work can have but little use. It answers very well in smooth going, but its readings are no guide to distance on rough land. In my work it has been used merely as a matter of interest, to estimate the number of miles travelled in a day or on a whole job. It is, in fact, a good deal of satisfaction after cruising a rough township, perhaps half-covered with brush-heaps and blow-downs, to figure up and tell the company just how far I have been.

On simple ground, running once across a lot serves, with a traverse of its boundaries, to give topography sufficient for the purpose. Elsewhere there are roads and streams to locate and divides that should be carefully put in. Here compass and pacing are still used, tying in to the lines as often as may be. Travel in parallel straight lines, however, has advantages if it is sufficient for the immediate purpose in hand. It is more accurate, in the first place. Secondly, if, as will no doubt be usual, the timber-land topographer also understands timber, and is expected to report on its character and amount, systematic travel of this kind insures his seeing a fair sample of all the land. Timber-estimates in the past have been notoriously inaccurate and misleading in their results, and one great cause of this has been that the men who made them did not see all the land. Of the accessible parts, perhaps of the good parts, they saw too much. They did not fairly balance the whole or correctly allow for the waste land. One man of my acquaintance, realizing that fact, says that in looking over land for purchase he makes it a practice to go first where no timber is to be found. Better than that is some systematic arrangement that causes one to see a sample of every part, and travel in straight lines, evenly spaced, will do it.

So far, our maps have been constructed on the scale of 4 inches to the mile, and 50-foot contours in the rough land with which we have to deal serve to represent the topography. In addition, as a result of the examination, timber-maps are constructed showing the character of the growth and the amount of merchantable timber judged to be standing on the land. On these sheets the progress of the cutting can be drawn in succeeding years. These timber-maps are of transparent tracing-cloth, so that they can be laid over the topography and the two seen in relation. Lastly, since contour-maps are not easily read by most woodsmen, topographical models are constructed out of cardboard or veneer. These are perfectly comprehended by any person. With their aid a contract can be let or plans of work talked over in the office with the same clearness as to main features as if men were on the land.

The survey and mapping of a township six miles square has ordinarily cost me about two months' work, two weeks in the office and six in the field. A township can be gone over conveniently from about four camps. If there are on the land places to live in, the topographer requires the help of but one man.



JUDGMENT in a case which has universal application wherever, at least, building operations are performed has been given by the Superior Court at Montreal. In delivering judgment, Justice Archibald said, "An employer has no right to use means which offer

a constant danger to his employes when other means, perhaps a little more expensive, and a little slower in operation, would have avoided the danger, nor can he excuse himself by alleging that he had warned the employe of the nature of the danger which he was running. It is not the duty of the employer to guarantee the lives and limbs of the men acting under his orders, but it is the duty of the employer to use means as safe as are practicable in the performance of his work."

The particulars of the case are interesting. One Scanlon sued the Detroit Bridge and Ironworks Company for damages for injuries received when in defendant's employ, engaged in the construction of the great railway-bridge that supersedes the celebrated Victoria Bridge built by Stevenson at Montreal. Plaintiff, with other workmen, was employed in removing the iron floor of the old tubular-bridge under orders of defendant's foreman, and it was his duty to fasten the hooks of the derrick-chains upon the cross-beams of the portions of the floor which were to be removed, which were then, by means of the derrick, lifted and carried over, and piled on one side of the new structure. These pieces of flooring of the tubular-bridge were six or seven feet wide by the width of the bridge, and had two cross-beams bolted to the plate-iron which formed the tube. The chain which came down from the derrick was provided at its lower extremity with two short chains having at the ends, hooks, or, rather, clamps. These clamps were then attached by the workmen under the flanges of the cross-beams, and as the chain of the derrick was pulled up, the clamps would grip the beam and so the whole piece be raised. The derrick had to work among the braces of the new bridge and the boom of the derrick would not swing over, so as to carry the iron sideways. A second derrick, provided with a chain, which was hooked into a ring on the other chain, was necessary. When the iron was raised a few feet by the first derrick, the strain was gradually transferred to the chain of the second derrick; the chain of the first derrick slackened until the iron was hanging directly beneath the boom of the second derrick and was then deposited on the pile, free from the railway tracks. The workman found it difficult to prevent the hook of the second derrick's chain from slipping out of the ring while it was being hoisted by the first derrick, and the men were in the habit of riding upon the iron so as to be able to keep the hook in its place in the ring. The plaintiff was one day riding thus on the iron, standing between the two cross-beams and holding on to the chain. As the strain was put upon the chain, one side of the iron lifted before the other, and as the whole mass was raised, a bolt that secured the cross-beams to the iron-plate gave way; the cross-beams fell together and the plaintiff was injured.

The defendant said that frequent warnings were given to the men not to stand between the beams or cross-pieces, and that the plaintiff disregarded the warnings and was himself to blame for any injuries he received. It appeared, however, that it was necessary for the men to be upon the iron which was being moved, in order to attach the chain of the second derrick. The danger to the men would be just the same, whether they were standing between the cross-beams or not, because the chains and pulleys would, if they gave way, kill, or seriously injure, the men working with them. The danger of the work ought to have been known to the defendants, and presumably it was known to them, seeing they warned the employes against standing between the beams. It is manifest that other means might easily have been employed to prevent any danger arising from the giving way of materials in connection with the removal of the iron. The accident was caused by the negligence of the defendant company, and judgment for \$750 was given the plaintiff, with costs.

The establishment of the prize scheme of the Corporation of Paris for the most beautiful houses erected in the year in that city calls forth a few remarks from the *Canadian Architect and Builder*. According to the terms of the awards, the architect is to get the prize, and the owner is exempted from one-half of his tax for local improvements. "What," asks the *Canadian Architect and Builder*, "would be the fate of such a prize in the hands of aldermen of an American or Canadian city? Among the list of applicants each would soon find some one whom he would like to help along, and would he be likely to stand in his way on the question of a little matter of appearance, that is of no consequence?"

It is to be feared that the writer has only too good and strong a reasons for his opinions of the honor of aldermen in general, but there is another reason for objecting to aldermanic control of such a prize, and that is, that however honorable our aldermen may be, as a rule, they are men who know next to nothing about art or the beauty of architecture. Such a prize competition would be altogether out of the question in these countries. As the paper quoted observes, "we have no tradition, no standard and no prevailing excellence." Before such a scheme could be organized, a long course of training would be necessary and imperative, for not only aldermen, but for the public, and, sad to say, for most architects too. The various local guilds for civic improvement that have recently been inaugurated are for the most part composed of men professing some knowledge of art, and are the outcome of a desire of artistic-minded men to counteract the influence of mere sordid monetary considerations. It is to such guilds, rather than to the aldermen, that people in the United States and Canada must look, and from them must emanate such encouragements towards improvements in design, if they are to come from any body. But these men who compose the guilds need to have the courage honestly to voice their inward convictions as to the merits of improvements, or they are a farce and worse than useless. As far

¹ Much help has been received on this and other points from the methods of the U. S. Geol. Survey in Michigan and Wisconsin, as communicated by Prof. W. S. Bailey, of Waterville, Maine.

as the design of domestic buildings is concerned, it will be many a long day before any one would be justified in offering a prize in this country at any rate. Style is unknown; character and proportion disregarded; composition is a matter of no consequence whatever. Theory may be all very well in its place, but its place is apparently outside the boundaries of the Dominion. A little dabbling in elementary construction makes a youth of twenty a full-fledged architect, with a "shingle" or "sign-board" at an office door. As an example I may mention that a young architect recently told me he was "going in for French." "French" was everything, every other style was "rot." No one with any pretensions to be called an architect would design in anything else but "French." I replied that all this was very interesting, and no doubt "French" was O. K., but what date of "French" did he particularly favor? I do not think my young friend has ever mentioned "French" since. He was just out of his fourth year in an architect's office in the States, and proposed to open an office for himself.

The scarcity of steel is beginning to be felt in Canada, a good many buildings being delayed for want of it, and the construction of others being postponed. Up to the present steel has not been very largely used in Canada for building purposes. We are, however, in the transition stage, and lightly constructed steel-framed buildings are to be seen going up beside the heavy, solid, four and six feet thick walls erected only a few years ago. One sign of the inability of contractors to secure steel is found in the fact that the Quebec, Hamilton & Fort William Navigation Company, who have been advertising for tenders for the construction of two steel vessels, at a cost of about \$250,000, have so far received no replies. The Company intends to send a representative to England and close the contract there. The question has arisen as to how contracts are affected by the impossibility of providing steel. A contract has been entered into for the completion of a large steel-framed warehouse by a certain date. At the time of signing no thought was entertained that there would be a difficulty in obtaining the material. The difficulty having grown now into almost an impossibility, the question is asked who is to bear the brunt of it. The law, however, seems to be quite clear on the subject. If the contractor is one who does not include the production of steel among his works, but would have to order the steel from some one else, so long as he has given the order for the steel, he is not responsible for its non-delivery. If, however, the contract is entered into direct with a steel producer, and he failed to ascertain that he would not be able to complete his contract, he has only himself to blame and is held liable.



[Contributors of drawings are requested to send also plans and a full and adequate description of the buildings, including a statement of cost.]

A COMPETITIVE DESIGN FOR THE MOUNT SINAI HOSPITAL, NEW YORK, N. Y. MR. R. H. ROBERTSON, ARCHITECT, NEW YORK, N. Y.

[Gelatin Print issued with the International and Imperial Editions only.]

GENERAL PLANS AND SECTION OF THE SAME.

GENERAL ELEVATION OF THE SAME.

THE DISPENSARY BUILDING OF THE SAME.

THE TRAINING-SCHOOL OF THE SAME.

[The following named illustration may be found by reference to our advertising pages.]

NEW BAPTIST CHURCH AND SCHOOL, ACTON BRIDGE, ENG. MR. FRANCIS P. MELSALL, ARCHITECT.

This plate is copied from the *Building News*.

[Additional illustrations in the International Edition.]

A COMPETITIVE DESIGN FOR THE MOUNT SINAI HOSPITAL, NEW YORK, N. Y. MR. BRUCE PRICE, ARCHITECT, NEW YORK, N. Y.

[Gelatin Print.]

THE MANHATTAN HOTEL, 42D ST. AND MADISON AVE., NEW YORK, N. Y. MR. H. J. HARDENBERGH, ARCHITECT, NEW YORK, N. Y.

[Gelatin Print.]

THE MAIN STAIRCASE-HALL: MANHATTAN HOTEL, NEW YORK, N. Y. MR. H. J. HARDENBERGH, ARCHITECT, NEW YORK, N. Y.

[Gelatin Print.]

THE ROYAL HOTEL, NORWICH, ENG. MESSRS. EDWARD BOARDMAN & SON, ARCHITECTS.

NOS. 74-78 HIGH ST., DEPTFORD, ENG. MR. LOUIS JACOB, ARCHITECT.

RESIDENCE AT WIMBLEDON, ENG. MR. J. H. EASTWOOD, ARCHITECT.



[The editors cannot pay attention to demands of correspondents who forget to give their names and addresses as guaranty of good faith; nor do they hold themselves responsible for opinions expressed by their correspondents.]

JURISDICTION OF THE GOVERNMENT OVER ITS BUILDING SITES.

TREASURY DEPARTMENT, OFFICE OF THE SUPERVISING ARCHITECT, WASHINGTON, D. C., OCTOBER 4, 1899.

TO THE EDITORS OF THE AMERICAN ARCHITECT:—

Dear Sirs,—I notice in the current number of the *American Architect and Building News*, an editorial bearing on an incident of recent occurrence growing out of an attempt on the part of an electric-lighting and heating company in the City of Camden, N. J., to place one of its poles in the sidewalk in front of the new Federal Building in that city. As it is apparent from the tenor of said editorial that you were not put in possession of the facts and the law involved in this matter, I venture, in the interest of preventing a wrong impression from gaining currency, to make the following statement:—

This Department did not, in this case, attempt the exercise of any jurisdiction, as alleged, over the sidewalks of the city. On the contrary, it expressly disclaimed any jurisdiction outside of its lot lines, though, under the laws of the State, abutting owners have a title, subject to the rights of the city, to the centre of streets.

Under the provisions of the laws of the State of New Jersey, power is given to electric-light, power and heat companies, etc., "to use the public roads or highways, streets, avenues, and alleys in the State for the purpose of erecting posts or poles on the same to sustain the necessary wires and fixtures, upon first obtaining the consent, in writing, of the owners of the soil," and subject to such regulations as may be imposed by the corporate authorities of cities and villages.

In this case the company did not secure the consent of the Government's agent for the erection of the pole, and its attempt to place the pole in position without having first secured such consent resulted in the arrest, at the instance of the city, of the persons engaged in said work.

As to your statement that the United States "may be presumed to have bought its Camden tract of a private owner, whose title was certainly subject to the same regulations in regard to poles that his fellow-citizens had to submit to; and as he could not convey to the United States any rights over the land that he did not himself possess," you are advised that the jurisdiction of the Government over its sites for public buildings is not derived from grants by the owners from whom such sites are acquired, but through legislative action by the States in ceding to the United States jurisdiction over lands acquired for such purpose, without which this Department is prohibited by Section 355 of the Revised Statutes of the United States from making any expenditure on sites for public buildings.

Respectfully, J. K. TAYLOR, Supervising Architect.

COMMISSION FOR DISCARDED PLANS.

BINGHAMTON, N. Y., October 3, 1899.

TO THE EDITORS OF THE AMERICAN ARCHITECT:—

Dear Sirs,—Can you call to mind in any of your publications a case parallel to the one I am about to cite, and to which I could turn for reference?

Some time ago I was asked to make sketches for an opera-house to be built in an adjoining town. I made drawings and took them up and was told to go on and make a set of plans. I did so, telling the parties interested that it could not be built for the sum they wished to invest, and in my opinion it would have to be cut down. This they would not do, but sent out the plans to have figures on the building. They found, as I had said, it could not be built for that money and so gave it up. Now they claim that the plans were not accepted, but were rejected. I would like to find a citation of a parallel case if possible.

Could you give me any information on this matter?

Yours respectfully, E. K.

[If the opposing party and the jury agreed with our correspondent's statement of this case, there would be no difficulty about it, and any action of contract would serve as a precedent; but the trouble is that the opposing party will claim that the architect agreed, either expressly or by implication, to make the sketches on speculation, and not to ask for any pay for them unless they were approved; or, perhaps, the claim will be that the plans were agreed to be for a building to cost a limited sum, and that, as it was found that it would cost more, the contract was not fulfilled; or very probably, both these claims will be made, so that if one fails, the other will serve as a defence. We are, of course, quite disposed to believe that

our correspondent's account of the matter is correct, but it is the jury, not we, who must decide between the conflicting claims, and if they believe that there is any truth in the defences which we have assumed to be most likely to be brought forward, they will probably not award the architect much for his trouble. E. K. can tell best what sort of evidence he can offer to convince the jury of the truthfulness of his assertions, and if he has been prudent in keeping letters, and taking notes, and having witnesses to conversations, and so on, he may be successful. — *Eds. AMERICAN ARCHITECT.*

NOTES & CLIPPINGS

HEAVY ANNUAL RAINFALLS.—The heaviest rainfalls so far observed with scientific accuracy occur in India. At Cherrapunji, in the Khasi Hills, in Assam, the mean annual precipitation is 39 feet 6 inches, and at Beundja 30 feet 10 inches, and at Bibundi 34 feet 4 inches. Both the latter stations are on the sea-coast, and at a much lower level than Cherrapunji. — *Exchange.*

THE ORIGIN OF MOLDAVITE.—We have meteorites of glass, as well as of stone and iron, if the recent conclusions of certain European geologists are to be accepted. The glassy stones of Bohemia known as moldavite, resembling the obsidian-bombs of Australia, have been a puzzle to scientific men, but have been explained by some authors as being relics of prehistoric glass manufacture. Late experiments by Herr J. Bares have shown that these objects cannot have had this artificial origin. The new theory that they are aerolites has been advanced by Dr. F. E. Suess, who finds many analogies to support this view, and points especially to the surface structure, which could not have been produced by ordinary water-wear. Other geologists are adding facts confirming the theory. Herr Woldrich points out, however, that it is remarkable that these stones, whether in Europe or elsewhere, are only known to occur in sandy deposits. — *Invention.*

EARTHQUAKE INSURANCE.—One result of the rapid growth of seismology is the suggestion by Dr. Mario Baratta that provision should be made by insurance against the damage to buildings caused by earthquakes in certain countries. He shows that since the beginning of the seventeenth century less than forty earthquakes have been responsible for the deaths of more than one hundred and fifty thousand persons in Italy alone. Moreover, to take but one example, the great loss of life during the Ischian earthquake of 1883 was due to the fact that the buildings had already been damaged by the earthquakes of 1828 and 1881. Dr. Baratta points out some of the conditions that must determine the amount of premium that should be demanded by insurance societies. The most important is the degree of seismicity of the district; but this would be modified by others, such as the nature of the surface-rocks and the character of the buildings. — *Nature.*

ROSA BONHEUR'S WILL.—A correspondent from the neighborhood of Fontainebleau writes: "A lawsuit of unusual interest is pending in France. It appears that a fortnight before Rosa Bonheur's death, although having many near relations, the great artist bequeathed her entire fortune, funded property, house and grounds, pictures, etc., to a lady companion of transatlantic origin who had not lived with her for more than two years. Naturally enough, the relations decided to contest the will, seals were set upon papers and the house, exclusive of two rooms, for the time being in the hands of the law. Meanwhile the legatee, or presumable legatee, remains in the two rooms thus made over to her, awaiting results. I learn that in the first instance she was strongly advised by friendly interveners to come to terms with the family, but preferred a legal decision. It is sad to think (adds our correspondent) that wealth so honorably won should form the subject of litigation. The sum total must amount to a million of francs at the least. Rosa Bonheur left nephews and nieces to whom she was much attached. The great artist, moreover, had received during her long and successful career many valuable marks of appreciation from crowned heads. Perhaps several millions would be a more correct appraisal of one of the largest fortunes ever achieved by a woman. George Sand earned during her lifetime a million francs (£40,000), but, as she wrote shortly before her death, she never saved a sou. Rosa Bonheur was more French, and possessed the national gift of economy." — *Westminster Gazette.*

RELIEF PAINTING ON WOOD.—Decorator Painter Wilhelm Plinwald, of Stuttgart, has taken out a patent on an invention which admits of producing ornaments in relief on wood or stone as quickly as they can otherwise be drawn or painted. When the priming is done only a wood-color or a colored glaze needs to be applied. The new process is carried out as follows: Add to suitably-diluted size enough chalk so that the mixture can be dabbed upon the surface to be decorated. The lower ground may consist of any material, as wood, stone or gypsum. After six or eight applications and rubbing down or smoothing a layer of about five millimetres in thickness is obtained. The rubbing-down is best performed wet, with pumice-stone, whereby all air-pores are closed up, and a nice smoothness results. Upon the surface thus created an ornament is applied by hand or with a stencil, in moderately thick lines, and with not too fat a paint, in order to prevent it from running off. After the drying of the paint all the uncovered places of the surface are treated with sponge or brush and softened water, to which a little potassium bichromate is added. The result will be that the ornament put on with fat paint will remain raised, while everything else is washed away more or less deeply through the treatment. Hence a flat-relief ornament is created, which, treated with colors after drying, presents a much more favorable effect than the imitations attempted by shading. The bichromate of potassium added to the water penetrates very deeply into the mass, eventually taking away its perviousness to water. — *The Scientific American.*

THE CHAPEL AT VERSAILLES.—So bent is the French Government upon doing away with every vestige of royalty that it has just given orders for the closing of the old Chapel Royal, at Versailles. Mass has now been said there for the last time. The only occasion when the head of the Executive attended service there, since the overthrow of the empire in 1870, was during the Presidency of pious old Marshal MacMahon. Disestablished at the time of the great revolution, one hundred years ago, the chapel was reconsecrated by orders of the first Napoleon when he became Emperor, and has continued open, and used for divine service ever since. The chapel is to be converted into an additional hall for the Versailles Palace Museum. — *Exchange.*

TUNNEL UNDER THE SPREE.—The first subaqueous tunnel in Germany is at the present time in course of construction under the River Spree in Berlin. It is intended to accommodate a tramway-route connecting the Silesian Railway-station with the suburb of Treptow, and has a total length, including approaches, of 2,020 feet, 1,500 feet of which constitute the tunnel proper. Since the introduction of iron as a substitute for the older stone or brick linings of tunnels, the usual method has been to construct them of cast-iron segments, which are bolted together through flanges and lugs provided for the purpose. In the tunnel under the Spree cast-iron is discarded for the modern material, steel, which forms a cylindrical casing having an internal diameter of 13 feet 2 inches. The lowest part of the tube is 35 feet beneath the mean-water level of the river, so that, given a depth of water of 11 feet, there remains a thickness of the same amount between the upper part of the tunnel and the bed of the stream. Steel plates 2 feet 3 inches in length, with their butt joints covered by double-angle steels, are built up to form the lining, and are protected externally from corrosion by a thick layer of cement. In the lower part, or invert, concrete is used to bring the floor of the tunnel up to the track level, below which is laid a longitudinal drain to carry off any water that might accumulate, which will be pumped out as required by electric-power. The piercing of the tunnel was effected by the shield and compressed-air through strata composed of mud and dirty sand of a most unfavorable description, the maximum hydraulic pressure available amounting to 900 tons. The work was commenced in 1895, and it is expected that the tunnel will be opened for traffic next year. — *Westminster Gazette.*

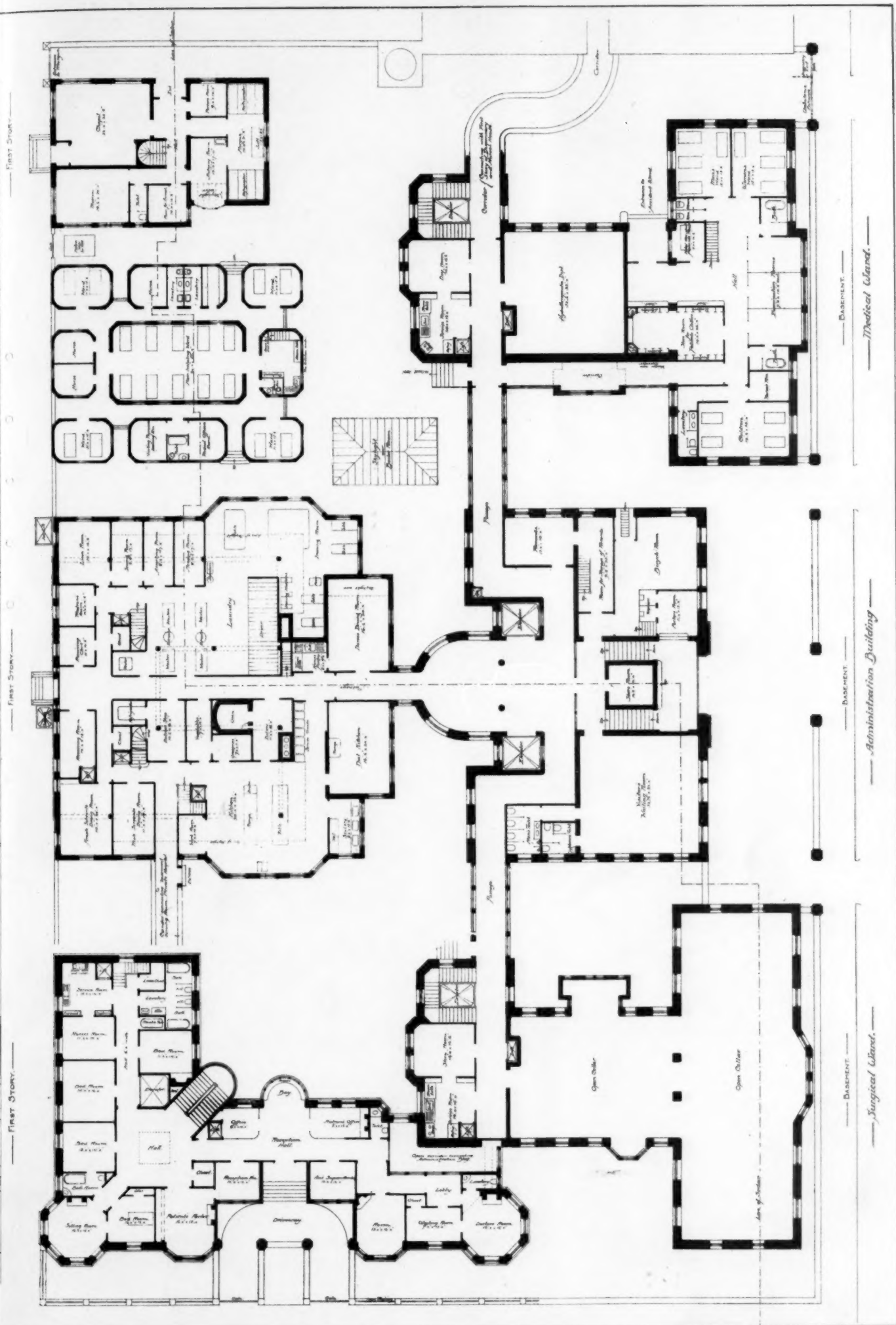
ST. JOHN LATERAN.—The columns of porphyry and granite were so numerous at Rome that they ceased to have any value. At St. John Lateran, that church so famous from the councils of which it was the theatre, there were such a quantity of marble columns that many of them were covered with plaster to be converted into pilasters, so completely had the multitude of riches rendered them indifferent. Some of these columns came from the tomb of Adrian, and bear yet upon their capitals the mark of the geese which saved the Roman people. These columns support the ornaments of Gothic churches, and some rich sculptures in the Arabesque order. The urn of Agrippa has received the ashes of a pope, for the dead themselves have yielded their place to other dead, and the tombs have changed tenants nearly as often as the mansions of the living. In the middle of the place before the church is an obelisk, perhaps the most ancient monument which exists in the world—an obelisk which the barbarian Cambyses respected so much as to stop for its beauty the conflagration of a city; an obelisk for which a king put in pledge the life of his only son. The Romans, in a surprising manner, got it conveyed from the depths of Egypt to Italy; they turned aside the course of the Nile to bring its waters so as to convey it to the sea. Even then that obelisk was covered with hieroglyphics whose secrets have been kept for so many ages, and which still withstand the researches of our most learned scholars. Possibly the Indians, the Egyptians, the antiquity of antiquity, might be revealed to us in these mysterious signs. The wonderful charm of Rome consists, not merely in the beauty of its monuments, but in the interest which they all awaken, and that species of charm increases daily with every fresh study. — *The Architect.*

DUTY OF MASTER TOWARD WORKMEN.—The President of the Hilton Bridge Construction Company, which had a contract to place a skylight over the Senate staircase in the Capitol, at Albany, devised plans for the work which provided for a scaffold to be built upon timbers suspended from the iron girders, placed at an incline over the "well-hole," by iron rods passing through the girders by means of iron straps, which were to be prevented from slipping by iron clamps placed around and bolted to the girder. The foreman of the Construction Company who had charge of the erection of the scaffold deemed the clamps supplied for that purpose unnecessary, and omitted to place them in position. While Timothy A. Hatton, who was a laborer employed by the Construction Company in the erection of the scaffold, was standing on one of the timbers, by direction of the foreman, the strap by which the rod supporting it was fastened to the girder slipped 4 feet, causing Hatton to fall, sustaining severe injuries. In a suit brought by him against the Company for damages for these injuries, evidence was given tending to show that, before he went to work upon the scaffold, all of the rods were in position save one, which he did not see placed, and that it required mechanical knowledge and skill to determine whether clamps were necessary. His complaint was dismissed at the Albany Trial Term, but a reversal and new trial was granted by the Third Appellate Division, which held that the dismissal was an error; that the jury might have found that the defendant's duty to furnish the plaintiff with a safe place in which to work, and with suitable appliances, required it not only to furnish the clamps to the foreman, but to see that they were used, and that the failure of the foreman to use them constituted negligence on the part of the Company. The Court held also that the jury might have found that Hatton, not having the mechanical skill necessary to appreciate the necessity of clamps, had been exposed to a hidden peril which he did not assume. Presiding Justice Parker and Justice Merwin dissented. — *N. Y. Times.*

Service Building

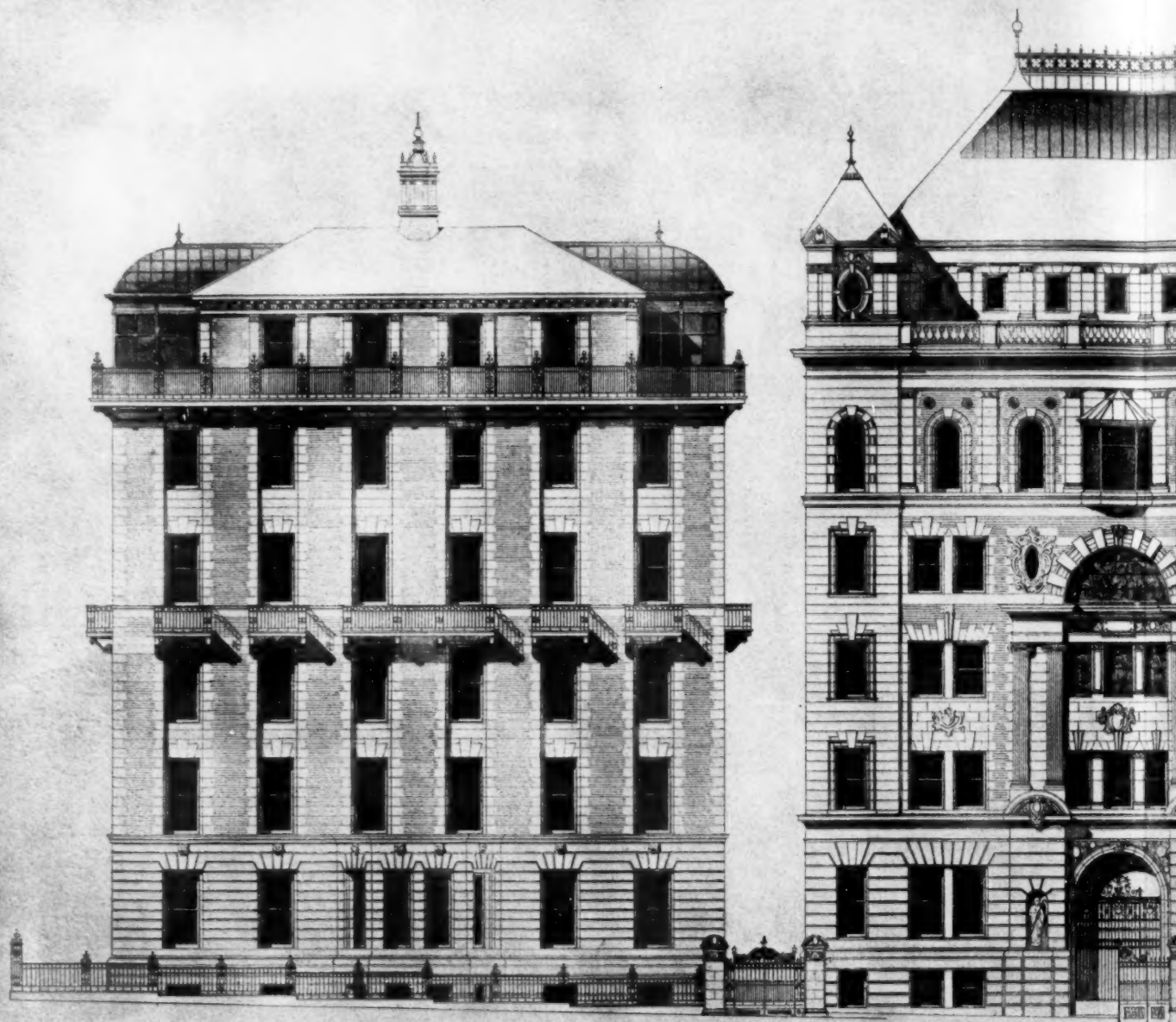
Isolating Pavilion

Morgue



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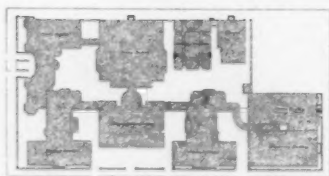
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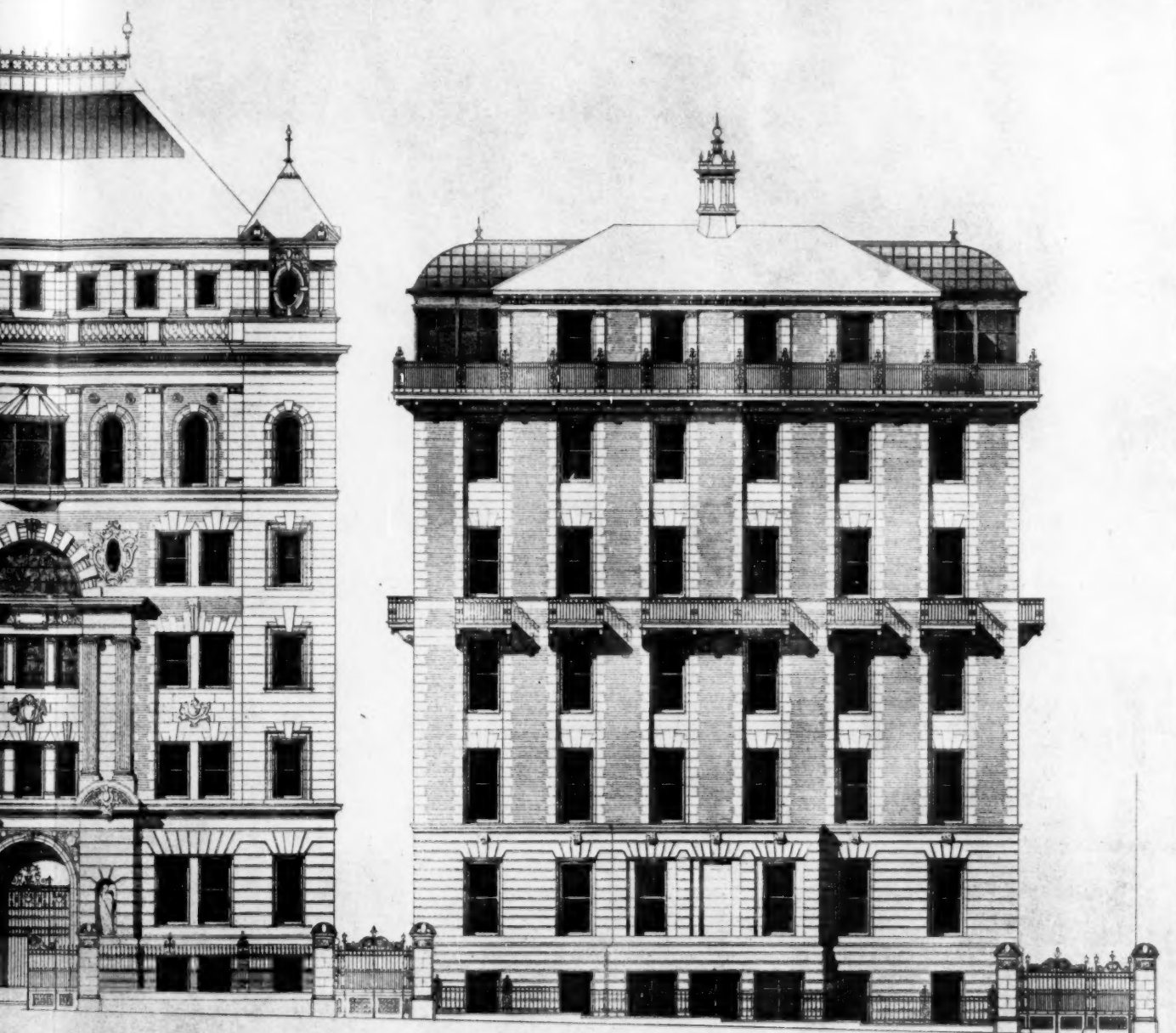


— Surgical Ward. —

Administration Bldg.

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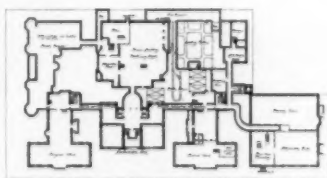




Nursing Building.

Medical Ward.

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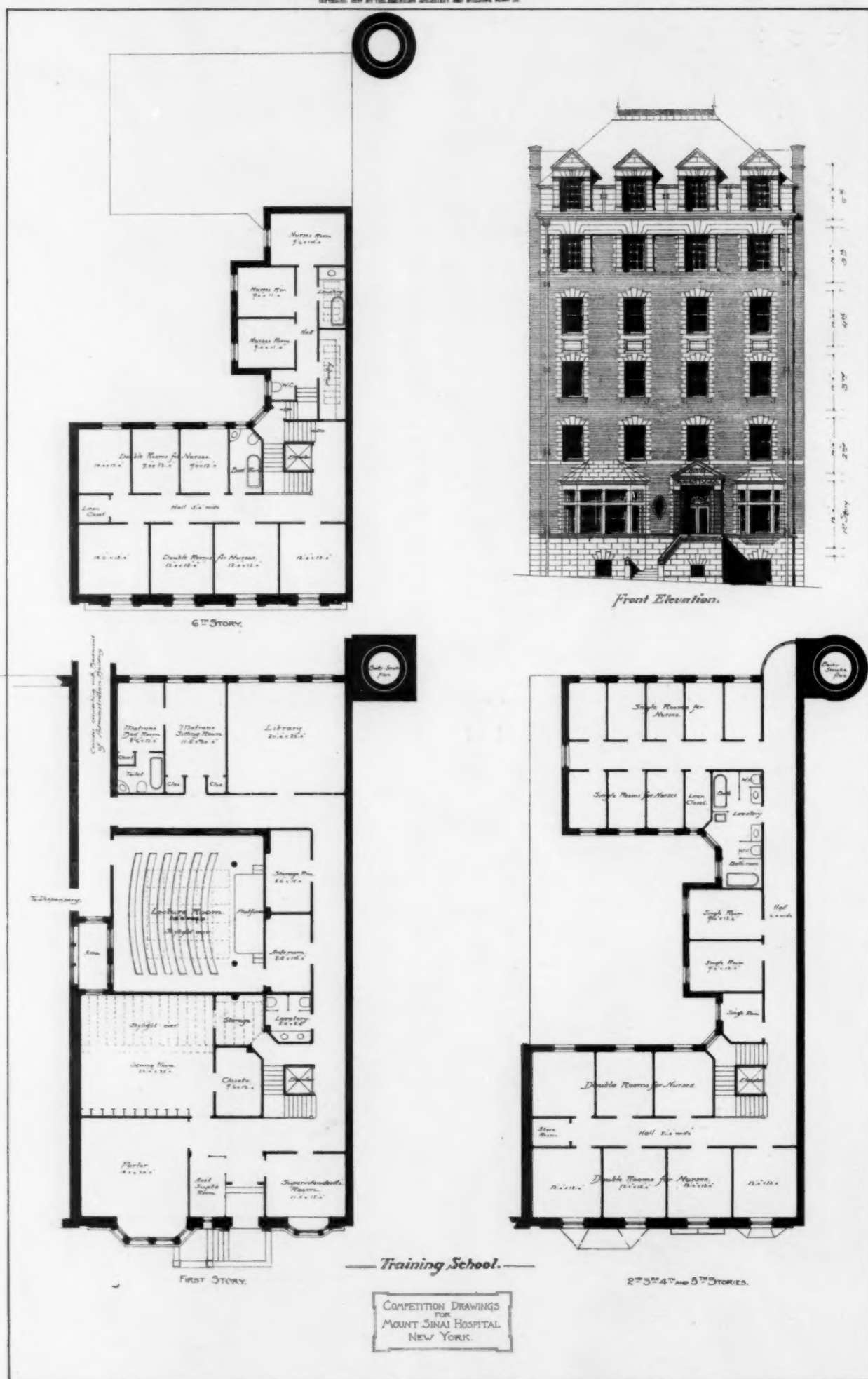


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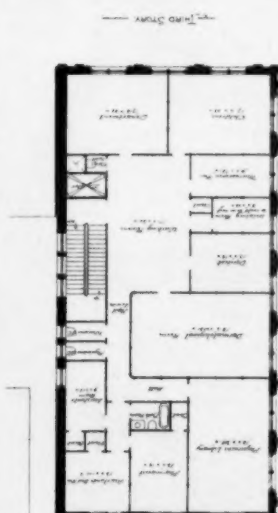
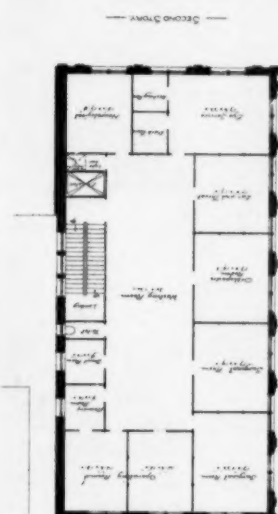
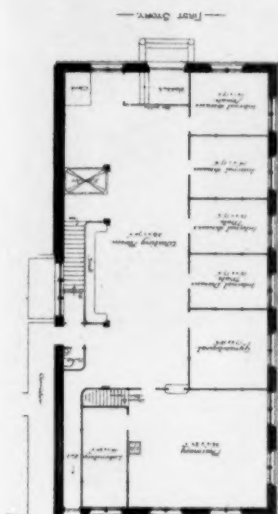
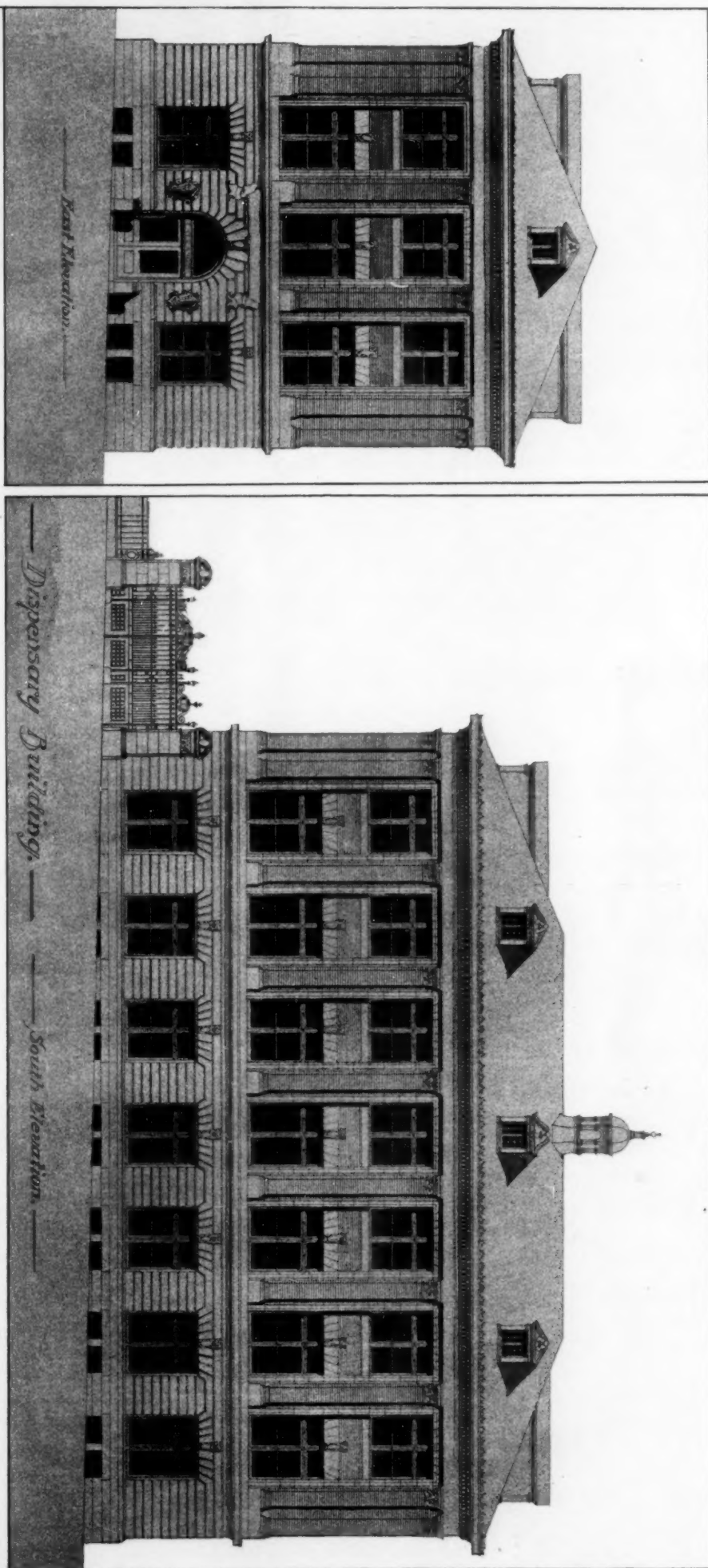
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THE AMERICAN ARCHITECT AND BUILDING NEWS

A WEEKLY JOURNAL OF CONSTRUCTIVE AND DECORATIVE ART.

VOL. LXVI.—No. 1242.]

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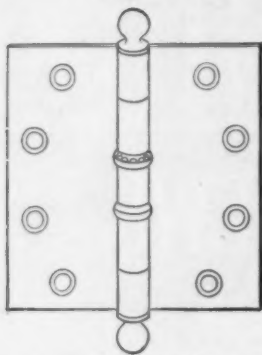
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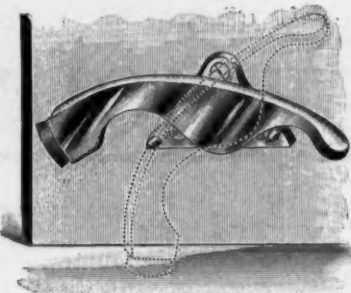
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Dimension.....	5 00 P ton.		5 00
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Rubble.....	1 25 @ 1 50		1 45 @ 2 50
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Longmeadow.....	80 @ 90		95 @ 1 05
Kibbe.....	90 @ 1 10		1 05 @ 1 25
Brown (Connecticut).....	1 00 @ 1 30		85 @ 95
Amherst Ohio.....	90 @ 1 00		85 @ 95
Berea ".....	75 @ 1 00		85 @ 95
Berlin ".....	75 @ 1 00		85 @ 95
Belleville.....	80 @ 1 25		1 00 @ 1 15
New Brunswick (Dorchester).....	80 @ 1 00		1 05 @ 1 10
Potadam Red.....	80 @ 1 30		1 05 @ 1 15
Oaen.....	80 @ 1 05		1 25 @ 1 35
Carlisle, English.....	80 @ 1 05		95 @ 1 05
Corse Hill (Scotch).....	80 @ 1 05		95 @ 1 05
Granite: (Maine)			
Limestone:			
Bedford.....	45 @ 1 25	95 @ 1 00	75 @ 85
Jollot.....	1 00		Richmond
Lemont.....			75 @ 1 50
Serpentine.....		10 50 per ton.	Perch 4 50 @ 5 50
Bluestone: (P sq. ft.)			1 in. th. 10 @ 25
Sidewalk.....	30 @ 5 00	40 @ 1 75	37 @ 50
Planed.....	50 @ 6 00	@ 75	
Marble: (P cu. ft.)			
Lee, Mass.....	@	1 75 @ 2 50	2 00 @ 2 50
Rutland, white and blue.....	@	@ 3 00	2 00 @ 3 00
Sutherland Falls.....	1 25 @ 1 75	@ 2 00	1 70 @ 3 00
Glens Falls, black.....	@	@	4 00 @ 4 50
Italian, blue-veined.....	@	@	2 50 @ 2 75
Sienna.....	@	@	@ 5 00
Tennessee, red.....	@	@	4 00 @ 6 00
Knoxville.....	@	@	3 00 @ 4 00
Pennsylvania, blue.....	@	@	2 00 @ 3 00
Vermont, white.....	@	@	2 25 @ 3 00
Slate: Roofing (P square)			
Green.....	5 00 @ 6 00	4 75 @ 5 25	2 90 @ 3 60
unfading.....	5 00 @ 6 00	5 50 @ 6 50	4 25 @ 5 00
Purple.....	5 00 @ 6 00	5 50 @ 6 50	4 50 @ 5 50
Red.....	@ 10 00	10 00 @ 11 00	11 50 @ 13 00
Black, Lehigh.....	4 25 @ 4 75	@	4 00 @ 4 35
Chapmans.....	@	@	4 50 @ 5 00
Genuine Bangor.....	4 35 @ 5 50	4 75 @ 5 90	4 35 @ 5 50
Unfading black.....	6 00 @ 8 50	6 00 @ 8 50	6 50 @ 9 00
".....	5 50 @ 8 00	5 50 @ 8 00	6 50 @ 9 00
Tiles, Am..... P M.....	@	@	@ 28 00
N. Peach Bottom, war unfading	@	@	5 75 @ 6 25
Fire Clay Roof Tile on cars at fac.	8 00 @	8 00 @	8 00 @
LUMBER.—P M.			
Boards: (Ordinary dimensions.)			
Pine, 1st quality, clear.....	65 00 @ 75 00	65 00 @ 75 00	47 50 @ 60 00
" 2d quality.....	55 00 @ 60 00	@ 55 00	38 00 @ 48 50
" 3d quality.....	18 00 @ 22 00	@ 45 00	37 50 @ 36 50
Spruce.....	@ 25 00	14 00 @ 20 00	15 00 @ 21 50
Hemlock.....	20 @ 14	13 50 @ 18 00	11 50 @ 13 75
Yellow pine.....	20 @ 40	22 00 @ 40 00	14 00 @ 29 00
Cypress.....	@	28 00 @ 53 00	30 00 @ 38 00
Clapboards:			
Pine.....	@	35 00 @ 55 00	14 00 @ 25 00
Spruce.....	@	24 00 @ 40 00	Not sold.
Framing Timber:			
Pine.....	14 00 @ 16 00	17 00 @ 20 00	25 00 @ 37 30
Spruce.....	12 00 @ 16 00	14 50 @ 17 00	15 00 @ 21 50
Hemlock.....	18 00 @ 21 00	25 00 @ 50 00	14 00 @ 20 00
Yellow pine.....	@	@	23 50 @ 30 00
Laths:			
Pine..... Round Wood	@ 2 75	2 00 @ 2 50	2 75 @ 3 00
Spruce..... Slab.....	@ 2 75	2 25 @ 2 75	2 30 @ 2 35
Shingles:			
Pine, shaved..... P M.....	5 00 @ 6 00	@ 4 50	30 00 @ 35 00
Pine, sawed.....	4 00 @ 5 00	1 50 @ 2 00	24 00 @ 21 00
Spruce, sawed.....	1 50 @ 2 00	3 25 @ 4 00	20 00 @ 21 00
Redwood..... P 125.....	1 40 @ 1 60	@ 6 00	20 00 @ 21 00
Cedar split..... P 125.....	@	2 75 @ 3 75	11 00 @ 14 00
Cedar sawed.....	@	5 00 @ 6 00	
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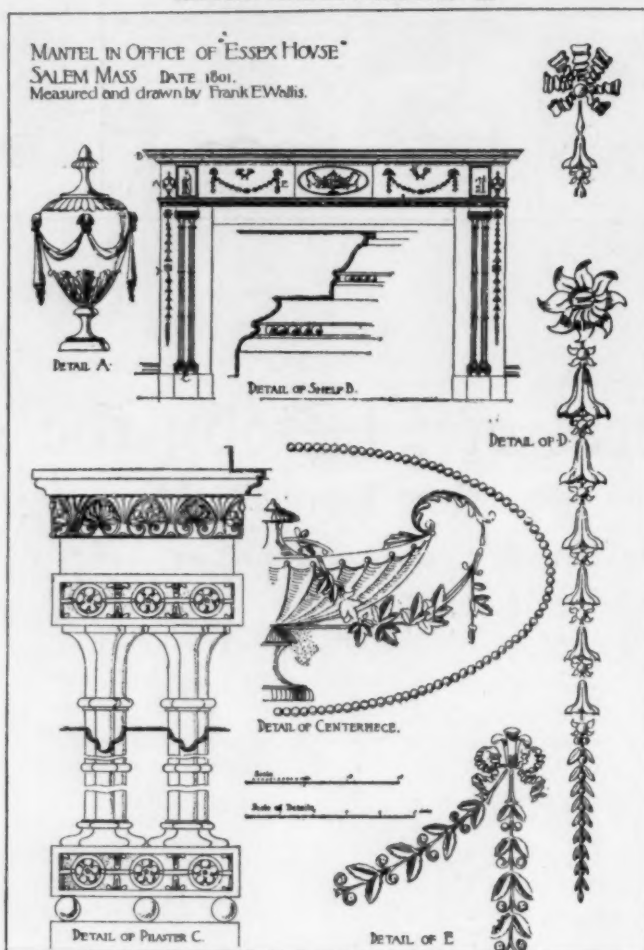
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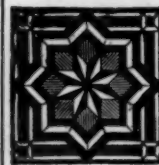
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BUILDING INTELLIGENCE.

(Reported for The American Architect and Building News.)

[Although a large portion of the building intelligence is provided by their regular correspondents, the editors greatly desire to receive voluntary information, especially from the smaller and outlying towns.]

ADVANCE RUMORS.

- Aberdeen, S. D.** — The County Board has decided to submit the proposition to erect a \$60,000 court-house and jail, to vote at the fall election.
- Atlanta, Ga.** — The plans of Grant Wilkins have been accepted for the \$100,000 annex to the Fulton County Court-house. They call for a building three stories high, 104' x 133', and to be constructed of stone or marble, brick, wood and glass.
- Austin, Tex.** — Jos. McWilliams & Co., of Louisville, Ky., have received the contracts to furnish the Texas State Insane Asylum, the State Deaf and Dumb Asylum and the State University with heating apparatus; contracts said to amount to \$70,000.
- Antigo, Wis.** — Van Ryn & De Gelleke, architects, Milwaukee, have plans completed for the city-hall. It will be of solid brick, two stories, 50' x 70', with quarters for the public library, fire-department, etc.; cost, \$10,000.
- Baltimore, Md.** — J. E. Sperry, Herald Building, has completed plans for the erection of a seven-story brick store and warehouse on Fayette St., for the Baltimore Bargain House; cost, \$100,000.
- The contract for four buildings to be erected by the United Railways & Electric Co. for its shops in Southwest Baltimore is stated to have been awarded to John Waters, 23 E. Centre St., for about \$500,000.
- The contract for erecting the Guardian Trust Company's new building on Calvert and German Sts. has been awarded to the Geo. A. Fuller Co., of Chicago, New York and Baltimore, for \$319,000.
- The contract for erecting a \$100,000 hotel building for D. W. Dwyer has been awarded to E. M. Noel.
- Bayonne, N. J.** — Mrs. Charles C. Marshall, of New York City, a former resident of this city, and a daughter of the late millionaire metropolitan merchant, Rufus Story, has donated to the mission of Trinity Protestant Episcopal Church two lots of ground in W. 23d St., between Avenues D and E, as a site for the erection of a suitable mission building. The gift is made upon the condition that an amount not less than \$5,000 be paid into the Corporation of Trinity Church for the construction of the chapel.
- Bellefonte, Pa.** — It is stated that Robert Cole has prepared plans for a \$30,000 fireproof building for the Pennsylvania Match Co.
- Benton Harbor, Mich.** — Dr. John Bell is to erect a \$30,000 opera-house.
- Boston, Mass.** — Connors Bros. have the contract for building the Bigelow Grammar School, South Boston, for \$84,000.
- The Boston Real Estate Trust, 39 Court St., has purchased land on Avon St., near Commonwealth Ave., and will erect a first-class boarding stable five stories high, for Henry C. Turner, lessee.
- Buffalo, N. Y.** — St. Mary Magdalene's Roman Catholic congregation is to erect a parochial school, three stories, 56' x 100', constructed of brick and stone, and having hot water heat, etc.; cost, \$23,000; Carl Schmill, Morgan Building, architect.

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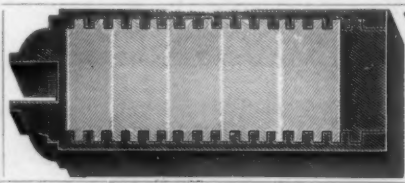
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BUILDING INTELLIGENCE.

(Advance Rumors Continued.)

- Architects Esenwein & Johnson have completed plans for the new three-story public school No. 43, on Lovejoy St., near Gold St.; cost, \$50,000.
- Carl Schmill has prepared plans for a three-story brick parochial school, 56' x 100', to be erected for St. Mary Magdalene's Roman Catholic congregation at Fillmore and Box Aves.; estimated cost, \$25,000.
- Cambridge, Mass.** — The A. D. Club, a society at Harvard, is about to build a splendid four-story, distinctly modern, club-house on Massachusetts Ave., corner of Plympton St., to cost in the neighborhood of \$80,000, on site of the old Dunlop house. Plans for the new building have been made by Mr. C. K. Cummings and Mr. J. Harleston Parker, 1 Somerset St., Boston. The second and third floors will contain the A. D. club-rooms, dining-room, music-room, library (for the 5,000 volumes), dressing-rooms, bath-rooms, billiard-room, etc. On the top floor is a banquet-hall capable of seating 200. The material will be limestone and brick; the entire first story will be solid limestone. This floor will be occupied by two stores, or, if the occupant chooses, one large store.
- Charleston, Mo.** — The proposition to bond Mississippi County for \$25,000 to erect a court-house is reported to have carried at the election September 30.
- Chattanooga, Tenn.** — Plans have been prepared for the erection of a new brick business block on the corner of 9th and A Sts., by the Cincinnati (O.) Investment Co.; cost, \$40,000.
- Chicago, Ill.** — It is stated that H. T. Thompson & Co., dealers in wool, 201 Michigan St., have purchased a lot on the north branch of the river at Clybourn Pl., and will erect a \$20,000 warehouse, after plans by F. B. Townsend, 234 La Salle St.
- Cincinnati, O.** — Crane & Hawley, Sheet Lead Manufacturers, 221 E. 9th St., will erect an eight-story brick building, to cost about \$50,000.
- The trustees of the Protestant Deaconess Home have decided to erect a new home, to cost about \$50,000.
- Clarinda, Ia.** — A large \$6,000 frame barn is to be built for the asylum from plans by Liebbe, Nourse & Rasmussen, of Des Moines.
- Des Moines, Ia.** — State Architect H. F. Liebbe

BUILDING INTELLIGENCE.

(Advance Rumors Continued.)

- has completed plans for the erection of several state buildings for which appropriations will be asked of the coming legislature. There are plans for an engineering building to be erected at Ames, to cost \$200,000; a science and dormitory building for the State Normal at Cedar Falls, to cost complete \$125,000; improvements at the State Institution at Glenwood, to cost \$60,000.
- Detroit, Mich.** — Geo. Wallace has had drawings prepared by F. C. Polmar for a flat of eight apartments to be built on the west side of 2d Ave., near Joy St.; cost, \$25,000.
- Donaldson & Meier have prepared plans for a two-story brick addition, 98' x 100', to the plant of the Buhl Stamping Co., Congress and Larned Sts.
- Mueller & Mildner have prepared plans for the enlargement and improvements to the Vienna Brewery to cost about \$40,000. John E. Moloney, president of the company.
- Joy & Bancroft have prepared plans for a large brick factory building for the Dealer's Vehicle Co., to be located at Wyandotte, and will cost about \$70,000.
- Dickson, Tenn.** — Capt. C. M. Turner is to erect a three-story brick hotel; cost, \$20,000.
- Dubuque, Ia.** — St. Patrick's Church will erect a parochial school at a cost of \$10,000.
- Emporia, Kan.** — Press report states that Andrew Carnegie is to build a new \$50,000 library for the college, and is having plans prepared.
- Evanston, Ill.** — Plans have been prepared for the new West Side School building; cost, about \$35,000. Fisher & Miller, architects.
- Germantown, Pa.** — De Long & Betts will erect 24 modern three-story stone and brick dwellings on Walnut Lane and Boynton St.
- Gettysburg, Pa.** — Report states that Ghequier & May, 227 St. Paul, Baltimore, Md., have prepared plans for the Prince of Peace M. E. Church, to be erected here, at a cost of \$75,000. Rev. W. R. Ashmore, pastor.
- Gloucester City, N. J.** — Plans have been prepared for an edifice for St. Mary's R. C. Church; estimated cost, \$25,000. Rev. Mr. Holman, pastor.
- Hartford, Conn.** — A three-story college is to be erected for the St. Thomas Seminary from plans

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BUILDING INTELLIGENCE.

(Advance Rumors Continued.)

by John J. Dwyer, architect, 78 Trembulla St.
Rev. John Synnot, rector.

Houghton, Mich.—It is said that Richard M. Edwards is about to erect a \$12,000 colonial residence after the plans of H. L. Ottenheimer.

Hudson, N. Y.—Plans have been prepared for a jail for Columbia County, to cost about \$15,000.

Kansas City, Mo.—Ira J. Hedrick is to build a block of three-story residences at 2937 47 Main St.; cost, \$50,000.

Reports state that a \$200,000 theatre will be erected on 12th and Central Sts. Edward and Jas. J. Butler, of St. Louis, are said to be interested.

I. J. Herick will build a \$50,000 brick dwelling on Main and 29th Sts.

A. Van Brunt, 32 Bayard Building, has prepared plans for an \$18,000 brick warehouse to be erected at 1312 W. 11th St., by C. Fleming.

Lakota, N. D.—The contract for the erection of the A. O. U. W. Building has been awarded to Jas. Dinnie, of Grand Forks. The new building will cost about \$20,000. J. W. Ross, Grand Forks, architect.

Lexington, Va.—The contract for erecting a building for the Virginia University Institute has been awarded to J. E. Parrish, Lynchburg, at \$25,000.

Lincoln, Neb.—The St. Paul M. E. Society has decided to build a \$40,000 church on the site of the present building. J. E. Miller, Chairman of Board.

Livermore Falls, Me.—A modern hotel is to be built on the site of the Grand View House by the Livermore Trust and Banking Co.

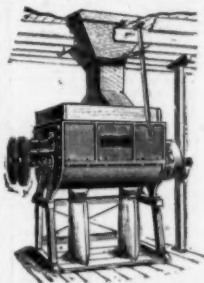
Logansport, Ind.—It is stated that Architect J. E. Grain has prepared plans for the following buildings for the Logansport Foundry Co.: Brick and stone foundry, one story, 70' x 30'; foundry and machine shop, 60' x 200'; one story; pattern shop, one story, 30' x 40'; composition and steel roof; cost about \$20,000.

Louisville, Ky.—D. X. Murphy, 5th and Market Sts., has prepared plans for a two-story brick warehouse, for the American Tobacco Co.; cost, \$50,000.

Luray, Va.—Albert F. Hunt, of Richmond, Va., has prepared plans for a \$25,000 building for the Winnie Davis Memorial cottage at the orphanage of Rev. H. M. Wharton.

Lynn, Mass.—A new hotel and theatre building to cost \$200,000 will be erected on the site of the old Sagamore Building in Union St. Henry W. Rogers, architect. The hotel building proper will measure 50' x 100', with the main entrances on Union St. and with the ground floor devoted to stores. The theatre building will occupy the lot in the rear, and will be modelled after the style of the best theatre in New England. Mr. Geo. T. Sheldon, of Boston, treasurer of the Chelmsford Foundry Co., is the principal in the enterprise.

Madera, Cal.—The Board of Supervisors have decided to erect a court-house to cost \$60,000.



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W. D. DUNNING,

239 W. Water St. SYRACUSE, N. Y.

BUILDING INTELLIGENCE.

(Advance Rumors Continued.)

Mankato, Minn.—Wesley Arnold, architect, 175 Dearborn St., Chicago, Ill., will prepare plans for a new church for Centenary M. E. Society. It will be of brownstone, and cost about \$30,000.

Marquette, Ill.—It is stated that a steel bridge, over a mile in length, and to cost \$1,000,000, will soon be constructed at this place by the Indiana, Illinois & Iowa Railroad Co.

McKeesport, Pa.—J. A. Atwood, Ch. Engr. of the Pittsburgh & Lake Erie R. R. Co., Pittsburgh, has completed plans for \$500,000 worth of new buildings and yards at this place.

The congregation of the First Presbyterian Church will erect a new edifice to cost about \$60,000. Rev. J. J. McCarroll, pastor.

Michigan City, Ind.—A \$50,000 sanitarium is to be erected after the plans of Hill & Woltersdorf, 70 La Salle St., Chicago, Ill. The main building will be three stories high, 45' x 330'.

Milwaukee, Wis.—Reports state that Dr. Joseph Schneider will shortly arrange to build a \$100,000 hospital on Jackson and Oneida Sts.

Minneapolis, Minn.—W. S. Hunt, architect, is preparing plans for two flat buildings to be erected, one on Western Ave. and one on Royalston Ave., between 12th and 13th Sts. Each will be 48' x 50', four stories, brick and stone, and contain eight apartments of five rooms; cost, \$25,000.

Monson, Mass.—Plans for a \$15,000 gymnasium for the Monson Academy have been prepared.

Muscogee, I. T.—The Spaulding Institute of this city, which was recently destroyed by fire, will be rebuilt at once.

Neenah, Wis.—The Presbyterian Society has raised \$27,000 toward the erection of a church. They propose to raise \$30,000. Plans are being prepared for a brick or stone building.

New York, N. Y.—Cass Gilbert, 111 Fifth Ave., has been appointed architect for the new custom-house.

Carrère & Hastings have completed and filed

BUILDING INTELLIGENCE.

(Advance Rumors Continued.)

plans for a granite church with seating capacity of 2,000. The structure will be erected on a lot of land on the northwest corner of 96th St. and West Central Park, opposite the entrance called "All Saints' Gate." This lot measures 100' x 200', and cost \$175,000. The church dimensions are 100' x 140'.

The Board of Education on October 2 approved amended estimates for 1900 asking an extra appropriation of \$16,754,514, to be expended on additional school accommodations in the several boroughs.

Omaha, Neb.—The Methodist Hospital Association is raising a building fund. The association now has \$11,000 cash, and \$10,000 more subscribed.

Owosso, Mich.—It is stated that the Owosso Carriage Co. will erect a \$50,000 factory.

Paducah, Ky.—It is reported that the Illinois Central will erect a depot here, to cost about \$50,000.

Philadelphia, Pa.—The De Witt-Moore Gospel Association, represented by Harry Taylor, has purchased a lot of ground on Germantown Ave., upon which their present building now stands, 43' front and extending through to 6th St. The price paid was \$8,000. It is the intention of the Board of Managers to erect upon the site a large four-story building similar to those in use in London, Eng. It will be used exclusively for the work of the mission.

The Pennsylvania Railroad contemplates building three new stations at Chester, Bryn Mawr and Rosemont. The plans are in course of preparation. A \$60,000 school-house is to be erected at 51st St. and Greenway Ave.

Pittsburgh, Pa.—Ellsworth Dean has prepared plans for a \$50,000 warehouse to be erected on Pen Ave., near 9th St., for Mrs. J. G. Coffee.

It is stated that Alden & Harlow have prepared plans for a new building to be erected for the Central District and Printing Telegraph Co.; cost, \$40,000.

Wm. Ross Proctor, 33 Stevenson Building, has

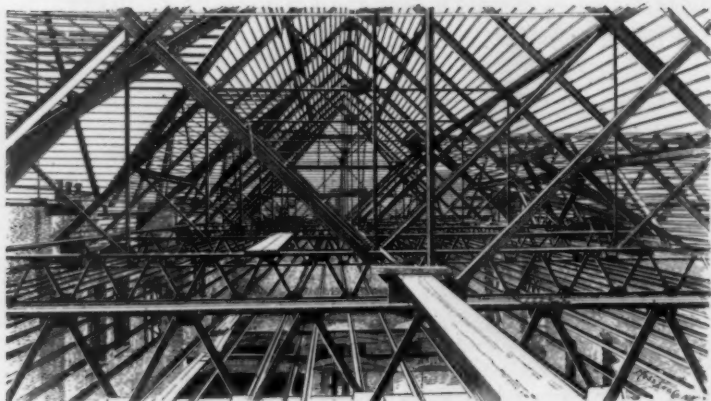
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BUILDING INTELLIGENCE.

(Advance Rumors Continued.)

prepared plans for alterations to the People's National
Bank at Wood St. and 4th Ave.; cost, \$35,
000.

Richmond, Va. — The plans of Wilson Bros. & Co.,
of Philadelphia, Pa., have been adopted for the
union depot for the Chesapeake & Ohio and Rich-
mond, Petersburg & Carolina Railroads; cost about
\$150,000. Address F. W. Scarborough, Engr. C. &
O. R. R., Richmond, and Col. T. M. R. Tateon for
R. P. & C. R. R. Co.

Noland & Baskerville, Chamber of Commerce
Building, have prepared preliminary plans for a
\$100,000 hospital, to be erected on 12th and Broad
Sts.

Rockport, Mass. — Press report states that a \$500-
000 hotel is to be built at Emerson's Point, Lands
End, by Boston, St. Louis and Philadelphia.

Salem, Ore. — The mill and elevator warehouse of
the Salem Flouring Mills Co. were burned Sep-
tember 22; loss about \$150,000. It will doubtless
be rebuilt.

San Antonio, Tex. — L. P. Boettler has secured
the contract for building the market-house and
convention hall, for \$39,945, plumbing, electric
lighting or cold storage not included.

Savannah, Ga. — Report states that T. S. Tutwiler,
chief engineer of the Plant system, has drawn
plans for a \$500,000 union depot to be erected here
by the Georgia & Alabama, the Plant System,
Florida Central & Peninsula and the Southern
Railways.

Seattle, Wash. — The Board of Education has
adopted the plans of W. E. Boone and J. M. Corner,
architects, of this city, for the new high-school
building, to cost complete \$200,000.

Sewickley, Pa. — Rutan & Russell, Tradesman
Building, Pittsburgh, have drawn plans for a \$25-
000 residence to be erected on Backbone Road, for
L. W. Jones, purchasing agent for the Schoen
Pressed Steel Co.

South Bend, Ind. — Parker & Austin, Hobbs Build-
ing, have prepared plans for a \$20,000 hospital to
be erected by the Epworth Hospital Association.

St. Paul, Minn. — The Northwestern Grass Twine Co.
will build a new factory, 41' x 78', three stories
high, and of brick; estimated cost, \$60,000.

Urbana, Ill. — Champaign County is to have a \$75-
000 addition to its court-house.

BUILDING INTELLIGENCE.

(Advance Rumors Continued.)

Watertown, Mass. — Chas. Brigham, Boston, is
preparing plans for a new building for the Union
Market National Bank.

Weston, Mass. — Plans for a public library to cost
about \$25,000 have been prepared by Jenney, Fox
& Gale, 120 Tremont St., Boston.

Whitewater, Wis. — The contract for building the
city-hall has been awarded to Michle & Co., of Mil-
waukee, for \$12,872.

Worcester, Mass. — Architect John P. Kingston
has completed plans for a cottage house for E. A.
Newman on Tower St. The specifications call for
furnace heat, open plumbing, gas and electric
fixtures and white wood finish. The contract has
been let to Axel Erickson.

Architect Harvey is working on plans for a brick
store building to be built at the corner of Millbury
and Richland Sts., for Carlson Bros. It will be 50'
x 75', two stories, with a tar and gravel roof.

Architect W. H. Harvey is making plans for a
private residence to be built on Olive Ave., for L.
M. Drury. The house will be two-and-one-half
stories, 30' x 52', and will have 12 rooms and be
first-class in all respects. It will be shingled all
over, have a cobblestone foundation, and have oak,
sycamore, white ash, white wood and N. C. pine
finish.

Architects Barker & Nourse are making plans
for an eight-apartment brick block to be erected
on Portland St., by Eli Bellisle. The structure will
be 48' x 68', and four stories in height. It will be
of light-colored brick with brownstone trim-
mings, a tiled vestibule and gravel roof.

Architect W. H. Harvey has completed plans for
a frame apartment-house to be built on Lincoln
Ave. by J. T. Roche. The house will contain 15
rooms, have open plumbing, furnace heat, shingle
roof and a cobblestone foundation.

Architects Cutting, Carleton & Cutting are revis-
ing plans for a two-room frame school-house to be
erected at Charlton.

APARTMENT-HOUSES.

Boston, Mass. — Commonwealth Ave., No. 386, Ward
11, bk. apart., 22' x 27' x 105', flat roof, steam; \$75-
000; o. George P. Ridgeway; b. E. W. Clark; a.
A. H. Vinal.

EDUCATIONAL.

Boston, Mass. — Eutaw St., nr. Meridian St., Ward
1, three-st'y bk. school, 87' x 150', hip roof, steam;
\$80,000; o. City; a. Greenleaf & Cobb.

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HOUSES.

Boston, Mass. — Orchard Pl., nr. Dorchester Ave.,
Ward 16, two-st'y fr. dwell., 25' x 39', pitch roof,
stoves; \$4,500; o. & b., Wm. A. Williams, 21 Button-
wood St.

Clarkson St., nr. Quincy St., Ward 20, three-st'y
fr. dwell., 26' x 46', flat roof, stoves; \$4,500; o. & b.,
John W. Douse, 4 Buttonwood St.

Draper St., nr. Bowdoin St., Ward 20, two-st'y fr.
dwell., 30' x 49', pitch roof, furnace; \$4,500; o. & b.,
John McKenna, 1 Folsom Ave., Melrose.

Gayland St., nr. W. Cottage St., Ward 16, 2½-st'y
fr. dwell., 27' x 46', pitch roof, furnace; \$5,000; o.,
F. E. Blanchard, 84 W. Cottage St.; b., Currier &
Ober.

Tremont St., Ward 19, 10 four-st'y bk. dwells., 21'
x 53', flat roofs, furnaces; \$60,000; o. & b., B. J.
Connelly, 93 Dale St.

Leverett St., Nos. 39-43, Ward 8, 3 three-st'y bk.
dwells. & stores, 21' x 48', flat roofs, stoves; \$15,000;
o., John Fleet Estate; a., Chas. H. Alden, Jr.

Prince St., No. 107, Ward 6, three-st'y bk. dwell.
& store, 35' x 49', flat roof, stoves; \$6,000; o., Esther
Channing, Franklin Ave., Chelsea; b., Sam'l Chan-
ning.

Bowdoin St., cor. Hamilton St., Ward 20, three-
st'y fr. dwell. & stores, 31' x 54', flat roof, furnace;
\$6,500; o., Mary A. Hall; b., Fred'k A. Schofield,
Grampan Way.

Park St., nr. Centre St., Ward 23, two 2½-st'y fr.
dwells., 31' x 41', hip roofs, furnaces; \$10,000; o.,
Mrs. C. O. Moulton; b., Yates & Jones, 2 Ivanhoe
St.

Princeton St., No. 121, Ward 1, three-st'y fr.
dwell., 22' x 60', flat roof, hot water; \$4,500 o., T. P.
Story; b., Chas. F. Hargrave.

Worcester, Mass. — Alpine St., 2½-st'y fr. dwell., 30'
x 56'; \$4,000; o., M. Blanch; b., Erik Erickson.

Vincent Ave., two-st'y fr. dwell., 26' x 53'; \$4,200;
o., W. A. Warden; b., M. L. & L. N. Hall.

Esther St., three-st'y fr. dwell., 26' x 48'; \$4,000;
o., Andrew Young; b., J. J. Higgins.

Highland St., 2½-st'y fr. dwell., 29' x 45'; \$5,000;
o., A. A. Rheutan; a., Barker & Nourse; b., H. G.
Hadley.

Hacker Ct., three-st'y fr. dwell., 26' x 51'; \$3,400;
o., Andrew Bowes; a., J. P. Kingston; b., P. A.
Millett.

Canterbury St., three-st'y fr. dwell., 50' x 39';
\$3,450; o., Pierce Power; b., P. A. Millett.

Hawthorne St., two-st'y fr. dwell., 40' x 50'; \$7,000;
o., Mrs. H. M. Orr; a., Frost, Briggs & Chamberlain;
b., Jas. I. Elliott.

City View St., two-st'y fr. dwell., 26' x 56'; \$3,000;
o. & b., A. T. Pickering.

STABLES.

Boston, Mass. — Beech St., nr. Westbourne St.,
Ward 23, fr. stable, 20' x 24'; \$500; o., Cornelius
Buckley; b., F. R. Wells, Roslindale.

WAREHOUSES.

Boston, Mass. — Congress St., cor. A St., Ward 13,
five-st'y bk. warehouse, 64' x 84' x 100', flat roof;
\$45,000; o. Boston Whf. Co.; a., Morton D. Safford.

Lewis Wharf, from Atlantic Ave., Ward 7, fr.
storage building, 58' x 61' x 347', flat roof; \$25,000;
o., Lewis Whf. Corporation; a., Lyman Sise.

MISCELLANEOUS.

Boston, Mass. — Bolton St., nr. Athol St., Ward 25,
bk. parochial building, 31' x 42' x 69', pitch r of,
steam; \$40,000; o., Rt. Rev. J. J. Williams; b., J. &
W. H. Muldowney; a., F. J. Untersee.

COMPETITIONS.

LIBRARY.

[At Fort Worth, Tex.]

The Committee for the Carnegie Public Library is
prepared to receive plans for the above building,
November 1, 1899. For particulars and conditions
apply to HOWARD MESSER, local superintendent.
1243

HOSPITAL.

[At Patton, Cal.]

Competitive drawings for a State Hospital are
wanted October 30; estimated cost, \$200,000, includ-
ing fixtures and accommodations.
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No. 568,275, May 25, 1897
No. 568,276, May 25, 1897
No. 591,588, Oct. 12, 1897

No. 620,888, Mar. 14, 1899
No. 601,425, Mar. 29, 1898
No. 608,540, Aug. 2, 1898
No. 608,972, Aug. 9, 1898

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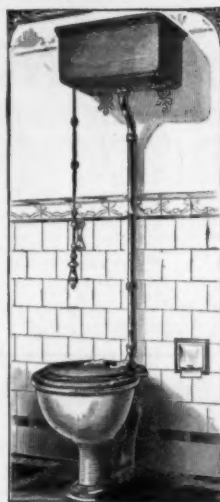
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No. 33 Design L
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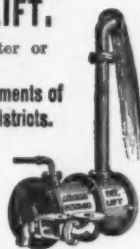
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COMPETITIONS.

HOSPITAL.

[At Patton, Cal.]

Competitive drawings are wanted October 30 for a State Hospital; estimated cost \$200,000, including fixtures and accommodations. 1243

COURT-HOUSE.

[At Martinez, Cal.]

Architects are invited to submit, in competition, October 16, plans and specifications for a fireproof court-house. J. D. WIGHTMAN, Chmn. Bd. Superv. 1242

PROPOSALS.

SEWERS.

[At Washington, D. C.]

Office of the Commissioners, D. C., Washington, D. C. Sealed proposals will be received at this office until October 21, 1899, for constructing sewers in the District of Columbia. JOHN B. WIGHT, JOHN W. ROSS, LANSING H. BEACH, Commissioners, D. C. 1242

HOSPITAL.

[At Tomah, Wis.]

Department of the Interior, Office of Indian Affairs, Washington, D. C. Sealed proposals will be received at the Indian office until October 20, 1899, for furnishing the necessary materials and labor required to erect and complete a frame hospital at the Tomah Indian School, Wis. A. C. TONNER, acting commissioner. 1242

ASYLUM.

[At Canton, S. D.]

Department of the Interior, Office of Indian Affairs, Washington, D. C. Sealed proposals will be received at the Indian Office until October 24, 1899, for furnishing the necessary materials and labor required to construct and complete a brick insane asylum upon

PROPOSALS.

the site selected at Canton, S. D. W. A. JONES, commissioner. 1242

ADDITION TO HOSPITAL.

[At West Point, N. Y.]

West Point, N. Y. Sealed proposals will be received here until October 27, 1899, for the construction of addition to Cadet Hospital. Address Q. M., U. S. Military Academy. 1243

CHURCH.

[At Schenectady, N. Y.]

Bids are wanted for the erection of St. John's Church. EDW. W. LOTH, architect, 253 Broadway, Troy, N. Y. 1243

CITY-HALL.

[At Pittsburg, Kan.]

It is stated that bids are wanted October 25 for a city-hall, to cost about \$35,000. E. E. McKIBBAN, architect, Muscogee, Ind. Ter. 1243

SCHOOL.

[At Brownsdale, Minn.]

Bids are wanted October 30 for a school. H. A. BROWN, District Clerk. 1243

SCHOOL.

[At Chester, Pa.]

It is stated that bids are wanted November 1 for a high school. JOSEPH D. OLIVER, Chmn. Bldg. Com. 1243

FRAME BUILDING.

[At Kiowa Agency, O. T.]

Department of the Interior, Office of Indian Affairs, Washington, D. C. Sealed proposals will be received at this office until October 29, 1899, for furnishing and delivering the necessary materials and labor required in the construction of a frame building at the Kiowa Agency, O. T. W. A. JONES, commissioner. 1243

PROPOSALS.

OFFICERS' QUARTERS.

[At Fort Hamilton, N. Y.]

Officers' Quarters, Fort Hamilton, N. Y. Sealed proposals will be received here until October 26, for construction of a double set of non-commissioned staff officers' quarters, including plumbing. S. E. ALLEN, Quartermaster. 1243

ADDITION TO HOSPITAL.

[At West Point, N. Y.]

West Point, N. Y. Sealed proposals will be received here until October 27, 1899, for the construction of addition to Cadet Hospital. Address Q. M., U. S. M. A. 1243

EXTENSION OF STABLE.

[At West Point, N. Y.]

West Point, N. Y. Sealed proposals will be received here until October 27, 1899, for extension of cavalry stable. Address Q. M., U. S. M. A. 1243

Treasury Department, Office Supervising Architect, Washington, D. C., September 23, 1899. Sealed proposals will be received at this office until 2 o'clock P. M. on the 30th day of October, 1899, and then opened, for the construction (except heating apparatus, electric wiring and conduits) of the addition to the U. S. Custom-house and Post-office Building at Dubuque, Iowa, in accordance with the drawings and specification, which will be furnished at the discretion of the Supervising Architect on application at this office or at the office of the Custodian, U. S. Custom-house and Post-office, Dubuque, Iowa. JAMES KNOX TAYLOR, Supervising Architect. 1242

SCHOOL.

[At Wonevoo, Wis.]

Sealed bids will be received by the Board of Education of Wonevoo, Wis., until October 20th, A. D., 1899, for the erection and completion of a school-building. F. R. POTTER, clerk. 1242

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Professional Ethics.

The following . . .

... CODE OF ETHICS ...

Prepared in Conformity with the Best Standards of Practice, and Recommended to its Members by the Boston Society of Architects, was

ADOPTED BY THE SOCIETY, FEBRUARY 1, 1895. . .

SECTION 1. No Member should enter into partnership, in any form or degree, with any builder, contractor, or manufacturer.

SECTION 2. A Member having any ownership in any building material, device or invention, proposed to be used on work for which he is architect, should inform his employer of the fact of such ownership.

SECTION 3. No Member should be a party to a building contract except as "owner."

SECTION 4. No Member should guarantee an estimate or contract by personal bond.

SECTION 5. It is unprofessional to offer drawings or other services "on approval" and without adequate pecuniary compensation.

SECTION 6. It is unprofessional to advertise in any other way than by a notice giving name, address, profession, and office hours, and special branch (if such) of practice.

SECTION 7. It is unprofessional to make alterations of a building designed by another architect, within ten years of its completion, without ascertaining that the owner refuses to employ the original designer, or, in event of the property having changed hands, without due notice to the said designer.

SECTION 8. It is unprofessional to attempt to supplant an architect after definite steps have been taken toward his employment.

SECTION 9. It is unprofessional for a Member to criticize in the public prints the professional conduct or work of another architect except over his own name or under the authority of a professional journal.

SECTION 10. It is unprofessional to furnish designs in competition for private work or for public work, unless for proper compensation, and unless a competent professional adviser is employed to draw up the "conditions" and assist in the award.

SECTION 11. No Member should submit drawings except as an original contributor in any duly instituted competition, or attempt to secure any work for which such a competition remains undecided.

SECTION 12. The American Institute of Architects' "schedule of charges" represents minimum rates for full, faithful and competent service. It is the duty of every architect to charge higher rates whenever the demand for his services will justify the increase, rather than to accept work to which he cannot give proper personal attention.

SECTION 13. No Member shall compete in amount of commission, or offer to work for less than another, in order to secure the work.

SECTION 14. It is unprofessional to enter into competition with or to consult with an architect who has been dishonorably expelled from the "Institute" or "Society."

SECTION 15. The assumption of the title of "Architect" should be held to mean that the bearer has the professional knowledge and natural ability needed for the proper invention, illustration and supervision of all building operations which he may undertake.

SECTION 16. A Member should so conduct his practice as to forward the cause of professional education and render all possible help to juniors, draughtsmen and students.

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