

THE MACHINERY HALL, PARIS EXHIBITION.

Of the splendid series of buildings which formed the great Exhibition of last year, the Machinery Hall was undoubtedly the most magnificent in conception and scale. The architect and engineer specially charged with the design of this immense structure were M. Dutertre and M. Contamin.

of the channel iron. The intermediate rafters are of riveted I section, web $15\frac{3}{4}$ in. deep by $\frac{1}{4}$ in., and four L irons 2.8 in. by 2.8 in. by 0.28 in. They are not continuous, but fit in between the top flanges of the main purlins, and fix to curved plate and angle iron gussets attached to the vertical web members of the latter.

strength towards the haunches by a number of additional plates of varying length, which are stopped off in order towards the springing and summit. The flange-plates at the greatest section of the lower boom or intrados, occurring opposite the center of outer spandrel, are 1 inner plate of 0.28 in., 4 inner plates of 0.32 in., and 1 outer plate of 0.4 in. It is the same for the upper boom or extrados, except that the outer flange-plate is replaced by two angle-irons 4.4 in. by 4.4 in. by 0.44 in., which connect the spandrel webs to the principal.

The radiating struts fit in between the side plates of the boom, and between the outer purlins marked (5) on the figure [fig. 1], consists of a web 15.2 in. by 0.28 in., and 4 angle-irons 3.2 in. by 2.4 in. by 0.28 in. The diagonals are attached to the inner and outer faces alternately of the boom side-plates. Between purlins (5) they consist of four angle-irons only 3.2 by 2.4 in. by 0.28 in. Beyond purlins (5), the angle-irons in struts and diagonals become 2.8 in. by 2.8 in. by 0.28 in., and flange-plates are added 7.87 in. by 0.28 in.

The lower end of each semi-arch is made of almost triangular form, being narrowed down from 12 ft. at the foot of the lowest bay to 4 ft. at the cast-iron bearing-plate resting on the springing pivot, while the flanges are at the same time widened out to 4 ft.; it has two solid webs with thickening plates, which are reinforced by a diaphragm and gusset plates, with inside and outside angle-irons. The upper ends of the semi-arches are provided with two diagonal struts, formed of plates and angle-irons, which converge to the center pivot and take up the resultant thrust passing through it; these ends have a curved shape between the inner and outer booms, and are stiffened by webs, to which are fixed the ends of the center pair of main purlins, forming here the ridge girders. These girders are connected together opposite to each intermediate rafter by gussets of plate and angle-iron, between which a plate of lead, $\frac{5}{8}$ in. thick, is placed, and which yields sufficiently to allow the slight motion due to temperature changes.

The straight sides of the angle spandrel are of the same trough shape as the main booms before described, and of the same scantlings, with the single outside plate 30 in. by 0.28 in. The side-plates are cut so as to form openings of bold curved outline, and between them are fixed radiating members which carry on the lines of the radial struts in the principal, and are of similar construction.

In the plane of the vertical back of spandrel, which is that of the outer enclosure to the center nave, the arched principals are connected together by a series of latticed arches, semicircular on the soffit except in the center bay, and of which the extrados repeats the slightly pointed and curved outline of the side gallery roofs. Uprights in the spandrels of these arches support a continuous purlin girder, which carry the outer ends of all the intermediate rafters of the main roof and also its outside gutters. The principals are further connected by a range of lattice girders carrying the floor and forming the front of the side galleries.

The material employed in the main roof was almost entirely steel, specified to have a breaking tensile strength of 28 tons per sq. in., and a tensile limit of elasticity of $15\frac{1}{4}$ tons per sq. in.; also that at fracture a reduction of sectional area not less than 45 per cent. should take place, with an extension of at least 24 per cent.

Each ordinary main principal rafter weighed 196 tons, and each end principal rafter 240 tons, the ten main purlins in each bay weighed 42 tons, and the intermediate rafters, minor purlins, and sash-bars had per bay the total weight of 62 tons. The weight of material in the center roof framing per square foot of area covered was $22\frac{1}{2}$ lbs.

MUNICIPAL OWNERSHIP OF ELECTRIC LIGHTS.

Chicago is now engaged in establishing a Municipal Electric Light System. It is an undertaking directly in line with Nationalism. The work has progressed far enough to demonstrate itself a "sure thing," both as to saving money for the people and as a blessing to humanity. It therefore finds hearty endorsement, save only by our Gas Trust and private Electric Light corporations.

A large part of our extensive river front, bridges, and viaducts, as well as many of our streets, are now lighted with electricity generated by the city at its own plant. The wires, lamps, and entire paraphernalia are owned by the city, free from any sort of control by private corporations. The system is being rapidly extended so as to embrace the whole city. It is the intention ultimately to make connection with stores, factories, and residences, so as to supply light for private consumption.

How did we succeed in getting such a work established without being headed off by private monopoly? Through a beginning so small as not to attract special notice! To our faithful servant, Mr. John P. Barrett, City Electrician, are we chiefly indebted for our good fortune. Some two and a half years ago, as Superintendent of City Telegraph Department, Mr. Barrett asked the City Council for a small appropriation with which to experiment in lighting the river front by electricity. About twelve thousand dollars was granted him. With this he purchased a small outfit, and commenced operations in an abandoned Fire Engine House belonging to the city. He laid his wires in the ground, from the first, and started a few lamps on the river front and at certain bridges. The effect was truly electric. The dark narrow river, dangerous alike to passing vessels and such people as were belated along its wharves, became like day, and safety was vouchsafed to all within the rays of these lamps. This small venture gave wonderful satisfaction, and the next year, a larger appropriation was voted with which to extend it, and try the lighting of a few streets. Mr. Barrett made the most of his opportunity, and the city's electric lamps soon became noticeable on prominent corners.

As these increased in number, the councilmen from wards not thus lighted, began importuning Mr. B. for an extension of the service to their wards. They would say to him, "My constituency are observing your electric lights down town, and, as tax-payers, want to know why they can't have the same thing out their way; what's the reason you can't run your wires out to our ward and give us the benefit too? To which it gave Mr. B. great pleasure to reply, "that is exactly what I propose to do, just as fast as you gentlemen will vote me the money to do it with." With the "Constituency" thus aroused and making demands, there was little disposition to refuse Mr. Barrett's request for a larger appropriation; in fact a vote against it would be political suicide.

During 1889, there was appropriated for this service, two hundred and seventy thousand dollars (\$270,000.) A large part of this sum is being expended in the building of three very substantial plants in as many divisions of the city. These will be completed and running by March 1st, next. In addition, a system of trunk lines is being rapidly extended throughout these districts, the wires being laid under ground. At present the city is operating 310 lamps. By March next 500 more will be added. March 1891 will see another 1000 added, making about 1800 in all. By March 1892, there will be in operation 2500, sufficient to light every street which is now lighted by gas. Chicago will be able to present to its visitors from all over the world in 1892, a sight to be found no where else,—a great city entirely lighted by electricity, the service performed by itself.

The present cost per lamp per night, according to the city electrician's last report, is about nineteen (19) cents. With the new plants in operation, the cost will be reduced to about (50) fifty dollars per lamp per year. St. Louis considers herself fortunate in contracting with a private corporation to supply city electric lighting at \$80 per lamp per year, an advance of sixty per cent. over Chicago's cost.

We now pay our Gas Trust the modest sum of six hundred thousand dollars (\$600,000) per year for lighting our streets. Our 25,000 electric lamps at \$50 each will do it for \$125,000,—and, as Mr. Barrett says,—give us forty times the light. The same authority says that the private consumers of the city electricity will pay less than for monopoly gas, and the city still have a profit on the business. In fact, he expects that after a time, the city profit on private consumption, will pay the expense of city lighting, and thus the city save the whole \$600,000 per year now paid the gas trust.

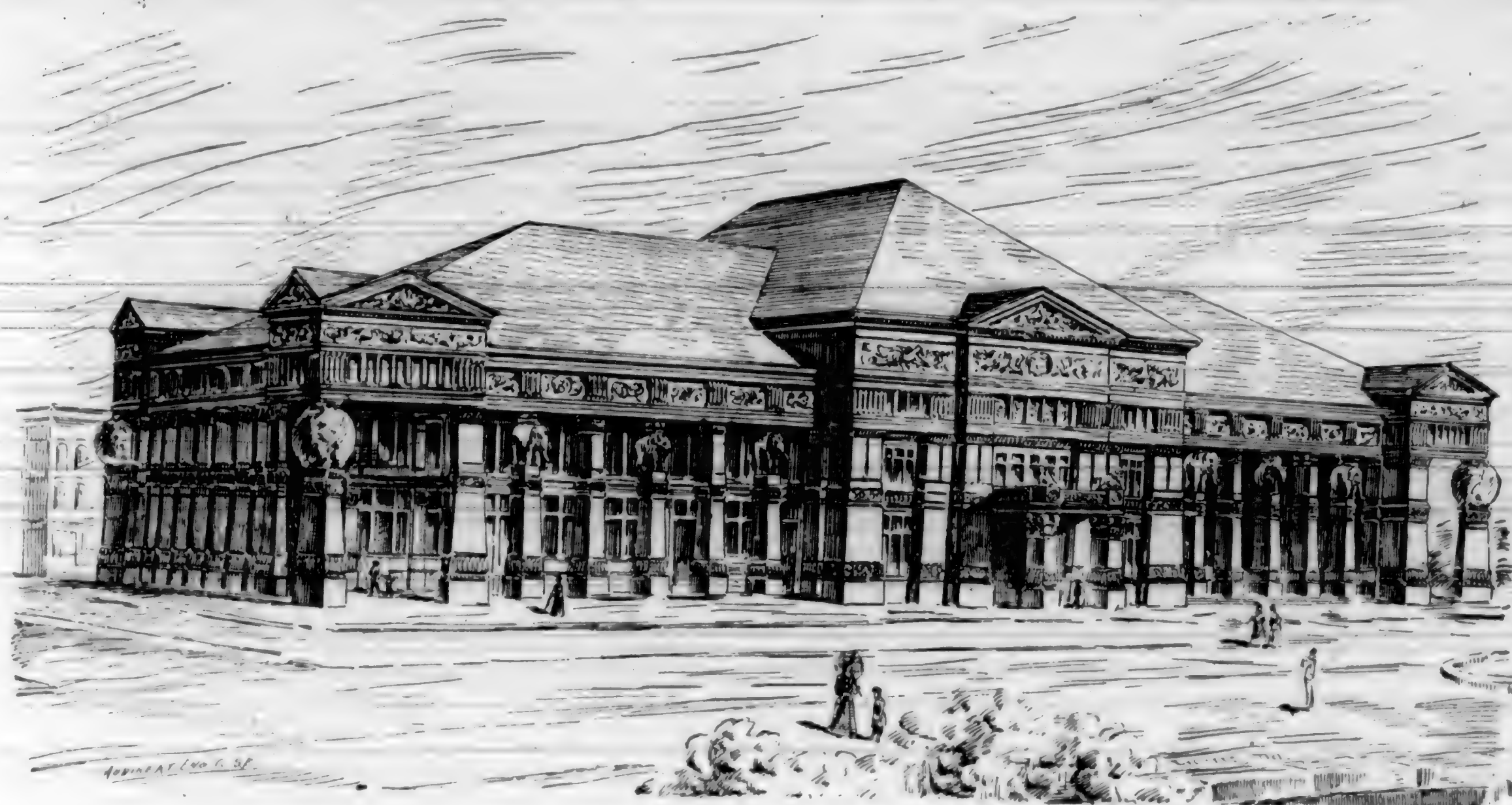
Thus is Chicago publishing to the world, in the universal language of dollars and cents, how much better and cheaper the people can perform their own service, than they can get it done by farming it out.—*The Nationalist*.

There is an excellent article in *The Architect and Contractor* on "Office Management and Routine," by R. W. Gambie Bonsfield.

The Northwestern Architect and Improvement Record for March publishes the second Royal Academy Lecture of this season of "Roman Architecture," by Prof. George Aithchinson, A. R. A.

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CITY BUILDING



COLORADO MINERAL PALACE.—O. BULOW, ARCHITECT.

We present above the design for a mineral palace to be erected at Puebla, Colorado; the cut is made from the drawings of the architect, Mr. O. Bulow, whose project was chosen from among a number submitted in competition.

The description of the building is as follows, and embodies some very unique and pleasing ideas. The plan is a parallelogram, 333 feet long by 164 feet wide. The main entrance admits the visitor to the central chamber, circular in form, 100 feet in diameter and 70 feet to the apex of the dome which surmounts it, and which is flanked by two smaller apartments, each 75 feet in diameter, of similar finish and design.

It is intended to make the building a permanent exhibit of the various minerals, ores and building stones of Colorado and elsewhere, by so using them that they form a part of the construction itself, instead of being displayed in the usual manner. The various quarries will be each represented by one or more columns or pilasters of the particular variety of marble, granite or sandstone they produce, and the effect secured by the contrasting colors can be rendered very striking, if the designer exercises good judgment in massing his colors—though of course such conglomeration would be inadmissible under ordinary circumstances.

Different mines will contribute specimens of their ores with which to adorn the walls, arches and ceilings, which will contrast handsomely with sparkling galena quartz and pyrite, mica, agate and feldspar. In the center of the middle dome will be a prismatic fountain, modeled after that of the Paris Exhibition. The roof will be covered with burnished copper.

The style of architecture employed is Egyptian, with some details modified to meet particular requirements.

COURT DECISIONS.

Judge Van Reynegom has reversed the judgment of the Justice's Court in a suit brought by the Fire Wardens against Samuel Hancock, for violating that section of the Fire Laws requiring light shafts in all buildings to be lathed with iron laths previous to being plastered. Hancock was convicted, and fined fifty dollars for having failed to cover the framing in the light shafts at 414 Ellis street, in conformity with the iron laths called for. In the appeal, Judge Van Reynegom, in summing up, said there was no proof that a light shaft or well, according

to the meaning of the term, was on the premises; that the ordinance fails to define what constitutes a light shaft, but he presumed it must mean a well-like structure, extending from a skylight to its base, for the purpose of giving light; that as the premises in question had no enclosed shaft, but merely a hand railing running around the hole, and as architects had testified that there was no light shaft in the building, for these reasons he reversed the judgment of the lower court.

While admitting the power of the Board of Supervisors to pass such an ordinance, the Judge declared it had not legally exercised its powers in the present instance.



The management of this journal desires to extend a cordial invitation to all Architects on this Coast and elsewhere to contribute designs for publication.

Drawings should be made with perfectly black lines on a smooth, white surface. Good tracings, if made with black ink, answer the purpose.

The designs selected will be published without charge. All drawings, whether accepted or not, will be returned to their authors, who must bear express charges both ways.

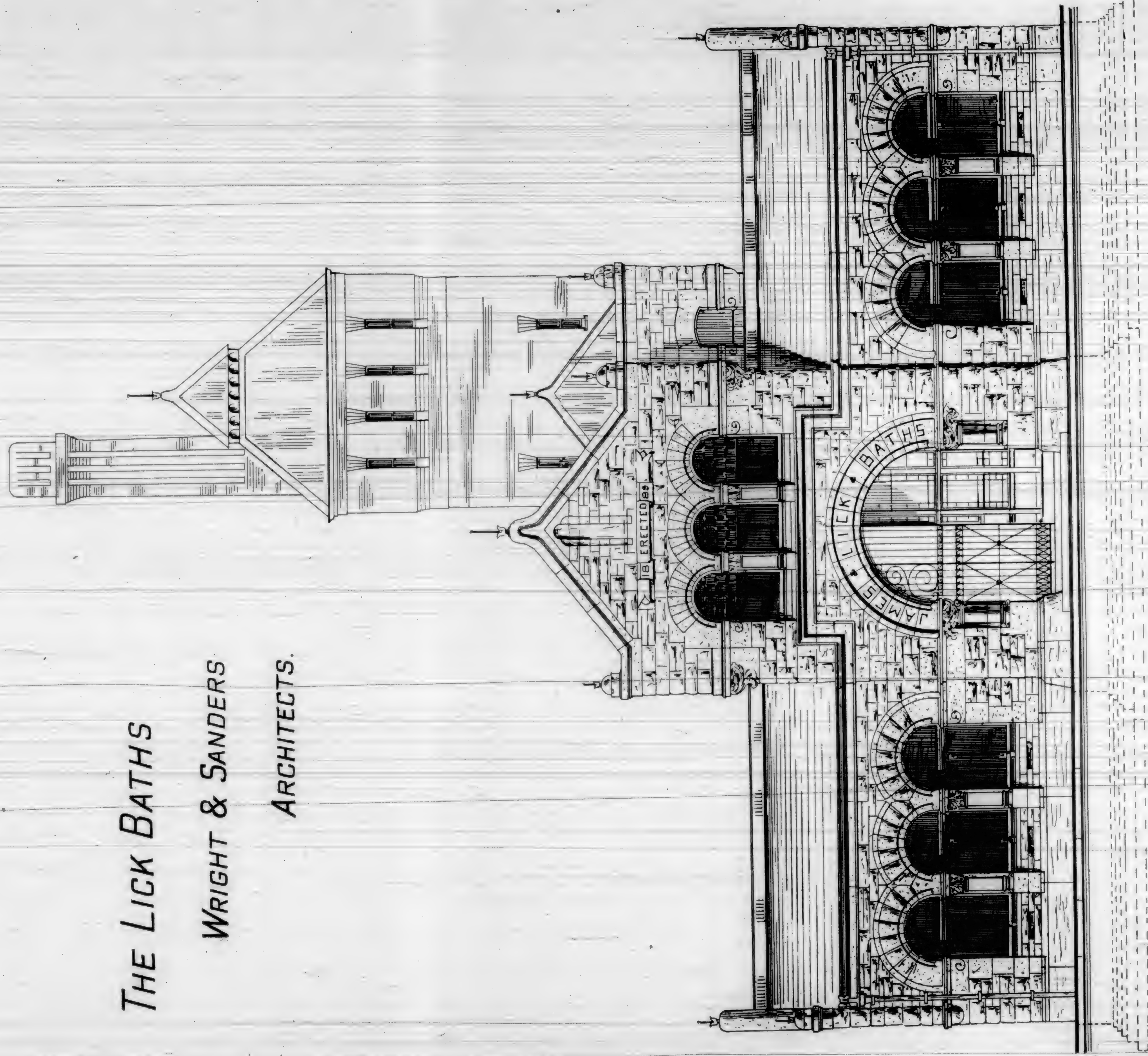
OUR lithographs this month show a residence designed by Architect Young of Los Angeles, and the Lick Free Baths by Messrs. Wright and Sanders of this city. The other designs are described in the text.



THE LICK BATHS

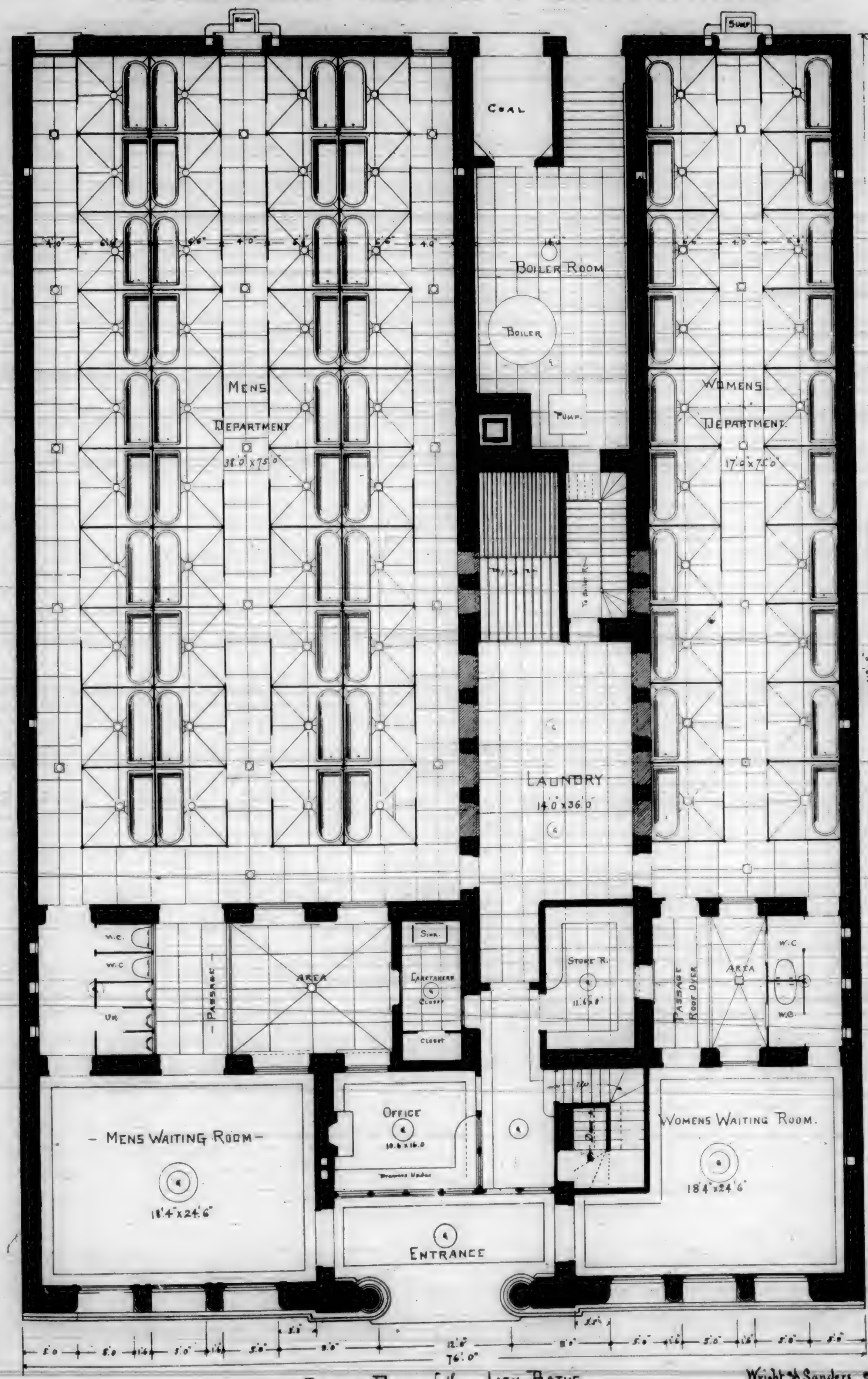
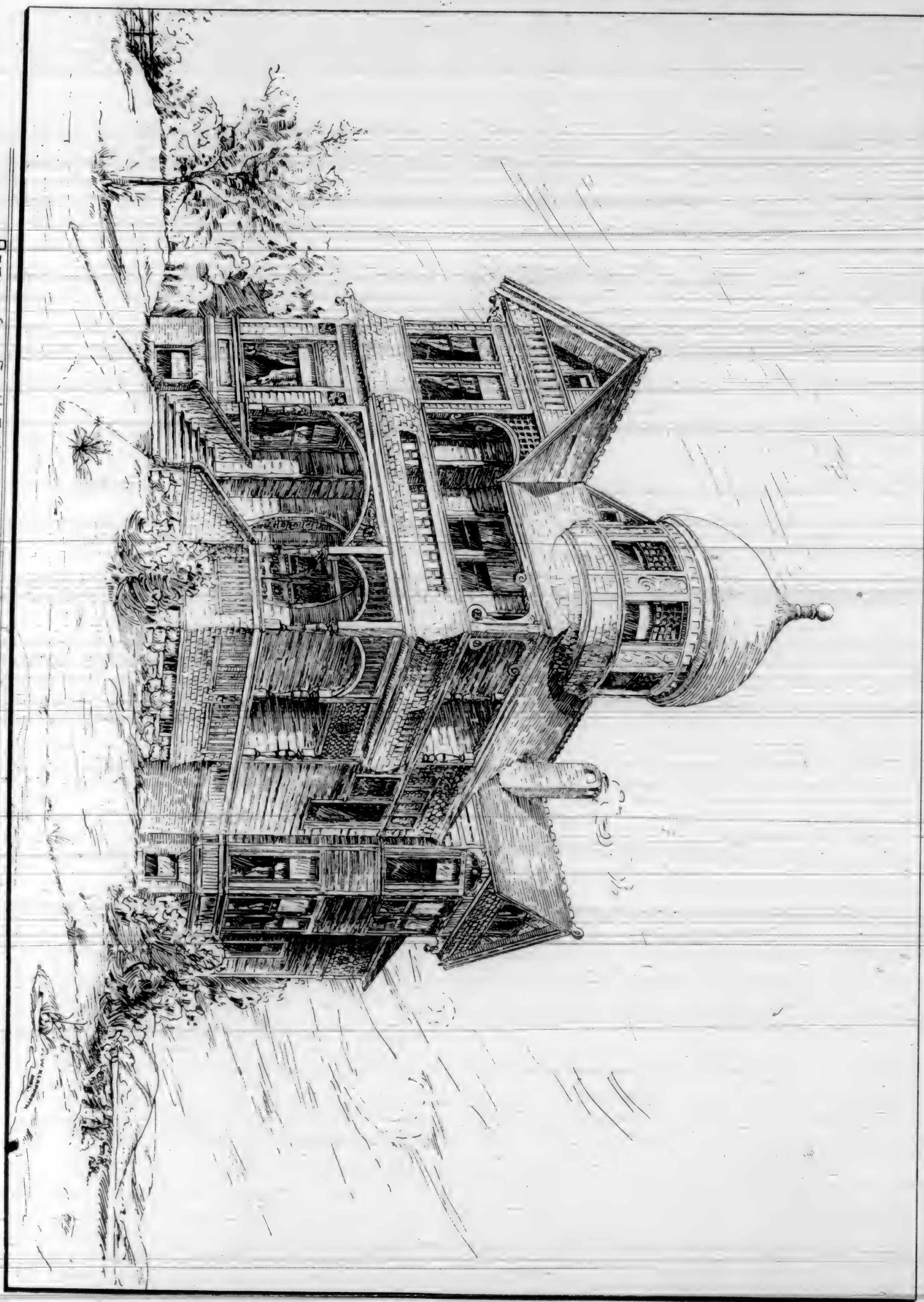
WRIGHT & SANDERS

ARCHITECTS.



FRONT ELEVATION ON TENTH ST.

RESIDENCE for H.E. KRONNICK Esq. LOS ANGELES, CAL. R.B. YOUNG, ARCHT.



ST. LOUIS CITY HALL COMPETITION.

The competition for furnishing plans for the new City Hall for St. Louis has at last been decided. The Board of Commissioners held a meeting, at which it was agreed that the three plans marked "Unity," "Pro Patria" and "St. Louis," were especially worthy of notice. These designs were put into the hands of Architect James McGrath, of this city, with instructions to report upon the comparative cost of each at the present ruling prices of material and labor. Mr. McGrath reports that this duty has been especially arduous, as the plans were not accompanied with sufficient data on which to make a ready estimate, although the code particularly provided for detailed specifications on which to found a basis of estimate. For this reason the work was delayed.

The City Hall Commissioners met on the 14th inst., in the Mayor's office, Mayor Noonan presiding. All the members were present, and Mr. McGrath was on hand to give an opinion as to the cost of constructing the buildings provided for in the several sets of plans considered the best. Mr. McGrath did not make a formal report, but gave his reasons as to why the set termed "St. Louis, 1892," should be selected. Such a building as would be erected in the event of the adoption of the plans, it was argued, would not exceed the appropriation in point of cost, and would be acceptable in every particular for a model City Hall. The matter was further discussed and the commission then, by a unanimous vote, adopted these plans. It was not known when this action was taken who submitted the plans. When it was adopted, the envelope containing the name of the architect was opened, and it was then ascertained that Eckel & Mann, of St. Joseph, Mo., were the lucky competitors for the first prize, which is \$5,000, with privilege of superintending construction.

The five consolation prizes of \$1,000 each were then awarded as follows: "Pro Patria," by Sidel, Ginssort & Ginder, of Birmingham, Ala.; "Faith," Carreve & Hastings, New York; "Civic," E. T. Fassett and A. J. Russell, Kansas City; "Star and Crescent," W. H. Dennis, Minneapolis, Minn.; "Unity," James & James, New York.

The high standing of the expert selected is a guarantee that his decision was impartial and his estimates approximately correct. He was prominently mentioned, four years since, in connection with the office of Supervising Architect of the Treasury, and is well known throughout the country.

Mr. McGrath states that the work represented by the 37 plans is worth in the neighborhood of \$40,000, and yet the competition has been one of the fairest conducted of late years in this country.

DESCRIPTION OF PREMIUM DESIGNS.

ST. LOUIS, 1892.

This plan received the \$5,000 prize. The design is in the Norman-French style of the Fourteenth century and is very handsome and elaborate. Ample provision is made for lighting all the departments. The halls of legislation and the Treasurer's office are given positions of architectural importance, but the latter is unduly prominent externally, while the former are externally diminished in importance by the bays that flank them. The exterior is consequently less expressive than in some of the other designs. It lacks repose and simplicity, being greatly injured by the two bays just mentioned. The main entrance is hardly adequate, but the main hall, the double staircase and the elevators are very happily combined. The stairs, main corridors and offices vary in this respect from admirable to poor. The material will consist of Missouri granite, rock face and St. Louis pressed brick. The dormers and cornices to be composed of terra cotta with finials and crestings of copper. Roof to be covered with copper and slate. The building to be thoroughly fire-proof. The floors of the main halls, public spaces and rooms and the wainscoting to be of marble of various hues. The stair cases to be also of marble and stone. The estimated cost of this building is \$1,100,000. The architects, Eckel & Mann, of St. Joseph, have been notified to come to St. Louis to confer with the board regarding necessary changes.

PRO PATRIA.

This design was drawn by Sidel, Ginssort & Ginder, of Birmingham, Ala. It was rated by Prof. Ware as the best of the

thirty-seven submitted. It is certainly a beautiful design in the Gothic style, but its great comparative cost rendered it unavailable. Mr. McGrath thought that it could not be built for less than \$2,000,000.

UNITY.

The claim for this building made by its architect is that it is useful and within the limits of cost. The architectural plan is the peculiar American development of the Romanesque. The details of the design are calculated to withstand the action of dirt and soot. The plan assumes the form of a parallelogram with a large court in the center, lighting the halls, corridors and staircases. There are four principal entrances, those on the east and west wings being covered. A grand staircase leads primarily to the Council and House of Delegates. The cost was estimated by the expert at \$2,000,000.

STAR AND CRESCENT.

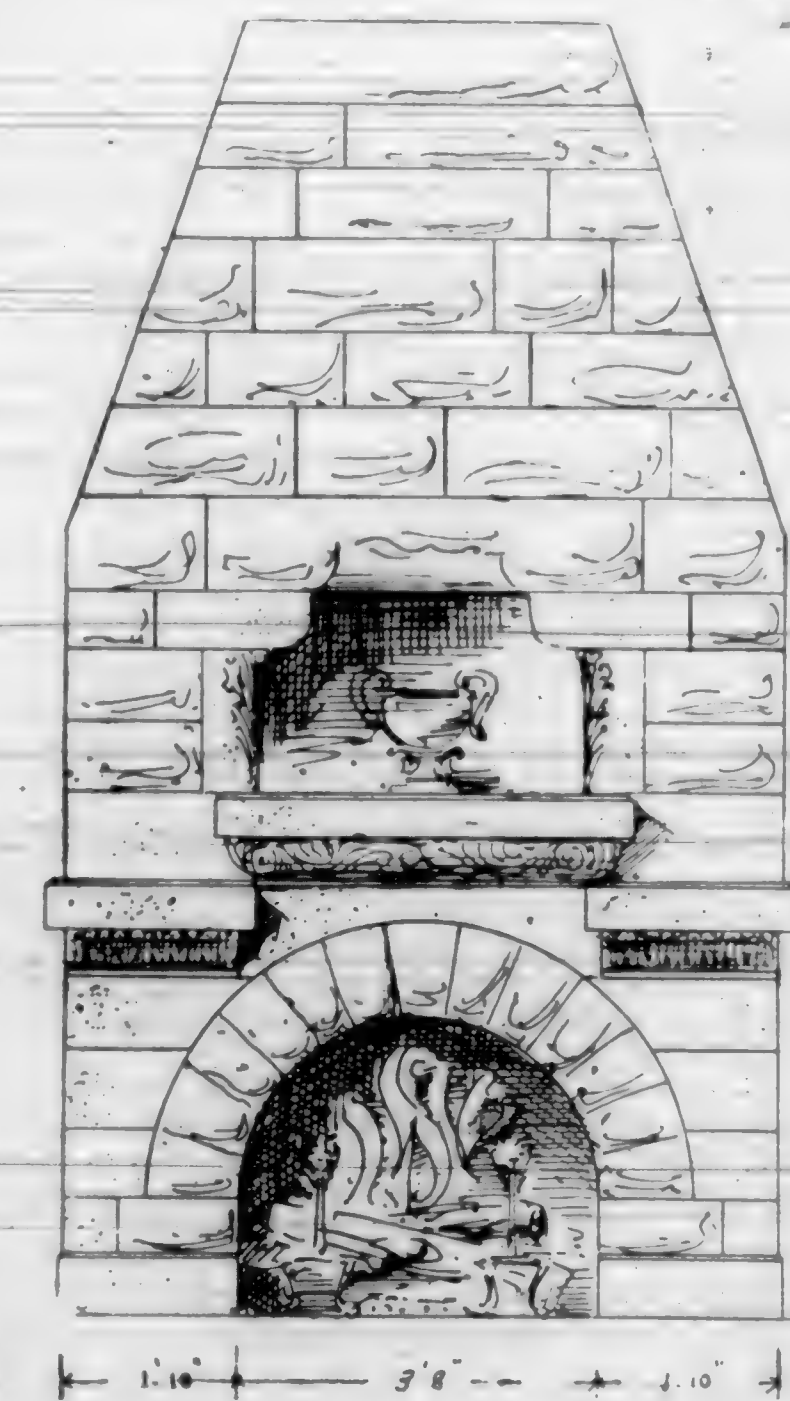
By W. H. Dennis, of Minneapolis. Classic in design, with very ample provisions for light and entrance. This would have made a very imposing building, surmounted with corner and central towers. The specifications provided for the use of saw-dust instead of sand in the plastering.

CIVIC.

By E. T. Fassett and A. J. Russell, of Kansas City. Very handsome, and apparently in full accord with code of competition. Very convenient arrangement of legislative and business departments.

FAITH.

By Carreve & Hastings, New York. Deserving of special mention. Style, French Romanesque, with a few early Gothic features. Thoroughly fire-proof. Ample light and air. Whole building in exact conformity with instructions.



MANTLE IN STONE, FOR THE SUTTER CLUB.
CURLETT AND CUTHBERTSON,
ARCHITECTS.

Most of the architects of Great Britain have signed an agreement not to compete for any building if their designs are to be submitted to anyone for decision who is not an architect known to the profession.

IN THE "VERNACULAR."

The question is often propounded by the inquiring American, Why it is that America is without a distinct American style? Many remarkable attempts have been made to answer this inquiry. Some have even gone so far as to call the attention of explorers and other scientifically inclined minds to the wonderful structures reared by the mound-builders; others have risked life or limb in vain attempts to fathom the mysteries of the cave-dwellers in the wild cañons of Colorado. Others, again, have not hesitated to declare that the Incas have left monumental remains of a long lost art that any nation might be proud of. In fact, archaeology itself has been appealed to and invoked to restore to us evidences of a great bygone American architecture, but in vain. The restless American eye has turned itself inward at last, and revealed an astonishing discovery—a style so rich in its decorative emblazonry as to astonish even the learned beholder, displaying to the thoughtful student such a wealth of encrusted enrichments as no Etruscan artificer ever dreamed of. The manifestations of this style are so peculiar and so striking that to understand the meaning of their story needs an erudition that is profundity itself. To see this style developed in its pristine beauty and unrivaled freshness, it is necessary to take a train to any far inland town, particularly if it be near a planing mill. The first glimpse one gets of a dwelling in this style is, of course, the general outline. What this is it would be indeed difficult to say. The sky-line is such a zig-zag contour, with pro-Norman feeling here, unmistakable Queen-Anneism there, Cinquecento yonder, Neo-Grec farther on, that where to begin and where to end is puzzling; but finally the eye itself, after wandering about the maze of sub-roofs, dormers, peaks, turrets, spires, campaniles, light-house bell-towers, smokers' snuggeries, and other quaint modern devices, lights upon the entrance-porch, or verandah, or piazza, or porto-cochere, or Dutch stoop, or reminiscence of Cluny, and is delighted to find—just as expected—that this porch, or stoop, or what-not, is tacked on to the building like a dog-kennel or chicken coop. This feature is noted and commented upon with peculiar satisfaction, for it is one of the unmistakable evolutions of modern architectural progress, and by the one-and-a-half-per-cent. men is styled a "cute" innovation.

What the most marked characteristics of this style are, not to make a long story too short, it would be equally difficult to say, "but there is one thing I hav' notiss," as Mr. Cable's famous creole Narcisse says, and that is the jumble of roofs just cited, the unaccountable corners, angles and elbows of the elevations, the "quaint" (?) breaks in the cornice, the snow traps on all parts of the house and the elaborate schemes of ornamentation offered.

The porch posts, for example, are arranged into compound columns of the most striking orders; one column consists of drum upon drum without base, plinth or capital, the more shown the richer the order. The entablature itself exhibits in a striking degree the triumphs of the modern jig-saw, and the cornice itself is modillioned and encrusted with mouldings to such an extent that one finds it difficult even to count them.

Some one has said that it is to the window we must look for evidence of a new style. Whenever the form of the window, its arrangement or its grouping, has been crystallized into permanent usage, then the world has become enriched by a new style. Applying this dicta to the scene of our investigations, we discover this; in the new style it is the custom to have but one window to a room, and that must be broad and low, and have its upper sash filled with encrusted glass—encrustations still wherever one may look for them—so, we suppose, that the inhabitants thereof cannot see thereout. Some mean and envious and unsuccessful architect has bitterly called this style the "barnacle style," and this outrageous person has gone so far as to divide this style into two groups, one in which the buildings arrange themselves on account of their size, being too great for their purpose, and the other on account of their dimensions being too small for the people who occupy them. But this arrangement and arraignment may, we assure our readers, be passed by with contempt and disdain. The style we have only briefly glanced at is very different from this. We are not responsible for its name; we do not know who is; but the name has passed into history—it fits the architecture as a glove does the hand, and it is needless to say the style of house we refer to is built in the popular "Vernacular."—*Architecture and Building.*

PAINT AND VARNISH BLISTERING AND ITS PREVENTION.

The question of blistered paint or varnish is a very vexed one. It has caused much anxiety and perplexity, and any amount of hard and unjust abuse, simply because it is invariably attributed to the use of inferior materials or "bad paint," as the phrase goes. Those, however, who have had long practical experience, and who have thought the matter well out, will not have the slightest hesitation in saying that it is nothing of the kind, an expression I may, perhaps, before I finish, be able to justify.

I was called in only the other day to examine and pass judgment upon the external painting of a bank, near Manchester. The work was done by a very respectable firm some time ago, and portions of it were found to be very much blistered, the lower part of the entrance or vestibule door (which was partly shaded by a lead covered roof) in particular; and to such an extent was this the case that for about eighteen inches from the floor it was a mass of blisters, and from that point upward a beautiful piece of work, as level and smooth as a polished plate. Bad paint or varnish, I think, could not be the cause of this; if so, why was it not blistered all over? How, then, was it to be accounted for? Simply this; the sun's rays striking the door at an angle of about forty-five degrees caused the mischief. This was explained to the manager, and he expressed himself perfectly satisfied on that point; but at the same time made the remark that there were no blisters on the same door when done three years ago. Quite likely, but from experience I find that the more paint or varnish the more blistering, hence the necessity of removing the old paint or varnish before applying the new. The more scientific question may arise, "Why does the action of a moderate degree of heat on the surface of paint or varnish cause blistering?" Because almost every kind of wood, more particularly white and yellow pine, being soft, contain, to a more or less extent, air and moisture, and, as a rule, immediately on leaving the joiner's hands, is painted with a coat of oil priming. Then begins the mischief; coat upon coat of paint follows in rapid succession, until this waterproofing and air-tight process is completed. Kept in the shade, the work is everything that could be desired, and nobody grumbles. No sooner, however, is it exposed to the rays of the sun, than the surface becomes heated (the more so if the paint is dark in color), the air and moisture underneath are expanded, steam generated, and in its effort to escape raises or upheaves the air and water-tight coatings in the form of blisters. Invariably the reputation of the painter is damaged in proportion to the exposure of his work to the destructive power of the sun, an agency over which he has not the slightest control.

Now in the case of iron or other metallic substances being painted, I have stated that soft woods under paint or varnish are more liable to blister than the hard or close-grained qualities, which partake more of the nature of iron and other metallic substances, and which, irrespective of quantity and quality of paint or varnish, or however much exposed to the sun, are seldom if ever found to be blistered. Why? Because the non-absorbent nature of the metals precludes the possibility of air or moisture entering into their composition, hence the absence of blisters as compared with the softer kinds of timber. Then, again, we have internal blistered paint, which in some instances differs in appearance from that already described, being more like heavily embossed leather. It is often deeply furrowed into patches, resembling in appearance the skin of a crocodile, and in many cases it is drawn into lumps as large and not unlike the form of split peas. This kind of damaged work is from the same cause, and results from long-continued exposure to the sun's rays, which, when reflected or focussed through glass, are much more powerful and destructive in their action on paint on that account. This kind of damaged work is chiefly to be found on the fronts of shutters exposed to the sun in the hottest part of the day, but never on the soffits or other internal or external portions of the painted or varnished wood work, entirely shaded or otherwise protected from the sun.

There is yet, however, another kind of blistering which may be occasionally met with, and in places, too, upon which the sun may never shine. This we find to be the case on newly-plastered walls having been oil-painted too soon, and also in places where old plastered or painted walls have been saturated with water through the bursting of pipes and other accidental causes. Nevertheless, the same influences have been at work, though more unequally combined, or, in other words, less heat

on the one side and more water on the other, with the hermetic film of dried paint or varnish between.

It will, I think, be seen from my line of argument, anent the question of blistering, that practical prevention in the case of oil paint or varnish is almost impossible, and could only be accomplished—first, by the use of white paint only, the destructive power of the sun upon dark surfaces having little or no effect upon white; second, by extracting the air and moisture effectually from the finished wood work in a heated chamber, and, on the instant, coated over with linseed oil priming; third, by complete protection from the sun; fourth, by stopping the sun from shining, which, I think all will agree, would be the greatest impossibility of all.—JAMES RENWICK, in *The National Builder*.

WASHINGTON'S BIRTH-DAY.

Architecture and Building, commenting on the anniversary of Washington's birthday, says:

The grave of Washington's mother is without a monument, and the money for the Washington Memorial Arch comes in but slowly, although the design has been accepted with universal approval. One magnificent edifice we may consider a memorial of the great statesman—the Capitol at Washington—the site of which was selected by President Washington in 1791. A plan was prepared by Dr. William Thornton, of Pennsylvania, and, after material changes, it was approved by Washington and submitted to Stephen Hallet, a French architect, to whom was entrusted its execution. On September 18, 1793, the cornerstone of the edifice (southeast corner) was laid by Brother George Washington, assisted by the Worshipful Masters and Free Masons of the surrounding cities, and the military and a large number of people. The silver plate deposited in the cavity of the stone bore the following inscription: "This south-east corner-stone of the Capitol of the United States of America, in the City of Washington, was laid on the 18th day of September, 1793, in the thirteenth year of American Independence, in the first year of the second term of the Presidency of George Washington, whose virtues in the civil administration of his country have been as conspicuous and beneficial as his military valor and prudence have been useful in establishing her liberties, and in the year of Masonry 5793, by the President of the United States, in concert with the Grand Lodge of Maryland, several lodges under its jurisdiction, and Lodge No. 22, from Alexandria, Virginia. Thomas Johnson, David Stewart and Daniel Carroll, Commissioners; Joseph Clarke, R. W. G. M. P. T.; James Hoban and Stephen Hallet, Architects; Collin Williamson, M. Mason." It may be interesting to note here the other architects employed on the erection of the Capitol: In 1803 R. H. Latrobe was appointed architect; in 1818 Charles Bulfinch had charge of the work, and in 1851 Thomas U. Walter's plans for the extension were accepted. It is stated that the cost of the Capitol has been less than that of the Court House in our City Hall Park! being estimated at \$13,000,000.



The new company that is to supply East St. Louis with gas is to receive 50 cents per thousand.

We regret to chronicle the death of architect Geo. H. Miller, whose office was in the Flood Building.

Owing to complications arising from the death of Mr. Gray, of Gray & Stover, the firm has assigned the contracts it had on hand at the time of Mr. Gray's death, to be completed by the assignees.

We see that the French authorities have issued an order directing the secretary and others connected with collapse of the copper syndicate to be handed over to the correctional police to be dealt with.

There is now being erected a skating rink in Paris, covering a plot of ground about 300 feet in diameter. The ice will be made artificially. Would not such a rink pay in San Francisco?

The Boston Architectural Club proposes to hold an exhibition of architectural work, beginning May 12th, and continuing three weeks. Contributions should be sent in not later than April 15th. R. C. Sturgis is the Secretary of the club.

Doe Brothers, sash and blind manufacturers at 44 Market street, San Francisco, are about to construct a six-story building on the gore lot bounded by Market, Hayes and Larkin streets. A theater, second only in capacity to the Grand Opera House, and of most modern style, will occupy a portion of the building.

The National University of Chicago has arranged for a National Circulating Library of 20,000 volumes, to aid in its University Extension work, modeled after the English system. The volumes will be sent by mail from Maine to Texas. It will supply a long felt want. To cover expenses, catalogues are sent only on receipt of ten cents. Address 147 Throop street, Chicago, Illinois.

Los Angeles gets her additional appropriation of \$370,000 for the enlargement of the postoffice building. This was a necessary step to insure a suitable Federal building for the city. It is to be hoped that this money will be available at an early day, and that work on the structure will soon be resumed. The coming summer may be a quiet one in business, and the employment of mechanics and laborers on this building will help out materially.

Wm. Ward, an architect of Salt Lake City, suggests that future competitions require drawings to be made to a scale much smaller than that usually employed, say 20 or 25 feet to the inch, such drawings to be made with black ink only, and any drawings submitted larger than called for to be reduced by photography to the standard scale before being compared with the other designs. This would save competitors much labor in making elaborate drawings and allow many sets of drawings to be examined and compared at the same time.

Four women were engaged last week working as bricklayers on a building corner of Montgomery avenue, Dupont street and Hinckley alley. All the four were dressed in men's clothes, and though not very competent workmen toiled very faithfully and hard. The occasion of the work was the order of the Street Superintendent that a brick foundation should be built under the wooden house on the corner. Although willing the women were not skillful, and yesterday regular male brick-layers were called in to take down what the women had built, and construct the foundation in a proper manner. It is stated that one of the women insisted on doing the work herself and superintending the job.

The report of the Grand Jury shows that a new county jail is an imperative necessity. The present one is neither safe nor comfortable. The property of the people of this city has been pretty severely taxed the past year, but we do not know that this fact has anything to do with the obligation of the people to maintain safe and healthful public buildings. If the people cannot find some way to elect men to responsible offices who will not waste a third or more of our municipal revenues, they must stand the consequences of their own incapacity. But the small taxpayer, who has just succeeded in getting together the heavy tax of last year, will be inclined to ask himself why, with all these taxes, the city is in need of so many things. It is not only the County Jail, but the school-houses, the Police and Fire departments which are kept in a state of inefficiency by the lack of conveniences which are supplied in other cities with less revenue than we provide.



The *American Architect and Building News* has the usual quantity of interesting matter.

In the *Architectural Era* for February will be found a continuation of *Good Things Gleaned from Different Eras of Architecture*.

Our esteemed contemporary and near neighbor, *Industry*, will soon have to increase the number of its advertising pages. No better proof could be had of its success.

Architecture and Building under its new name, presents an improved appearance. Its issue of February 15 concludes an article on *The Influence of Materials on the Development of Architecture*.

The *Engineering and Building Record* for February 15, contains a plan and description of the office of Shepley, Rutan & Coolidge, architects, of Boston, and an interesting account of how these gentlemen conduct their extensive practice.

The National University of Chicago announces a new Spanish Grammar in preparation. It is by Prof. Schele de Vere of the University of Virginia, is written on a novel plan, and will form one of the "University" series of text books.

The February number of *The National Builder* contains, part V of Adolph Cluss' article on *Mortars and Concretes of Antiquity and Modern Times*, describing the manufacture of Portland cement and the chemical actions of its component parts also.

An article by James Renwick, on *Paint and Varnish Blistering and Its Prevention*, and installments of the articles on *Ventilation of Sewers*, and *The Art of Drawing*.

The *Building Budget* for January contains translation of *Viollet le Duc's Dictionnaire Raisonné de l'Architecture* and an interesting article on *Adoban Architecture* by Andre Matteson, and proportion in Doric architecture by Prof. A. Thiersch, translated by Prof. N. Clifford Ricker, also the proceedings of the joint meeting of the Chicago Chapter, A. I. A., and the Illinois State Association of Architects, at which their consolidation was effected.

The February number of the *Western Architect and Building News* is one of the two *special numbers* issued during the year, and is thoroughly deserving of special mention. The gelatine plates are as near perfection as choice of subjects, and skill in this process of reproduction combined can attain. The most interesting plates are a general view of the Chicago Auditorium Building, Adler & Sullivan, architects, an interior of the Kansas Senate Chamber, L. M. Wood, architect, a residence designed by John J. Huddart, architect, and a perspective view of the Peoples' National Bank Building by F. E. Edbrooke & Co., architects.

The *National Magazine* for March, contains the continuation of an interesting article by Prof. Schele de Vere of the University of Virginia, entitled *How We Write*, giving many curious historical facts. Rev. J. C. Quinn, L. L. D., contributes *Biblical Literature*. F. W. Harkins, Chancellor of the National University

of Chicago, describes the workings of the *National Circulating Library* of 20,000 volumes and the new non-resident courses of study of the University. A timely article on the University Extension system of England is by Rev. C. C. Willett, Ph. B. The ladies will be particularly interested in the new Woman's Institute and a unique plan, here described.

Published on the 1st of each month at 147 Throop street, Chicago, Ill. Sample Copy, 10 cents.

THE LICK BATHS.

We are enabled to present to our readers this month through the kindness of the architects, Messrs. Wright & Sanders, the design for the Lick Free Baths now being erected on Tenth street near Howard street, in this city.

The deed of trust, executed by the late James Lick, providing for the construction and perpetual maintenance of free public baths in this city, reads as follows:

"And in further trust to expend the sum of one hundred and fifty thousand dollars under direction of H. M. Newhall, Ira P. Rankin, Dr. J. D. B. Stillman and John O. Earl and the survivors of them, in the erection and maintenance in the city of San Francisco of free baths, the site or sites therefore to be acquired and held by the persons last named and the survivors in trust forever to maintain such baths for the free use of the public under proper and reasonable regulation, said baths to be erected as soon as practicable to raise the money after the money has been provided to erect said telescope."

The building has now been in course of construction for several months past, and is so far advanced as to afford the observer a good idea of the handsome appearance it will present when completed. The facade has a frontage of 76 feet and the material employed is San Jose sandstone, very effectively treated. The main entrance is in the center, and opens into a spacious vestibule, flanked by separate waiting rooms for men and women. There are forty separate bath rooms in the men's department, and half that number in the women's; each room is furnished with an enameled iron bath tub, and the whole well lighted by large skylights.

Tanks for hot and cold water are located in the tower, which is situated near the center of the building.

Apartments have been provided for the employees in the second story, and every convenience provided for the work they will be called on to perform.

Following that which we have written relative to the *Lick Baths*, we learn that the *Joshua Hendy Machine Works*, whose place of business is at No. 54 Fremont Street, this city, furnished the boiler, engine and all of the necessary shafting, pulleys, etc., connected therewith and as well the *Laundry Machinery* from the Pacific Laundry Machinery Company.

This Laundry Machinery comprises hot and cold water tanks having a capacity of 10,000 gallons each, and the further accessories of a washing machine, mangle, centrifugal hydro-extractor, soap tanks, etc.

The drying room is to be specially constructed of iron upon plans and specifications prepared by the manager of the Pacific Laundry Machinery Company, the office of which is at No. 51 Fremont Street, this city.

Mr. Jos. F. Forderer, 226 Mission street, is doing the galvanized iron and slate work. The front roofs are covered with California slate, the rear ones being of corrugated iron. The skylights are built with the Forderer patent, of which Mr. Forderer is the patentee. Persons contemplating building should call on Mr. Forderer and inspect his skylight, as it has many advantages over other styles. The partitions in the bathing department are all built of galvanized iron. Mr. Forderer is well known to the building community and the public in general, as doing nothing but first-class work in his line of business, and having acquired an enviable distinction will always endeavor to maintain it.

The plumbing in this establishment is, as its name implies of great importance and the work therefore was to be done in the most approved sanitary manner, and with the latest and best plumbing appliances as well as to have it durable. Mr. W. F.

Wilson, whose place of business is at 204 Stockton street in this city, was therefore chosen by the architects and the trustees for the Lick Baths, to perform this branch of the building, and who has spared no time or trouble to make the plumbing in this building, a credit to those who entrusted him with this work as well as to himself. The drainage pipes are of extra heavy cast iron, and so arranged under the cement floor that any part of it can be cleaned or flushed at any time, these drain pipes empty into large cast iron tanks specially designed for this building by Mr. Wilson, and by this means making it impossible for sewer gas to enter the building. As an extra precaution, the drains are constructed in such a manner, that there is a constant circulation of air passing through these pipes from rear to front of building.

The traps for bath-tubs, catch-basins or floor strainers are of a unique pattern as are also the waste and supply fixtures to the bath-tubs. A marked feature in this plumbing is the absence of lead pipes, no lead pipe of any kind to be used in the connection of any part of the plumbing in the Bath House, all material being extra heavy, strong, cast iron, or heavy brass, thereby avoiding the risk of having any part of the plumbing damaged by carelessness or intent; the bath tubs, made of solid porcelain, are 2 1/2 inches thick and weigh each about 800 lbs. Each tub is set and connected in such a manner that it can be uncoupled and removed without interfering with any other part of the plumbing,—the supply to the bath-tubs are taken from two large tanks situated in tank-tower, and consist of galvanized iron pipes 4 inches in diameter, and sufficiently large to fill each tub in about 2 minutes. A large and commodious room is fitted up for gentlemen with a combination needle and shower bath something entirely new, and will be enjoyed by those who know the benefit of such a luxury, the plumbing in lavatories and toilet rooms are in keeping with the work in the bath-rooms. The water-closets are of the latest approved pattern, with a large square opening and are known as the *Pedestal Syphonia*, each water-closet is furnished with an antique oak seat and cistern and is automatic in action, the urinals are of petroleum, the floors, sides and back of which are of California slate, the supply to each through an automatic periodical flushing cistern.

J. Steuart Mackay, whose office is No. 330 Sutter Street, room 3, has the contract for the performance of the carpenter work. Mr. Mackay is a well known builder of long standing in the community, and has erected many prominent buildings in and around this city. Being a thorough man of business as well as a competent mechanic, attentive to his work, and careful to fulfill all agreements to the satisfaction of his clients; it may be stated without hesitation that he will take particular pride in

carrying out this important contract, in such a manner as to reflect credit on himself and the architects who designed the work.

Messrs. W. W. Montague & Co., of 309 and 317 Market street, have the contract for the tile work and their name is a sufficient guarantee that the work will be done in an artistic manner and the material will be of the best.

The offices and waiting rooms are wainscoted with English glazed tile in light cream with a Grecian border in colors, and the floors and halls of the rooms are laid with encaustic tiling in mosaic designs and colors. The walls of the main bath rooms are all wainscoted with English cream colored tile from floor to ceiling with a Tennessee marble base running all around.

The plastering has been let to Mr. Charles Dunlop, who is an experienced man in his line of business, and as the result of his knowledge and ability, he secures a great deal of the best work in the city. His headquarters are at 330 Pine street, at the Builders' Exchange. Among the prominent buildings lately plastered by Mr. Dunlop, may be mentioned the First National Bank, corner of Sansome and Bush streets, and the Strathmore Apartment House on Larkin street. He has also contracted to do nearly twenty thousand dollars worth of work for the new building now being erected for the California Academy of Science on Market street.

Messrs. Fraser & Keefe, the well known painters of 317 Sutter street, whose exhibit at the last Mechanics' Fair attracted such universal attention, have the contract for the painting and glass work. The work done by these gentlemen speaks for itself. By a long series of experiments they have discovered certain methods of treating natural woods so as to bring out the beauties of the natural grain, and persons wishing to have this kind of work done in a first-class manner, would do well to call and examine specimens of wood so finished, which can be seen at their place of business, 317 Sutter street, between Grant avenue and Stockton street.

Mr. George Goodman, of 307 Montgomery street, has the contract for the foundation and artificial stone work. As the foundation of a building designed to stand for any length of time is of the first importance, it is essential that the composition be the best and that the mixing be done in a thorough manner; his name is a guarantee that the requirements called for has been fulfilled. The sidewalk will be laid with artificial stone, of which he is the patentee and manufacturer. Mr. Goodman has had many years of experience in this business, and does nothing but first-class work.

CITY BUILDING NEWS.

Alpine and Fourteenth. 3-story; owner, D. Swannack; architects, Townsend & Wycken; contractor, D. Currie; cost, \$1,484; signed, Feb. 19; payments, \$500, main floor beams are on; \$400, framed; \$1,168 ready for laying; \$1,000 work is up and primed; \$500, white coat of mortar is on; \$500, inside is trimmed; \$1,356, 35 days.

Bryant and Third. Concrete cementing and excavating; owner, E. G. Lyons & Co.; architect, Wm. Mooser; contractor, Chatain Gillett; cost, \$25,500; time, 68 days; sureties, Byron Diggins & Diggins Bros., \$15,000; filed, Feb. 25; signed, Feb. 24; payments, 75 per cent. of value of work done; balance, 35 days.

Bryant and Third. Brick work; owner, E. G. Lyons & Co.; architect, Wm. Mooser; contractor, J. W. Wissinger; cost, \$24,850; sureties, C. C. Rohlfis and D. Dodge, \$16,000; filed, Feb. 25; signed, Feb. 21; payments, 75 per cent. of value of work done; balance, 35 days.

Bryant and Third. Stone and plastering; owner, E. G. Lyons & Co.; architect, Wm. Mooser; contractor, Jno. McCarthy; cost, \$13,284; time, 60 days; sureties, J. F. Logan and T. W. Peterson; signed, Feb. 21; filed, Feb. 25; payments, 75 per cent. of value of work done; balance, 35 days.

Church, between Ridley and Fourteenth streets. Owner, Ann Shattuck; architect, T. J. Welch; contractor, Jas. Campbell; sureties, A. W. Starbird and J. B. Goldstone, \$5,000; time, 3 months; signed, Feb. 24; filed, Feb. 28; payments, \$1,925, enclosed; \$1,925, brown coat; \$1,925, completed; \$1,925, 35 days.

Chattanooga and Twenty-Fourth. Frame building; owner, Robt. McElroy; architect, J. Marquis; contractor, David Perrey; cost, \$2,225; signed, March 4; filed, March 4; payments, \$500, chimneys are up; \$400, building is ready to lath; \$400, brown coat of mortar is on; \$315, completed; \$500, 35 days.

Drumm and Sacramento. Carpenter work; owners, Mahony Bros.; architects, Ashton & Stone; contractor, John Trotter; sureties, John F. Kennedy and Geo. T. Shaw, \$2,000; cost, \$5,559; signed, Feb. 27; filed, Feb. 28; payments, 75 per cent. of value of work done as it progresses; balance, 35 days.

Ellis and Franklin. Frame building; owner, Henry Payot; architect, Wm. Mooser; contractor, M. C. Lynch; cost, \$3,322; sureties, Henry Blythe and J. T. Trotter, \$3,000; signed, Feb. 13; filed, Feb. 18; time, 75 days; payments, 75 per cent. of value of work done; balance, 35 days.

Ellis and Buchanan. Painting and graining; owners, Morris Brinn and Philip Flatlow; architects, Saffield & Kolberg; contractor, J. A. Mohr; cost, \$850; signed, Feb. 17; filed, Feb. 17; payments, \$300, outside has two coats; \$325, accepted; \$225, 35 days.

Eleventh and Folsom. To complete building; owner, Jas. Seobie; architect, Oliver Everett; contractor, Cook Stover; sureties, Jno. Wagner & Chas. Dunlop; filed, Feb. 18; signed, Feb. 19.

Ellis between Polk and Van Ness Avenue. 3-story frame; owner, A. Paula; architects, Kenitzer & Kollofath; contractors, Shutt & Kreker; sureties, T. Hook and J. C. Jensen, \$5,000; cost, \$9,257; time, May 31, 90; signed, Feb. 18; filed, Feb. 19; payments, \$1,200, frame is up; \$1,200, roofed; \$1,500, first coat of plaster is on; \$1,200, plastered; \$1,457, entire work is completed; \$2,700, 35 days.

Ellis and Buchanan. Carpenter work; owner, Morris Brinn & Philip Flatlow; architect, Saffield & Kolberg; contractor, H. Holzenberg; sureties, J. F. Kennedy and Geo. T. Shaw, \$3,000; cost, \$13,000; signed, Feb. 7; filed, Feb. 17; payments, \$1,000, up to second floor; \$2,000, framed; \$2,000, partitions set; \$2,000, doors and windows hung; \$2,750, accepted; \$3,250, 35 days.

Ellis and Buchanan. Plumbing, etc.; owner, Morris Brinn & Philip Flatlow; architect, Saffield & Kolberg; contractor, Sam'l Ickelheimer; cost, \$1,550; signed, Feb. 7; filed, Feb. 17; payments, \$500, rough work is up; \$500, accepted; \$400, 35 days.

Ellis and Buchanan. Plastering; owners, Morris Brinn & Ph. Flatlow; architect, S. V. Kohlberg; contractors, Brennan & Fraser; cost, \$1,569; signed, Feb. 24; filed, Feb. 28; payments, \$600, brown coat is on; \$569, plastering is finished; \$400, 35 days.

Ellis and Leavenworth. 2-story frame; owner, Chas. Meyer; architects, John & Ralczynski; contractor, Wm. Plums; cost, \$13,640; signed, March 1; filed, March 3; payments, \$2,500, frame; \$2,500, partitions are set; \$2,500, outside finish is on; \$2,781, inside finish is on; \$3,410, 35 days.

Ellis and Franklin. Plumbing, etc.; owner, Joseph Getz; architect, Wm. Mooser; contractors, Thos. Clark & Son; cost, \$1,100; signed, March 5; filed, March 7; payments, 75 per cent. of value of work done; balance, 35 days.

Ellis and Leavenworth. Concrete work; owner, Johann A. Schmidt; architect, Julius E. Kraft; contractors, Ransome & Cushing; sureties, C. E. Greene and F. M. Smith, \$5,000; cost, \$4,173; signed, March 1; filed, March 3; payments, \$1,400, all walls are up to one-half height; \$1,723, completed; \$1,150, 35 days.

Ellis and Franklin. Carpenter work; owner, Jos. Getz; architect, Wm. Mooser; contractor, J. R. Whalen; sureties, O. H. Greenwald and J. Levi, \$9,000; cost, \$13,482; signed, March 5; filed, March 7; payments, 75 per cent. of value of work done; balance, 25 per cent., 35 days.

Ellis and Franklin. Artificial stone work; owner, Jos. Getz; architect, Wm. Mooser; contractor, Geo. Goodman; cost, \$355.50; signed, March 5; filed, March 7; payments, 75 per cent. of value of work done; balance when completed.

Grove and Shrader. One-story cottage and 2-story stable; cost, \$4,000; owner, John Hasselgren; contractors, Drogge & Munster; time, 100 days; signed, Feb. 24; filed, Feb. 28; payments, \$750; rough frames are up; \$750, brown coated; \$750, outside finish on; \$750, accepted; \$1,000, 35 days.

Grove and Lott. Frame building; owner, Chas. G. Gebhardt; architect, Edward Burns; contractor, Jas. J. Marceau; sureties, Jas. Greig and Ed. F. Blake; \$1,800; cost, \$5,500; time, 75 days; signed, Feb. 17; filed, Feb. 28; payments, \$750, rough frame is bridged and braced; \$800, rough plumbing done; \$1,100, completed; \$940, 35 days.

Golden Gate Ave. between Baker and Lyon. Frame; owner, Henry Osbourne; architect, Bernard Dreyer; contractor, Bernard Dreyer; cost, \$8,000; time, 90 days; signed, March 5; filed, March 7; payments, \$2,000, framed; \$2,000, brown coat of mortar is on; \$2,000, white coat of mortar is on; \$2,000, 35 days.

Hyde and Vallejo. Alterations, etc. Owner, Mrs. Duffy; architect, J. F. Hayes; contractor, J. F. Hayes; cost, \$340; signed, Feb. 17; filed, Feb. 18; payments, \$100, roof of old house is shingled; \$60, floor is laid; \$100, brown mortar is on; \$100, complete; \$180, 35 days.

Harrison and Sixth. 3-story building; owner, J. Verdenhalven; architect, Henry Gellinger; contractor, Henry Gellinger; cost, \$3,475; signed, Feb. 28; filed, March 1; payments, \$650, framed; \$650, partitions are set; \$650, finish completed; \$650, 35 days.

Hardy and Kearny. Cast-iron work; owner, G. T. Watterson; architect, J. Marquis; contractors, O'Connell & Lewis; cost, \$6,745; signed, Feb. 28; filed, March 3; payments, \$1,700, third story joists are on E 1/2 of building; \$800, third story joists are on W 1/2 of building; \$1,000, completed; \$1,745, 35 days.

Howard and Eighteenth. 3-story frame; owner, Wm. Perkins; architects, R. H. & R. White; contractors, H. O. Noyes & E. W. Hyde; cost, \$6,657.50; signed, March 1; filed, March 1; payments, \$850, roof boards are on; \$1,000, rear frames are up; \$1,100, brown coat of mortar is on; \$1,000, standing finish is on; \$1,000, completed; \$1,750, 35 days.

Hardy Place and Kearny. Carpenter work; cost, \$1,135; owner, Chas. Schrotz; architect, J. Marquis; contractor, J. R. Wilcox; signed, Feb. 25; filed, Feb. 27; payments, \$280, roof joists and boards are on; \$2,800, building ready to lat; \$2,850, accepted; \$2,975, 35 days.

Hardy Place and Kearny street. Grading, excavating, brickwork, iron work, etc.; cost, \$22,000; owner, Chas. Schrotz; architect, J. Marquis; contractor, Geo. T. Matterson; filed, Feb. 27; signed, Feb. 28; payments, \$2,000 E 1/2 of basement is up; \$5,500, third story joists are on E 1/2; \$2,000, W 1/2 of basement is up; \$5,500, joists are on third story; \$2,000, fifth story floor joists are on; \$6,500, brick work is all finished.

Howard and Capp. Cost, \$3,200; owner, Mary E. Von Schroeder; architect, T. J. Welch; contractor, Gray Bros. A. S. P. Co.; filed, Feb. 26; signed, Feb. 16; payments, 75 per cent. of value of work done; balance, 35 days.

Howard and Tenth. Machine work; cost, \$6,965.

Hardy and Kearny. Stone-work; owner, G. T. Watterson; architect, J. Marquis; contractors, F. E. Knowles & Co.; cost, \$2,960; signed, Feb. 28; filed, March 3; payments, \$900, third-story joists are on E 1/2 of building; \$700, third-story joists are on W 1/2 of building; \$1,000, completed; \$700, 35 days.

Hardy and Kearny. Wrought-iron and steel work; owner, G. T. Watterson; architect, J. Marquis; contractors, C. Nutting & Son; cost, \$3,000; signed, Feb. 28; filed, March 3; payments, \$1,700, third-story joists are on E 1/2 of building; \$800, third-story joists are on W 1/2 of building; \$850, completed; \$750, 35 days.

Jackson and Scott. Owner, Albert Gallatin; architect, Clinton Day; contractor, John T. Grant; cost, \$37,500; time, 5 months; signed, March 5; filed, March 7; payments, \$4,500, roof is ready for slating; \$9,000, prime coat of paint on; \$10,500, all inside finish is on; \$4,194, completed; \$9,397, 35 days.

Laguna and Pacific Avenue. Carpentry work of seven houses; owner, D. F. Walker; architect, Wm. F. Smith; contractor, F. W. Kern; cost, \$36,500; signed, Feb. 15; filed, Feb. 19; payments, \$6,483.75, framed; \$6,483.75, ready for plaster; \$6,483.75, standing finish is on; \$6,483.75, completed; \$9,125, 35 days.

Larkin street wing of New City Hall. Brick work, etc. Owners, Hughes & Foster; architect, W. Patton; contractor, J. Wagner; cost, \$4,000; signed, Feb. 14; filed, Feb. 18; time, 3 months; payments, 75 per cent. of value of work done as it progresses; balance, 35 days.

McAllister and 1st Avenue. 1-story and basement; cost, \$1,350; owner, Mrs. Limmermann; architect, P. R. Schmidt; contractors, Drogge & Munster; time, April 18, 1890; filed, Feb. 27; signed, Feb. 24; payments, \$350, frame is up; \$350, roof is on; \$350, outside finish is on; \$350, finished.

Market and Golden Gate Avenue. Brick-work; owner, Joseph Donohue; architect, A. Page Brown; contractors, Richardson & Gale; cost, \$39,260; signed, March 3; filed, March 4; payments, 75 per cent. of value on work done on the first Friday of each month; balance, 35 days.

Nineteenth and Fair Oaks streets. 2-story frame; owner, Jno. Roberts; architect, Chas. Shaner; contractor, Chas. H. Foster; surety, J. Pierce and E. B. Dunning; \$1,200; cost, \$2,400; time, 105 days; signed, Feb. 14; filed, Feb. 17; payments, \$340, frame is up; \$440, cornice on; \$400, stairs up; \$350, brown mortar on; \$350, windows are in; \$615, 35 days.

New City Hall. Plumbing and gas fitting; contractors, Lawton & Britt; owners, Hughes & Foster; cost, \$2,780; signed, Feb. 11; filed, Feb. 18; payments, 75 per cent. of value of work done; balance, 35 days.

Oak & Devisadero. Three 2-story frames; owner, Charles C. McDougall; architect, B. McDougall & Son; contractor, John H. McKay; cost, \$8,000; signed, March 1; filed, March 1; payments, \$1,400, framed; \$1,400, brown coated of mortar is on; \$1,400, one coat of paint is on; \$1,500, completed; \$2,000, 35 days.

Oak and Devisadero. 2-story frame; owner, M. J. Sahlein and wife; architect, B. McDougall & Son; contractor, Alex. J. Wheeler; cost, \$6,300; signed, March 1; filed, March 1; payments, \$500, basement story up; \$600, framed, \$600, roof tinned; \$600, inside stairs up; \$300, brown mortared; \$600, white mortared; \$700, completed; \$2,000, 35 days.

Polk, between Hayes and Fell. 3-story frame; owner, Mrs. M. Irvine; architect, P. R. Schmidt; contractor, Wm. T. Connelly; sureties, Cgd. Greenwald and G. Kurster; \$3,050; signed, Jan. 28; filed, Feb. 15; cost, \$3,000; time, 100 days; payments, \$1,500, rough frame up; \$1,500, brown mortar on; \$1,500, hard finish on; \$1,500, completed; \$2,000, 35 days.

Page and Ashbury. Two frame stable; owner, J. L. White; architect, A. J. Barnett; contractor, Rountree Bros.; surety, F. Joost; \$3,500; cost, \$6,875; time, 75 days; signed, Feb. 15; filed, Feb. 18; payments, \$1,500, roof boards are on; \$1,000, brown mortar on; \$1,500, white mortar on; \$1,000, completed; \$1,725, 35 days.

Post and Devisadero. Two-story frame; owner, Jos. Robinson; architect, C. Zwierlein; contractor, C. Zwierlein; surety, F. Joost; \$2,000; cost, \$37,500; signed, March 4; filed, March 7; payments, \$700, framed; \$700, brown coat of mortar is on; \$700, outside mill finish is on; \$700, completed; \$940, 35 days.

Point Lobos and Eighth Avenue. Two-story frame building; owner, C. Giese; contractors, Schultz & Meeker; surety, T. C. Jensen; \$4,000; cost, \$4,000; time, 65 days; signed, March 4; filed, March 5; payments, \$900, roof is boarded; \$1,000, brown coat of mortar is on; \$1,000, accepted; \$1,100, 35 days.

Shotwell and Twenty-third. Additions, etc.; owner, A. Schaar; architect, J. E. Kraft; contractor, Wm. Paterson; surety, Chas. H. Ackerson; cost, \$3,250; signed, Feb. 18; filed, Feb. 19; payments, \$725, roofed; \$700, all interior finish on; \$1,000, when completed; \$825, 35 days.

Scott and Sutter. Plumbing, etc.; owner, Geo. Hageman; architect, Chas. I. Havens; contractor, G. C. Sweeney; cost, \$2,147; signed, March 6; filed, March 8; payments, \$750, all rough pipes are in; \$797, completed; \$600, 35 days.

Scott and Sutter. Brick-work, carpenter work, etc.; owner, G. Hageman; architect, Chas. Havens; contractor, F. W. Kern; cost, \$18,890; signed, March 6; filed, March 8; payments, \$3,500, diagonal boarding is on; \$3,500, outside finish is on; \$6,500, outside mill work is on; \$6,500, completed; \$1,300, 35 days.

Sanchez and Twenty-sixth. Seven 5-room cottages; owner, Louis Landler; architect, J. E. Loomer; contractor, J. E. Loomer; cost, \$8,450; time, 5 months; signed, March 7; filed, March 8; payments, \$3,150, roofed; \$3,150, brown coat of mortar is on; \$3,150, 35 days.

Scott and Ellis. Alterations and additions; owner, Chas. Meyer; architects, John & Balczynski; contractor, Wm. Plins; cost, \$2,275; signed, March 1; filed, March 3; payments, \$1,700, underpinning of old house done; \$575, 35 days.

Shotwell, between Twenty-third and Twenty-fourth. Frame building; owner, Mrs. H. C. Adams; architect, M. G. Bugbee; contractor, R. O. Chandler; cost, \$2,626; signed, Feb. 18; filed, Feb. 18; payments, \$556.50 enclosed; \$556.50 brown mortar on; \$556.50 accepted; \$556.50 35 days.

Scott and Sutter. Painting, etc.; owner, Geo. Hageman; architect, Chas. I. Havens; contractor, Jos. Thomas; cost, \$1,865; signed, March 6; filed, March 8; payments, \$500, inside is second coated; \$315, all work is completed; \$350, 35 days.

Van Ness Avenue and O'Farrell. Decorating, etc.; owner, P. W. Riordan; architect, T. J. Welch; contractor, Moretti & Trezzini; cost, \$6,500; signed, Feb. 20; filed, Feb. 20; payments, monthly, 75 per cent. of value of work done; balance, 35 days.

Van Ness Avenue and Myrtle. Four-story frame building and alterations; owner, L. A. Levy; architect, P. R. Schmidt; contractor, J. F. Logan; sureties, O. Greenwald and I. Levi; \$33,300; cost, \$65,300; time, Nov. 1, '90; signed, March 3; filed, March 4; payments, \$6,000, second-story joists are laid; \$6,000, rafters on; \$6,000, roofed; \$6,000, ready for plaster; \$6,000, brown coat of mortar on; \$6,000, hard finished; \$6,000, standing finish is up; \$5,475, completed; \$158.25, 35 days.

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W. P. MOORE, President, OLIVER EVERETT, Secretary.

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NOTICE OF MEETINGS.

SAN FRANCISCO CHAPTER, AMERICAN INSTITUTE ARCHITECTS, meets second Friday of each month at 408 California Street.

SETH BABSON, Pres. W. P. MOORE, Vice-Pres.
OLIVER EVERETT, Sec. JOHN M. CURTIS, Treas.

TECHNICAL SOCIETY OF THE PACIFIC COAST, meets first Friday of each month at 408 California Street.

JOHN RICHARDS, Pres. PROF. FRANK SOULÉ, Vice-Pres.
OTTO VON GELDERN, Sec. JAS. SPIERS, Treas.

THE regular monthly meeting of the San Francisco Chapter of the American Institute of Architects was held on Friday evening, April 11th. President Babson in the chair. M. G. Bugbee desired to be advanced to fellow membership. The Committee on binding exchanges made their report and were discharged. It is hoped that the volumes (nearly a dozen in all) will form the nucleus for a valuable architectural library for the use of members of the Chapter and students of the Chapter's classes.

The proceedings of the New York Chapter at their last regular and special meeting were received, and the Secretary ordered to suitably acknowledge the courtesy.

The documents in relation to the Aug. Laver and City Hall case were received from Mr. Root, the Secretary of the A. I. A., and referred to a committee to formulate a suitable reply.

A committee of three was appointed to revise the constitution and by-laws of the Chapter, and make them conform to the requirements of the new constitution of the American Institute of Architects.

Mr. Sanders, the teacher of the class in architectural drawing, presented several drawings by his pupils, on the subject of a design for a frieze.

An interesting subject was broached by Mr. Sanders who suggested the formation, by the architects, of a joint stock company to erect a building designed for the accommodation of scientific, artistic and kindred societies, and to serve as a headquarters for associations of a like nature.

The matter will be discussed more in detail at the next meeting, and if decided to be advisable and practicable, there appears to be a likelihood of the idea taking definite shape.

THE regular monthly meeting of the Technical Society of the Pacific Coast was held Friday evening, April 4th. A communication was read from the American Society of Engineers, requesting the society to make certain tests at the Bear Valley arch dam, when the newer and higher dam relieves the present structure of the pressure it sustains.

It is hoped that by making such observations, valuable information may be obtained on the elasticity of masonry, as such an opportunity may never occur again. A committee consisting of Messrs. E. J. Molera, R. E. Browne, Prof. F. Soule, and Luther Wagoner was appointed to take charge of the matter, and to request the co-operation of Messrs. A. Lietz and Joseph Sala, as scientific experts.

The paper of the evening was then read by Randell Hunt, C. E., on "Coffer Dams" treating also of the construction of open caissons.

Mr. Wagoner then explained some experiments he had made on stretching steel bars beyond the limit of their elastic strength.

RETAIL LUMBER DEALERS PROTECTIVE ASSOCIATION.

THE retail lumber dealers of this State, have organized an association to protect their business against the encroachments of the manufacturers of and wholesale dealers in lumber, and to enforce the principle that the wholesale and retail are separate branches of the trade, and that no wholesale dealer should violate the established usages by encroaching on the prerogatives of the retail dealers by selling to consumers.

About seventy-five delegates were present at the meeting which was held at the Chamber of Commerce on April 9th, and they represented about four-fifths of the retail dealers of the State.

A. W. Starbird of San Francisco was elected chairman, and Henry Rogers of Oakland as Secretary with Edward Raum as Assistant Secretary.

A constitution and by-laws were adopted; the most important section, provides that whenever any wholesale dealer or manufacturer or their agents shall sell to any person not a regular dealer, or to any lumber-dealer, not a member of the association, upon information lodged by any member doing business in that district, the Secretary shall notify such manufacturer or wholesale dealer who made such shipment, that he has a claim of 10 per cent of the value at retail rates prevailing at point of destination of such sale against him for such shipment. In the event of such wholesale dealer defying the Secretary or Board of Directors, the list of those with whom the association may trade will not include his name, and any member then dealing with him will be expelled from the association.

Provision is made against making any such complaint on account of lumber sold to original manufacturers, or wholesale dealers in their legitimate business, or steam railroads operated by locomotives.

Section 7 states that it is contrary to the spirit of the organization for one retailer to ship lumber into the territory of any other retailer, both being members of the association, at less than the rates established by the retailer for that territory, providing said rates are not higher than the established retail rates at the main point of supplies for that territory, with freight added.

After the adoption of the by-laws the election of Directors was proceeded with. Messrs. George W. Hooper, George H. Payne and S. L. Richards were elected to serve one year, representing respectively San Francisco, Alameda County and Sacramento. The three elected to serve a term of two years were J. F. Kennedy of San Francisco, William Dougherty of San Jose and A. Powell of Alameda County. For the three-year term Colonel W. C. Little, S. H. Harmon, representing San Francisco, and H. G. Stephenson representing Los Angeles, were elected.

The Directors will hold weekly meetings to carry out the objects of the association.

PROPER HABITATIONS FOR ALL.

ALTHOUGH the well-to-do mechanics and tradesmen have ample house accommodation at present, yet we see signs here, as the city of San Francisco grows and assimilates itself more and more to the old cities of the country east of the Rockies, of a growing lack of accommodation for purposes of habitation for the poor, and those unfortunate enough to be in the ranks of those who lack the power of being successful.

This matter will have to be grappled with here, as it has already been found necessary to grapple with it in London, and other overcrowded cities of the old world.

The abstract justice of the duty of those supplying their quota of labor for the common good, to supply themselves with proper habitations, is now pretty well conceded. A state of society failing to do this has already been condemned by many of our

deepest thinkers. It seems hopeless however to leave the matter in the hands of capitalists, for although taking London as an example, a number of paying investments of this kind have been made, it is as but a drop in a bucket of water. Capitalists would rather put their money in a more speculative and presumably a better paying investment. There is no doubt that any effective work done in this line must be done by the collective efforts of the citizens working through the municipality. It seems also to be the duty of such, in view of the bad effect of unhealthy and unsanitary homes upon the character and morals of its citizens.

Though this may seem a bold suggestion at first, yet everything points in every direction to collective effort in all departments of social life; and it will be the way also in that of providing homes for its constituents.

The best way of dealing with the problem of such an important social question, will not be further entered into here; but left for the working out of our readers.

THE GRANT MONUMENT.

TWO years or more ago the Grant Monument Association of New York, invited artists, architects and sculptors to submit competitive designs for the memorial to be erected in honor of General Grant. Apparently the prizes offered were not large enough to tempt a competent artist, architect or sculptor to devote the time and study necessary to involve a suitable and appropriate project, as out of the seventy or eighty designs delivered to the Committee, not one was deemed by experts, to possess sufficient merit to warrant its adoption.

It is to be hoped that some day Committees, and the public in general, will become sufficiently educated to perceive that it is folly to expect to obtain first-class material by offering third rate inducements.

We are pleased to see that other than architectural journals are aware of the futility of such proceedings, and quote the following from *Harper's Weekly* upon the subject in question:

The Grant Monument Committee has learned by experience what it should not have needed experience to learn, that the masters in the plastic arts do not enter into competition for such work. The reasons for this fact are many and various, but the fact is unquestionable. It is certainly to be expected that the reputation of an artist will be as serviceable to him as that of a man of science or of the learned professions. If a mining company wishes to have the quality and character of its ores determined, it applies to an expert whose distinction is due to his proved ability. If a Committee wishes a statue, or a portrait, or a monument, application to an expert would seem to be equally natural.

The preparation of designs for such a work as the Grant memorial involves a great deal of time and money. The masters in the art are not obliged to depend upon the chance of approval of their designs. They can use their time for labors which are sure to bring a return. If therefore, a Committee should ask a service of them which would be properly reimbursed, if it were only the preparation of designs, the masters, or at least some of them, would be glad to do that work as they would do any other. In this way designs of the proper character could be procured.

This course need not exclude a competition of such others than recognized chiefs as might be willing to try for a prize and an opportunity. The triumph would be greater if achieved in comparison with the works of men of established name. If, however, such men should decline to take any part short of the execution of the work, the result would be either an original selection among acknowledged masters, or among such as were willing to compete. In the case in question we understand that the Committee was advised to invite what was practically such a mixed paid and unpaid competition as we have mentioned, but decided to take the course which has failed to lead to the result desired, none of the designs being satisfactory. The Committee will do well to hasten slowly in the completion of a work so important.



EXAMPLE OF FRENCH GOTHIC.

SUGAR AND MORTAR.

SOME time ago the statement that the mixture of a small quantity of sugar with mortar greatly improved the latter, excited the risible faculties of the building fraternity. The notion was regarded as too ridiculous for serious consideration. There is, however, reason to believe that the addition of saccharine matter to mortar is an extremely valuable discovery. In the first place, it enables bricklaying to be carried on in the frosty weather.

About two pounds of coarse brown sugar to a bushel of lime and two bushels of good sand will supply the proportions for a mortar that will resist frost admirably. It is claimed, however, that in addition to this advantage, mortar with sugar mixed in it

is vastly superior to mortar without it. It sets as hard as cement very soon, makes the brick work extremely strong and quite effective when used with dry bricks. For indoor plastering, also, saccharated mortar sets hard quickly. When portions of the same wall have been covered in one part with sugared and in another with unsugared mortar, the latter has ripped up directly when a nail was run over it, months after the former had become as hard as stone. Much interest is taken in the matter by Mr. Cramp-ton, of Cranleigh, Guilford, and he reports some interesting experiments. He points out that if sugar be added to mortar that is already made, it will render it too thin.

Strong sugared water dissolves lime, in the same way that water dissolves sugar. It is therefore necessary to dissolve the sugar in water first, and then add the sugared water to the lime, slowly and cautiously. The mortar should be as stiff as it can be used. For lime washing, one pound of sugar to sixteen gallons of water will make it adhere splendidly. Drops of whitewash made with water so mixed, if they fall on the floor or window, or any iron plate, cannot be washed off. They stick like enamel, and have to be scraped off. Evidently, sugar is not such an absurd thing to mix with lime as the practical man thought.

— *The Manufacturer and Builder.*

SANITATION.

There is no doubt that the science of sanitation, as applied to the different features of building, is so far advanced that those professionally interested are possessed of sufficient knowledge to render building secure from unhealthfulness. The question now is how shall the public be educated up to an intelligent appreciation of this knowledge so that they may understand the importance and value of its great offices? There are many people unable to appreciate sanitation in their homes simply because they have not been made acquainted with it. All ventilation or no ventilation, and all drainage or no drainage is the same to them, and they sit in rooms filled with foul air or sewer gas with indifference. They have not been taught otherwise, and need from some source the knowledge that will teach them the value of healthful homes.—*Exchange.*

NEW YORK CHAPTER, A. I. A.

NEW YORK Chapter A. I. A. The regular meeting was held on March 12th. The most important subject brought before the meeting was the proposed "Act to regulate the practice of Architecture within the State of New York."

After a general debate and thorough discussion of the matter from all points of view, the following resolutions were adopted:

Resolved, That the New York Chapter A. I. A., is glad to give its support to the proposed bill before the Legislature of the State of New York, entitled "An Act to regulate the practice of Architecture," but strongly and unanimously urges the suggestion that the proposed provisions in relation to the appointment, as commissioners, of collegiate professors of architecture be changed, so as to provide for the appointment of one professor of architecture for two years, alternately from Cornell University and Columbia College.

Resolved, That the Chapter is also of opinion that to induce commissioners to act, it will be necessary to provide that they receive a mileage for travel done in the performance of their duties under the proposed act.

The gist of the bill above referred to is contained in our December number, 1889.—[ED. CAL. ARCHITECT.]

A SPECIAL meeting was held at the quarters of the Chapter, in the Welles Building, 18 Broadway, New York, on Wednesday, March 26th, 1890, at 3 P. M., President Littell in the chair.

The President stated that the meeting had been called to consider an important subject presented to the Chapter by the Department of Architecture of the Brooklyn Institute, through Messrs. Upjohn and Dickson, Fellows A. I. A., and members of the Brooklyn organization, and of a Special Committee thereof having the subject in charge.

The Secretary then read the following communication from the Department of Architecture, Brooklyn Institute:

DEPARTMENT OF ARCHITECTURE, BROOKLYN INSTITUTE.

At a meeting of the Department of Architecture of the Brooklyn Institute, March 19, 1890, the following preamble and resolutions were adopted:

WHEREAS, An act has been introduced in the Assembly of the Legislature of this State, and referred to the Committee of Ways and Means, which reads as follows, to wit:

AN ACT FIXING THE SALARY OF THE COMMISSIONER OF THE CAPITOL.

The salary of the Capitol Commissioner is hereby fixed at ten thousand dollars per annum. And it shall be his duty, whenever requested by the proper authorities, to furnish plans and specifications for all public buildings belonging to the State, and to render such services as may be required, without further compensation.

This act shall take effect immediately.

Resolved, That in the judgment of this Department of Architecture of the Brooklyn Institute, the passage of such an act, which is substantially the creation of office of State Architect, will be detrimental to the interests of the people, and the promotion of architecture by preventing free and open competition.

We are therefore opposed to the office of State Architect as not in accord with the culture of the times and the liberality of our institutions, which call for the highest excellence obtainable—the best from the best.

Resolved, That feeling confident we voice every architectural institution in the land, we would respectfully urge that the plans for all public buildings—Federal or State—be given out among our architects for competition, who shall be compensated therefor, and that none but architects be selected to pass judgment upon the architectural merits of such plans.

In thus protesting against the creation of a Government or State Architect, we do so not believing it possible for any individual to possess originality sufficient which, in the designing of a number of public buildings, will not wane into more or less commonplaceness.

Neither do we favor any individual's peculiar standard of architecture, or interference with, or biasing of, that novelty and attractiveness which is rapidly giving American buildings a prestige.

While thus opposing the office of State Architect, we most respectfully suggest this substitute:

That upon the recommendations to the Governor of the State, or the insertion of the names in the act, of three or five architects, from any institution recognized among the profession as authority in architecture, they be appointed and constitute an Advisory Board, having the management of the competition, subject to the rules of said institutions, and of the building until completed, being paid per session for their services; the architects successful in the competition to receive the customary fee, to be accountable to the Advisory Board, which in its turn reports to the State authorities.

A. J. BLOOR, Secretary.



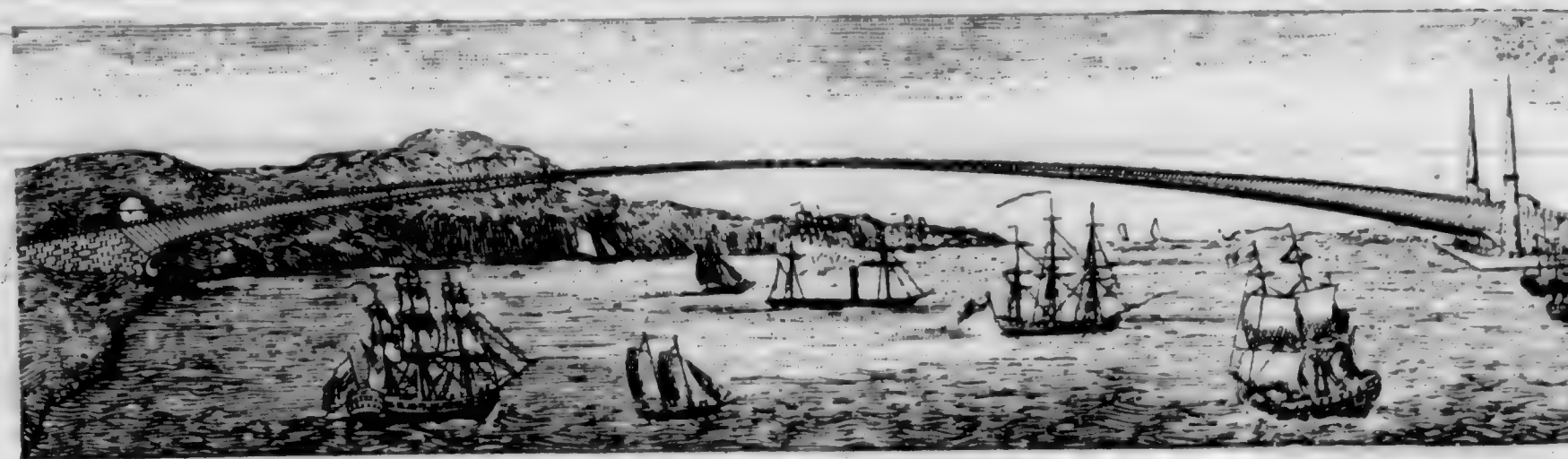
THE ARTIST, BY M. F. EHRMANN.

THOMAS POPE'S FLYING BRIDGE.

AN INCIDENT OF ANCIENT HISTORY REVIVED.

We presented in our impression of February an illustration, with suitable description, of a proposed suspension bridge across the East River at Blackwell's Island, which had been seriously contemplated over fifty years ago. The designer of this ambitious project had worked out the details most carefully, and the failure to execute the work cannot be attributed to any defect in these, but rather, as appears most reasonable to assume, to the magnitude of the undertaking; for the structure proposed, for that time, would have exceeded in proportions all others of its class, then existing, as much as the great Forth bridge to-day exceeds all others.

As we have dipped a little into history to revive the memory of one bridge project almost forgotten, it will be pardonable to supplement our article of last month with the description of another yet more ancient, and greatly surpassing the first in boldness of design and originality.



THREE PUBLIC COMPETITIONS.

The *Cosmopolitan* magazine offers \$600 in three prizes of \$200 each for the best competition designs on the following subjects: Public Baths, Public Laundries, and Tenement House Co-operative Kitchens.

The Committee of Award is as follows: Richard M. Hunt, President of the American Institute of Architects, Richard L. Hoxie, United States Corps of Engineers, Albert T. D'Oench, ex-Superintendent of the N. Y. City Department of Building, Seth Low, President of Columbia College, Cornelius Vanderbilt and the editor of the *Cosmopolitan*.

The successful drawings are to become the property of the *Cosmopolitan*, and the right to first publish any drawing to rest exclusively with the *Cosmopolitan*, any competitor to submit, if he wishes, drawings for any one, two, or all the prizes, the following programme to apply to each competitor:

Each competitor is required to exhibit two sheets of drawings, one to contain the ground plan, front elevation, and section, with such other drawings as may be necessary to explain the design and construction, all drawn to a scale of one-sixteenth of an inch to the foot, and one to exhibit a perspective view of the whole, drawn to a scale of one-eighth of an inch to the foot.

The plan and elevation sheet to be finished in line with India ink and lining pen; no brush work on this sheet, except in blocking in openings and sections. No shadows are to be cast. The perspective sheet to be rendered at will.

Each sheet to be cut to the uniform size of 24"x32", and to be white card or Bristol board or Whatman paper, mounted on a stretcher. No colored borders, frames, or glazing will be allowed.

Each sheet must be distinguished by a motto or cipher. A sealed envelope bearing the same motto or cipher must contain the name and full address, and must be mailed to the *Cosmopolitan* Magazine Architects' Competition, Madison Square, New York, on or before May 10th, 1890. Drawings are to be delivered flat, carriage paid, at the same time and place. They will be returned at the close of the competition, at the expense of the contributor.

SPECIFICATIONS FOR PUBLIC BATHS COMPETITION.

The drawings shall exhibit a public bath constructed of stone, iron, or equally enduring material.

The structure is to be located on a plot with light on two sides, not exceeding 200x200 feet, any part or all of which may be utilized, and provision to be made for baths in both summer and winter, adapted to the necessities of both sexes in a population of not less than 100,000 people. A letter of explanation must be submitted with the drawings, setting forth the probable cost of maintenance, the number of attendants needed, and any details not apparent in the drawings, but the price of a single bath should not exceed seven cents. The practicable nature of any plan of operation will be considered in determining the award.

SPECIFICATIONS FOR PUBLIC LAUNDRIES COMPETITION.

The drawings shall exhibit a laundry interior for the requirements of one hundred and fifty families of five each.

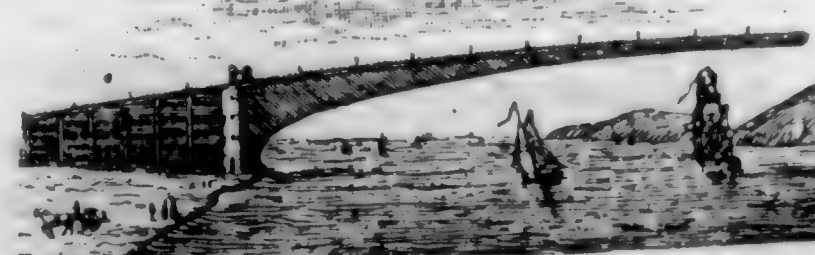
The floor space shall not exceed 100x25 feet. Written explanations on separate sheets may accompany the drawings.

SPECIFICATIONS FOR TENEMENT HOUSE CO-OPERATIVE KITCHEN COMPETITION.

The drawings shall exhibit a kitchen interior for the requirements of twenty families of five each.

The floor space shall not exceed 50x25 feet. Written explanations on separate sheets may accompany the drawings.

The three subjects are all of a practical nature, and it is more



than possible that by bringing the advantages of co-operative kitchens to the attention of the public, it may be the means of their adoption in future tenement buildings.

The necessity of public baths is quite apparent without calling particular attention to them. There is no doubt that such baths would be liberally patronized. The Lick Free Public Baths, (illustrated in our March number) and which are now approaching completion in this city, will afford an excellent illustration



THE GOLDSMITH, BY M. F. ERHMANN.

of the practical workings of the system. It is to be hoped that after the *Cosmopolitan* has obtained the best plan for this purpose, it will be able to go a step farther and transform the design into a reality. As all large cities now maintain public parks for the enjoyment of their citizens, and public libraries for their use, why should not public baths be instituted and maintained at the public expense?—[Ed. *California Architect*.]

A NOVEL use of electricity, and one that will revolutionize the present methods of warming houses, if it can be successfully carried out, is that of heating dwelling houses electrically, without the use of any hot substance. It is claimed that wall paper can be made in such a way that the passage of currents of low electro-motive force will heat it moderately warm to the touch and diffuse throughout the room an agreeable temperature. —*Exchange*.

PERSONALS.

After many years active service as Architect of the Fire Department, P. J. O'Connor has retired. Architect Frank T. Shea has been appointed to the position thus made vacant.

Architect Maxwell G. Bugbee has removed his offices from 330 Pine street to larger and more convenient quarters at No. 419 California street, where he will be pleased to receive his friends and clients.



The management of this journal desires to extend a cordial invitation to all Architects on this Coast and elsewhere to contribute designs for publication.

Drawings should be made with perfectly black lines on a smooth, white surface. Good tracings, if made with black ink, answer the purpose.

The designs selected will be published without charge. All drawings, whether accepted or not, will be returned to their authors, who must bear express charges both ways.

The handsome interior which we present this month, was designed by B. McDougall & Son, architects, and was one of the drawings illustrating their competitive design for the Olympic Club's proposed new building.

The Fiske building, shown in our lithographs is from a pen and ink drawing by the architect, Harold D. Mitchell, of San Francisco. The building is situated on the southwest corner of Mariposa and J streets, in Fresno, and is owned by J. B. Fiske, who has shown both his enterprise, and his faith in the future and progress of Fresno, by erecting this business block, which it is claimed, is second to none there in solidity of construction and convenience of arrangement.

The style chosen by the architect, is English Renaissance. The roofs and pediments are clearly defined, and present an effective sky line, while the clock tower on the corner of the building makes a very effective feature. The building covers a lot seventy feet by one hundred and fifty, and is four stories in height, besides basement and attic; the basement is nine feet high, fitted up for office purposes, and reached from the sidewalk by flights of wide stone steps, the intermediate openings being utilized for light and ventilation.

The interior of the upper stories has been arranged to conform with the latest ideas concerning suites and offices, each having separate entrances from the halls, yet so arranged as to allow communication if necessary from one to the other.

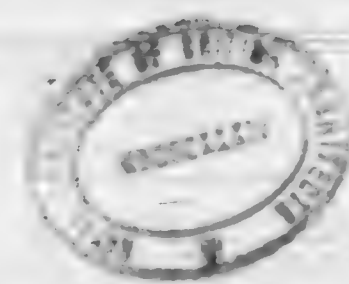
The two main staircases and the interior finish, are of hard wood; the janitors' quarters, lavatories, etc., being finished in cedar and prima vera.

The hardware throughout is of the latest designs in oxidized iron and bronze.

The mantels are all of native California woods, and were made from special designs by the architect. English encaustic tiling form the hearths.

All the latest modern conveniences, such as sliding blinds, electric gas lighting and bell work, polished plate glass, etc., have been liberally supplied. The exterior walls are finished with pressed brick and terra cotta trimmings, with cornices and bay windows of galvanized iron.

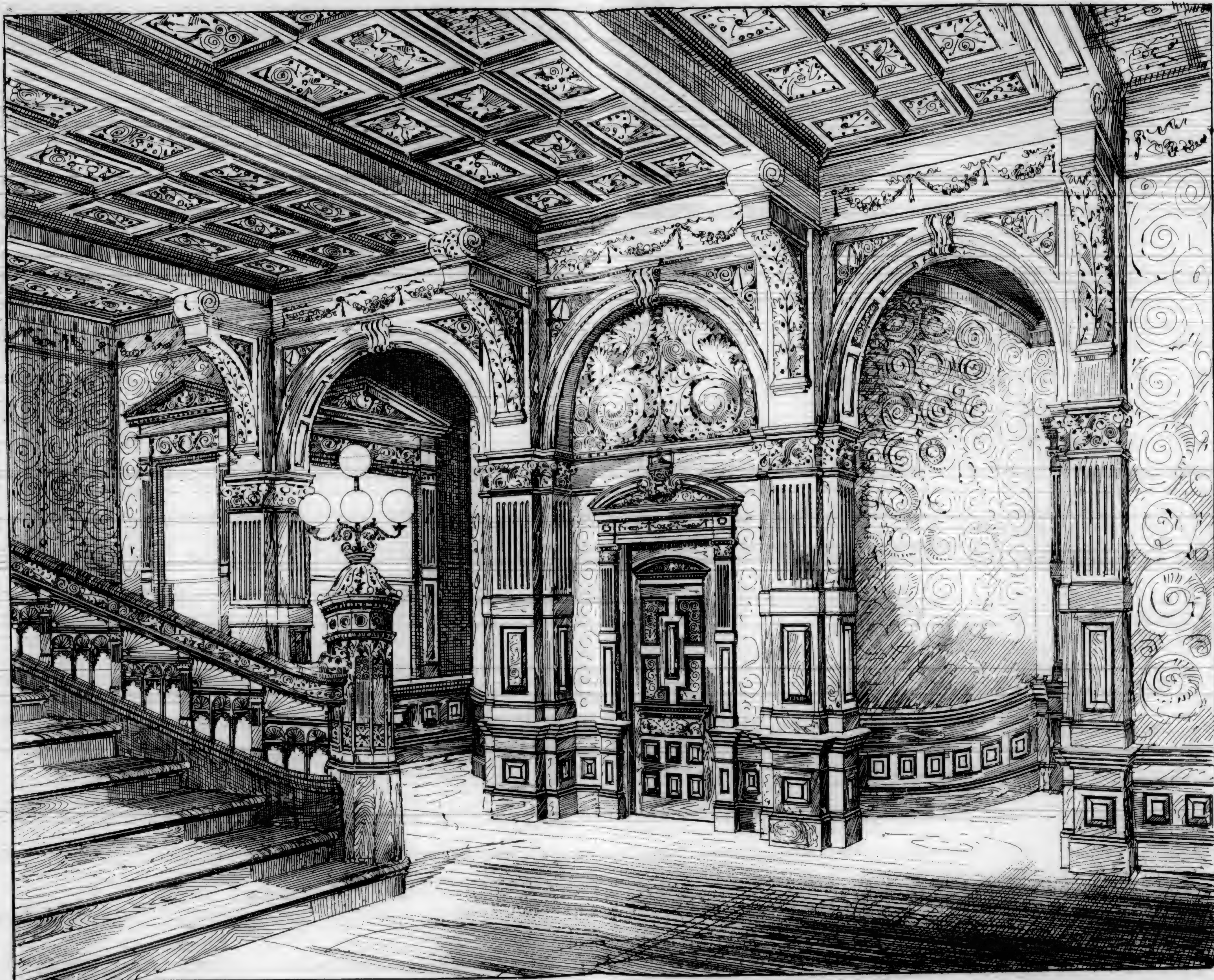
The roof of the main building is terraced, and forms a promenade that will be enjoyed during the summer as a delightful retreat from the dust and heat in the streets below.





The Fiske Building Fresno, Cal.

H. D. Mitchell Architect San Francisco



Submitted in Competition
for the Olympic Club Building.

Interior Hall.

Architects
D. Mc Dougall & Son. San Francisco.

ESTIMATES AND ESTIMATING.

In the course of preparation of every set of drawings that are to be executed, a stage is reached where it becomes necessary to receive from contractors estimates of cost. In no part of the work undertaken by an architect is there so much misunderstanding, confusion, and mystery as in the matter of obtaining estimates. A would-be client approaches an architect, states his wants, outlines his own plans and explains himself in the fullest manner of which he is capable; as every architect is aware, such first ideas are apt to be hazy and nebulous. Finally a plan is evolved, and then the question of cost is considered. Without a moment's preparation, an architect is expected to state within a small margin how much such a plan will cost. Here is where the first misapprehension comes in. Of all the difficult things to decide about a new building, the question of cost is the most uncertain. For this condition there are many things to be considered.

First, very few builders will take up a set of plans and conscientiously figure out the quantities and foot up the items one by one, indifferent to the total until the summing up. It is admitted that the quantity of material to be used within a narrow margin is a fixed unit for the plan given; the uncertainty is in the amount of labor involved in the execution.

Second, few builders have taken the time and the study required to prepare complete sets of time cards, and consequently the element of the amount of labor involved is an unknowable factor.

Third, many builders figure by analogy on the last job which they have done, if it be similar in character to the new one which is proposed. This method is purely a chance one; it contains nothing of a reliable character as a basis of comparison, owing again to the uncertainty as to labor.

Again, many builders figure by the cubic contents of the proposed new building, allowing a certain margin for waste. This method needs a vast amount of data, carefully arranged and classified as to character and finish, as to time employed in erection, and prices of labor during periods of construction, to make it applicable with any degree of security to new work. This method is that which is pursued mostly by architects themselves, and there are some men in the profession who have spent years in acquiring data which can be used for such purposes.

Another method has been proposed, and that is to endeavor to classify every portion of a house in such a manner that a price per square inch, or square foot, or foot run may be obtained. This method involves, as all other methods, the amount of average time employed to do any given piece of work. For example, how few men are there who could from reliable data furnish the cost of a square foot of ordinary stained pine wainscoting, plainly furnished, without a foot of running mouldings, the same with mouldings, the same with various kinds of finish, etc.? But all this, and in fact everything that goes into the house, could be ciphered down with a very small amount of mathematical labor if it were known just how much time it occupied to make, set and finish such and such a piece of work. It is true there is some margin of difference as to the amount of time required to any given piece of work. The average of that time is what is wanted. There must be a summary of this kind for information prepared for American work, before any order or system shall be evolved from the present confused state of estimating. Builders themselves need this kind of knowledge more than anybody else; and next to them, the architects.—*Architecture and Building.*

ELASTICITY AND STRENGTH OF WOOD.

The hardwoods of which frame work and carriage parts are made, possess different qualities. A piece of ash one inch square, one foot long, secured at one end, will break under a weight, attached to the other end, of 168 pounds, while a piece of hickory of same size and under same conditions, will break under a weight of 250 pounds. The ash, however, will deflect but two and five-tenths inches, while the hickory will deflect eight inches, making the value for general use nearly equal, say 55 pounds, of ash and hickory, that being what each will support without deflecting enough to prevent straightening when the weight is removed. Locust breaks at 295 pounds, but resists deflection up to 80 pounds. Maple breaks at 202, but resists deflection up to 65 pounds. White oak breaks under 230 pounds, but deflects at 50 pounds. Elm breaks at 140. and

and deflects at 40 pounds, and yet it is next to hickory and maple in resistance to crushing weight on end. These facts, the results of scientific tests, teach a practical lesson that should be heeded by every wood-worker. They teach that where elasticity is desirable, then the woods that will deflect the most without breaking are the most valuable; but where great strength and rigidity are required, then the woods that are the slowest to deflect, even though they will break under less pressure, are the best.—*The Wood-worker.*



THE POTTER, BY M. F. ERHMANN.

THE ORIGIN OF GRANITE.

GEO. F. HARRIS, F. G. S.

Possibly no geologist could be more anxious to account for the origin of granite than are many of the quarrymen and masons who blast and work the material. They always listen with the greatest attention to anything that may be said on the subject, and most of them have their own ideas respecting it. Several of them are quite prepared to believe that granite is of igneous origin, but the majority do not clearly understand the fact from which such a conclusion is drawn. A certain section believes that the long feldspar crystals are the remains of fossils; whilst another is of opinion that granites are as regularly stratified as the aqueous deposits are. All of them know of the existence of other rocks than granite, perhaps, in their immediate

vicinity; but the relations existing between the granite and those rocks very few people seem to recognize.

When the various points are carefully considered, we think that there cannot be the slightest doubt that the evidence is overwhelming in favor of the view that the greater part of granites were once in a molten condition. Taking that afforded by the veins, it is quite clear that the granitic matter must in the majority of cases have existed in a highly plastic condition. From the thoroughly crystalline state of the material and from the fact that when examined by the microscope many of the crystals contain fluids which could not have been formed unless under the influence of great pressure we are led to the conclusion that all such highly crystalline rocks have been formed at a considerable depth from the surface of the earth, that being the only place where such enormous pressure could have been exerted. Now, everybody knows that moving pressure causes heat, and the enormous pressure exerted by the overlying rocks, side-tresses and thrusts in mountain regions, would therefore result in tremendous heat at no very great depth within certain parts of the earth's crust. This heat would be sufficient to melt any known rock, and that it actually does melt is proved by the gradual alternation by heat exemplified in many of the rocks, the upper portions of which have been denuded or worn away and which are thus bared and raised to the surface for our examination. These rocks, as we have before stated, are known as metamorphic, and it has been demonstrated that there is a very gradual passage from certain of them through gneiss to granite; and we must therefore conclude that granite, in the vast majority of cases, is the result of extreme metamorphism by heat, and that it has therefore been, once at least, in a molten condition.

We will pause for a moment to consider the meaning of the words "Molten condition." Although we have stated that at certain depths within the crust of the earth the heat resulting from moving pressure exerted by superincumbent rocks would be sufficient to melt any known rock, we should have added, if this rock existed at the surface of the earth.

Now, we have shown that the metamorphism and ultimate fusion of rocks was dependent upon the condition that they existed not at the surface of the earth, but at some distance within the earth's crust. Therefore we have no right to assume that rocks would actually melt when not situated at the surface. But the only thing which prevents them from becoming liquid is the weight of the superincumbent mass of rocks; in other words, the principal thing which caused them, in most cases, to become highly heated is the very same agent which deters them from becoming liquid. We therefore are led to see that rocks can exist in a highly heated condition in a solid form, and even when they, under the ordinary conditions prevailing at the earth's surface, would melt.

Such rocks are described by Professor Judd, F. R. S., who clearly explains this point, as being in a potentially liquid condition. If by reason of earthquake action or otherwise, this superincumbent pressure be suddenly released, the potentially liquid mass would fly to the actual liquid form, and would burst through the rocks immediately above it, sending veins branching in every direction. Perchance some of these veins, bursting along the lines of least resistance, would reach the surface of the earth, and we should then get a volcano. The same acute observer mentioned above has demonstrated that the acid lavas (those which have a large portion of silica in them), when traced downwards, will be found to have proceeded from granite and granite rocks. The lavas under consideration are very frequently of identical chemical composition with the granites, and the only difference between them is their respective minerals and states of crystallization. The granites, as we have before mentioned, are thoroughly crystalline; there is no glassy-looking cementing material binding the crystals together, but the lavas, on the contrary, contain a very large proportion of this glassy cement, and are not, therefore, thoroughly crystalline in structure.

Further, Professor Judd and other geologists have shown that the amount of glassy material present in an igneous rock is in inverse proportion to the amount of pressure under which it consolidated. For example, if it consolidated at the surface of the earth (and so under very little pressure) it would cool quickly, and there would be a greater proportion of glassy matter between its crystals than if it consolidated more slowly some distance down the throat of the volcano, and there would be still less of

the material as the granite was approached. The glassy ground-mass would gradually assume a crystalline structure, and would pass from cryptocrystalline through microcrystalline to thoroughly crystalline, or granite state of crystallization.

We have now shown that a rock which is indubitably in a molten condition, inasmuch as it is found exuding in that state from a modern volcano, can be traced downwards to granite. What greater proof of the once molten condition of the granite is needed? Surely the evidence is overwhelming enough to convince the greatest skeptic on the point. Of course nobody has actually descended the neck of a volcano to ascertain these things. It is all worked out by observation on denuded volcanoes, which have long since ceased to emit lavas, being now extinct; on the phenomena exhibited by the veins of granite, and on the invariable alteration of the rocks surrounding the granite. Denudation, or the action of the atmosphere, etc., in weathering or wearing down rocks, has been the greatest assistant in enabling us to solve the problem. There is no rock in existence which successfully resists the denuding agents for any great length of time. Our building stones are weathered, no matter how well they may be selected. Even granite itself, hard though it may be, is worn away in time; and nobody would pretend to dispute this fact who has seen the many feet in depth of rotten granite which exists at the surface in many granite districts.

We would desire to be clear in connecting acid lavas with granites. Having seen that in time all rocks may be disintegrated, we can trace by means of a volcano, dissected in this way by the weather, the rocks from the crater downwards. We may find in one region the lava of the crater and a small portion of the neck of the ancient volcano leading down from it. We carefully collect specimens of the rock from the crater and the different levels in the neck, and if the section be sufficiently large, we shall observe that the rock at the lower levels of the neck is slightly more crystalline in character than the lava in the old crater. Then we go on to another section, it may be in another district, and succeed in discovering a rock exactly like the more crystalline form from the lower portion of the volcanic neck. Tracing this rock downwards, we find that as we get to its lower part it gets indubitably more and more crystalline. Another section may, perhaps, present us with the more crystalline rock last alluded to and on following this up we find that it leads us to a granite vein, maybe one of the elvans, and so on to the main mass of the granite. The connection of the lava with the granite would thus be proved.

We see, therefore, that although there is plenty of granite now at the surface of the earth, it once existed a few thousand feet below, and it has been brought to the position in which we now find it, partly by the wearing away of the rocks which were above it, and partly by the irruptive nature of the material itself when in the molten condition. Such operations would take thousands of years to carry into effect, but then geologic time is practically infinite. Reverting to the order of sequence of the aqueous rocks, we may mention that, taking the whole world, exceedingly few granites are of Tertiary age, and even these are confined to the earlier periods of it; the majority are of Primary (or Palaeozoic) age, or Archaean. This is just as it should be, for of course the longer the rocks have been in existence the greater chance they have had of being largely denuded. Granites are being formed below us at the present time, but it will be in the exceedingly remote future before the rocks overlying them will be worn down, and they will thus be brought to the light of day. Granite would not be formed at such great depth from the surface of the earth in mountainous regions as in the less corrugated portions of the crust, for the enormous lateral pressure exerted in the formation of the mountain ranges would raise the temperature sufficiently to melt rocks comparatively nearer the surface. This is how it is that granites so frequently occur along the lines of very much denuded ancient mountain chains.

It was not so very long ago that geologists universally believed that all granites were older than any of the aqueous rocks, but it is now proved, as we have stated, that they may be of any age, except the most recent geologic periods. At the same time the granites of several areas are unquestionably among the oldest rocks in existence, and in many such cases it is exceedingly doubtful whether they are the products of extreme metamorphism caused in the way we have attempted to explain, or simply the cooling, at great depths, of portions of the original molten crust of the earth.

STONE.



Santa Rosa is to have an improvement society.

A brick-yard is talked of at Sebastopol this season.

The entire expenditure for the Firth Bridge foot up about sixteen and a quarter million dollars.

A building syndicate and trust company is projected in Philadelphia for the purpose of carrying on large building interests.

The city and county attorney reports to the Board of Supervisors that in his opinion, the city will be responsible for damage to private property resulting from raising or lowering the grade of its streets.

Every architect who has charge of important constructions, should have photographs of the work taken at frequent intervals. They will serve a variety of useful purposes, besides forming an interesting record of the execution of the work.

San Diego has 39 miles of graded streets, 22 miles of street railroad, 58 miles of motor railway extending to the suburbs in every direction, 47 miles of sewer system, and a complete system of water works. It is now proposed to build a seawall for the water front.

For interior plumbers work which may be exposed, brass pipes and fittings should be substituted for lead or iron. A kitchen fitted with exposed polished brass or plated pipes forms a beautiful effect. Iron pipes treated by the Bower-Barff process would be suitable for such work.

The iron railing and fence now surrounding the Plaza, on Kearny street, is to be removed according to an order passed by the Board of Supervisors, March 31st. This work was done some thirty-six years ago, when labor and materials were high, as may be seen from the fact that the cost was \$45,000.

A dispatch from New York, states that a hole has been accidentally burned through the roof of the caisson of the hugh North River Tunnel and caused the flooding of the tunnel. Engines are unable to expel the water. The accident reaches the magnitude of a disaster, and it appears that a new start will have to be made from the New York end, which would cause the loss of the work of years.

We think that building in cities, with a few exceptions, are built too light. * * * * European cities, * * * do not suffer by fire to any extent. This is due to heavier and better constructed buildings, that are preserved and carried out substantially over the whole of the closely built parts, and fires, when they occur, are always localized, even with the comparatively inefficient fire departments common in the best cities in Europe.—Stone.

At a recent meeting of the Fire Committee of the Board of Supervisors, it was decided to report in favor of changing the ordinance governing fire escapes, so that in every building erected hereafter four or more stories in height, there shall be metallic ladders or fire escapes with balconies and railing to extend in front of and communicating with one window in each story, extending from the first story to the upper stories and four feet above the roof.

It is probable that the Grant Monument Committee of New York will arrange for another competition in hopes of obtaining a design more satisfactory than any submitted in the first com-

petition. If they should decide to institute another competition, it is to be hoped they will take professional advice in framing the invitation, and make the terms such that men of established reputation will be willing to devote their time to producing a creditable design.

A farmer read in an agricultural journal: "A side window in a stable makes a horse's eyes weak on that side; a window in front hurts his eyes by the glare; a window behind him makes him squint-eyed; a window on a diagonal line makes him shy when he travels, and a stable without windows makes him blind." The farmer has written to the editor of the agricultural paper, asking what effect a window without a stable would have on his horse's eyes.—N. Y. Ledger.

In our last issue we published several articles and portions of articles, taken from our exchanges, and by oversight neglected to give the proper credit to which they were entitled. We will consider it a favor if each subscriber will make the necessary corrections in the March number under the uncredited articles as follows:—

The article under the heading of "The Machinery Hall, Paris Exhibition," was an extract from a paper contributed to the *Journal of Proceedings of The Royal Institute of British Architects*, by Henry Reilly, Assoc. M. Inst. C. E. For "St. Louis City Hall Competition" we are indebted to the *Building Trades Journal*, of that city.

It is reported that the statue of liberty on Bedloe's Island, in New York Bay, is slowly sinking. The fact has been suspected for some time past, and an examination recently made by practical engineers, confirms the belief and shows that the statue is lower than when erected.

Though Bedloe's Island is rock and was supposed to be as firm a foundation as could be obtained, it now appears that it was the extreme edge of an enormous shelf, underneath which is a bed of quicksand. The immense weight of the solid stone and concrete pedestal undoubtedly broke off the portion of the rock on which it rests, and it is now thought to be slowly but surely settling out of sight.

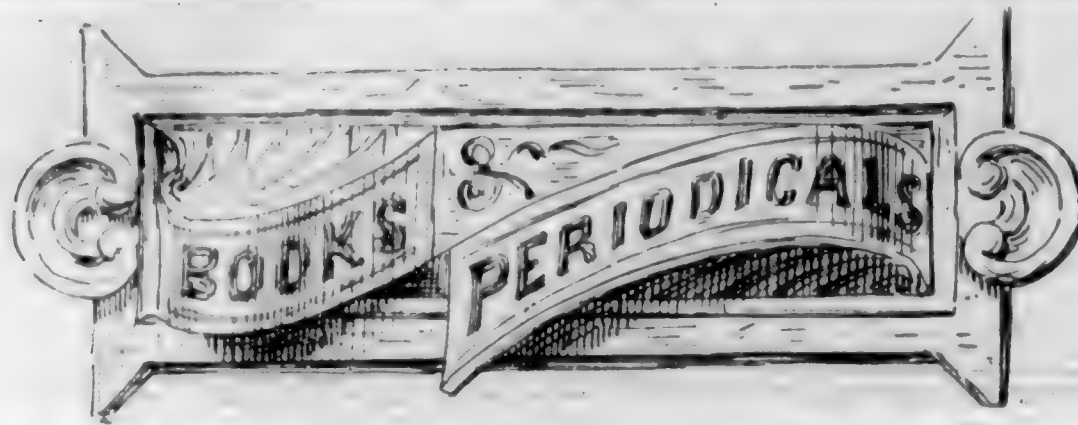
The monument to the memory of James W. Marshall, the first discoverer of gold in California, will be unveiled within the course of a month. The monument was erected by the State, at a cost of five thousand dollars, and will be placed in the lot where the body of Mr. Marshall is interred. This memorial consists of a bronze statue, eleven feet in height, resting on a granite base thirty feet high. The commissioners who have charge of the matter, desire the ceremonies on the occasion to be memorable, and have invited all the societies of the Pioneers of California, and the Grand and Subordinate Parlor of the Native Sons of the Golden West, to be present in a body or send delegates to suitably represent them.

The Master House Painters' and Decorators' Association of the United States recently held a convention at Detroit, Michigan, and adopted the following resolutions:—

WHEREAS, The fact that architects do not usually specify the sizes of glass is a source of much inconvenience and loss to master painters.

Resolved, That the Master House Painters' and Decorators' Association of the United States of America, in convention assembled, do earnestly and respectfully request architects in future to specify the sizes of glass, and that the secretary be requested to forward a copy of this resolution under the seal of the Association to the American Institute of Architects.

There are many little points of difference in the customs of architects and builders in the Eastern States and those on this Coast. The above resolution illustrates one of them. In the Eastern States it is customary to have the glazing done by the painter; here it is usually sub-let by the contractor, to some one making a specialty of glazing, consequently it would be of no particular benefit to the painter to have the sizes of glass specified. The sizes of the sashes are marked however, and also the number of panes to each sash, so the contractor is enabled to ascertain the amount of glass required.—[ED. CALIFORNIA ARCHITECT.]



Architecture and Building for March continues its articles on architectural design, by Prof. A. D. F. Hamlin; also a paper by Francis Osbourne on "A Course of Reading in Architecture," and a paper on "Architectural Effect in Cities," read before the Art Congress at Edinburgh by Mr. H. H. Statham.

There is an excellent article in *The Architect and Contractor* on "Office Management and Routine," by R. W. Gambier Bonsfield.

The *Northwestern Architect and Improvement Record* for March publishes the second Royal Academy Lecture of this season on "Roman Architecture," by Prof. George Aitchinson, A. R. A.

Volume 1, Number 1 of *The Architectural and Building Monthly*, is the first issue of a new monthly published by A. J. Bicknell, New York.

CITY BUILDING NEWS.

Ashbury and Frederick. Frame building and stable, owner, P. A. McDonald; architect, R. Depierre; contractor, John O'Brien; cost, \$3,300; signed, April 2; filed, April 4; payments, 75 per cent. of value of work done; balance, 35 days.

Bush and Jones. Four-story building; owners, J. Flinn and wife; architect, D. De Shunt; contractor, W. Lamsell; cost, \$13,000; time, 120 days; signed, March 26; filed, March 27; payments, \$1,000, first tier of joists are set; \$2,000, framed; \$3,100, brown coated; \$1,650, outside finish on; \$2,000, completed; \$3,250.

Broderick and Washington. Two-story frame; owner, W. A. Shaw; architect, A. J. Barnett; contractor, J. A. Shepherd; cost, \$4,500; signed, March 26; filed, March 27; payments, \$1,000, enclosed; \$1,000, brown coated; \$500, white coated; \$1,000, completed; \$1,000, 35 days.

Broadway and Mason. One-story Chapel; owner, A. M. Santandrea; architects, Shea & Shea; contractors, Blinn & Maxwell; sureties, O. H. Greenwald and J. Lewis; cost, \$5,300; signed, March 8; filed, March 13; payments, \$550, frame is up; \$550, rough coated; \$550, sand finish on; \$507, completed; \$550, 35 days.

Baker and Washington. Two-story frame; owner, J. M. Kelly; architect, B. Dreyer; contractor, B. Dreyer; cost, \$13,550; time, 90 days; signed, March 10; filed, March 10; payments, \$87.50, framed; \$87.50, brown mortared; \$87.50, white mortared; \$87.50, 35 days.

Bartlett and Twenty-First. 2-story stable; owner, Chas. Kratz; architect, H. Gellfuss; contractor, F. L. Hanson; cost, \$1,250; signed, March 12; filed, March 13; payments, \$150, roofed; \$150, completed; \$150, 35 days.

Bush and Pierce. Three-frame dwellings; owner, Wm. Campbell; architects, Pissis & Moore; contractor, Jas. Geary; cost, \$12,650; signed, Feb. 29; filed, March 26; payments, \$2,000, framed; \$2,500, first coat of plaster on; \$2,500, interior plastering done; \$2,000, completed; \$3,550, 35 days.

Broadway and Franklin. Owner, L. Hirsch; architect, Salfeld & Kohlberg; cost, \$1,700; signed, March 17; filed, March 24; payments, \$1,000, enclosed; \$1,000, brown coated; \$500, done; \$500, accepted; \$1,500, 35 days.

Camp and Albion Ave. Frame building; owner, J. L. Reinhardt; architect, Salfeld & Kohlberg; contractors, Jos. L. Riney & Chas. Maxwell; cost, \$1,100; signed, March 17; filed, March 24; payments, \$1,000, enclosed; \$1,000, white coat of plaster on; \$1,100, completed; \$1,100, 35 days.

California and Helen. 2-story; owner, A. Burneiser; architect, W. O. Banks; contractor, Geo. H. Walker; sureties, C. Dix and J. Graham; cost, \$3,200; time, 90 days; signed, March 23; filed, April 3; payments, \$900, framed; \$1,000, brown coated; \$800, completed; \$800, 35 days.

California and Leavenworth. Two-story building; owner, J. H. C. Pien; architects, John & Balczynski; contractors, Schult & Kreyer; cost, \$10,885; signed, March 27; filed, March 27; payments, \$2,000, framed; \$2,000, floors in; \$2,000, rough mortared; \$2,160, inside finish on; \$2,722, completed; \$3,722, 35 days.

Camp and Albion Ave. Two-story frame; owner, Daniel Riley; contractor, Wm. Linden; surety, P. Swift; cost, \$4,885; time, 90 days; signed, March 21; filed, March 21; payments, \$1,221, framed; \$1,221, brown mortar on; \$1,221, completed; \$1,221, 35 days.

California, bet. Baker and Lyon. Two-story frame; owner, Jas. K. Kennedy; contractor, J. A. Shepherd; cost, \$5,150; time, 90 days; signed, March 7; filed, March 13; payments, \$1,000, enclosed; \$1,000, brown coat of mortar on; \$1,000, white coat on; \$1,000, completed; \$1,150, 35 days.

Central Ave. and Washington. Owner, W. R. Hearn; architect, J. J. Clark; contractor, R. V. Hurlbut; sureties, I. Levi and D. H. Bibb; cost, \$14,000; time, June 15, 1890; signed, March 25; filed, March 25; payments, \$1,000, brick-work done; \$500, enclosed; \$500, brown coated; \$500, inside finish completed; \$1,000, 40 days.

Columbia and Twenty-Second. Three-story frame; owner, J. P. L. Doody; architect, A. J. Barnett; contractor, O. Brault; surety, T. Richardson; \$1,500; cost, \$3,325; time, 80 days; signed, April 1; filed, April 2; payments, \$800, roof boards on; \$800, brown coated; \$800, completed; \$830, 35 days.

Capp and Sixteenth. Frame; owner, M. P. Bolger; architect, M. J. Welch; contractors, Conser & Kemble; cost, \$1,847; signed, March 31; filed, April 1; payments, \$461.75, framed; \$461.75, brown coated; \$461.75, completed; \$461.75, 35 days.

California and Octavia. Plumbing; owners, J. Baumgarten and M. L. Cahn; architects, Curlett & Cuthbertson; contractors, S. Ickelheimer & Bro.; cost, \$1,990; signed, March 27; filed, March 31; payments, 75 per cent. of value of work done; balance, 35 days.

California and Octavia. Three two-story houses; owners, J. Baumgarten and M. L. Cahn; architects, Curlett & Cuthbertson; contractor, V. Linden; cost, \$18,590; signed, March 28; filed, March 31; payments, 75 per cent. of value of work done; balance, 35 days.

Devisadero and Sutter. One-story frame; owner, H. Lohmann; architect, A. Smith; contractor, G. G. Gillespie; cost, \$1,700; signed, March 26; filed, March 26; payments, \$125, framed; \$425, outside finish on; \$425, standing finish on; \$425, 35 days.

The *National Builder* for April continues the articles on *Mortars and Concretes of Antiquity and Modern Times*, and on *The Art of Drawing*.

The *Inland Architect* for March contains plans and descriptions of some of the competition designs for the St. Louis City Hall, and some editorial remarks on competitions in general and this one in particular.



A correspondent write us for information as to where certain court decisions can be found bearing on the legal responsibility of parties inviting architects to furnish competition plans for buildings, the erection of which had not been fully determined upon, or the erection of which might be finally abandoned. If any of our readers can give the desired information such will be received with thanks.—*Ed. California Architect.*

Devisadero and Broderick. Two-story building; owner, Mary Talbot; architect, W. O. Becker; contractor, R. P. Hurlbut; sureties, O. H. Greenwald and I. Levi; cost, \$5,300; time, 100 days; signed, March 10; filed, March 15; payments, \$1,000, framed; \$1,500, brown coated; \$1,000, completed; \$1,400, 35 days.

Ellis and Bryant. Carpenter work; owner, S. M. Blumenberg; architect, Fred E. Wilcox; contractors, Mullins Bros.; cost, \$2,450; signed, April 3; filed, April 4; payments, 75 per cent. of amount as work progresses; 25 per cent., 35 days.

Ellis and Laguna. owner, Mrs. J. Joel; architects, John & Balczynski; contractor, A. Miller; cost, \$5,130; signed, March 29; filed, April 2; payments, \$1,000, framed; \$1,000, enclosed; \$1,000, rough mortared; \$47.50, inside finish on; \$1,252.50, 35 days.

Elizabeth and Noe. Owner, C. Fitzgerald; architect, J. J. Clark; contractors, Mullins Bros.; sureties, T. Lester and H. Magill; cost, \$1,635; signed, March 26; filed, March 27; payments, \$400, framed; \$400, brown coated; \$400, completed; \$435, 35 days.

Ellis and Leavenworth. Plumbing; owner, J. Schmidt; architect, J. E. Kraft; contractor, R. Rice; sureties, R. Dalziel and S. R. Elliot; \$4,000; cost, \$7,250; signed, March 29; filed, April 2; payments, 75 per cent. of value of work done; balance 35 days.

Ellis and Leavenworth. Carpenter work; owner, J. Schmidt; architect, J. E. Kraft; contractor, C. H. Ackerson; sureties, W. J. Adams and C. S. Holmes; cost, \$4,000; signed, March 29; filed, April 2; payments, 75 per cent. of value of work done; balance, 35 days.

Ellis and Leavenworth. Brick work, etc.; owner, J. Schmidt; architect, J. E. Kraft; contractors, Brennan & Flading; sureties, P. Deegan and R. Brennan; \$4,000; cost, \$7,250; signed, March 31; filed, April 2; payments, 75 per cent. of value of work done; balance, 35 days.

Ellis and Bryant. Owner, Chas. Voeke; architect, W. H. Bayless; contractor, F. L. Hans; n; sureties, W. A. Meeker and B. Joost; \$4,000; cost, \$4,000; signed, April 1; filed, April 1; payments, \$840, floor joists are on; \$840, roof on; \$840, first coat of plastering; \$840, ready for painter; \$1,140, 35 days.

Front and Oregon. Piling, capping, iron-dogs, bolts, pumping, etc.; owner, Jas. G. Fair; architects, Schultze & Meeker; contractor, Cal. Bridge Co.; cost, \$7,820; signed, April 2; filed, April 4; payments, 1st. of each month, 75 per cent., of value of work done; balance, 35 days.

Front and Oregon. Grading, brick-work, stone-work, etc.; owner, J. G. Fair; architects, Schultze & Meeker; contractor, John McCarthy; cost, \$16,784; signed, April 2; filed, April 4; payments, 1st. of each month, 75 per cent. of value of work done; balance, 35 days.

Fulton and Scott. Two-story frame; owner, J. M. Caldwell; architect, S. Hatfield; contractor, A. MacDonald; sureties, F. Atzeroth and W. J. Thomas; \$3,000; cost, \$1,470; signed, March 31; filed, April 2; payments, \$558, roof boarded; \$558, mortared; \$558, fences up; \$558, completed; \$1,117.50, 35 days.

Fell and Jackson. Three-story building; owner, Chas. F. MacDermot; architect, John Gash; contractor, Jno. H. McKay; cost, \$37,000; signed, March 8; filed, March 8; payments, \$6,500, lumber on the ground; \$3,600, roof is boarded; \$3,600, roof is framed; \$3,600, outside finish on; \$3,600, all standing finish on; \$3,600, two coats of paint; \$3,700, completed; \$4,000, 35 days.

Filbert, bet. Leavenworth and Hyde. 2-story frame; owner, D. M. Shafer; architect, Edward Burns; contractor, J. Dyar; cost, \$3,450; signed, March 19; filed, March 19; payments, \$800, framed; \$900, first coat of mortar is on; \$900, white coat on; \$750, completed.

Folsom and 22nd. Alterations; owner, M. Alpers; architect, M. J. Welch; contractor, Jno. O. Donald; cost, \$1,635; signed, March 10; filed, March 31; payments, \$800, framed; \$800, brown coated; \$800, completed; \$435, 35 days.

Geary and Buchanan. Four 2-story buildings; owners, Miss B. K. Dunne and Mrs. M. P. Rucker; architect, Chas. J. Devlin; contractors, John Blake and Daniel Powers; sureties, J. J. McKinnon and F. Joost; \$10,000; cost, \$5,456; time, 30 days; signed, March 25; filed, April 5; payments, \$750, chimney up; \$324, completed; \$524, 35 days.

Geary and Buchanan. Carpenter work; owners, Miss B. K. Dunne and Mrs. M. P. Rucker; architect, C. J. Devlin; contractors, John Blake and Daniel Powers; sureties, J. J. McKinnon and F. Joost; \$10,000; cost, \$15,456; time, 100 days; signed, March 26; filed, April 5; payments, \$1,000, framed; \$2,000, enclosed; \$2,500, first coat of plaster; \$2,500, ready for paint; \$522, completed; \$3,564, 35 days.

Geary and Buchanan. Brick-work; owners, Miss B. K. Dunne and Mrs. M. P. Rucker; architect, C. J. Devlin; contractor, V. Fitzsimon; sureties, C. A. Warren and F. Joost; \$10,000; cost, \$1,000; time, 30 days; signed, March 31; filed, April 5; payments, \$750, chimneys up; \$324, accepted; \$524, 35 days.

Geary and Laguna. Owner, C. Keefe; architect, J. J. Clark; contractor, P. Maloney; sureties, J. H. Troy and N. Doran; \$5,000; cost, \$6,164; time, 100 days; signed, March 14; filed, March 28; payments, \$1,200, foundations are in; \$1,000, framed; \$1,200, brown coated; \$1,200, completed; \$1,600, 35 days.

Grove and Franklin. Alterations, etc.; owner, G. Buchholz; architect, H. Gellfuss; contractors, Pfaff Bros.; cost, \$1,495; signed, March 26; filed, March 28; payments, \$500, brown coated; \$500, completed; \$575, 35 days.

Geary and Buchanan. Plumbing; owner, B. K. Dunne et al.; architect, C. J. Devlin; contractor, Chas. Anderson; sureties, P. McCarthy and A. J. Wheeler; \$10,000; cost, \$1,000; time, 70 days; signed, March 26; filed, April 1; payments, \$450, rough plumbing in; \$370, completed; \$271, 35 days.

Golden Gate Ave. and Laguna. Three three-story frame; owner, Mrs. M. Frederick; architect, P. R. Schmidt; contractor, McCann & Riddell; cost, \$24,500; signed, April 2; filed, April 3; payments, \$3,500, framed; \$3,500, ready for plastering; \$3,500, brown coated; \$4,000, hard finished; \$5,500, completed; \$5,200, 35 days.

Grove and Franklin. Alterations; owner, G. Buchholz; architect, H. Gellfuss; contractors, Pfaff Bros.; cost, \$1,495; signed, March 26; filed, March 28; payments, \$500, brown coated; \$500, completed; \$575, 35 days.

Guerrero, bet. Duncan and 28th. Two-story frame building; owner, L. G. Flanagan; architect, T. J. Welch; contractors, R. Doyle & Son; sureties, Anthony Quill and P. F. Ward; \$4,500; cost, \$6,585; time, 90 days; signed, March 12; filed, March 14; payments, \$1,645, enclosed; \$1,645, brown coated; \$1,645, finished and completed; \$1,650, 35 days.

Golden Gate Ave. and Laguna. Owner, M. Heuberg; contractor, R. O. Chandler; sureties, R. Joost and E. Algetinger; cost, \$1,250; signed, March 28; filed, March 31; payments, 25 per cent., brown mortared; 25 per cent., completed; 25 per cent., 35 days.

Guerrero and Fourteenth. Three-story frame; owner, P. J. Melia; architect, M. J. Welch; contractor, M. Walsh; cost, \$5,200; signed, March 13; filed, March 17; payments, \$1,315, framed; \$1,315, brown coated; \$1,315, completed; \$1,315, 35 days.

Greenwich, between Fillmore and Steiner. Two-story frame; owners, I. Burton and wife; architect, H. J. Simpson; contractors, C. W. Caldwell and J. D. Davis; cost, \$2,800; time, 6 months; signed, Feb. 17; filed, March 17; payments, \$700, enclosed; \$650, brown coat of mortar is on; \$650, hard finished; \$800, completed.

Hayes and Buchanan. Additions and alterations; owners, A. Fuller and husband; contractors, Wm. J. Field & Geo. Lack; cost, \$2,450; time, 12 weeks; signed, March 11; filed, March 11; payments, \$600, frame is up; \$900, plumbing is done; \$600, completed; \$650, 35 days.

Haight and Steiner. Three-story dwelling; owner, Louis Freidlander; architect, P. S. Barber; contractor, H. Kettinger; cost, \$2,000; signed, March 13; payments, \$1,000, building is enclosed; \$1,000, brown mortar is on; \$1,000, white plaster is on; \$1,125, building is completed; \$1,325, 35 days.

Haight, between Octavia and Laguna. Three-story building; owner, F. McMorey; architect, T. J. Welch; contractor, M. J. Gorman; sureties, T. J. Ford and J. Maloney; \$4,000; cost, \$4,250; time, 80 days; signed, March 23; filed, April 1; payments, \$1,063, enclosed; \$1,063, brown coated; \$1,064, completed; \$1,060, 35 days.

Jones and McAllister. Vault, doors and vaults; owner, Hibernia Savings and Loan Society; architects, Pissis & Moore; contractor, Hall's Safe and Lock Co.; cost, \$2,752; time, 10 months; signed, Dec. 6; filed, March 27; payments, \$1,376, burglar vault is put together; \$5,688, completed; \$5,688, 35 days.

Jersey and Sanchez. Frame; owner, J. L. Muddwyler; contractor, A. Kallin; cost, \$5,350; signed, March 21; filed, March 31; payments, \$1,450, framed; \$1,450, brown coated; \$1,450, white coated; \$1,500, 35 days.

Jersey and Diamond. Cottage; owner, Wm. N. Baronsfeather; architect, A. Steinhilb; contractor, G. Phibby; cost, \$1,050; signed, March 10; filed, March 10; payments, \$200, framed; \$200, ready for lathing; \$250, brown coat of mortar is on; \$270, 35 days.

Jackson and Van Ness Ave. Painting, etc.; owner, S. Wenban; architects, Pissis & Moore; contractors, J. St. Denis & Co.; cost, \$2,725; signed, March 17; filed, March 20; payments on first and fifteenth of each month; 75 per cent. of value of work done; balance, 35 days.

Jackson and Van Ness Ave. Hot water and heating apparatus; owner, S. Wenban; architects, Pissis & Moore; contractor, Harvey Heating Co.; cost, \$1,225; signed, March 17; filed, March 20; payments, \$200, pipes and heater are in; \$925, completed; \$925, 35 days.

Keamy and Butler. Sidewalk; owner, B. H. Liebenstein; architect, Wm. Mooser; contractors, Ransome & Cushing; sureties, T. M. White and C. E. Greene; \$700; cost, \$1,147; signed, March 10; filed, March 22; payments, 75 per cent. of value of work done; balance, 35 days.

Leavenworth and Vallejo. Two-story frame; owner, M. White; architect, Chas. M. Rousseau; contractor, M. W. Green; sureties, Harris and Jones; \$2,000; cost, \$3,000; signed, April 4; filed, April 5; payments, \$562.50, roofed; \$562.50, brown coated; \$562.50, white coated; \$562.50, completed; \$750, 35 days.

Lott and Fulton. Three-story frame; owner, Wm. Helbing; contractor, Louis Helbing; cost, \$3,200; time, 75 days; signed, March 24; payments, \$800, framed; \$825, brown coated; \$825, plastered; \$800, 35 days.

Langton, bet. Folsom and Harrison. frame; owner, T. C. Van Bibber; architects, Macy Jordan & Lyon; contractor, B. R. Banks; surety, L. E. Emanuel; \$2,000; cost, \$2,975; signed, March 26; filed, March 27; payments, \$575, framed; \$575, partitions are set; \$575, brown coated; \$575, completed; \$575, 35 days.

Lausatz and Steiner. Owner, G. Depaul; architect, Jos. H. Humphreys; contractors, Forrester & Co.; sureties, V. H. Rayner; \$3,500; cost, \$2,370; signed, March 11; filed, March 14; payments, \$565, building is ready for shingling; \$565, brown coat of mortar is on; \$565, completed; \$575, 35 days.

Merchant and Montgomery. Alterations; owner, Henry Winter; architects, Pissis & Moore; contractor, S. H. Kent; cost, \$8,000; signed, April 3; filed, April 4; payments, \$2,000, brown coated; \$2,000, plastered; \$2,000, completed; \$2,000, 35 days.

Miles Ct. and California. Plumbing; owner, F. Mitchell; architect, S. Hatfield; contractor, H. Williamson; cost, \$750; time, 38 days; signed, March 25; filed, March 24; payments, \$300, rough plumbing in; \$750, completed; \$75, 35 days.

Miles Court and California. Painting; owner, F. Mitchell; architect, S. Hatfield; contractor, Jas. Larsen; cost, \$415; time, 90 days; signed, March 24; filed, March 25; payments, \$75, first coat on; \$75, inside ready for graining; \$75, finished; \$75, 35 days.

Miles Court and California. Two-story frame; owner, Mrs. F. Mitchell; architect, S. Hatfield; contractor, Jobe Hatfield; cost, \$4,024; signed, March 24; filed, March 25; payments, \$739, framed; \$740, first coat of plaster on; \$739, white coated; \$800, completed; \$1,006, 35 days.

Miles Court and California. Brick work; owner, F. Mitchell; architect, S. Hatfield; contractor, W. H. Williams; cost, \$415; time, 30 days; signed, March 24; filed, March 25; payments, \$170, foundation is up; \$170, chimneys are completed; \$225, 35 days.

Market bet. 6th and 7th. Brick, stone and cast iron work; owner, H. J. Meyer; architects, Kenitzer & Kollofrath; contractor, John McCarthy; sureties, C. Lewis and J. Mahoney; cost, \$25,714; time, August 15, '90; signed, March 10; filed, March 10; payments, \$1,500, basement walls are up; \$800, second story walls are up; \$6,700, fire walls are finished; \$5,514, 35 days.

Minna and Sixth. Alterations, etc.; owner, P. Feeney; architect, Jno. T. Hogan; contractors, Kitchen & Daley; sureties, L. Albert and W. W. Davis; \$800; cost, \$1,200; signed, March 10; filed, March 11; payments, \$800, rustic is on; \$800, rough plumbing is done; \$800, building is completed; \$800, 35 days.

Market and Sixth. Brick work, granite, etc.; owner, A. Vetter; architect, R. Zimmerman; contractor, J. McCarthy; cost, \$21,000; time, Sept. 1, '90; signed, March 13; filed, March 18; payments, \$3,500, basement walls are up; \$3,500, first story walls are up; \$3,000, third story walls are up; \$3,000, fifth story joists are up; \$2,500, completed; \$2,500, 35 days.

Market and Sixth. Carpenter work; owner, A. Vetter; architect, R. Zimmerman; contractor, A. Miller; cost, \$15,500; time, 50 days; signed, March 13; filed, March 18; payments, \$2,000, third story joists are set; \$3,000, roof boards are on; \$4,000, tin and galvanized iron work is finished; \$2,625, completed; \$3,875, 35 days.

Market and Sixth. Plastering, etc.; owner, A. Vetter; architect, R. Zimmerman; contractor, W. C. Watson; cost, \$1,450; signed, March 13; filed, March 18; payments, \$300, brown coated; \$300, white coat of mortar is on; \$500, accepted; \$550, 35 days.

Market bet. 6th and 7th. Carpenter work, etc.; owner, H. J. Meyer; architects, Kenitzer & Kollofrath; contractor, A. Miller; sureties, F. Doe and J. C. Roberts; \$7,100; cost, \$14,000; time, 60 days; signed, March 10; filed, March 10; payments, \$2,500, fourth-story joists are in; \$1,000, first coat of brown mortar is on.

Market and Sixth St. Plumbing, etc.; owner, A. Vetter; contractor, W. F. Wilson; architect, R. Zimmerman; cost, \$1,115; signed, March 13; filed, March 18; payments, \$400, rough work is done; \$400, second certificate is delivered; \$515, accepted.

Octavia and Hickory Ave. Owner, J. H. Holm; architect, W. H. Bayless; contractor, W. E. B. Siles; sureties, W. Dickie and P. Gilligley; \$5,500; cost, \$5,500; signed, April 3; filed, April 4; payments, \$700, cellar up; \$500, framed; \$950, first coat of plaster; \$800, white coated; \$855, 35 days.

O'Farrell and Stockton. Plumbing; owner, S. Levy; architects, Schulze & Meeker; contractors, Duffey Bros.; cost, \$6,110; signed, March 13; filed, March 18; payments, 1st. of each month in sums equal to 75 per cent. of value of work done; balance, 35 days.

Owner, J. M. Caldwell; architect, R. H. Daley; contractors, Barbee & Fryer; cost, \$1,925; time, 60 days; signed, March 31; filed, April 2; payments, \$300, framed; \$300, brown coated; \$300, inside in; \$300, completed; \$450, 35 days.

Octavia and Geary. 2-story frame; owner, J. Schroeder; architects, John & Balczynski; contractors, Schult & Kreyer; cost, \$7,180; signed, March 22; filed, March 22; payments, \$1,500, framed; \$1,500, partitions set; \$1,500, outside finish on; \$1,350, inside finish on; \$1,350, 35 days.

O'Farrell and Stockton. Plumbing; owner, Mrs. S. Levy; architects, Schulze & Meeker; contractors, Duffey Bros.; cost, \$6,110; signed, March 13; filed, March 28; payments, 1st. of each month, in sums equal to 75 per cent. of value of work done; balance, 35 days.

Oak, between Webster and Fillmore. Building of two flats; owner, E. Newman; contractor, G. Houston; cost, \$4,075; time, 100 days; signed, March 14; filed, March 15; payments, \$1,000, rustic is on.

O'Farrell and Mason. Carpenter work; owner, H. W. Heath; architects, Percy & Hamilton; contractor, J. C. Gibson; cost, \$8,219; signed, Feb. 26; filed, March 31; payments, 75 per cent. of value of work done on first Saturday of each month; balance, 35 days.

O'Farrell and Mason. Mason work; owner, H. W. Heath; architects, Percy & Hamilton; contractors, Richardson & Gale; cost, \$13,125; time, 30 days; signed, March 26; filed, March 31; payments, first Saturday of each month in sums equal to 75 per cent. of value of work done; balance, 35 days.

Vallejo and Stockton. 3-story frame; owner, Mrs. M. B. Godkin; architect, H. Gellfuss; contractor, C. E. Dunshee; cost, \$1,191; signed, April 2; filed, April 4; payments, \$628, framed; \$628, enclosed; \$628, brown mortared; \$628, white coated; \$628, completed; \$1,051, 35 days.

Vallejo and Stockton. 3-story frame; owner, C. Hussenburg; architect, H. Gellfuss; contractor, C. E. Dunshee; cost, \$1,191; signed, April 2; filed, April 4; payments, \$628, framed; \$628, partitions in; \$628, brown coated; \$628, white coated; \$628, completed; \$1,051, 35 days.

Valparaiso and Taylor. Two-story; owner, E. Buchel; architect, Wm. Schrof; contractor, A. Norton; cost, \$2,685; signed, April 2; filed, April 4; payments, \$670, chimneys up; \$670, brown coated; \$670, first coat of paint on; \$675, 35 days.

Vallejo and White. Four two-story buildings; owner, F. Siebrecht; architects, Kenitzer & Kollfath; contractor, A. Miller; sureties, H. Dahler and C. F. Doe, \$10,000; cost, \$11,390; time, July 19, '90; signed, March 25; filed, March 26; payments, \$2,500, roofed; \$2,000, first coat of plaster on; \$2,000, ready for paint; \$1,900, completed; \$2,800, 35 days.

Van Ness Ave. and Myrtle. Plumbing; owner, L. A. Levy; architect, P. R. Schmidt; contractor, S. Ickelheimer; cost, \$1,700; signed, March 26; filed, March 26; payments, \$1,625, all pipes are in; \$1,625, two-thirds of vessels are set; \$1,625, completed; 35 days.

Valencia and 24th. Plumbing, etc.; owner, J. Taubman; architect, J. C. Newsum; contractors, Numan & Gordon; cost, \$1,900; signed, March 8; filed, March 1; payments, 75 per cent of value of work done; balance, 35 days.

Van Ness Ave. and Myrtle. Hotel; owner, L. A. Levy; architect, P. R. Schmidt; contractor, F. A. Logan; cost, \$63,000; signed, March 24; filed, March 18; payments, \$6,000, second story flooring joists are on; \$6,000, framed; \$6,000, roofed; \$6,000, main cornice on.

Van Ness Ave. and Jackson. 3-story building; owners, West School Company; architect, C. K. Kirby Jr.; contractor, W. T. Connery; cost, \$16,230; signed, March 17; filed, March 18; payments, \$2,000, brick walls are up; \$2,000, second and third story floor joists are on; \$2,000, exterior finish on; \$1,500, lathing completed; \$2,000, plastering completed; \$2,677, completed; \$5,039, 35 days; \$1,000, six months after completion.

Valencia and Twentieth. Three-story frame; owner, D. Warner; architects, R. Doyle & Son; contractor, T. J. Weidner; sureties, W. Plagemann and U. Remensperger; cost, \$11,749; signed, March 26; filed, April 1; payments, 75 per cent of value of work done; balance, 35 days.

Van Ness Ave. and O'Farrell. Fixtures; owner, P. W. Riordan; contractors, Thos. Day & Co.; cost, \$2,661; time, July 1, 1890; signed, March 4; filed, March 18.

Webster and Hickory Ave. 2-story frame; owner, C. Mausshardt; architect, Winterhalter; contractor, T. Von Borstel; sureties, W. Plagemann and U. Remensperger; cost, \$2,000; cost, \$2,275; time, 60 days; signed, March 10; filed, March 19; payments, \$800, enclosed; \$800, outside finish on; \$800, completed; \$975, 35 days.

Washington and Laguna. Stone and brick residence; owner, Henry J. Crocker; architect, Frank Freeman of New York; contractors, Richardson & Gale; cost, \$45,000; time, Jan. 1, 1891; signed, March 12; filed, March 14; payments to be made on the first day of each month, in sums equal to 75 per cent of value of work done; balance, 35 days.

Washington street, Block 614. Frame; owner, B. E. Stevens; contractor, L. C. Jenkins; cost, \$1,900; time, June 1, '90; signed, March 19; filed, March 28; payments, \$475, framed; \$475, first coat of mortar on; \$475, completed; \$475, 35 days.

Washington and Laguna. Wrought iron work; owner, H. J. Crocker; architects, Schultz & Meeker; contractor, H. Ralston; cost, \$910; time, January 1, '91; signed, March 19; filed, March 25; payments, installments on first day of each month in sums equal to 75 per cent of value of work done; balance, 35 days.

Willard and Carl. Owner, Geo. A. Rankin; architect, P. R. Schmidt; contractors, Arthur & Aldridge; cost, \$3,947; signed, March 21; filed, March 26; payments, \$740, enclosed; \$740, brown coated; \$740, inside finish up; \$737, completed; \$930, 35 days.

Washington, bet. Leavenworth and Hyde. Alterations, etc.; owner, John F. Cline; architect, W. O. Banks; contractors, Douglass & Velpe; sureties, E. Katigan & H. Magory; cost, \$2,173; cost, \$2,173; time, 30 days; signed, March 13; filed, March 20; payments, \$300, partitions set; \$629, outside finish on; \$500, completed; \$544, 35 days.

York and Twenty-fifth. Cottage; owner, M. Dougherty; contractor, A. Klahn; cost, \$1,400; signed, March 12; filed, March 13; payments, \$400, framed; \$500, brown coat of mortar is on; \$150, completed; \$350, 35 days.

1419 Scott St. Alterations; owner, Chas. Sicklan; contractor, G. G. Gillespie; cost, \$1,500; signed, April 3; filed, April 4; payments, \$375, white coated; \$375, completed; \$375, 35 days.

319 and 321 Pine St. Plumbing, etc.; owner, Jas. G. Fair; architects, Schultz & Meeker; contractor, Wm. F. Wilson; cost, \$2,628; filed, March 31; signed, April 4; payments, 1st. of each month, 75 per cent. of value of work done; balance, 35 days.

329 and 321 Pine. Alterations; owner, Jas. G. Fair; architects, Schultz & Meeker; contractor, P. G. Martin; cost, \$7,973; time, May 15, '90; signed, March 24; filed, March 25; payments, first day of each month in sums equal to 75 per cent of value of work done; balance, 35 days.

743, 745, 747 Tehama St. Alterations; owner, Edward Hogan; architect, Chas. J. Devlin; contractors, J. Blake and D. Powers; sureties, J. Fitzpatrick and R. E. Eckler; cost, \$2,500; cost, \$3,550; time, 70 days; signed, March 17; filed, March 18; payments, \$500, foundation is completed; \$750, ready for plastering; \$1,000, ready for paint; \$400, completed; \$500, 35 days.

723 Hayes St. Alterations; owner, J. Feecey; architect, J. T. Hogan; contractors, Kitchen & Daley; sureties, L. Albert and L. Swanson; cost, \$240; signed, March 26; filed, March 28; payments, \$135, framed; \$135, brown coated; \$135, accepted, 35 days.

Oakland.

Eight St. Tract. Two-story frame; owners, John and Mary Dalton; architects, Townsend & Wyenken; contractor, W. Matthews; cost, \$2,250; signed, March 14; filed, March 28; payments, \$500, roofed; \$500, brown coated; \$500, completed; \$750, 35 days.

Myrtle and Tenth. Owner, H. S. Crane; architect, Samuel Newsom; contractor, L. H. Long; cost, \$8,350; signed, March 27; filed, March 28; payments, 75 per cent of value of work done; 25 per cent, 35 days.

Linden and Sixteenth. Two-story frame; owner, T. P. Strong; contractor, D. C. Scanlan; cost, \$3,441; signed, March 25; filed, March 26; payments, \$2,000, enclosed; \$1,441, 35 days.

Eighteenth and Adeline. Two-story frame; owner, E. Meese; architect, C. Mau; contractor, P. F. Nelson; cost, \$3,143; signed, March 24; filed, March 25; payments, \$785, one-third material furnished and one-third work completed; \$785, two-thirds material furnished and two-thirds work done; \$785, completed; \$785, 35 days.

Fifth Ave., between Seventh and Eighth. Two cottages; owner, E. Dolan; contractor, J. G. Pearce; cost, \$5,387; signed, March 10; filed, March 10; payments, \$1,384.25, brick-work is completed; \$1,384.25, second coat of plaster is on; \$1,384.25, completed; \$1,384.25, 35 days.

Twelfth and Clay. Dwelling house; owner, R. E. Cole; architect, Wm. Kirk; contractor, J. G. Pearce; cost, \$5,387; signed, March 10; filed, March 10; payments, \$1,384.25, brick-work is completed; \$1,384.25, second coat of plaster is on; \$1,384.25, completed; \$1,384.25, 35 days.

Block 2256, Valdez Tract. One and a half frame cottage; owner, J. H. Kercheval; architects, Schultz & Meeker; contractor, F. W. Knight and C. A. Littlefield; cost, \$2,815; time, June 14, '90; signed, March 18; filed, March 18; payments, \$380, frame up; \$550, ready for lathing; \$500, first coat paint on; \$681, completed; \$704, 35 days.

Clinton Block, bounded by 9th and 10th Avenues, and 15th and 16th streets. Addition to Franklin School; owner, City of Oakland; architect, W. J. Matthews; contractor, H. E. Jones; cost, \$4,614; signed, March 14; filed, March 17; payments, \$865.12, one-fourth completed; \$865.12, one-half completed; \$865.12, three-fourths completed; \$865.12, completed; \$133.30, 35 days.

Twenty-fifth and Telegraph Ave. Owner, H. F. Hampel; contractor, P. F. Nelson; cost, \$1,475; time, June 15, '90; signed, March 25; filed, March 26; payments, \$650, brick work done; \$300, enclosed; \$250, inside finish on; \$369, 35 days.

Alameda.

Two one-story cottages; owner, A. Rouncey; contractor, R. Gillis; cost, \$2,525; signed, March 12; filed, March 14; payments, \$550, frame up; \$750, brown mortar on; \$625, completed; \$600, 35 days after.

Enchial. Two one-story cottages; owner, Mrs. Jennie Shannon; contractor, R. Gillis; cost, \$2,412; time, 30 days; signed, March 5; filed, March 10; payments, \$512, ready for rustic; \$700, brown coated; \$600, completed; \$600, 35 days.

Santa Clara Ave. Two-story frame; owner, G. H. Waggoner; architect, Chas. S. Shaner; contractors, D. S. Biant and J. C. Diamond; cost, \$4,650; signed, March 10; filed, March 11; payments, \$872, sheathing on; \$872, floors laid; \$872, window frames are in; \$871.50, front window frames are up; \$1,162.50, 35 days.

Berkeley.

Dana street. One and a half story cottage; owner, C. L. Huggins; contractors, Loyd & Boynton; cost, \$2,085; signed, March 7; filed, March 12; payments, \$520, frame up; \$520, brown mortar on; \$520, completed; \$525, 35 days after.

Livermore.

Addition to the Hinton cottage. Wm. Sanderson, contractor.

Addition to Jenkins Hotel. Messrs. Thomas & Budworth, contractors.

Additions to the Beach cottage.

New tank house and stable for A. B. Henderson.

New eight-room cottage. Cost, \$5,000; to be built for A. B. Henderson.

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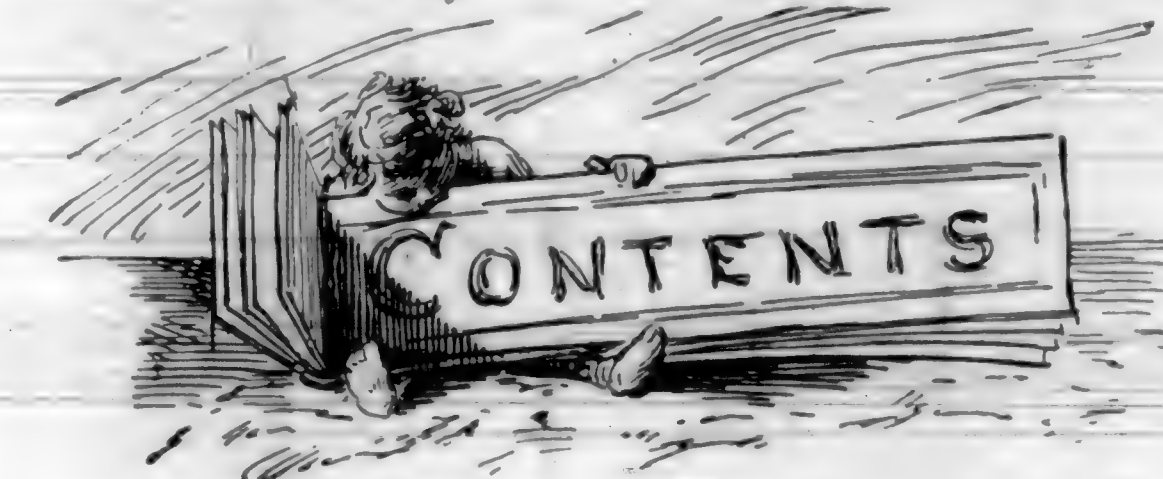
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6 inch.....	9.00	24.00	45.00	78.00
7 inch.....	10.50	28.00	52.50	91.00
8 inch.....	12.00	32.00	60.00	104.00
9 inch.....	13.50	36.00	67.50	117.00
10 inch.....	15.00	40.00	75.00	130.00

Remittances should be in the form of postal orders, payable to THE CALIFORNIA ARCHITECTURAL PUBLISHING COMPANY, and all communications addressed to the office of the Company, 408 California Street, San Francisco, Cal.



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NOTICE.

MR. George H. Wolfe, having no further connection with the business of this journal, correspondents will in future address their communications to the *California Architect and Building News*, 408 California street, San Francisco, Cal.

NOTICE OF MEETINGS.

SAN FRANCISCO CHAPTER, AMERICAN INSTITUTE ARCHITECTS, meets second Friday of each month at 408 California Street.

SETH BABSON, Pres. W. P. MOORE, Vice-Pres.

OLIVER EVERETT, Sec. JOHN M. CURTIS, Treas.

TECHNICAL SOCIETY OF THE PACIFIC COAST, meets first Friday of each month at 408 California Street.

JOHN RICHARDS, Pres. PROF. FRANK SOULÉ, Vice-Pres.

OTTO VON GELDERN, Sec. JAS. SPIERS, Treas.

THE regular monthly meeting of the San Francisco Chapter of the American Institute of Architects was held in their rooms Friday evening, May 9th.

Architect M. G. Bugbee was elected to fellow membership. Architect Frank Shea made application to become a fellow member. The application took the usual course and was referred to the Investigating Committee.

The report of the Committee on revision of Constitution and By-laws, to bring them into harmony with the Institute, was laid before the meeting, and the proposed changes discussed at length. Action will be taken at a future meeting.

The report of the Committee appointed at the last meeting to prepare a suitable defense of the action of the Chapter in accepting the invitation of the City Hall Commissioners to investigate and report on the proposed New City Hall tower, was presented to the Chapter, unanimously adopted and the Secretary ordered to send the same to the Secretary of the American Institute.

The Committee named to decide on the Order of Merit of the drawings submitted in the last monthly competition of the A. I. A. Sketch Club reported that the honor of first mention was given to S. C. Benson, second mention to C. A. Meussdorffer and third mention to Frank Holland. The drawings in the May competition on the subject of a country stable, were inspected by the members present, and the same Committee continued to pass on the respective merits of the drawings submitted. Mr. Sanders, the teacher of the Chapter's class in design, reports that an increased interest is being taken in the work by members of the class, and desires to call the attention of all students in Architects' offices, and extend a cordial invitation to them to join the class.

The class is open to any student in the office of any member of the Chapter, and any further information will be given upon application to Mr. Sanders or to the Secretary of the Chapter.

THE LABOR QUESTION.

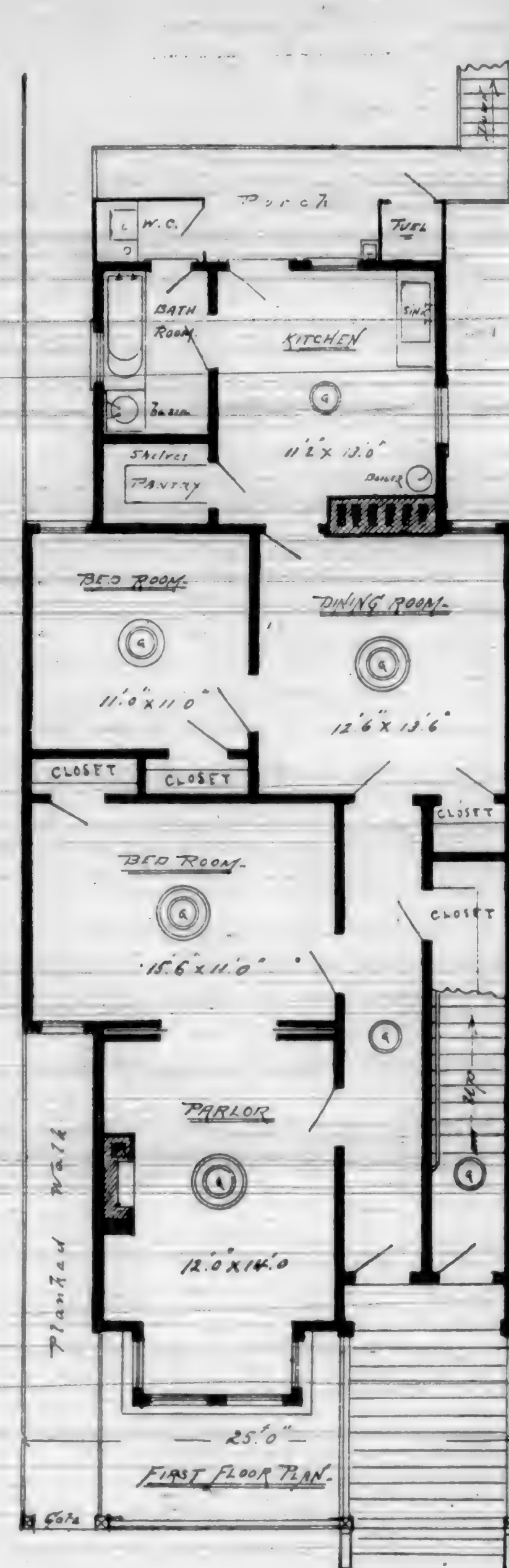
ON the all absorbing labor topic of the day the *The Canadian Architect* has the following:—A solution of the problems in connection with the adjustment of wages must be recognized as being as difficult as those pertaining to the science of political economy, and a solution which every one will accept as correct and satisfactory may be considered to be well nigh impossible, but some plan for the avoidance of these periodical convulsions in our industrial life we believe must and will be found, however slow its development may be. What we would propose and appeal most earnestly to every man to strive for, is some arrangement of the present difficulties that will set and keep the wheels and machinery moving until the happy condition shall have been brought about when these disputes will be a thing of the past. To that end, and as meeting the immediate necessities of the case we would suggest for the consideration of labor union men,

master builders and every business man in Toronto, that a committee be appointed, to sit as a Board of Arbitration between the building trades and the employers for the city of Toronto, this committee to settle the present difficulty and decide what shall be the standard of wages for the years 1890 and 1891 and the same committee to remain organized for two years and re-adjust the scale of wages for the years 1892 and 1893 reporting its decision of the same to the Trades' Union and Master Builders' Association on or before January 1, 1892, the same course to be pursued biennially thereafter. The membership of this Board of Arbitration should be one delegate from each branch of the building trades and one from the Building Laborers' Union, one delegate from each branch of the Master Builders' Association, and an equal number of architects, to be delegated by the Ontario Association of Architects, making in all about 25 members. Let this board establish its own rules of procedure, except that the vote of a majority of all its members should decide any question under consideration. After settlement of the questions now in dispute, they would be prepared to receive information or complaints tending to furnish light needed for the next biennial regulation of prices. After that, a new selection of delegates could be made every two years. We believe that the Trades Unions, Master Builders and public generally could and would have confidence in such a body, and that it could be made successful not only as a regulator of wage rates, but could also be made a sort of Court of Appeal for the settlement of any differences now usually ending in a strike. The trades and masters would be evenly balanced and no doubt prepared to protect their respective interests, and the position of mediators would devolve upon the architects. We feel sure that the Master Builders would be satisfied to place themselves in the hands of such a Board and we can see no reason why the Trades Unions should not have all necessary confidence in its fairness and intelligence.

Contractors are constantly placing themselves in the hands of architects in a way that involves large interests, and they know that every true architect will endeavor to see that they as well as the proprietor, get fair play. Surely the workmen ought to be ready to have as much confidence as their employers in the reasonableness of the architects. This is one of several apparently feasible plans, which might be suggested for the adjustment of such disputes. For instance, three Superior Court judges might constitute a Board of Arbitration to whom each party to the dispute would state their case and in accordance with whose ruling on all the points submitted, the difficulty would be settled.—*The Canadian Architect and Builder.*

THE SITUATION.

NEARLY every city in the country is in a state of ferment regarding the eight hour question. Particularly is this true of trades connected with building. The labor organizations, so far as can be perceived, have no very well defined plan of operations. The result of the conference of the Executive Council of the American Federation of Labor, held in New York on March 18th, must be rather disappointing to the various trades which expected the central organizations to manage the details of the fight. According to the telegraph report, this burden has been placed upon the local societies in the various cities, and with them is left the privilege to do as they please regarding the subject of hours and wages. We believe this decision will be fatal to the success of the eight hour movement, as employers are not liable to make any concessions while their competitors in other cities continue to do business under the old conditions. Perhaps in some trades a temporary local advantage will be gained, but unless the change becomes general, the laws governing trade will soon enforce an observance of the old standard.—*Building Trade Journal.*



Plan for flats. H. T. Bestor, Architect.

MONEY STIPULATIONS IN CONTRACTS.

AT THE present time there is considerable discussion among architects and builders as to the proper method of providing stipulated amounts in contracts for various purposes.

For example, plumbers are urging architects, wherever opportunity offers, of wording a specification in such a manner that certain fixtures shall not cost less than a certain specified amount, after naming general typical features that are recognized as desirable in goods of the same class.

This is a very convenient method of procrastination, and the too-busy architect sometimes succumbs to the temptation of being indefinite. For to be definite is to be particular and signifies thought and selection, and both require an expenditure of time which is not always available.

The stipulation clause is generally put in itself with wide possibilities as to construction, and the wider the door is left open for differences of opinion, the greater are the difficulties which surround the practice. Some clauses call for so much hardware to cost such a sum; this may seem definite enough at first sight, but in reality it is often wide of the architects' intentions. It may be his intentions are that the cost named shall be the net cost to the contractor, the latter on the other hand maintaining that, as he is obliged to handle the goods and make the purchases and invest his capital for the benefit of the owner, he should, therefore, be reimbursed for his trouble. It may be just in many cases that he should receive some compensation for such a service, but the whole difficulty of the matter is in the lack, in the first place, of a proper understanding of each other's position. The specification should either say net cost to the builder, or wholesale price, or list price less trade discount, or so much profit allowance to the builder, the latter can adjust his bid to the conditions proposed. To leave the matter until it is time to settle up, is, to say the least, gross carelessness on the architect's part, and stupidity on that of the builder.—*Architecture and Building.*

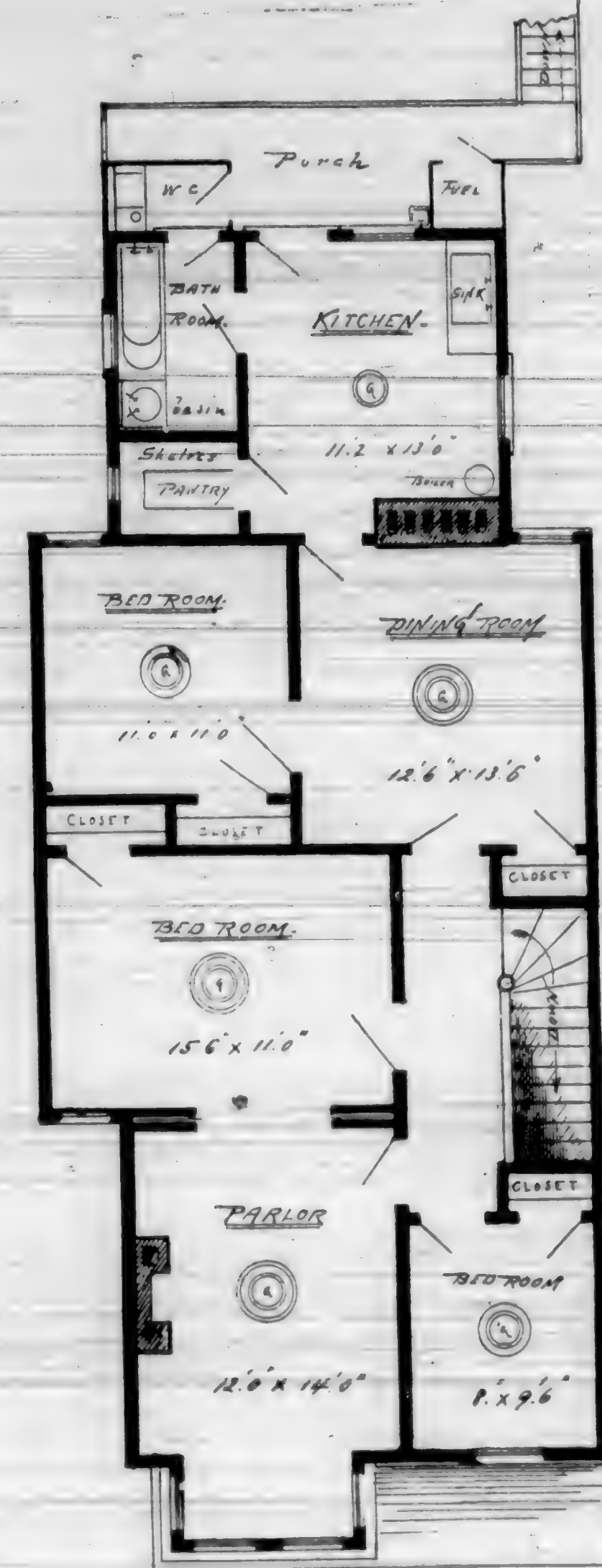
THE VENTILATION OF SCHOOLS.

IN November last, Professor Carnelley (professor of chemistry, Aberdeen University) delivered an address under the auspices of the Aberdeen branch of the Educational Institute on "The Sanitary Condition of Our Schools." Professor Pirie presided, and there was a large attendance. Professor Carnelley spoke more particularly of the air of schools. After showing how important good air was to health, he went on to speak of the great necessity there was for improvement in this direction, in so far as schools are concerned. He referred with satisfaction to the position Aberdeen occupied in having, in proportion to population, introduced the mechanical system of ventilation in more schools than any other town in the country. Aberdeen had introduced the system in four schools; and in the whole of England and Scotland there were only seventeen schools ventilated. In almost all schools the cubic space was far too little, and ventilation was deficient. It was necessary that ample cubic space should be provided, because if the space were small, the amount of ventilation that would be required would have the effect of creating draughts, which might be more injurious than impure air. The older the school was the more micro-organisms there were; and the younger children, the less carbolic acid and the more germs. Boys made the air of the school much more impure than the girls.

As to what to do to render the air better, he said he had visited, eighteen months ago, 150 schools with 110,000 scholars, and had received details regarding 173 other schools with 165,000 scholars, and he had come to the conclusion that mechanical ventilation should be adapted in all new schools.

It gave much greater purity to the air, and it was much more independent of the weather than any other means of ventilation. There was a more equal distribution of the hot and the fresh air. Mechanical ventilation was very effective in diminishing the micro-organisms, and it reduced the draughts to a minimum. It was far more conducive to health and comfort, and it was a factor in increasing the power of teaching and learning. The cost of such a system in a school for 1,000 scholars was £40 per annum.

At the close Professor Carnelley was cordially thanked for his address.—*The Builder.*



Plan for flats. H. T. Bestor, Architect.

The following statistics are taken from the *San Francisco Journal of Commerce*. The Real Estate sales in San Francisco for the past four years have been as follows:

1889.....	6,736 sales.....	\$32,768,969 00
1888.....	5,356 sales.....	24,744,479 00
1887.....	4,998 sales.....	20,745,079 00
1886.....	3,101 sales.....	15,119,760 00

The year 1889 shows more than double the year 1886.

During the year 1889 the new vessels built on the Pacific Coast and registered at the port of San Francisco was 7,144 net tonnage.

The lumber receipts at the port of San Francisco for the three preceding years was, in feet, board measure:

	1889.	1888.	1887.
Pine.....	301,894,864	268,286,418	209,908,981
Redwood.....	161,258,329	138,235,710	118,693,590
Shingles, M.....	113,375,200	144,336,900	59,089,702

Receipts for California Lime for 1889 have been 129,463 bbls.

A NEW WHITE HOUSE.

The Committee on Public Buildings and Grounds of the Senate have been invited to visit the Executive Mansion to examine its condition with a view to repairs and to enable Mrs. Harrison to state her ideas with reference to the extension of the building. The theory of Mrs. Harrison's design, which has been carried out in the plans which an architect of this city has made under her direction, is the preservation of the original building intact, the addition on the east and west respectively of counterparts of the original structure in general architectural style, their connection with the main edifice by a colonnade range, and the extension on the south of a wide conservatory or winter garden, with a central rotunda or palm house, the entire series of structures forming the four sides of an inner park. The original building is to be devoted exclusively to the uses of an Executive residence. On the west is the official wing, approached from the Departments of State, War and Navy, and arranged on the floor with a diplomatic audience room and anterooms for guests at receptions. The connecting range or statuary hall forms the way to the main building, where the President and wife receive. The second floor of this wing contains the office of the President, the Executive library and cabinet, the private secretary's and clerks' rooms. From the main building toward the east another broad passage similar to that on the west opens into the public wing, containing the gallery of paintings and treasures of art and history. This wing will be open to visitors. The conservatories on the south form not only a scene of tropical beauty in winter, when social gayeties are at their height, but a grand promenade back to the entrance and to the anterooms, thus obviating the crowding which occurs in great throngs of people.

The outer measurement of this architectural rectangle of edifices is 427 feet from east to west, and 350 feet from north to south. The inner court or park, 250 feet square, is to be turfed and arranged in parterres, with a grand allegorical fountain in the center, commemorating the discovery of America in 1492, the laying of the corner stone of the Executive Mansion in 1792, and the triumph of free institutions in 1892. The fountain will represent the landing of Columbus and his officers on the October morning of 1492 from the Santa Maria, Pinta and Nina, with the island of Guanahani in the distance. Subsidiary figures will represent the different ages of exploration, colonization, independence and national progress. This piece would not only be an effective feature in the artistic entirety of the Executive residence, but would serve as a memorial of Columbus's discovery of the New World and the laying of the corner stone of the official home of the Presidents of the American Republic, the former on October 12, 1492, and the latter on October 13, 1792. The fountain would have attachments of light and colors by night.

The advantage of this comprehensive plan is a symmetrical addition to the building. The construction of the conservatories on the south admits sunshine, winter warmth and summer breezes into each of the buildings without obstruction. The view from the windows is also unbroken. The court affords private grounds for the President's family, and on a certain day of the week may be thrown open to the public, with music and the fountains playing. The cost is estimated at \$700,000, with such additional expenditures as may be allowed for elaboration of details, erection of terraces and embellishment of the grounds. The staircases would be of marble, with onyx trimmings. The connecting galleries are set apart for statuary halls, with statues of Lincoln and Grant as central figures. The rotundas of the stair halls of the wings are arranged for statues of Washington and Jackson. The entire additions might be completed by October, 1892, as a commemoration of the discovery of America and laying of the corner stone of the original mansion, thus constituting a suitable memorial of those historic events at the national capital.—*Architecture and Building.*

WHICH PART OF THE TREE IS STRONGEST?

"It is by no means rare," says the proprietor of a large physical laboratory for builders and prospective owners of buildings, "to have joists, plates, sills and other important pieces tested, in order that the size and kind for prospective uses may be determined." Why not? Is it not of much greater importance that the strength of materials entering into the construction of factory, store or dwelling be as accurately determined and well known as those out of which cars, bridges, and crossties are

built? Proprietors of extensive car works, railroad and construction companies have the strength of materials known before a blow is struck, by which means enough and no more is used to sustain the strains to which the materials are to be subjected; but an architect and builder who makes a specialty of such knowledge, is extremely difficult to find in this, and, we presume, in any other city on the American continent.

This leads to the question, strength considered, of the relative merits of certain portions of a tree. It might be supposed, inasmuch as every layer from the central pith to the bark is in a different stage of perfection, the innermost or earliest formed being the most matured, would naturally be the strongest; but practical tests, made on the most modern and accurate testing machines, demonstrate that this is only true up to a certain period of growth. The greatest strength and toughness lies near the most recently formed heartwood, or that part the nearest to the sapwood. For this reason alone, to say nothing of many other peculiarities that will be enumerated at another time, it becomes a matter of the greatest importance in the selection of timber or lumber for special purposes, requiring great strength and toughness, to have as little sapwood as possible, and as little pitch.

With practical tests already made, this leads to the conclusion that timber or lumber for these special purposes, where the above properties are required, should be cut as near the sapwood as the timber will allow, for it should be remembered that the tree does not cease growing when it comes to maturity. As long as the tree is alive it continues to increase in bulk by the addition of the annual layer, but when maturity is once passed, each succeeding year produces a certain degree of deterioration. This decay appears in various stages, and generally exhibits in the first instance, either a white or a yellowish color at the butt or root end of the stem. If white, the decay is often very slight, and does not appear more than a few feet up at most, but if a yellowish red in color, it is not infrequently of a most serious character. Again, if the affected parts have assumed a decidedly red tinge, the tree is said to be foxy, and scarcely fit for any purpose, as the decay will be found to permeate a greater portion of the entire tree.

A more advanced stage of deterioration is that which may be described as a drying up or wasting away of the wood layers surrounding the pith. This forms a hollow, first at the butt, and then spreads upward, gradually increasing in size as the tree gets older, while this defect may eventually reach into the very branches.

Trees are most valuable as yielding the largest amount of good timber just prior to their reaching maturity, which is indicated by the topmost branches and branchlets becoming stunted and presenting a scraggy appearance. If, therefore, we wish to select a prime, healthy tree for felling, we must select one having an abundance of young shoots, and the topmost branches of which look vigorous, strong, pointed and healthy, this being the most certain evidence that the tree has not exhausted all the vegetable food within reach of its roots; in other words, that the tree has not passed its maturity.

Whenever there is the unmistakable evidences of permanent decay in a tree, the most economical thing to do is to cut it down, convert such parts as will answer the purpose into lumber, and use the balance for such purposes as do not require strength, durability, or staying properties. The size of any tree cannot be taken as a criterion of the tree's maturity by any means, there being unlimited growth if the roots can find food to sustain and extend the formation fabric.—*The Wood-Worker.*

STONE CUT WITH WIRE.

A NEW INVENTION USED IN FRENCH QUARRIES.

A NEW plan of cutting stone by means of wire cord has been adopted in many European quarters, says a writer in *Science*. While retaining sand as the cutting agent, M. Paulin Gay of Marseilles has succeeded in applying it by mechanical means, and as continuously as the sand blast and band saw, with both of which appliances his system—that of the "helical wire cord"—has considerable analogy. An engine puts in motion a continuous wire cord (varying from five to seven thirty-seconds of an inch in diameter, according to the work), composed of three mild steel wires twisted at a certain pitch, that found to give the best results in practice, at a speed of from fifteen to seventeen feet per second, the higher speed being adopted for the smaller diameter.



Elevation of flat.

H. T. Bestor, Architect.

POPULAR IGNORANCE ON A COMMON SUBJECT.

SOME twelve or fourteen years ago, one of the editors of this journal was the spectator of a scene on one of the smaller streets, which it was the custom at that time to plank instead of pave.

An excited woman was vigorously berating the contractor for endeavoring to lay some planks in front of her property that were not entirely free from knots. The contractor in vain endeavored to convince her that no fraud was proposed, but the woman insisted on her right to have clear timber.

One of her neighbors, an old country man, after the squabble had subsided, quietly went up to the contractor and privately offered him a small sum to pick out all the planks that showed small knot, and have them laid opposite his sidewalk. Of course the reason was plain:—the knots and the wood surrounding them being much harder would wear a correspondingly longer time, and would not be worn out until the straight grained wood was splintered and destroyed. The result confirmed the old fellow's shrewdness, as the woman had to repair her part of the street long before her more far-sighted neighbor.

DRESSING A STONE.

THE method of dressing a stone has an important bearing upon its durability. As a rule it may be set down that the less jar from heavy pounding the surface is subjected to the better; this for the reason that constant impact of the blows tends to destroy

the adhesive or cohesive power of the grains, and thus renders the stone more susceptible to atmospheric influences. It is stated by Mr. Batchen that some of the dolomites used in Chicago, although apparently perfectly sound when quarried, shortly showed a tendency to scale on exposure.

On examination it appears that in dressing these surfaces were both ax and bush—hammered, the implements used weighing from eight to twelve pounds, and capable of striking blows not less than 150 to 200 pounds. The effect of these heavy blows was to "stun" the surfaces for the depth of from one-sixteenth to one-eighth, or even one-fourth of an inch, and on exposure scaling resulted, leaving them ragged and unsightly. Sawn surfaces of the same stone, on the contrary, do not usually show the slightest tendency to scale.

Results such as these are what one is naturally led to expect, but further experiments are necessary before it will answer to speak too positively regarding the merits or demerits of various kinds of finish. With compact crystalline rocks like the granites and diabases it would seem probable that rock-faced work, untouched by chisel or hammer, would prove most durable, since the crystalline facets thus exposed are best fitted to shed moisture and the natural adhesion of the grains has not been disturbed.

With the softer and more absorbent stones on the other hand, the rock surface from its irregularity and roughness is more susceptible to the attacks of moisture and atmospheric acids, and hence would probably be found less durable, although from its roughness at the start any disintegration is less noticeable than on finely-finished work. With such stones a smoothly-sawn or polished surface seems best adapted to our variable climate.—*Stone.*



The management of this journal desires to extend a cordial invitation to all Architects on this Coast and elsewhere to contribute designs for publication.

Drawings should be made with perfectly black lines on a smooth white surface. Good tracings, if made with black ink, answer the purpose.

The designs selected will be published without charge. All drawings, whether accepted or not, will be returned to their authors, who must bear express charges both ways.

One of our lithographs this month illustrates a ten class school building erected at Eureka, Humboldt county, from the drawings of the architect, Jas. E. Wolfe.

The other double plate shows the elevation of the General Keyes Building on Stockton and O'Farrell streets, in this city. This building, of which a more extended notice appears elsewhere, was designed by architect Chas. Geddes under whose supervision the building was erected.

The plans and elevation of a two-story flat, were designed by H. T. Bestor, architect, and are intended for use on a lot having a frontage of twenty-five feet.

The monument to Paul Baudry in Pere la Chase cemetery, Paris, was designed by architect Ambroise Baudry, his brother, who superintended its erection; the figures were executed by Antonin Mercie, and the bust by Paul Dubois. Paul Baudry stood high in his art. One of the latest and greatest of his works is *la glorification de la loi*.



Postmaster Bryan has notified the public that he will not collect other than first class matter left at letter boxes.

It is estimated that the Mills Building in New York city, which cost between three and four million dollars, pays him nearly 6 per cent.

Senator Stanford proposes to donate 200 acres of land in the vicinity of the Twin Peaks for use as a public park, provided Market street is extended to reach the locality.

The interior of the St. Ignatius church on Hayes street is to be decorated at an expense of \$25,000. Moretti and Trezini are the artists who have the work in charge.

The monument to Marshall, the discoverer of gold in California, was recently unveiled according to programme. The monument was designed and erected by sculptor Marion F. Wells.

D. O. Mills is in the city, and it is rumored thinks of improving his property on the northeast corner of Montgomery and Bush streets, by erecting a nine-story building somewhat similar to Mills Building in New York city.

According to the editor of *Stone* the best pavement for streets upon which there is a heavy traffic, is granite or sandstone; and that for residence streets asphalt is the thing, it being understood that the durability of any good pavement depends on its having a proper foundation.

The Board of Education has selected the Scott street lot for the new Girls' High School, and the Board of Supervisors have approved the selection. Architect T. J. Welsh has been requested to prepare plans for a brick and stone structure containing sixteen class rooms and an assembly room.

The Carpenters' Union held a very successful and enjoyable picnic on May 1st. The boats were crowded with the men and their friends, who enjoyed thoroughly the unusual holiday which broke so pleasantly the monotony of their daily toils. The various games were well contested, and many valuable and useful prizes were distributed to the successful competitors.

A handsome building has been erected near the Trocadero Palace, in Paris, for the reception of a collection of idols and other objects of worship procured and arranged by M. Guimet. Here will be exhibited divinities worshiped by the inhabitants of the pagan and uncivilized countries of the world from the early ages down to the present time. A curious collection they will be, and an interesting study as well.

The Illinois Chapter A. I. A., has assumed the control of the permanent exhibit of building materials. The enterprise was established some five years ago at Chicago, by H. L. Gay, who has conducted it since. The task assumed by the Illinois Chapter is one of no small magnitude, and is a departure from established precedents which may give rise to unfavorable criticism. We wish the enterprise may be as successful as its warmest advocates can expect.

On the 17th of April Judge Hoge gave judgment for the defendants in the case of Calvin Brown, C. E., against the City and County of San Francisco; Mr. Brown desired to collect for services rendered in investigating and reporting on the proposed new tower for the City Hall. The defense was that the services had been requested and rendered on the assumption that Mr. Brown as a public spirited citizen would be pleased to render such services gratuitously. The Judge took that view of the case in spite of Mr. Brown's assertions to the contrary.

PERSONAL.

Architect G. W. Percy is in the East on a trip combining business and pleasure.



Monument to Paul Baudry.

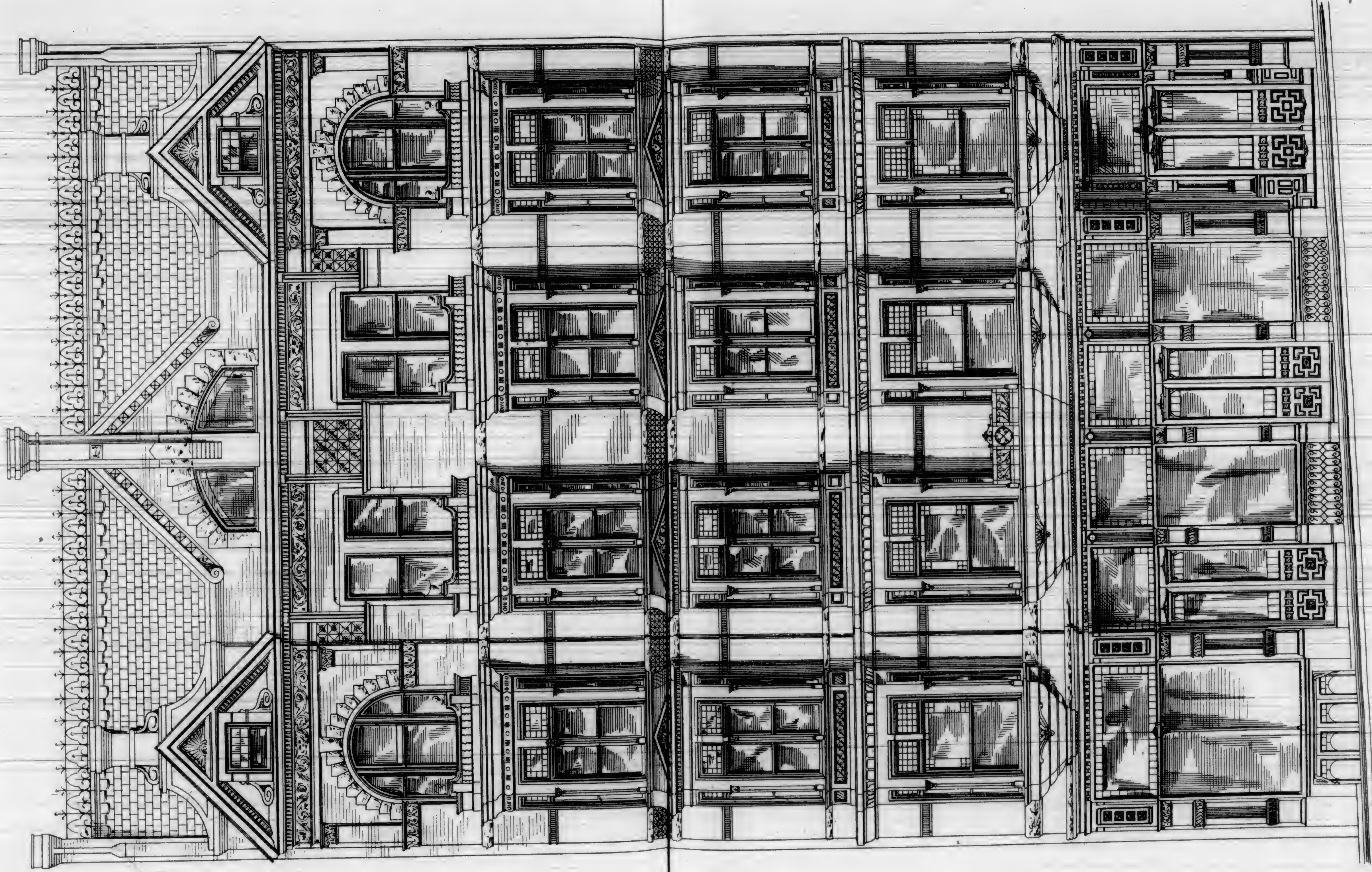
SPONTANEOUS IGNITION.

AN English authority says: "When oxide of iron is placed in contact with wood excluded from the atmosphere, and aided by a slightly increased temperature, the oxide parts with its oxygen and is converted into very finely divided particles of metallic iron having such an affinity for oxygen that, when afterward exposed to the action of the atmosphere from any cause, oxygen is absorbed so rapidly that these particles become red hot, and if in sufficient quantity will produce a temperature far beyond the ignitable part of dry timber. Whenever iron pipes are employed for circulation of any heated medium (whether hot water, hot air or steam), and wherever the pipes are allowed to become rusty, and are also in close contact with wood, it is only necessary to suppose that under these circumstances the finely divided particles of metallic iron become exposed to the action of the atmosphere (and this may occur from the mere expansion or contraction of the pipes) in order to account for many of the fires which periodically take place at the commencement of the winter season."

It is very difficult to get persons to believe that there is any danger arising from the contact of steam pipes with wood, notwithstanding that there have been well-attested cases of fire originating from this cause.

The fire at the Washington residence of Secretary Tracy, was ascribed to the burning off of the felt insulation, allowing the heating pipes to come in contact with the wood work.

The increased use of steam for heating purposes makes a close study of the subject of spontaneous ignition imperative, particularly on the part of furnace builders.—*Building Trade Journal*.



THE GENERAL KEYES BUILDING.

STOCKTON & O'FARRELL S^{rs}

CHARLES GEDDES
Architect

THE CALIFORNIA ARCHITECT AND BUILDING NEWS.



A TEN CLASS SCHOOL BUILDING, EUREKA, HUMBOLDT CO. CAL.

JAS. E. WOLFE ARCHITECT.