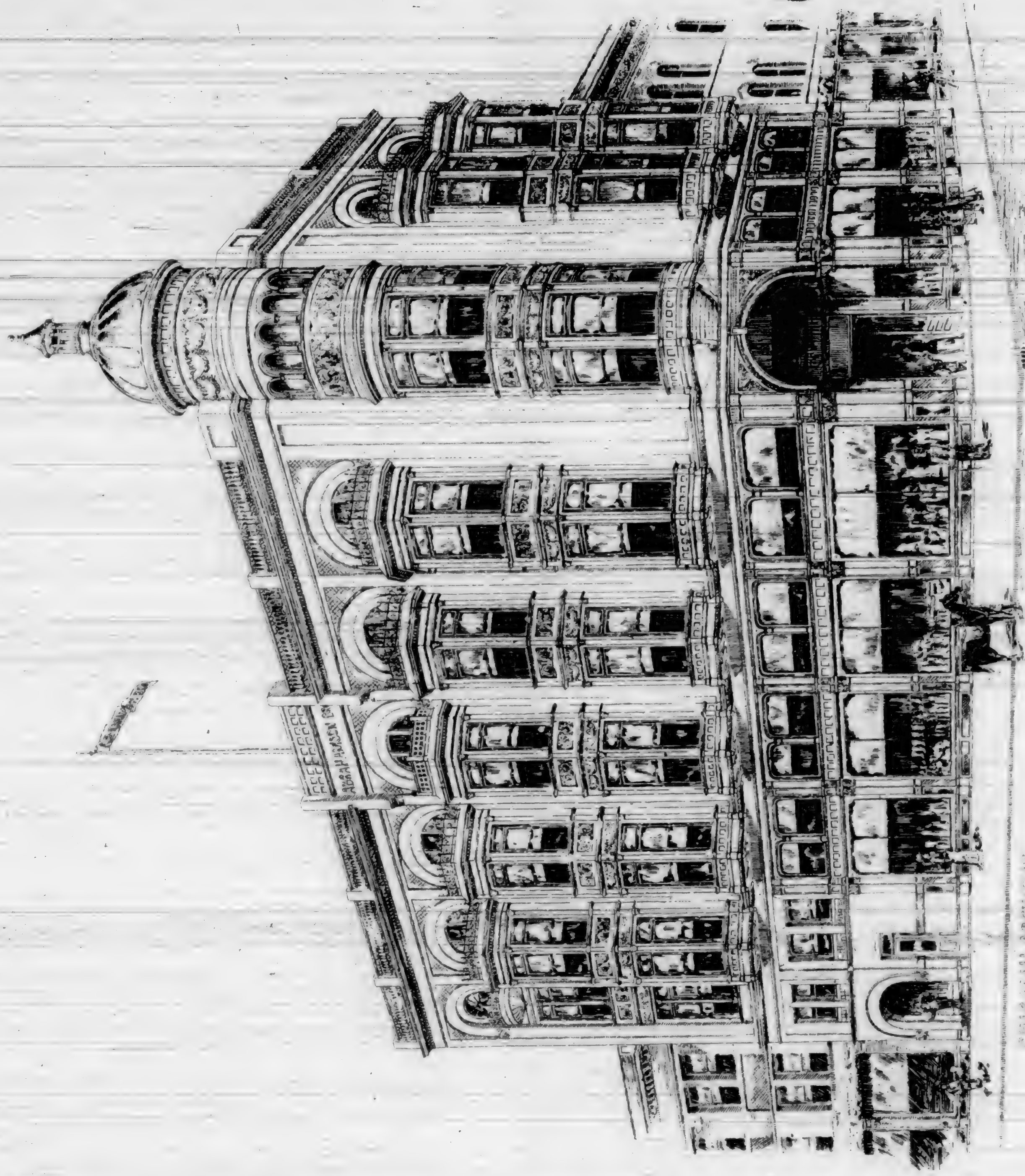


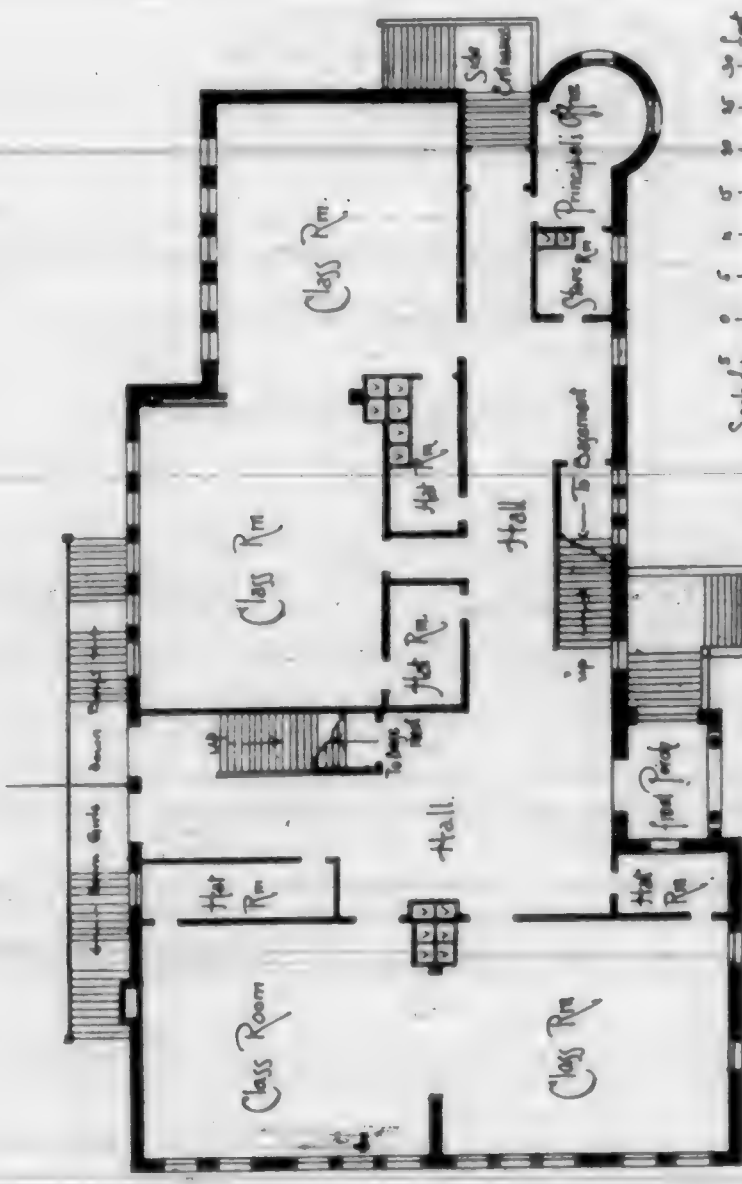


CHAS. HAU, ARCHT.

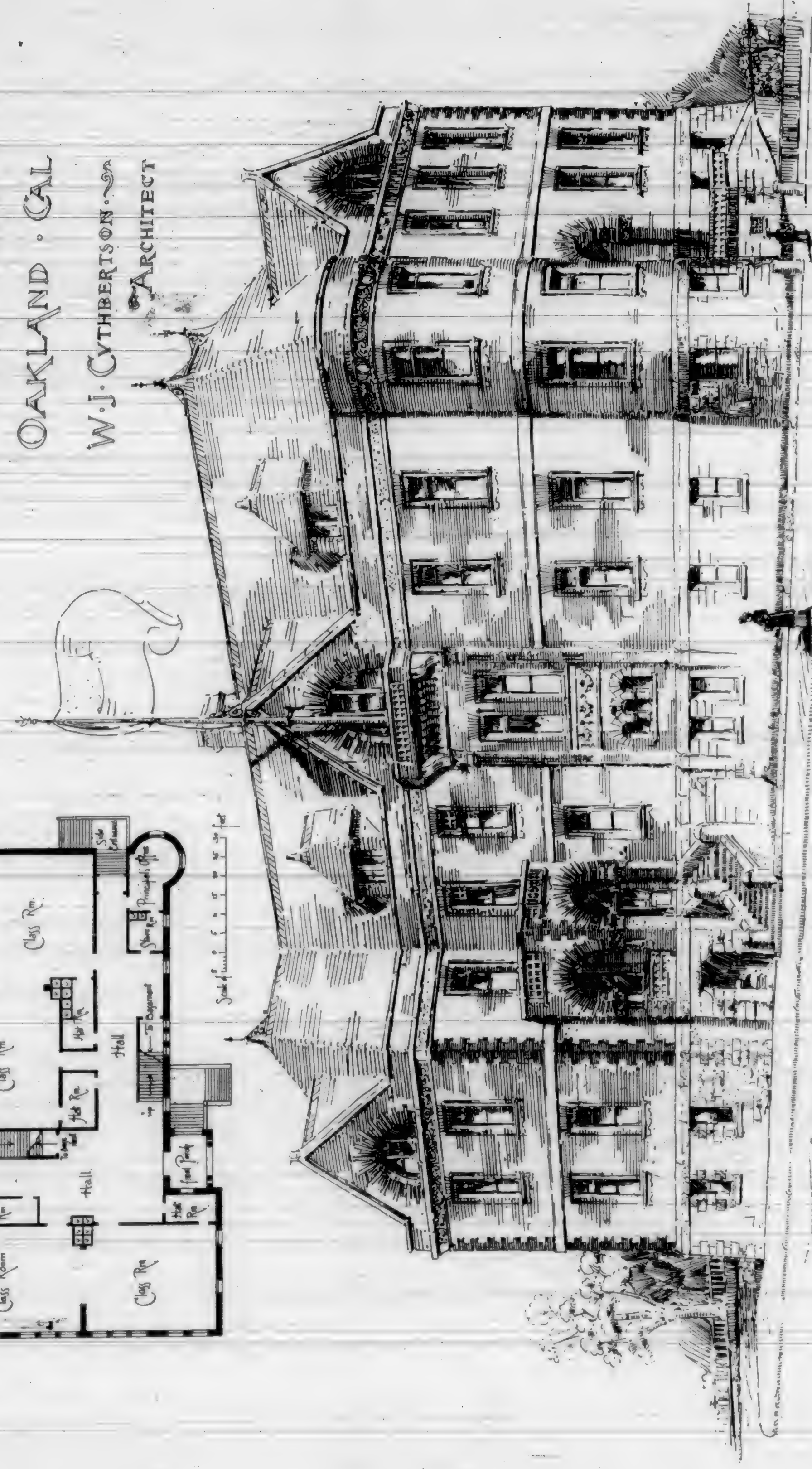
CALIFORNIA ARCHITECT & BUILDING NEWS
SAN FRANCISCO.

BRITTON & REY PHOTO LITH.

VOL. XIV. NO. 3. MARCH 1893.



SIXTH WARD
SCHOOL - HOUSE.
OAKLAND - CAL
W.J. CYTHBERTSON - ARCHITECT



PLATING A TOWER WITH ALUMINUM.

THE work of electro-plating with aluminum the iron work of the new city hall tower in Philadelphia, a surface of 50,000 square feet, is progressing so steadily at the Tacony Iron Works, that it is expected that the great task, if carried on as fast as it has been this year, will have been entirely completed in a little over three years. It will require 20,000 pounds of aluminum to plate the entire surface of 50,000 square feet.—*The Age of Steel.*

The fact that the resisting powers of the metal Aluminum have been greatly over estimated, should render the Architect careful in the use of this metal, as both acids and the atmosphere will oxidize the metal far more than is generally supposed.—*Ed. Cal. Architect.*

Since the construction of the works the consumption of water for street watering has been annually less than 5,000,000 gallons at five cents per 1,000 gallons, instead of 7,000,000 gallons at twenty-four cents per 1,000 gallons, as before. There is also a considerable saving on the gravel and flint for macadamized roads, and the author believes that these roads can be maintained for about 15 per cent less than when fresh water was used. The salt water does not seem to hurt them in any way. During the summer months the dust is kept under by the qualities of salt water, and in the early autumn, if the surface coating is removed by the broom upon the appearance of the first frost, no evil effect is traceable to the use of salt water. No complaints are made by shopkeepers, jewelers, etc., and the three reasons urged by the committee of chemical experts have given no cause for anxiety. Used in sewer flushing, salt water has cleaned them thoroughly, and after five years' experience no



INTERIOR VIEW OF RESIDENCE ON NUUANU AVENUE, HONOLULU, H. I., RIPLEY & REYNOLDS, ARCHITECTS.

MUNICIPAL USE OF SALT WATER.

THE advantages to be gained by the employment of salt water for street watering, sewer flushing, fire extinguishing and similar purposes in coastwise towns has received considerable attention from experts in municipal engineering during the past few years, and before long we shall unquestionably witness its widespread use for this purpose. Among others, H. P. Boulnois, a well-known English engineer, has had the subject under consideration, and makes the following report as to the practicability of its utilization:

"Watering the streets with sea water should be adopted wherever it is feasible, as it not only gives a delightful freshness to the air and dispels iodine, but it also causes the surface of the street to maintain its humidity for a longer period than when fresh water is used, as it impregnates the soil with hygrometric matter. This has been attempted artificially by adding common salt to the water used for watering. The general results may be stated as follows:

nuisance of any kind has followed. Its effect in the Yarmouth, England, sewers has been to reduce and almost prevent the generation and accumulation of sewer gas. Sewers can now be entered at once on the removal of the manhole cover, which was not the case before. An 18-inch pipe sewer on a gradient of 1 in 300 was formerly constantly clogged by deposits; it is now kept thoroughly clean by two flushes per day from a 3,000 gallon tank, which fills the sewer two-thirds full. There are no deposits of any sort in the sewers, except in several of the larger ones, and there it has been reduced one-half since salt water has been used. As to the effect of salt water on iron, the author says that the syphons are of galvanized sheet iron only, but they have required no repairs since they were put in. As to the sulphates in sea water, no evil effects are traceable; the town possesses no manufactories, and no acids are discharged into the sewers. The salt water has never been used for extinguishing fires, though it is available if needed. The author does not recommend it for this purpose, as he considers that a dwelling would not be habitable after its walls had been saturated with sea water."—*The Sanitary Plumber.*

ARCHITECTURAL LEAGUE EXHIBITION.

THE eighth annual exhibition of the Architectural League of New York was almost lost this year in the spacious and magnificent halls and galleries of the American Fine Arts Society's Building, 215 West Fifty-seventh street, New York.

The exhibition opened on the 2d and closed on the 24th of January. The attendance was larger than heretofore, and in some respects the exhibit was more deserving. This, however, can hardly be said of the purely architectural department, for, although there were some excellent representations of executed work, and a number of meritorious designs, there were not so many of either class as were shown in the expositions of 1891-92. This may be accounted for by the fact that in the years named there were certain causes which stimulated the ambition of American architects. Thus, in 1890 the competitive designs for St. John's Cathedral formed a special and important feature of the exhibit, while last year the Columbian collection would have been sufficient in itself to make an interesting and instructive architectural show. But while this may be called an off year, it must not be concluded that there is any decadence of interest or degeneration of genius manifest in League work; rather the contrary, for the general work is above former standards, and several sets of drawings are decidedly original. We might say American, in conception with a breadth of treatment far beyond the scope of the mere imitators, and adaptors who could not if they would, and would not if they could, depart from the conventional track. First and most striking among these is the California State Building, to be erected in Jackson Park, Chicago. This is a spacious but low, yet imposing structure in the characteristic Mission style of the Spanish settlements. Connecticut, Maryland, Rhode Island, New Hampshire, New Jersey, Pennsylvania, Nebraska, New York, North Carolina, Iowa, Georgia, Ohio, Minnesota, Texas and Massachusetts are also represented by designs of State buildings for the Columbian Exposition, but the Georgian design by G. L. Norrman, of Atlanta, is the only one which can be considered an exponent of a type. The design is characteristic of the Sunny South, where the public buildings have always been more ornate and graceful than in the more material North. It is of the Grecian temple style, but there is enough originality and boldness in the treatment to defend the architect from any suggestion of a too slavish conservatism. There

is a beautiful proportion carried out in the details, and the whole is a harmonious picture.

Among the studies is a design by Henry B. Herts, for the Columbian Memorial Arch in New York. This was fully described and illustrated in a former number, but in passing we may express our regret that it is not to materialize in marble, or at least not so soon as was anticipated when its temporary forerunner was receiving the plaudits of the hundreds of thousands who passed under it three months ago.

If Mr. Herts had been an architect of the Pecksniffian type he might have had enough pull to work off on a committee a much less meritorious work by some unfortunate Chuzzlewit, but such is life, and even in architecture the reward of merit too frequently goes to the ostentatious pretension.

The grand market at Lima, by A. Page Brown, has something in common with the California design mentioned above although there is no similarity whatever in the buildings. The style is distinctively South American, with arcade and colonnade, and is a happy combination of the graceful Spanish-Morisco, with a leaning to the solidity of the Flemish.

The annex to the exhibit which includes antiquities, bric-a-brac, painting, sculpture, etc., would be deserving of a much more extended notice if it were not that our last year's description nearly covers the same ground, except that the patrons of the League have been more than ordinarily liberal in their contributions to the loan department.—*The Architectural and Building Monthly.*



TENDERS TO BE RECEIVED.

Treasury Department, Office Supervising Architect, Washington, D. C., February 23rd, 1893. Sealed Proposals will be received at this office until 2 o'clock p. m. on the 30th day of March, 1893, and opened immediately thereafter, for all the labor and materials required for Hospital and Attendants' Buildings, Laundry Building, etc., U. S. Quarantine Station, Angel Island, San Francisco, California, in accordance with the drawing and specification, copies of which may be had on application at this office or the office of the Superintendent at Angel Island, San Francisco, Cal.

Each bid must be accompanied by a certified check for a sum not less than 2 per cent. of the amount of proposal. The right is reserved to reject any or all bids and to waive any defect or informality in any bid, if it be deemed in the interest of the Government to do so. All bids received after the time stated will be returned to the bidders. Proposals must be enclosed in envelopes, sealed and marked, "Proposal for Hospital, Attendants' Buildings, Laundry Building, etc., U. S. Quarantine Station, Angel Island, San Francisco, California," and addressed to, W. J. EDBROOKE, Supervising Architect.

Treasury Department, Office Supervising Architect, Washington, D. C., March 2d, 1893. Sealed proposals will be received at this office until 2 o'clock p. m. on the 6th day of April, 1893, and opened immediately thereafter, for all the labor and materials required for the interior finish of the U. S. Post Office, etc., building at Sacramento, California, including iron work, lathing, plastering, iron stairs, concrete floors, joiner work, wood flooring, marble work, painting, polishing, glass, hardware, etc., in accordance with the drawings and specification, copies of which may be had at this office or the office of the Superintendent at Sacramento, Cal.

Each bid must be accompanied by a certified check for a sum not less than 2 per cent. of the amount of the proposal. The right is reserved to reject any or all bids and to waive any defect or informality in any bid, if it be deemed in the interest of the Government to do so. All bids received after the time stated will be returned to the bidders. Proposals must be enclosed in envelopes sealed and marked, "Proposal for Interior Finish of the U. S. Post Office, etc., Building at Sacramento, California, and addressed to, W. J. EDBROOKE, Supervising Architect.

LEGAL DECISIONS.

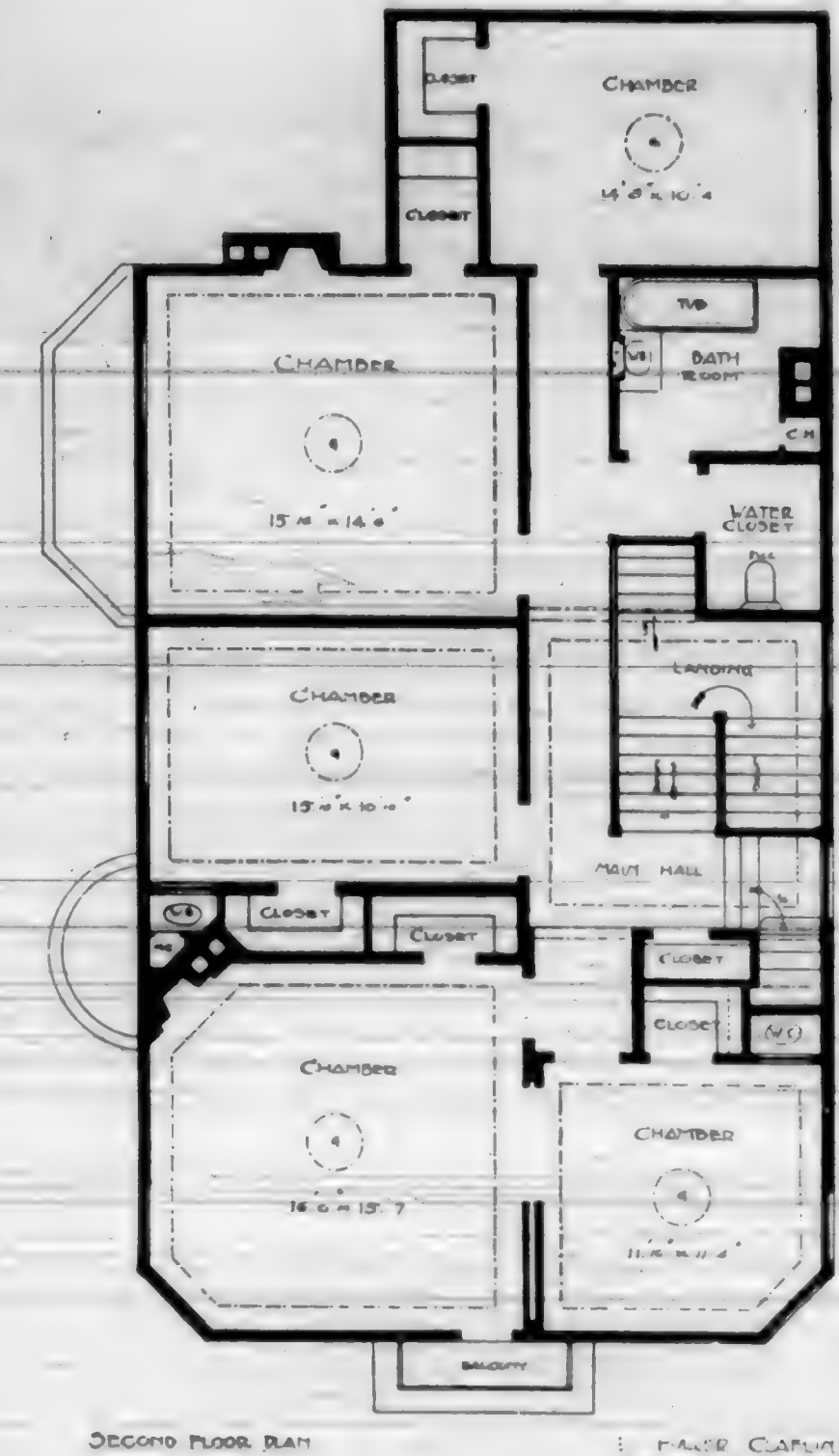
From a large number of Legal Decisions of the higher Court, of the different States of the Union, we select and publish in this column, such as appear applicable to this section of the country.

DISTRICT COURT CANNOT ALTER PERIOD OF REDEMPTION.—A district court cannot, in the exercise of the discretionary powers conferred upon it by statute, extend or enlarge the period of time within which real property must be redeemed from a sale made in proceedings to foreclose a mechanics' lien.
Anderson v. Kerr, Supreme Court of Minn., 53 N. W. Rep. 719, 43.

WHEN BUILDER IS NOT LIABLE FOR REFUSAL TO ACCEPT BID.—The terms of the proposals to receive bids not being proven, not that the builder was to be bound by the offer of the lowest bidder, and it not being established that a certain bidder was the lowest, the builder is not liable in damages for violation of contract.
Reusch v. American Brewing Co. Supreme Court of Louisiana, 11 S. Rep. 719, 59.

JURISDICTION OF COURT OVER MECHANICS' LIEN.—Where there is due a contractor a certain amount for which, less his liens allowed his sub-contractors, laborers and material men, he is entitled to a lien, and the court allows the lien of such sub-contractors, laborers and material men, to an aggregate less than the amount for which the contractor would otherwise be entitled to a lien, and deducts that aggregate from such amount, allowing him a lien only for the remainder, the owner is not prejudiced by error in determining the amounts due the sub-contractors, laborers and material men, and cannot complain. Where a pleading for a mechanics' lien sets up but a single lien, no bills of particulars need be filed.

Menzel v. Tubbs, Supreme Court of Minnesota, 53 N. W. Rep. 653, 119.



SECOND FLOOR PLAN.

EFFECT UPON LIENS OF GIVING FALSE RECEIPT.—A material man is not estopped from seeking to foreclose his liens for materials furnished by him to the contractor by reason of his giving a false receipt for the amount due him, to enable the contractor to obtain a payment from the owner, where the owner has paid out no money, and suffered no loss on account of such receipt.

Washburn v. Kahler, Sup. Ct. of California, 31 Pac. Rep. 741, 68.

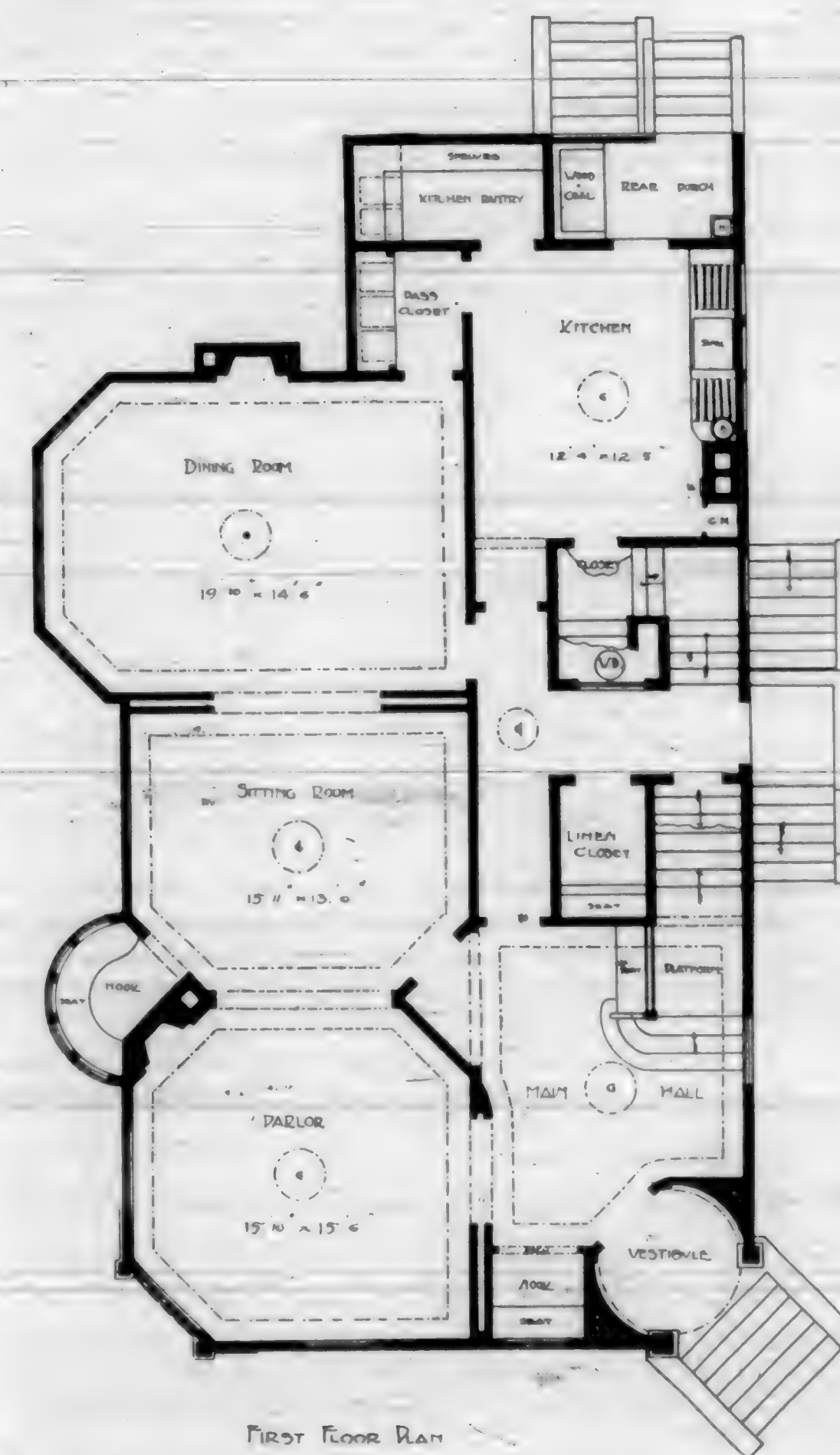
PRIORITY OF MECHANICS' LIEN OVER MORTGAGE.—Under the statute providing for a lien for work on any building or other improvement on land under contract with the owner of the building and the land on which it is situated; and that such lien shall be preferred to all other liens and incumbrances attached to such building and land subsequent to the commencement of the building, a lien for work done as a mechanic on a building was superior to the lien of a mortgage on the property given and recorded before the work was begun, but after the building had been commenced.
Apperson v. Farrell, Supreme Court of Arkansas, 20 S. W. Rep. 514, 102.

MISTAKE IN LIEN STATEMENT.—The Oregon statute provides that the statement filed shall contain a true statement of the claimant's demand, after deducting all just credits. Plaintiff filed a lien stating that the value of the material furnished by him was \$783, and that no payments had been made thereon. On the trial, plaintiff admitted that prior to the filing of the lien \$100 had been paid, and stated that the misstatement in the lien was due to a mistake of his agent. Held, that the mistake not being one about the amount or price of labor, or the quantity or value of material furnished, in regard to which there might be an honest difference of opinion, but being one which could have been avoided by the exercise of reasonable diligence, the lien was invalid.

Nicola Bros. & Co. v. Van Fridagh, Supreme Court of Oregon, 31 Pac. Rep. 288, 135.

ENFORCEMENT OF MECHANICS' LIENS.—The seller of a certain building agreed with the purchaser, to remove and completely rebuild it upon a lot belonging to the latter. The seller then contracted with a builder to furnish all materials needed, and to perform the necessary labor in accordance with the terms of his agreement with the purchaser. The builder failed to complete the reconstruction of the building as agreed upon, and also allowed lien claims to be filed against the property, for materials furnished to him for rebuilding, in an action to foreclose the liens, a mortgage given by the purchaser to secure the payment of his note to the seller, for the amount agreed upon as the price of the completed building, was secondary to the liens of the material men, and as between the seller and the purchaser and the seller, the latter was liable to the former for the failure of the builder to complete the contract.

Bassett v. Menan, Supreme Court of Minnesota, 53 N. W. Rep. 1064, 163.



FIRST FLOOR PLAN.

A. H. WARD'S RESIDENCE. FULLER CLAFLIN, ARCHITECT.



The Hawaiian Islands have not yet been annexed.

Edward R. Swain, Architect, has resumed the practice of his profession. Room 227, Crocker Building, eleventh floor.

The Assembly Bill introduced by the Hon. J. M. Curtis, in regard to regulating the practice of Architecture in this state came up on the 8th instant and was defeated.

The municipal ordinances regulating the erection of buildings in the city and county of San Francisco are to be remodelled, to bring them more in harmony with the requirements of modern construction.

An interesting feature of the Government exhibit will be a model of the earth, with all the geometrical accuracy that mechanism and art can give to such a difficult representation. It is intended to form a part of the exhibit from the General Land Office of the Interior Department. So far as known it is the largest globe ever constructed. It will surmount a star-shaped edifice, which pedestal will elevate the monster globe fifteen feet above the floor, so that it will rise above the surrounding exhibits. The globe will be sixty-three feet in circumference. A stairway in the pedestal will give access to a gallery at the base of the globe, which will revolve on a horizontal axis. —*Warner's Building Review.*

We have no genuine art, as a people, and we can never have so long as that which calls itself "Modern Civilization" possesses so little kinship with the true civilization which has created art in the past. We never consider the essential impulse of art, and it is pitiful to see the poor little attempts we make towards this end, still dimly felt to be desirable. We build big museums of art and crowd them with pictures filched from their homes; and casts which for purposes of art educating, are useless.

Then the people go and stand before the mute memorials of dead civilization, wistfully and hopelessly. It would be laughable were it not miserable. One is reminded of a child who gathers roses and lilies and thrusts their stalks into the sand, hopeful of a fair garden. —*Ralph Adams Cram in The Architectural Record.*

In view of the large number of petty larcenies from buildings, special preference being shown for mechanics' tools, it would be well for mechanics of all kinds to have their names stamped in several places on all of the tools. A steel stamp costs a very small sum. Saws may be indelibly marked by writing your name on same with a sharp pointed piece of hard wood, which has been dipped in Nitric Acid. —*Wolfe's Building Review.*

Probably the oldest timber in the world which has been subjected to the use of man is found in the ancient temple of Egypt, in connection with stone work, which is known to be at least 4,000 years old. This was the only wood used in the construction of the temple, and it is in the form of ties, holding the end of one stone to another. When two blocks are laid in place, an excavation about an inch deep was

made in each block, in which one of these wooden ties, shaped like an hour glass, was driven. It is, therefore, very difficult to force a stone from its position. These ancient ties are made of timarisk or Shittim wood, the same as that from which the ark was constructed. —*St. Louis Republic.*

Ambrose Bierce recently criticized, with much reason, the backhanded way our laws are made and enforced. Mr. Bierce has no patience with stupidity, and it does one good to read his vigorous language in denunciation of the senseless system by which our laws are enforced first and declared void afterward—after mentioning a particular case he generalizes as follows:

"In this State, in every State, thousands, millions of dollars are lost, great industries ruined, families reduced from prosperity to poverty, whole communities driven from their homes, by some Supreme Court coolly declaring unconstitutional laws that have for years been enforced by the terrible power of the State or the Nation. There is no way to distinguish such laws from other laws—the greatest jurist in the world cannot do it; yet of them it may be said that to resist them is calamity, to obey, disaster. The only safety is emigration.

"The overthrow of this barbarous and inhuman system is too much to hope for; it has behind it the inert strength of too many centuries. There is not a lawer, out of jail—and none get in—but can give you two score reasons why things should be as they are; and there is not a fool but will swallow the whole forty with never a twist of the face."

Obviously, the good of the community would be served by making the Supreme Court pass on the Constitutionality of Laws, before compelling the executive to enforce them.

Is it not worse than childish, is it not absolutely idiotic, to allow legislatures to make, and governments enforce laws, that it is unconstitutional and to make consequently the refinement of cruelty to enforce?

Mr. Bierce insinuates that the lawyers are too much interested in the continuance of the present senseless method to allow of reform; yet it is a reform that would be of incalculable benefit to the public.

The proposition to change the location of the State Capital from Sacramento to San Jose will be submitted to the people at the next election.

One of the recent industries added to the already numerous manufactures carried on in Chemnitz, Saxony, is the production of curtains made of india-rubber as the main ingredient. The material employed for this purpose consists of 75 per cent of india rubber, 5 per cent of wool dust, 5 per cent of pulverized fruit stones, 10 per cent of bleached amber varnish and 5 per cent of bleached leather waste; to these being also added, if deemed necessary, a quantity of infusorial earth. The various substances thus named are together worked up with bisulphide of carbon in the most perfect manner into a thick mass, and from this are rolled out thin leaves, which are capable of being decorated with the greatest variety of ornamental patterns, and several of these leaves are combined to form a curtain. —*New York Sun.*

The Legislature lately adjourned has modified the Lien Laws.



BUSINESS MOSAICS.

Roche Harbor Lime in quantities to suit the trade, C. L. Dingley, Agent, 29 Steuart street, San Francisco.

FARMER—"Well, I've heard of red currants, black currants and white currants, but I'll stop chewin' if ever I heard of alternating currents." —*New York Truth.*

Messrs. Dyer Bros. of 110 Main street have only been in business a short time, but by doing good work, and at living prices, giving satisfaction to their customers, they now number among their patrons the first architects of the city. They made all the fence work on the Hibernia Bank. Persons requiring iron work of whatever description should give them a call. Hammered wrought iron work a specialty.

PROFESSOR (to class in physics)—Now, describe this electrical machine if you please. **HEAD BOY**—It consists of a large glass wheel, turned by a crank. (Applause from the class.) —*Brooklyn Life.*

On page V of this number we would call architects attention to the advertisement of the J. L. Mott Iron Works. As with all things gotten out by this company the articles shown are unique in design and beauty of finish and well worthy the attention of those contemplating building a residence. The company's representative in this city is always willing to furnish all necessary information.

An interesting piece of information brought out during the Brussels conference is the fact that there are at present no less than \$100,000,000,000 of counterfeit silver in money circulation in France, Belgium, Switzerland, Italy, Spain and Portugal.

The Vulcan Iron Works of 135-145 Fremont street, make everything in the way of stable fittings, also architectural and ornamental iron work of every description; hand hoists, tramways, refrigerators and ice machines. If you are in want of anything in their line call on them.

Careful scientific investigations show that the average speed of the transmission of earthquake shocks is nearly 16,000 ft. per second.

Persons building houses should not be without Dixon's Cement Laundry Tray, both from a sanitary as well as an economical point of view, no foul odors arise from them as is the case with wooden ones and they last longer and are easily kept clean. Mr. Dixon's place of business is 40 and 42 Eighth street between Market and Mission.

It is difficult to pardon in another the weakness that is your own pet vice.

The Phoenix White Lead and Color Works of 713 Sansome street, guarantee the Phoenix Pure Paint and will replace it free of charge with any material the architect may select if it is not satisfactory; being machine mixed it is ground to the last degree of fineness, does not chalk and is much more economical than paint mixed by hand. See advertisement on page XV.

Some people are of the opinion that heating a house by the use of steam or hot water has a tendency to make the house too damp or dry as the case may be. This is not so. Call on Mr. J. J. Lawton, agent for the Gurney heater, of 418 Fulton street, who will be pleased to give the reasons therefor and any information relative to the merits of heating by the use of steam or hot water.

The government of Belgium has formally taken over the telephonic system of that country.

Yellow Pine has been in use on this coast since the earliest days of its settlement. The superior qualities of this wood for finishing for house and office work should be more generally known. The wood grown down on the lower levels of the coast line make a superior framing lumber, as it does not have the springing tendency that Oregon pine has. As we ascend the mountain ranges the yellow pine becomes softer and better adapted for doors, sash and finish, and after reaching the summit, that grown on the easterly slope, resembles the eastern pines. Therefore, the location of the saw-mills has a very considerable bearing on the quality of the product.

The lumber mills of Messrs. Harris & Jones, are located in one of the best of these tracts of soft yellow pine, where they are preparing a superior quality of this lumber and which may be had at their yards, 728 Bryant street, in this city.

In a letter to the Rapid Safety Filter Co., W. T. Wenzell, M. D., Professor of Chemistry in the California College of Pharmacy, Department of the University of California, says:—From an examination of the city drinking water made by me some years ago at the instance of the Board of Health, I became satisfied of the great necessity of filtering the water. Not until I had seen and tested the workings of the Rapid Safety Filter, had I found a filter that to my idea could do this work properly.

Its chief merit lies in the fact that though connected with the service pipe, it is a non-pressure filter; the water filtering through it by percolation only and not by hydraulic or other artificial pressure. No pressure filter can prevent the transmission of microscopic disease germs.

I predicted at once the success of your filter, because I believed that there was not a family in San Francisco able to procure one that would persist in boiling unfiltered water and its germs for soup, tea and coffee, when the luxury of removing the impurities from these beverages by filtering the water could be enjoyed.

As an antiseptic filter, none better could be constructed. The filtering medium used is the best absorbent for odorous gases and putrid organic matter known; and renders the water so filtered as limpid, sparkling and wholesome as the purest mountain spring.

If every user of the Rapid Safety Filter derives as much satisfaction as I have from mine in my laboratory, and enjoys the exemption from sickness that my family has since its use in my residence, you will have abundant testimony to the superior merit of your filter over all others now in use.

CITY BUILDING NEWS.

Alpine near Ridley. To build; owner, Wm. Patterson; contractor, A. J. Duke; signed, Feb. 10; filed, Feb. 13; cost \$2,500.

Ash Avenue near Laguna. To build; owner, August Koerber; architect, H. Geiffuss; contractor, L. D. Frichette; signed, March 2; filed, March 2; cost \$1,400.

Battery between Pine and Bush. Store alterations; owner, Levi Strauss; architects, Wright & Sanders; contractor, T. McLachlin; cost \$5,700.

Broadway and Steiner. Two-story frame; owner, M. Van B. Watson; architect, J. B. Mathison; contractor, A. Jackson; signed, Feb. 7; filed, Feb. 11; cost \$4,200.

Bush near Powell. Plumbing, two-story frame; owner, Mrs. L. M. Bigelow; architect, J. C. Newson; contractor, Wm. F. Wilson; signed, Jan. 31; filed, Feb. 16; cost \$1,050.

Dryden Avenue 24th. Alterations and additions; owner, Margaret Burns; architect, E. A. Hornan; contractor, H. Jacks; signed, Feb. 28; filed, March 1; cost \$1,880.

California near Laguna. Three-story frame; owner, J. and Mary Dowling; contractor, Allen MacDonald; signed, Feb. 17; filed, Feb. 18; cost \$5,500.

California and Taylor. Granite wall; owner, C. P. Huntington; architect, J. D. Isaacs; contractor, Robt. Kirk; filed, Feb. 18; cost \$9,500.

California and Taylor. Iron fence; owner, C. P. Huntington; architect, John D. Isaacs; contractor, H. Ralston; signed, Feb. 27; filed, Feb. 28; cost \$1,000.

Capp between 18th and 19th. Two-story frame; owner, W. T. Little; contractors, Houston Bros.; signed, Feb. 27; filed, Feb. 28; cost \$4,000.

Cook corner Pl. Lobos Ave. Mill work; owner, Carster Otten; architect, M. F. Le Berge; contractors, California Mills; signed, Feb. 14; filed, Feb. 15; cost \$800.

Eleventh Ave. near Clement. One-story cottage and stable; owner, Chas. Leamon; architects, John & Balczynski; contractor, Jas. Geary; signed, Feb. 16; filed, Feb. 21; cost \$1,850.

Eleventh near Folsom. Alterations, etc., except plumbing; owner, Ellen Huebner; architect, Jas. P. Brady; contractor, J. W. Connell; signed, Feb. 23; filed, Feb. 24; cost \$4,350.

Elmira and Augusta. Cottage; owner, J. H. Dolan and wife; contractor, A. Klahn; signed, Feb. 16; filed, Feb. 16; cost \$1,190.

Ellis and Mason. To build; owner, Y. M. C. A. Assn.; architect, A. Page Brown; contractors, Mahoney Bros.; signed, March 2; filed, March 2; cost \$30,000.

Fair Oaks near 23d. Alterations and additions; owner, Roger Carroll; architect, J. F. Kenne; contractors, Currie & Loomer; signed, Feb. 17; filed, Feb. 24; cost \$2,125.

Fifth and Clara. One-story frame; owner, architect and contractor, J. J. Clark; cost \$2,150.

Fulton and Broderick. To build; owners, A. Brown & E. Gruber; architect, W. H. Lillie; contractor, J. G. Adams; signed, Feb. 14; filed, Feb. 14; cost \$5,000.

Fulton and Scott. Two-story frame; owner, Henry Knist; architects, John & Balczynski; contractor, C. A. Hippely; signed, Feb. 18; filed, Feb. 14; cost \$5,450.

Golden Gate Ave. near First Ave. To build; owner, Herman Waling; contractor, J. Schuler; signed, Feb. 13; filed, Feb. 17; cost \$1,400.

Howard and 4th. Plumbing, four-story brick; owner, Annie M. Farrell; architects, Shon & Shon; contractor, Richard Rice; signed, Feb. 28; filed, March 2; cost \$4,000.

Humboldt near City Hospital. To build; owner, Geo. Hartman; architect, J. G. Behrens; cost \$1,800.

Kearny near Clay. Iron work; owner, E. L. Heuter; architect, H. Geiffuss; contractor, Fred Wagner; signed, Feb. 23; filed, Feb. 23; cost \$8,644.

Kearny and Clay. Remove old building and carpenter work on same; owner, E. L. Heuter; architect, H. Geiffuss; contractor, F. W. Kern; signed, Feb. 23; filed, Feb. 23; cost \$5,550.

Leavenworth near Filbert. Alterations; owner, Amelia C. Rochford; architect, S. W. Hemenway; contractor, H. Behrens; signed, March 2; filed, March 2; cost \$2,400.

Lyon near Haight. Cottage; owner, Robert N. Silver; architect, J. B. Wuerschling; contractors, Home Bldg. Co.; signed, Feb. 23; filed, Feb. 24; cost \$2,383.

Main street No. 344. Alterations; owner, Margaret Curtin; contractors, Craig & Fulton; signed, Feb. 18; filed, Feb. 17; cost \$1,850.

Market near Guerrero. To build; owner, Benj. Goldfish; architect, W. H. Lillie; contractor, W. H. Wickersham; signed, Feb. 25; filed, Feb. 27; cost \$2,600.

McAllister near Lyons. Two-flats; owner, Mary Doherty; architect, J. B. Wuerschling; contractors, Home Building Co.; signed, Feb. 11; filed, Feb. 16; cost \$3,600.

Minna near 7th. Alterations; owner, Sarah J. McLaughlin; contractor, J. Ehmann; signed, Feb. 17; filed, Feb. 17; cost \$1,900.

Mission street, No. 147. Alterations; owners, J. W. McElroy, et al.; architect, P. R. Schmidt; contractor, S. H. Kent; signed, Feb. 13; filed, Feb. 14; cost \$3,800.

Octavia and Green. To build; owner, Konrad Schneider; contractor, Wm. Knapp; signed, Feb. 16; filed, Feb. 13; cost \$3,900.

Pacific near Hyde. Millwork, 8 flats; owner, Pauline Greenberg; architect, W. C. Dickerson; contractor, W. R. Johnson; signed, Feb. 25; filed, Feb. 28; cost \$1,525.

Perry near 5th. Two flats; owner, Annie Galfather; contractor, Jas. McDonald; signed, March 1; filed, March 3; cost \$1,700.

Pine near Montgomery. Three-story brick; owner, Henry Caillaud; architect, Emile Deperre; contractor, H. Behrens; signed, Feb. 28; filed, March 1; cost \$3,000.

Pine near Montgomery. Three-story; owner, Henry Caillaud; architect, E. Deperre; contractor, A. T. Mills; signed, Feb. 21; filed, Feb. 28; cost \$2,250.

Point Lobos and 1st Ave. Plumbing; owners, Geary street R. R. Co.; contractor, H. Williamson; signed, Feb. 16; filed, Feb. 16; cost \$1,134.

Polk street, Nos. 1710 and 1712. Alterations and additions; owner, Jas. Podesta; architect, Oliver Everett; contractor, Fred Renfort; signed, Feb. 27; filed, Feb. 27; cost \$2,625.

Post near Gough. Two-story frame; owner, Emma Taylor; architect, G. W. Kenitzer; contractors, Schutte & Kreeker; signed, Feb. 28; filed, Feb. 28; cost \$5,389.

Randall and Chenery. Eight flats; owner, Sophie Koster; architect, H. D. Mitchell; contractor, J. N. McLeod; signed, Feb. 11; filed, Feb. 14; cost \$8,540.

Scott near Vallejo. To build; owner, C. A. Murdock; architects, Coxhead & Coxhead; contractor, F. G. Kronnick; signed, Feb. 20; filed, Feb. 20; cost \$1,763.

Sickles and Huron Ave. To build; owners, Jno. and Bridget Maloney; contractor, J. L. McLaughlin; signed, Feb. 13; filed, Feb. 24; cost \$3,200.

Sullivan near Stanyan. Cottage; owner, Chas. Duffy; architect, J. Wuerschling; contractors, Home Building Co.; signed, Feb. 11; filed, Feb. 11; cost \$1,950.

Sixteenth near Dolores. Three-story frame; owner, Hannah Boyle; architect, H. Geiffuss; contractor, Henry Rohling; signed, Feb. 27; filed, Feb. 27; cost \$4,418.

Tenerville near Susquahanna. Two-story frame; owner, Father T. Fitzpatrick; architect, T. J. Welch; contractor, W. J. B. Warner; signed, March 2; filed, March 2; cost \$4,485.

Townsend near 4th. Three-story corrugated iron house; owner, David Hewes; architects, Percy & Hamilton; contractor, A. H. Plummer; cost \$3,077.

Twentieth near Church. Two-story frame; owner, Edienne Garneau; contractor, Jos. L. Binet; signed, Feb. 20; filed, Feb. 21; cost \$2,200.

Twentieth near Howard. Two-story frame; owner, Rachael Rosenblum; architect, A. J. Barnett; contractor, I. Wells; signed, Feb. 13; filed, Feb. 18; cost \$5,000.

Twenty-first near Castro. Two-story frame; owner, J. A. McCormick; contractors, Marcuse & Remmel; signed, Feb. 27; filed, March 2; cost \$4,300.

Walter and Ashbury. Two-story frame; owner, Wm. B. Dolan; architect, A. C. Lugens; contractor, C. M. Mason; signed, Feb. 15; filed, Feb. 18; cost \$2,330.

Webster near Geary. Two-flats; owner, Josephine Read; architect, W. H. Lillie; contractor, T. T. Pottinger; signed, March 1; filed, March 2; cost \$3,000.

ALAMEDA COUNTY.

Addison near Shattuck avenue, Berkeley. Two-story frame; owner, R. Johnson; contractor, G. A. Emburg; signed, Feb. 18; filed, Feb. 21; cost \$3,400.

Albion near Telegraph Ave., Oakland. To build; owner, Mrs. R. M. DeGolia; architect, J. S. Adams; contractor, John P. Baudin; signed, Jan. 30; filed, Feb. 2; cost \$4,007.

B near Fifth, Haywards. To build; owner, H. P. Jessen; architect, E. W. Mervin; contractor, A. Ubbhoff; signed, Feb. 7; filed, Feb. 13; cost \$1,575.

Brush and 7th street, Oakland. Two-story frame; owner, J. T. Kelley; architect, Chas. Mau; contractors, Bassett Bros.; signed, Feb. 23; filed, Feb. 23; cost \$4,445.

Ellsworth near Dwight Way, Berkeley. To build; owner, W. E. Loy; architects, Coxhead & Coxhead; contractor, E. A. Wheeler; signed, Feb. 4; filed, Feb. 10; cost \$3,100.

Eighteenth and San Pablo Ave. Additions and alterations; owner, Mrs. J. E. Johnson; architect, John Johnson; contractor, C. N. Bolles; signed, Feb. 1; filed, Feb. 6; cost \$3,230.

Ford's Addition, Lot 7, East Oakland. To build; Mrs. M. Ebeling; architect, A. W. Smith; contractor, H. E. Brown; signed, Feb. 8; filed, Feb. 9; cost \$1,200.

Grant and Santa Clara Ave. To build; owner, Nellie Liese; contractor, A. W. Cornelli; signed, Feb. 13; filed, Feb. 16; cost \$4,250.

Robert and Grove, Oakland. Church to build; owner, Rev. T. McSweeney; architect, C. J. I. Devlin; contractors, P. B. and P. H. Hughes; signed, Feb. 1; filed, Feb. 3; cost \$3,400.

Relsey near Russell, Berkeley. To build; owner, L. C. Williams; architect, R. H. White; contractor, H. S. Haseltine; signed, Feb. 21; filed, Feb. 24; cost \$3,800.

Lorina street and Ashbury avenue, Berkeley. To build; owner, J. L. Woods; architect, G. A. Bordwell; contractor, C. L. Lombard; signed, Feb. 18; filed, Feb. 18; cost \$5,018.

Main and Second streets, San Lorenzo. Alterations and additions; owner, San Lorenzo V. Hall Association; architect, G. Bordwell; contractor, Wm. Smith; signed, Feb. 1; filed, Feb. 14; cost \$1,895.

Morton near Santa Clara Ave. To build; owner, H. V. Herbert; architect, A. Steubit; contractor, J. J. Boyle; signed, Feb. 8; filed, Feb. 9; cost \$1,875.

Oakland Heights Tract, Oak lot 3, block L. To build; owner, E. A. Walz; contractor, W. H. Weilbye; signed, Feb. 16; filed, Feb. 21; cost \$3,500.

Occidental near McKee street, Oakland. House and barn to build; owner, R. Wilkinson; architect, C. Winstanley; contractor, T. E. Armstrong; signed, Feb. 6; filed, Feb. 11; cost \$2,600.

Pacific Ave. near St. Charles street. To build; owner, R. H. Baird; architect, F. P. Fisher; contractors, D. Straub & Son; signed, Feb. 13; filed, Feb. 15; cost \$1,550.

San Antonio Ave. near Willow. To build; owner, B. Ghilleri; architect, Chas. Shaner; contractors, C. H. Foster & Son; signed, Feb. 8; filed, Feb. 8; cost \$4,057.

Santa Clara Ave. and Encinal streets. To build; owners, J. H. & S. Harris; contractor, A. R. Denke; signed, Feb. 15; filed, Feb. 17; cost \$2,560.

Santa Clara Ave. To build work shop; owner, F. J. Fletter; architects, Percy & Hamilton; contractor, J. E. Henderlong; signed, Feb. 21; filed, Feb. 23; cost \$1,066.

Ten-tonia Park, Block 6 and 7. To build; owner, Geo. Whittel; architects, Coxhead & Coxhead; contractors, W. T. Veitch & Son; signed, Feb. 8; filed, Feb. 24; cost \$10,800.

Thirteenth Ave. and Twentieth, East Oakland. To build; owner, Isabella Wright; contractor, J. A. Aymar; signed, Feb. 21; filed, Feb. 24; cost \$3,300.

Twenty-fourth and Eighth Ave., Oakland. To build; owner, Mrs. M. B. Smith; architect, W. J. Mathews; contractor, F. W. Knight; signed, Feb. 21; filed, Feb. 23; cost \$10,393.

Union near Bancroft Way, Berkeley. To build; owner, R. H. Longbridge; contractors, W. T. Veitch & Son; signed, Feb. 18; filed, Feb. 20; cost \$3,900.

Valdes and Den'n, S. M. Tract, East Oakland. To build; owner, Alex. Dolg; architect, J. Conant; contractor, W. F. Whyte; signed, Feb. 16; filed, Feb. 16; cost \$2,075.

Verdi near Railroad Ave. To build; owner, C. H. & F. Smith; contractors, Marcuse & Remmel; signed, Feb. 21; filed, Feb. 23; cost \$2,850.

The California Architect and Building News.

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OFFICE, 408 CALIFORNIA STREET,

SAN FRANCISCO, CAL., U. S. A.

VOLUME XIV.

APRIL 20th, 1893.

NUMBER 4.

A MONTHLY JOURNAL DEVOTED TO THE ARCHITECTURAL INTERESTS OF THE PACIFIC COAST.

Published on or about the 20th of each month by The California Architectural Publishing Company. The Stockholders being Architects and others interested in the profession.

SUBSCRIPTION TO THE JOURNAL,

\$3.00 PER YEAR IN ADVANCE.

ESTABLISHED 1879.

INCORPORATED 1889.

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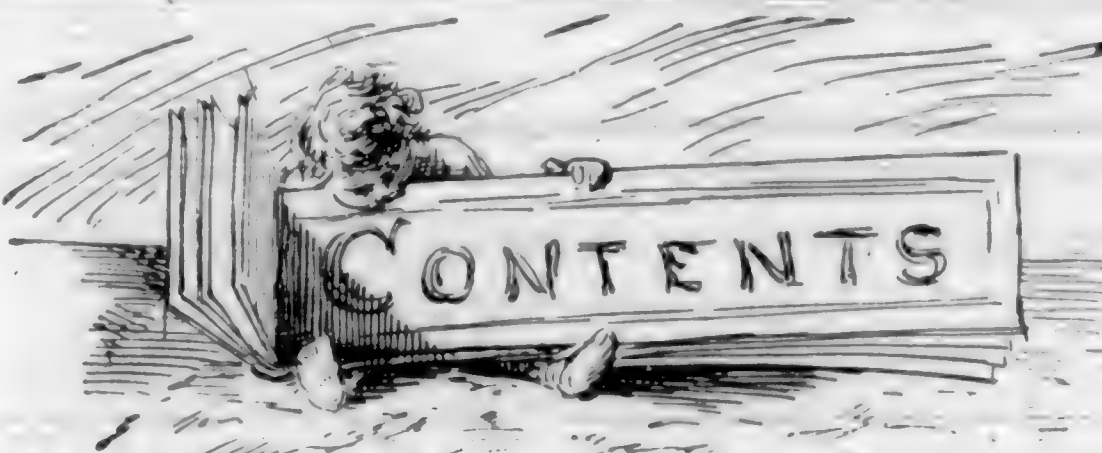
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OLIVER EVERETT, Secretary.

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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It is to be regretted that the Governor vetoed the bill providing for a State Building for this city. It will prove to be "penny wise and pound foolish" to the people of California, as the saving in rents would have greatly overbalanced the interest on the amount of money required. We lose, besides, the chance of having a building that might have been made a most attractive architectural feature.

THE new section added to the lien law of the State of California by the last legislature, makes it obligatory on the owner of any proposed building, or structure when it is to be erected by contract, to secure from his contractor "a good and sufficient bond" in an amount equal to at least twenty-five per cent, of the contract price, which bond shall, by its terms, be made to inure to the benefit of any and all persons who perform labor for, or furnish materials to the contractor, failure on the part of the owner to exact such bond, renders the latter liable for the debts incurred by the contractor.

The design of this amendment is to afford more ample protection to the creditor class, and this object is achieved by making the owner financially responsible for the solvency of the contractor and the contractors bondsmen. Not a very just or logical method of procedure perhaps, but reasonably sure of being effective.

On the whole, the new law will we think be of benefit to the parties honestly interested in the welfare of the building business. It will have a tendency to cause owners to choose a responsible man in preference to an impecunious "cheap John" when giving out their work. It will require much precaution on the part of both owners and architects in the acceptance of bondsmen and without doubt responsible parties will be equally cautious about becoming security for irresponsible or tricky contractors.

Neglect of proper prudence on the part of either owner or bondsmen, will be so dearly paid, that the man who now secures a large amount of work at figures that will not cover the actual cost of construction will find it more difficult to

continue their methods, and will be ultimately driven from the business, or forced to mend their ways. The new departure will afford many a case for the lawyers.

Just what will constitute "a good and sufficient" bond will of course have to be decided by the courts, and the prospects are that a good many decisions will be rendered and appeals argued before positive precedents will be at the disposal of the would-be house builder.

Whether an owner would be safe after having secured a rich and prosperous bondsman who should become insolvent before the completion of the contract; or in accepting a man of "straw" who should duly qualify before a notary (but whose real estate might be of no more value than an unimproved lot in a suburban cemetery) are problems that will perplex the brains of the architect, and possibly deplete the purses of the owner, till the law is again amended and further experiments made as to the best way to make men honest.

WIRING OF BUILDINGS FOR ELECTRIC LIGHTS.

IT is almost universally the practice in drafting specifications for electric light wiring to stipulate that "the loss in potential in circuits shall not exceed two (2) per cent" or that "the wiring shall have not more than two (2) per cent drop," meaning that the loss in volts on any conductor, due to the resistance encountered by reason of the current passing through that conductor, shall not exceed two per cent of the voltage applied. Why two per cent loss is so generally stipulated is not plain, neither is it always necessary that it should be specified in every case, as in some instances a loss of three, or four or even five per cent would be more advantageous to the owner of a building, than would a loss of two per cent. Nevertheless, a two per cent "drop" is generally specified, yet it is a fact that of all the larger buildings in San Francisco, hardly one of them comes up to the two per cent limit specified. When it is realized that fifty per cent more copper is required to wire a building under two per cent loss than under three per cent loss, the importance of the matter becomes apparent. To place the facts in another light: a certain building is to be wired for incandescent lighting under specifications calling for two per cent loss. To carry out these electric specifications would require the installation of, say, 3,000 pounds of copper wire. The electrician, however, realizing that the architect generally has no means of determining whether the specification has been adhered to in the matter of "drop" concludes to install the circuits at three per cent loss. He does so and what occurs: The insurance inspector examines the installation and accepts it, for he only looks at the work from the fire underwriters' standpoint and his certificate only attests that the wiring presents no fire hazard. The central station people also examine the work and finding it to be safe and properly laid out, they too pass the work, for they do not compare it technically with the specifications any more than the insurance inspector does. The current is thrown on to the wiring, it works satisfactorily, all lamps burn to the satisfaction of the architect, nothing more is said about the two per cent loss stipulation, the work is accepted and paid for and that is the end of it so far as ninety-nine cases in a hundred are concerned. Yet what has the wireman done: Instead of installing 3,000 pounds of copper wire, as called for under the two per cent clause, and as he was paid for doing, he wired the building for three per cent loss, and saved thereby

1,000 pounds of copper wire, for under three per cent loss but 2,000 pounds was required, and no one was the wiser.

These frauds, so palpable to an expert electrician, yet concerning which laymen are utterly ignorant, are practiced daily by all save a very few first-class wiring companies and indeed many concerns, ignore the loss requirement altogether in wiring, yet consider it in making up bids. Others will maintain that their work is figured for two per cent loss; say, while upon questioning it soon become apparent that they do not know how to figure drop in potential, or they will use a two per cent wiring table and will generally get a two per cent loss each on mains, sub-mains and ultimate circuits, or six per cent loss in all, while two per cent was called for. A large concern having a capitalization of several hundred thousand dollars, when questioned as to the fulfillment of the two per cent clause in a certain building it had wired, struck the keynote in the matter when it frankly and honorably admitted that it had not carried out the two per cent requirement for the reason that it could not do so and compete for business. It had, however, placed the wiring in accordance with commercial usage and it maintained that for that reason the work should be accepted.

The writer has frequently been asked to assign a reason why such a discrepancy so frequently exists between the bids of different electrical concerns on the same piece of work. Reasons for this may be found from the facts above recited. Some few concerns will follow the specifications vigorously in every detail, while others, taking advantage of the almost universal ignorance prevailing in regard to electrical matters contract to do work that they never intend to perform. A dual result ensues: Owners pay for something they do not get—but they do not know it—and the electric wiring business is utterly demoralized both physically and morally.

It must not be inferred that a two per cent specification is never advisable or that a three per cent clause will prove equally satisfactorily as in the instance cited. To lay down a general law even for a given class of building is impossible and each building must receive specific consideration both in the matter of proper loss in potential as well as in the load basis upon which to figure the circuits. It is evident then that the drafting of electric wiring specifications is a matter worthy of most serious consideration and concerning which the architectural profession is deeply interested.

THE NEW LIEN LAW.

THE following is a copy of the New Section to the Lien Law introduced by the Hon. J. M. Curtis and passed at the last session of the Legislature.

SECTION 1. A new section is hereby added to the Code of Civil Procedure of the State of California, to be known and designated as section one thousand two hundred and three:

SEC. 1203. Every contract required to be filed under the provisions of this chapter shall be accompanied by a good and sufficient bond in an amount equal to at least twenty-five per cent of the contract price, which said bond shall be filed at the same time and in the same manner as herein provided for the filing of such contract, or memorandum thereof. Said bond shall, by its terms, be made to inure to the benefit of any and all persons who perform labor for, or furnish materials to the contractor, or any person acting for him or by his authority; and any such person shall have an action to recover upon said bond, against the principal and

sureties, or either of them, for the value of such labor or materials, or both, not exceeding the amount of the bond; but such action shall not effect his lien, nor any action to foreclose the same, except that there shall be but one satisfaction of his claim, with costs and counsel fees. Any failure to comply with the provision of this section shall render the owner and contractor jointly and severally liable in damages to any and all material men, laborers, and subcontractors entitled to liens upon the property affected by said contract.

bled and unbled timber, results which in themselves justify the expenditure by the government of money on such work.

The Forestry Division will exhibit the methods pursued in this work at the World's Fair, which will be of interest, since nowhere in the world has such comprehensive and systematic investigation of timbers been ever devised. The working plans for a similar undertaking by the Prussian Government have only just been perfected.

Another exhibit of interest to railroad engineers and those interested in reducing forest waste will be a collection of the most approved types of metal railroad ties.



UNITED STATES TIMBER TEST WORK.

ALTHOUGH all the leading railroad engineers, architects, professors of engineering and others interested in the Timber Tests had flooded with hundreds of letters their Representatives and Senators and the Committee on Manufacturing in whose hands the special appropriation for the work was pigeon-holed, neither the Committee nor the House paid any attention to this expression of public interest. The Senate, however, realized that there was value in the work and sincerity in its endorers and increased the appropriations for the Forestry Division by \$8,000, that is twenty per cent of the amount asked and considered by those in charge as necessary to continue the work on a proper business basis.

Under the circumstances, the testing will be discontinued until after July, when the new appropriations become available and then proceed at the slow pace which Congress has set.

Although the result of the efforts of those, who took active interest in securing appropriations for the work were not crowned with that success which they deserved, this is the only proper method of influencing legislation and those interested in the investigation should not fail to move again when the new Congress assembles.

The first compilation of test results is now in the hands of the printer and will probably be issued within six or eight weeks as Bulletin 8, Timber Physics, Part II. It will contain the results obtained on Longleaf Pine and will especially discuss in detail the results of tests and examinations of

PROPOSED NATIONAL GALLERY OF HISTORY AND ART.

MR. Franklin W. Smith, a Boston gentleman, delivered on the 12th inst an illustrated lecture under the auspices of the Mechanics' Institute, describing his design for a national gallery of history and art.

His proposition is for the United States Government to take hold of the project, which will, if carried out afford a most interesting and instructive permanent exhibition.

The design exhibits eight courts and galleries, viz: Egyptian, Assyrian, Greek, Roman, Byzantine, Mediæval, Saracenic and East Indian; surmounted by American galleries, for illustration of the history of the United States, and a memorial Parthenonic temple. This temple to contain a hall of the presidents; an American Walhalla, such as stands to-day in grandeur and beauty of marble upon a hill-top of the Danube, a proud manifestation of the patriotism and artistic inspiration of the Bavarian people.

The courts are to contain reproductions in full size of dwellings, temples, monuments, etc., of their respective nationalities; typical of their religion, life and art.

It is proposed that the ranges of galleries enclosing the courts be filled with mural paintings, illustrating in its orderly, chronological succession the history of the peoples whose architecture is shown upon their walls; similar to the pictorial history of Bavaria in the national museum of Munich; the basement stories being filled with casts and models—architectural, artistic and historical; supplying abundant material for elucidation in study.

Mr. Smith reports great encouragement as the result of his explanations, in confident assertion that "It ought to be, it can be, it will be."

OBITUARY.

THE death of David Scannell, Chief Engineer of the San Francisco Fire Department, took place on March 30th. Chief Scannell was seventy-three years of age, and had been connected with the Fire Department of this city for a period of over forty years. He was born in the year 1820 in New York. He served through the Mexican war and took part in the battles of Vera Cruz, Cerro Gordo, Contreras, Cherubusco, Chapultepec, Carrita de Berlin and the City of Mexico, and was promoted to the position of Captain for bravery. In 1851 he came to California in time to take part in the memorable fire of that year. David Scannell was Deputy Sheriff at the time of the Vigilant Committee, and he was the first sheriff under the Consolidation Act.

In 1860 he was elected Chief of the San Francisco Volunteer Fire Department, holding the office for six years and until the paid department was organized. In 1871 he was again elected Chief of the Paid Department which position he has held to the time of his death.

THE REDWOOD TREE.

ON the camping grounds of the Bohemian club on Austin creek, and in the Armstrong tract near Guerneville, one finds the low land redwood imperfection. In such places there are often rings of great trees inclosing pits five or six feet deep and thirty, forty, or even fifty feet in diameter. Each of these pits is supposed to show where the venerable ancestor of the surrounding circle of trees once stood. Long before it fell, innumerable sprouts grew from the yet living roots. Afterwards, when the giant yielded, the rains washed new soil into the "bottoms" from the mountain sides to fill the deep chasm. For a century or so there was a struggle among the children of the fallen monarch, and at last only seven or eight remained to become great trees of twelve feet in diameter set on the rim of the pit formed by the decay of the roots of the ancient tree, and each having a complete root system of its own.

Other trees, seedlings or sprouts, grew up between them, and in a few more centuries the process of forming another redwood tree ring will be repeated about the largest of the second growth. Rings of this sort can be found in all stages of formation in every canyon and valley of the redwood country. Some very large rings still show the broken edges of the central tree's roots projecting like the staves of a barrel around the hollow, over-grown with ferns and wild oxalis, or filled to the brim with fresh, spicy redwood sprouts. The green spires of the living forest, 300 feet

high, filter the air through their innumerable branches and shut out all but faint blue sparkles of the sky. The dust of one of the pioneers is under foot, and a little tree of last year's growth is struggling to gain a place.—*Charles H. Shinn in Century.*

Another instance of the remarkable vitality of the redwood may be given, a redwood tree growing on the bank of a stream, became undermined, and fell across the ravine, a portion of the roots still retaining their hold in mother earth, while the once lofty head found repose on the opposite bank. The tree soon adapted itself to the changed conditions of its life, and behold! A dozen or more small branches on the upper side of the trunk, ambitious to rise in the world, transformed themselves into redwood trees, drawing their nourishment from the parent trunk, and flourishing as though their roots were in nature's own soil.

THE USE OF BRICK.

IT is noticeable that during the year the use of the better bonds—English bond and Flemish bond—has been more common in the best work, to say nothing of the lavish use that has been made in some instances of the more complicated bonds in ornamental work. We are, of course, a long way yet from any frequent use of English or Flemish bond in every course in purely constructional work; it might be said, indeed, that these bonds are never used except in facade walls. But if our brickwork is to become what it ought, the abominable "American" bond must be abandoned or at any rate, restricted in its use to the cheaper and commoner constructions, except in cases where it may be made of value decoratively where constructional considerations are not paramount.

Such cases are, however, very exceptional; and the use of the bond ought to be regarded as a sign of cheap and generally poor work. In addition to the wonderful variety of expensive bricks of ornamental color, the past year has shown more appreciation of the beauty of variety of color in common brickwork also; and there have been several instances which have come under our notice in which common brick has been used with telling effect for the sake of its variety of color, just as the yellow brick, which takes its name from the Madison Square Garden, where it was first used, is especially esteemed for its beautiful variety of color, for there is other yellow brick of which one sees only too much. To see the relative effect of the two, we have but to compare the wall of the Madison Square Garden itself; or any building in which this brick has been used (for we are now speaking merely of the effect of the brick in producing an agreeable wall surface without regard to the design of the building in which it may happen to be used)—we have but to compare, we repeat, the exquisite beauty of



David Scannell
Chief of Department

the wall surface of the Madison Square Garden, in which every brick differs in color from its neighbors, with, for instance, the wall surface of the yellow brick walls of the addition to the State House of Boston, now in course of con-

France in the modern as well as in the old work these sources of effect are well understood.

On the other hand, it is refreshing to note that the mon-pressed brick is coming more and more into well-deserved contempt, especially among the best architects. We suppose it will take a long time for New York, as well as for some Western cities, to wean itself from the use of the vermilion paint pot. But this too will come in time. It is curious to note that in architecture, as well as in politics, while many of the best reforms emanate from New York, some of the worst abuses seem to find their last refuge there.—*The Brickbuilder.*

GAS LEAKAGE.

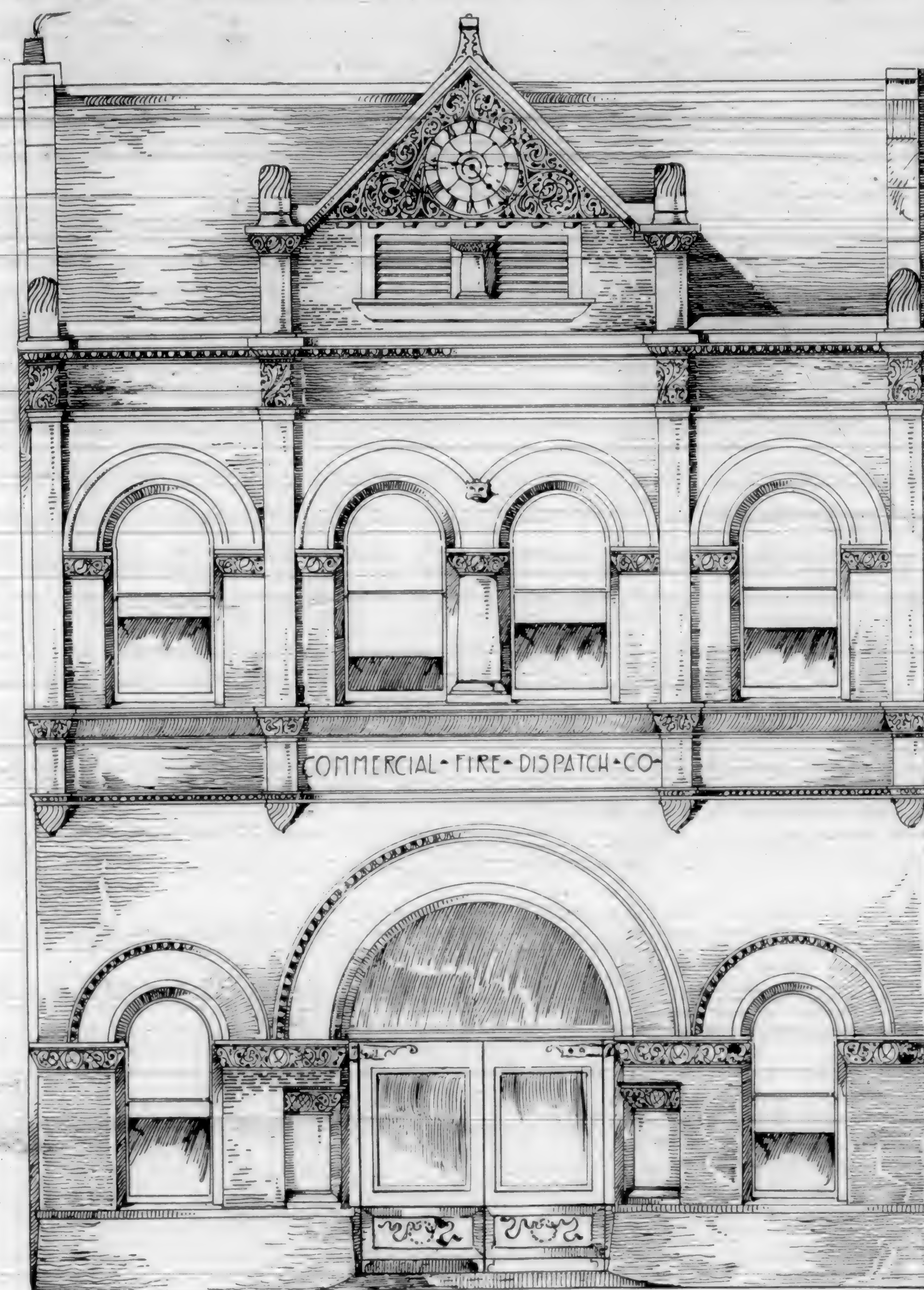
A very curious result from gas leakage is described by Dehnhardt in the *Centralblatt für Bauverwalt.* It appears that an asphalt pavement had been laid down, and in spite of the fact of the material having been carefully mixed and applied, in about two years afterwards faulty places were observed to appear. These were duly repaired, and in the course of a short time became again faulty; the asphalt at these places was soft and tarry and exhibited upon the surface a number of tiny radiating fissures. The asphalt was broken up and the cause of the trouble investigated. Beneath the faulty places it was discovered that there was an escape of gas from pipes laid beneath the pavement.

On analysing samples of the impaired asphalt it was observed that it

had absorbed the heavy hydrocarbons, and especially the benzene contained in the gas, rendering the pitch contained in the asphalt soft and tarry.

INQUIRY.

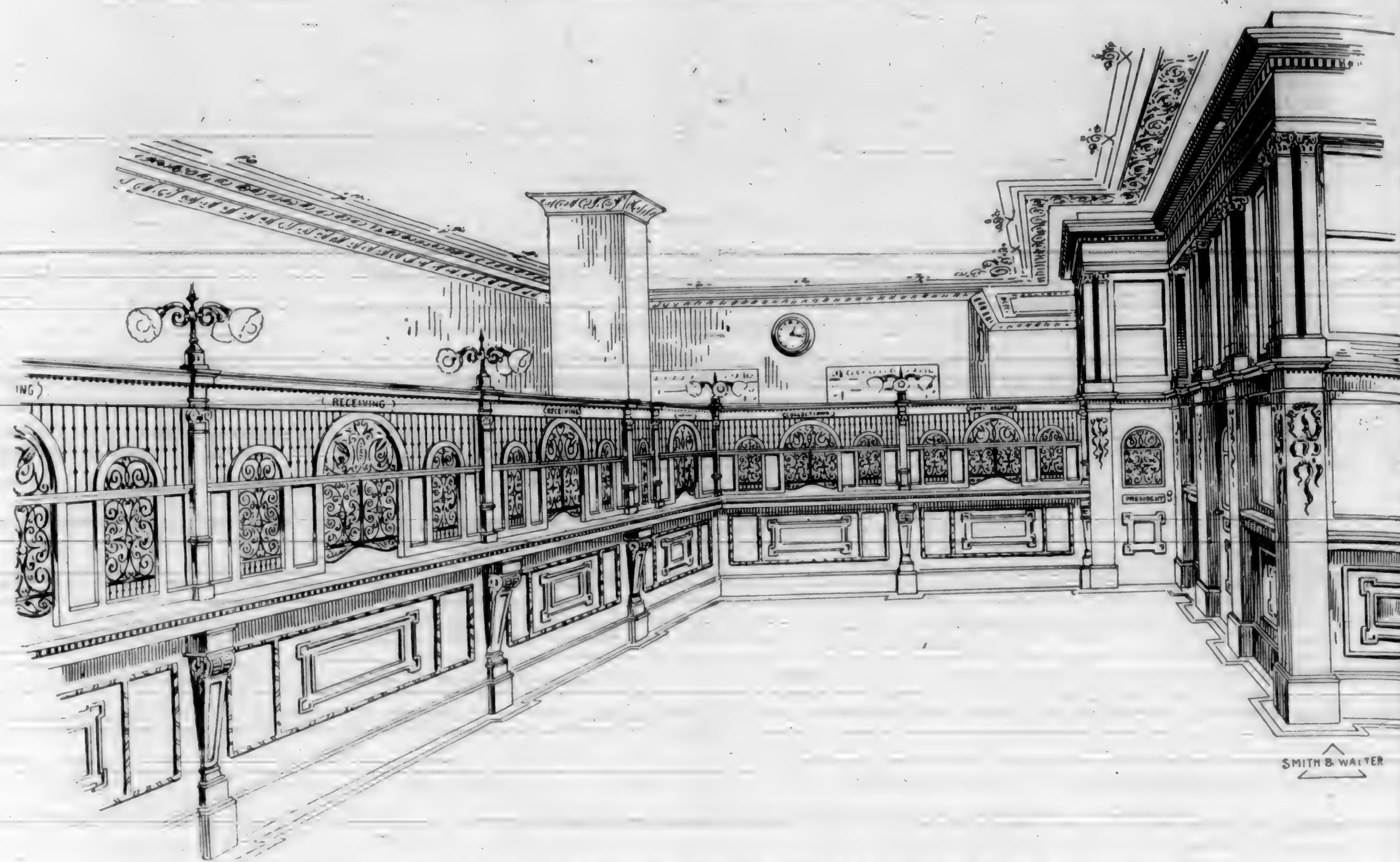
DOES any one know of a material to put on walls, of an impervious character, similar in quality to what is put on bath tubs so as to make them perfectly washable?



PROPOSED NEW BUILDING COMMERCIAL FIRE DISPATCH CO., C. I. HAVENS, ARCHITECT.

struction, where the absolute monotony of color of the brick ruins the effect of the building.

In addition to the points we have already adverted to, we ought, perhaps, also to draw attention to the recognition of the joints of brickwork as a means of effect, and also of the texture of different bricks when contrasted with each other. Both these sources of effect have received much more attention during the past year than formerly, and brick diapers produced by different bonds and using brick of different colors have come much more into use. In England and



INTERIOR OF THE AMERICAN BANK AND TRUST COMPANY'S OFFICE, MILLS BUILDING, S. F.



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 Third Ward School is one of several which are about to be put up in Oakland, Elmer Childs is the architect.

A residence in Alameda with plans for same is for Henry K. Field. Architect, Fuller Clafflin.

THIS design for the Oakland High School was submitted in competition by Seth Babson. The basement provides a set of rooms for the janitor and family, a large Dining-Room, Kitchen and Pantries for use on festive occasions, and for a students' lunch room; a lecture room for the Superintendent, and class-rooms for night school. The first-story provides twelve class-rooms, a lecture room and rooms for the Principal and Teachers. The third floor provides a large assembly hall and ante rooms, drawing rooms and rooms for classes in chemistry, physics, and their apparatus.

NOTICE OF MEETINGS.

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

GEO. H. SANDERS, Pres. W. J. CUTBERTSON, Vice-Pres.
OLIVER EVERETT, Sec. JOHN M. CURTIS, Treas.

TECHNICAL SOCIETY OF THE PACIFIC COAST, meets first Friday of each month at Academy of Sciences Building.

C. E. GRUNSKY, Pres. CHARLES D. MARX, Vice-Pres.
OTTO VON GELDERN, Sec. GEO. F. SCHILD, Treas.

CALIFORNIA ELECTRICAL SOCIETY, meets the first and third Monday evenings of each month at the Academy of Sciences Building.

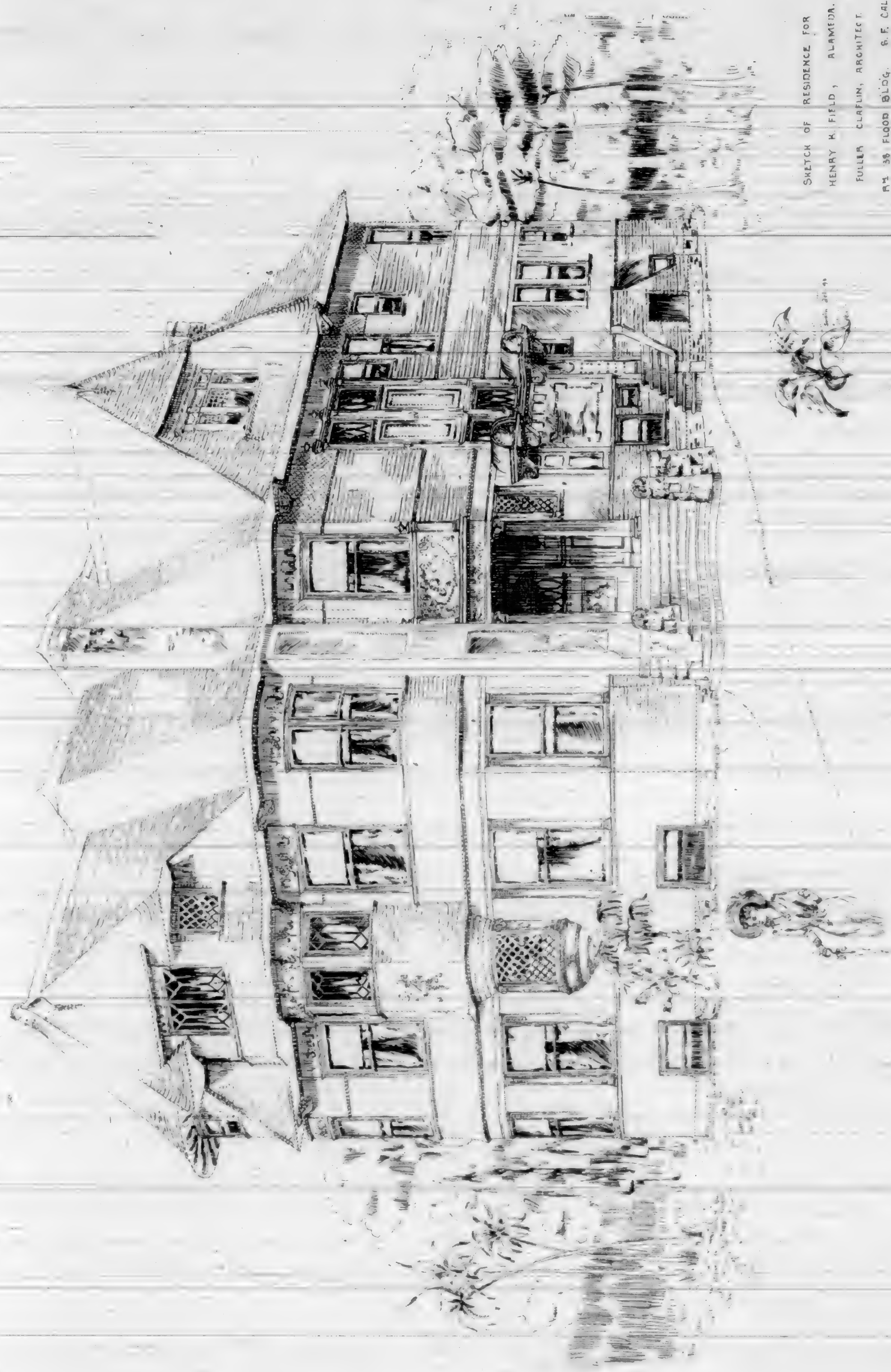
GEO. P. LOW, Pres. C. O. POOLE, Vice-Pres.
MAX CASPARI, Sec. H. T. BESTOR, Treas.

THE regular monthly meeting of the San Francisco Chapter A. I. A., was held on the 15th inst. A communication was received from Alfred Stone, Secretary A. I. A. in reference to the eligibility of architects to join the Institute, explaining to all inquirers that the first step to be taken is to become a member of the Chapter in the vicinity where they reside, as it is necessary that every application for fellow membership in the Institute should be endorsed by the President and Secretary of the Chapter of the Institute of which the applicant is a member.

The printed report of the proceedings of the Boston Society of Architects was received and the secretary instructed to suitably acknowledge the receipt thereof.

The following report on the Students' classes was adopted: This Chapter of the A. I. A. from its inception, has, among its other objects, the promotion of the general welfare of the pupils of its members and that the education and guidance of these students should be carried along





SKETCH OF RESIDENCE FOR
HENRY H. FIELD, ALAMEDA.
FULLER CLARKE, ARCHITECT.
N.Y. 98 FLOOD BLDG. S. F. CAL.

CALIFORNIA ARCHITECT & BUILDING NEWS
SAN FRANCISCO.

BRITTON & REY PHOTO LITH.

VOL. XIV NO. 4 APRIL 1893.





THIRD WARD SCHOOL, OAKLAND.

CALIFORNIA ARCHITECT & BUILDING NEWS
SAN FRANCISCO.

BRITTON & REY PHOTO LITH.

VOL. XIV No. 4 APRIL 1893.



THE MILLS BUILDING.

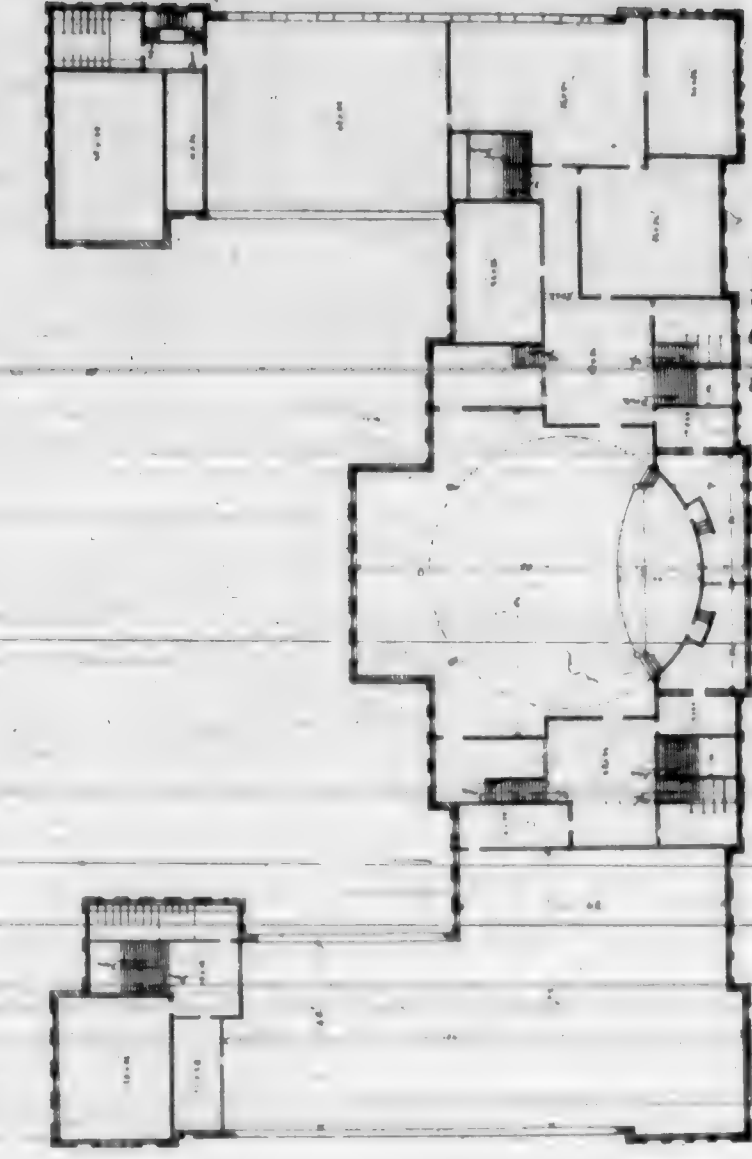
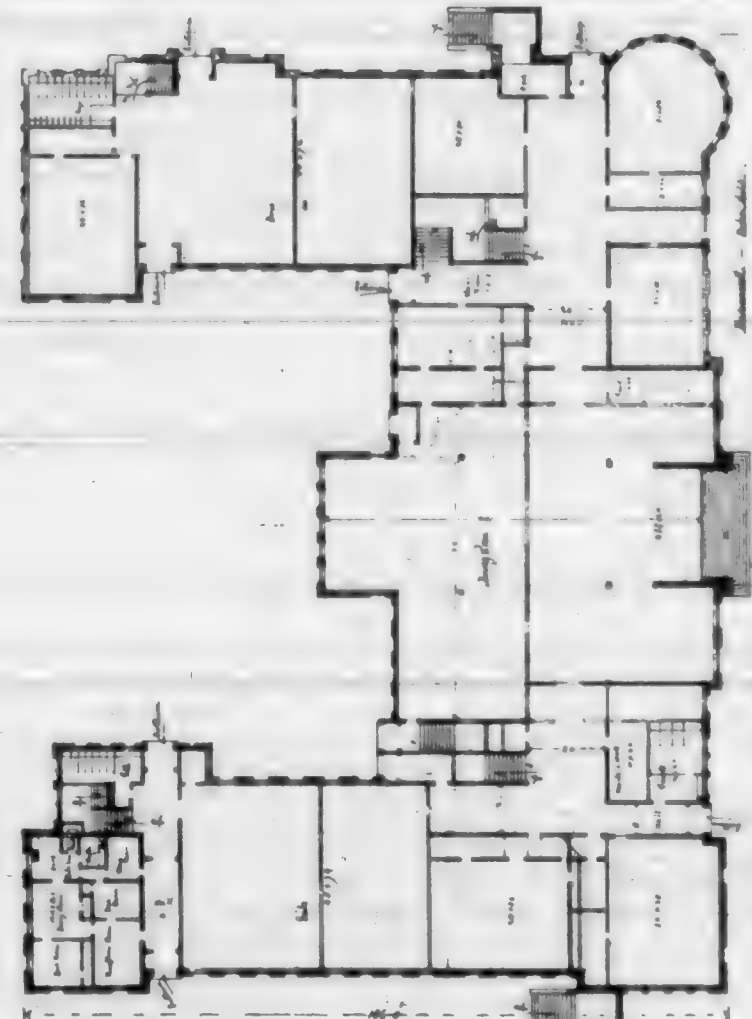
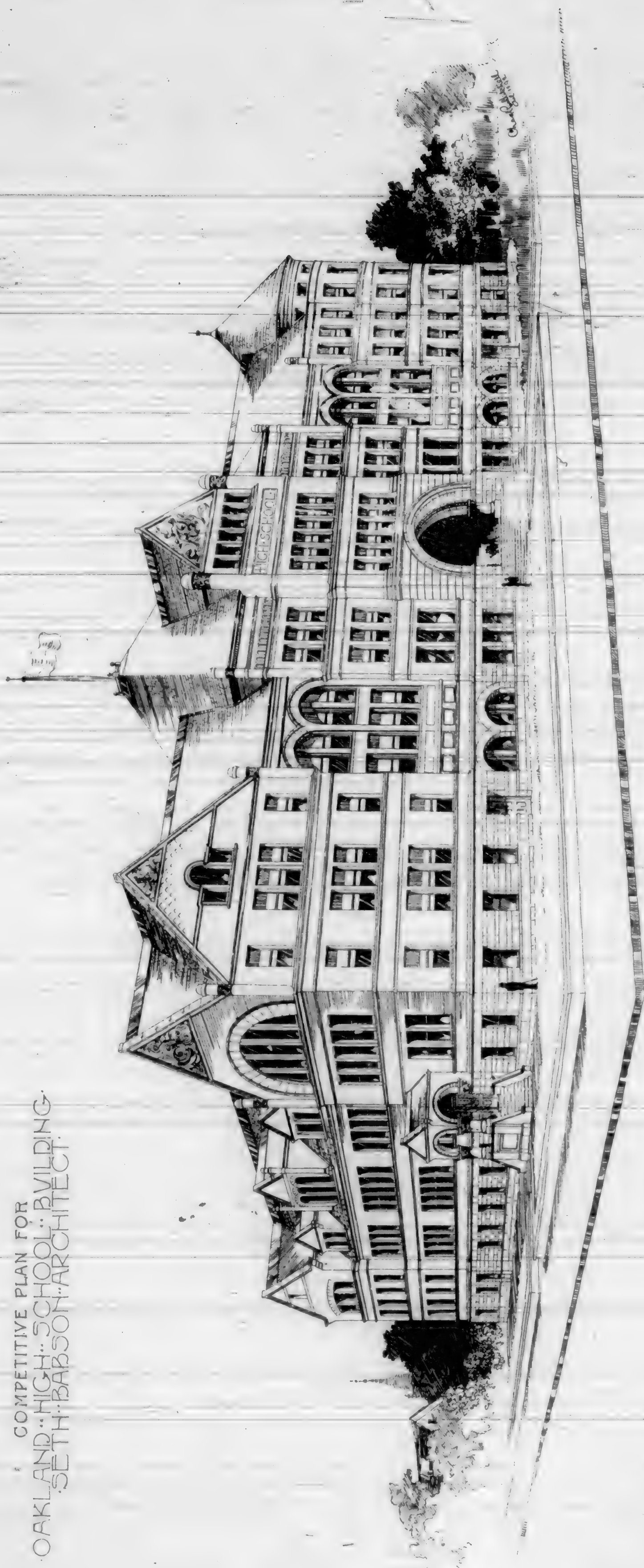
BURNHAM & ROOT, ARCHITECTS.

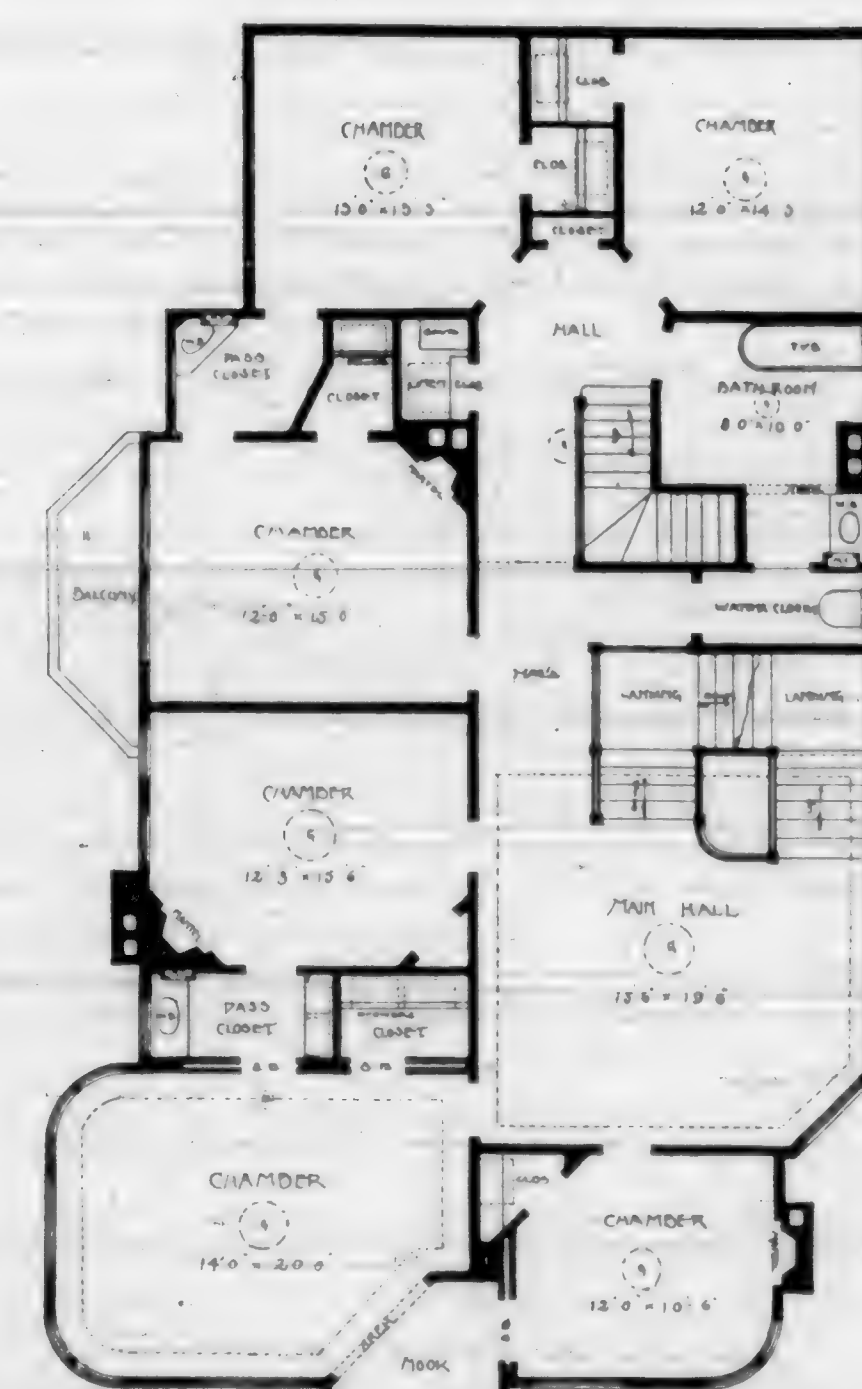
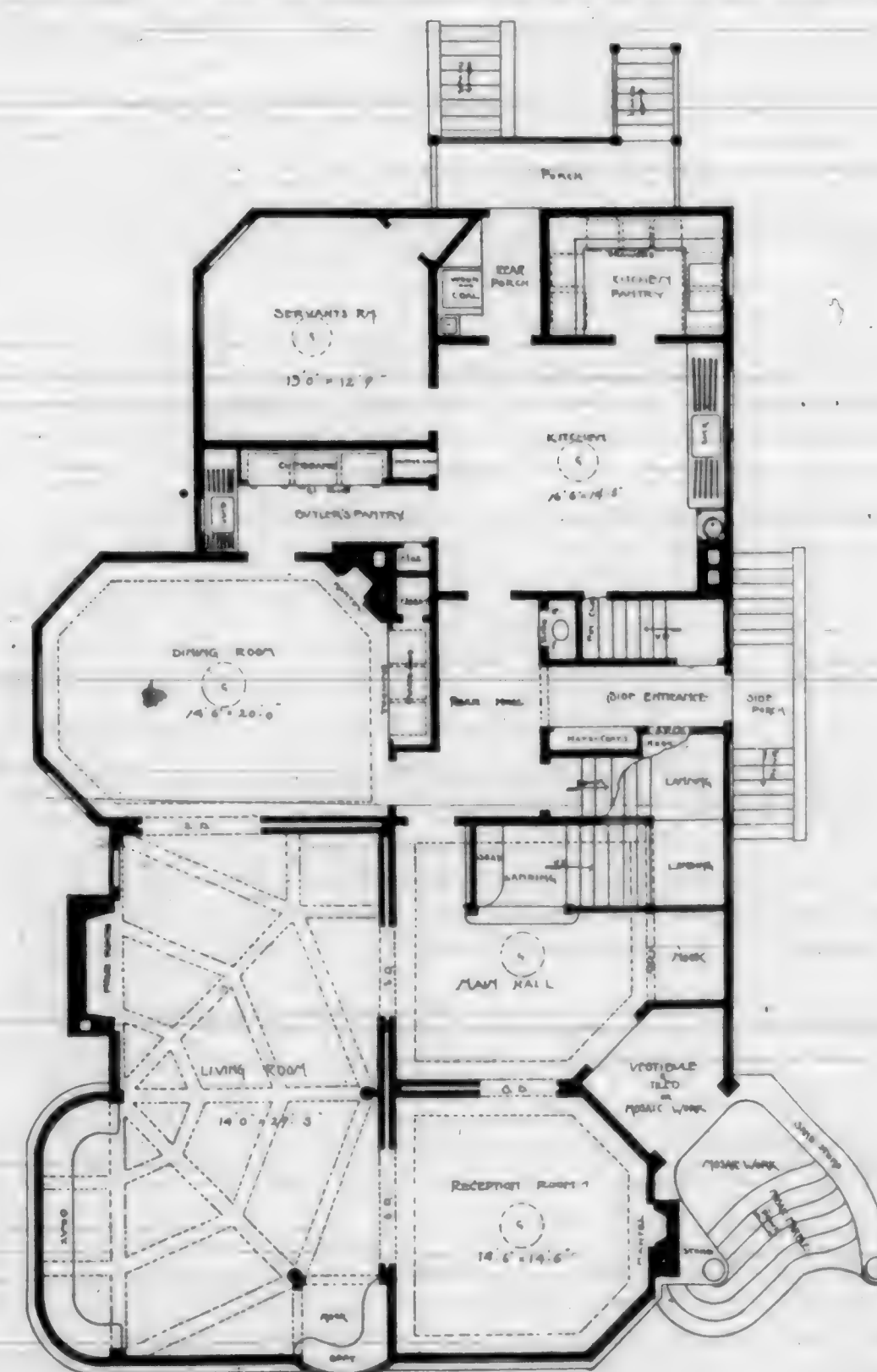
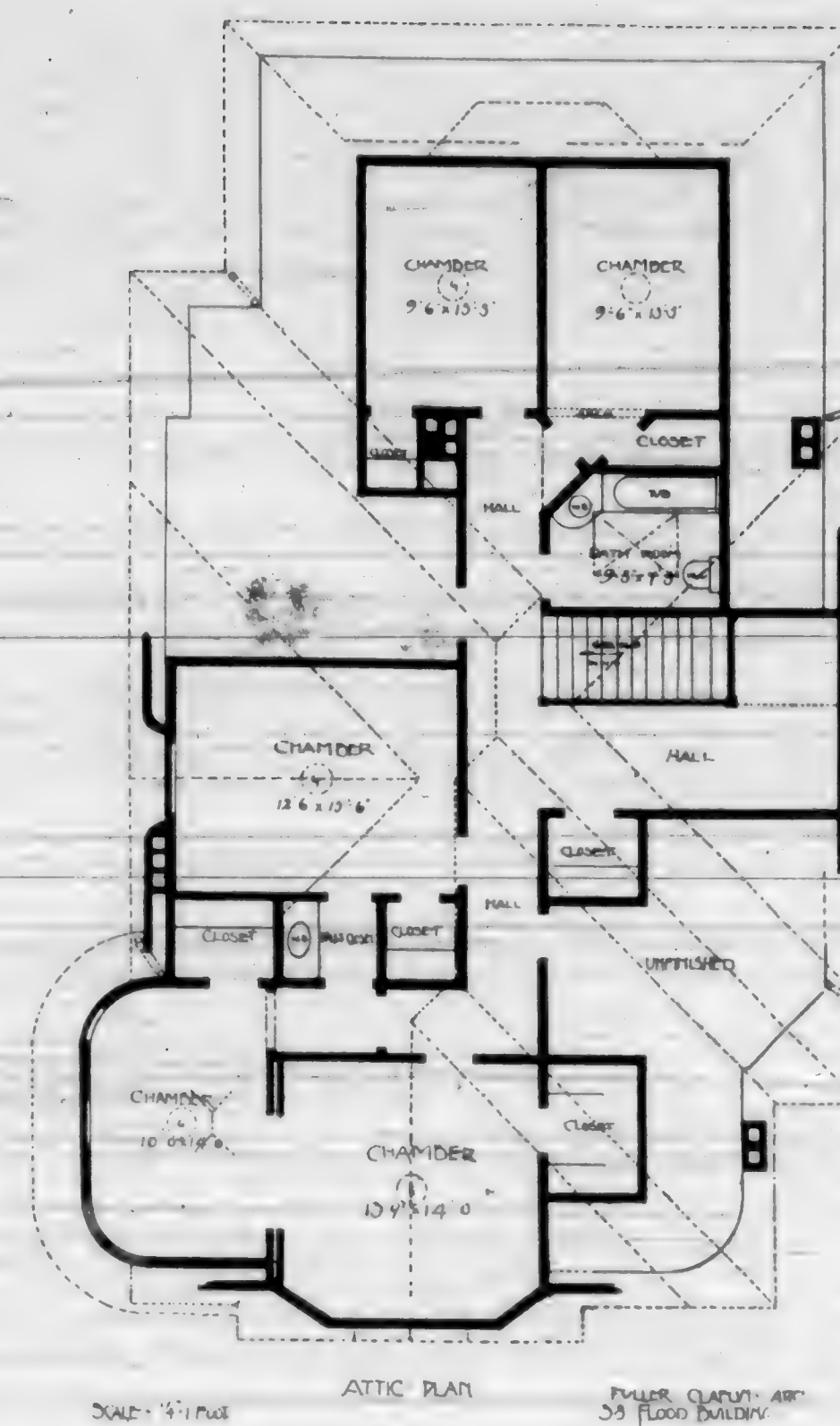
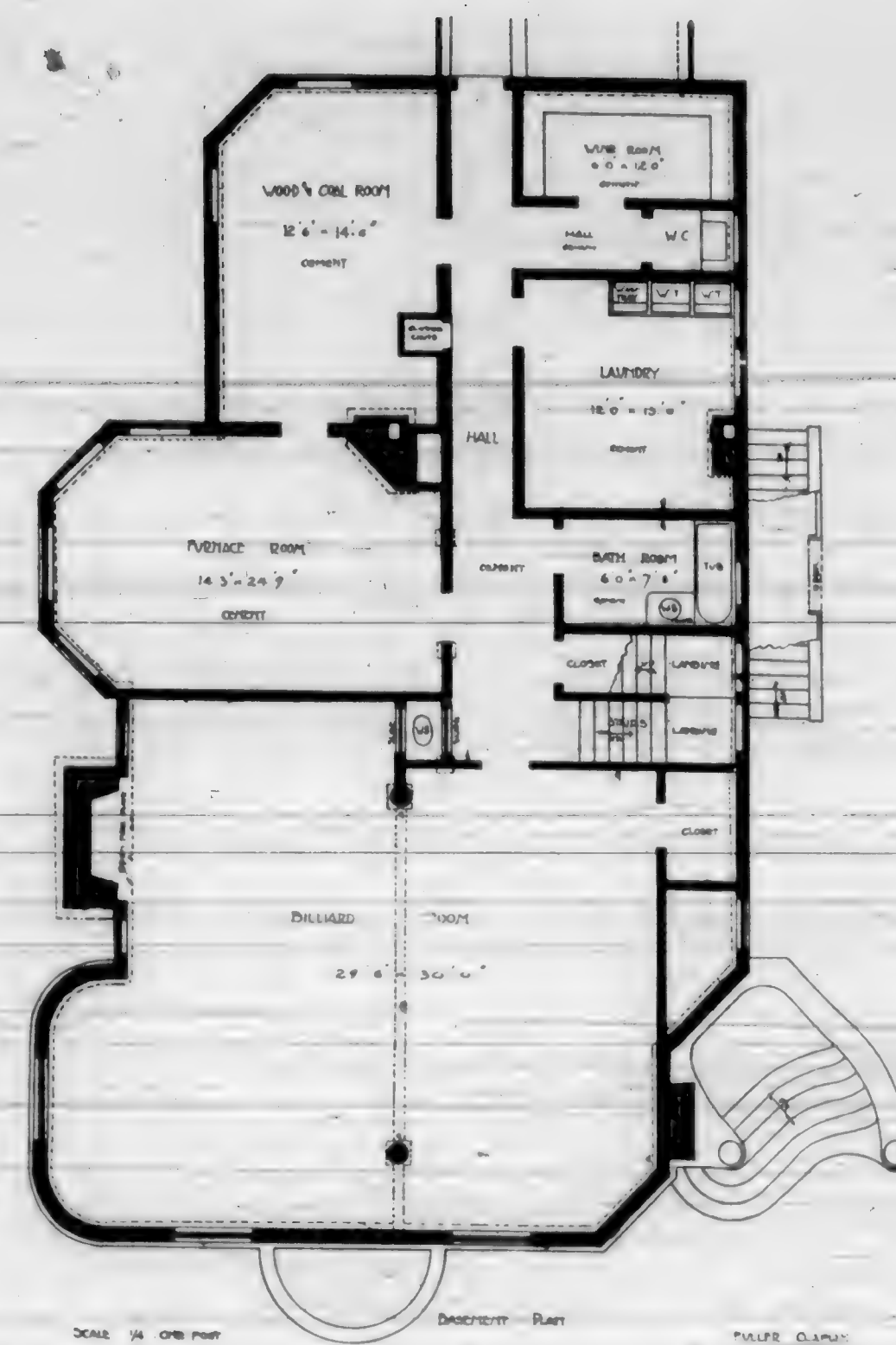
CALIFORNIA ARCHITECT & BUILDING NEWS.
SAN FRANCISCO.

VOL. XIV. No. 4. APRIL 1893.



COMPETITIVE PLAN FOR
OAKLAND HIGH SCHOOL BUILDING
SETH BABSON ARCHITECT







through certain well defined lines of study in the art and science of Architecture.

If through the isolated position of our section of the country we have not accomplished all we could have wished, yet it has been the endeavor to animate the student of art and to direct him by some well directed and persistent effort on his own part to attain the requisite skill to render his ideas in pictorial expression as a medium for the conveyance of his thoughts to others.

Your committee on classes herewith submit the following report on the drawings and models made by the students during the year 1892, and placed on exhibition at the rooms of the Chapter.

The Students' Classes have been under the immediate supervision of Mr. Geo. H. Sanders, the President of the Chapter, and it is in a great measure due to his untiring zeal and painstaking care that the classes have advanced to its present state of vitality and promises to overcome all obstacles. The studies in free hand drawing from the "flat" the "model" or from "nature" have been directed by the president through his personal attention in the class room.

The modeling class has been under the instruction of Mr. V. A. De Prose, and the exhibit shows that the pupils have worked with an enthusiasm and artistic feeling which is highly commendable. That the almost imperceptible undulations of the lines and surfaces have been so closely following in the models is proof that the instructor has succeeded in gaining the hearty co-operation of the students in the work.

CLASS IN DRAWING.

1st mention—Mr. Linden Bree. His second years course, comprising a series of nine subjects that have been worked out during a period of one year. Each subject shows a gradual improvement over the previous one, the first example being a leg, and the last a heavily draped figure. These drawings show a greater degree of excellence than any others on exhibition.

2d mention—Mr. E. Blankenberg. His third year, five subjects exhibited. The foliated capital is an excellent piece of work. The color subject, autumn leaves, is well done and shows an artistic feeling. This series of drawings shows that the pupil has natural gifts that with a little more concentration and persistency would bring out some superior work.

3d mention—Mr. H. E. Harris. His second year; two subjects are represented, a large "torso" and a large nude figure. These drawings show that the pupil has set his standard beyond the ability to execute, the attempt is praiseworthy when sufficient time and study is used to work out the details in a thorough manner. The trials in this case argues well for future success.

4th mention—Mr. J. H. Applegarth. His second year; five subjects are presented, hands, feet and legs. They are well executed, the outlining is clean and clearly defined, which, with a little more time and persistent energy applied

to the finishing touches would have shown to better advantage.

5th mention—Miss Eda Menzel. Four months' work in preliminary studies; profiles and hands. The outlines and shading has been done with a degree of care and study which promises exceedingly good results in the future.

6th mention—Miss Belle McCuaig. Four months' study in profiles and shading. The outlines as done by this pupil show fairly well, and with study may bring good results.

THE MODELING CLASS.

1st mention—Mr. C. A. Meusdorffer. A grape leaf after nature. All the veins and undulating surface of the natural leaf is shown with precision and care.

2d mention—Mr. H. J. Van Vlack. A "Renaissance" scroll, after model, the contour being well relieved and the lines sharp and clean.

3d mention—Miss Eda Menzel. A leaf scroll, after model, and worked out with spirit and delicacy.

4th mention—Mr. H. Hobart. A seraphine head, from a plaster cast, also a girls hand after a life cast.

5th mention—Mr. Lloyd B. Brown. A "Renaissance" scroll, from the cast.

6th mention—Mr. H. Meyers. Model of ears after a life cast.

After disposing of routine and new business the Chapter adjourned.

MUNICIPAL GOVERNMENT OF BERLIN.

FROM our contemporary, *Fair Play*, we take the following description of some points of interest in the municipal government of Berlin. There is much food for thought in this article, and much that might with advantage be adopted by other cities.

Berlin is the best-managed city in the world, and its city fathers regulate the style of the buildings which shall be put up. You can't build a dog kennel without showing a design of it at the City Hall, and no man can put up a signboard on his own house until he has shown a diagram of it and has gotten the permission of the Government. You can't put down a pavement in front of your house without a permit, and the Government watches your building and insists that you make your walls just so thick, and the ceilings must be of a given height and the fronts must be of a uniform pattern. In building the house you are not allowed to litter the street with your bricks and mortar, and all the materials for building must be kept inside of the lot.

You have to fence off the street while the building is going on, and when your house has reached the height of the second story you must build a roof over the sidewalk to prevent the bricks or mortar falling on those passing below. The building is done much better than with us, and much more economically. Nearly all the mortar is mixed at one place, and there is a mortar company here which sells the mortar ready mixed to the builders, and which carries it about in iron wagons, and delivers it just where it is needed. There is no reason why such a company might not make money in the cities of the United States. This Berlin establishment is paying dividends of 25 per cent on its capital, and it sells its mortar like coal, at so much per wagon load or per ton.

I don't know how much New York runs behind every year, but there is scarcely a city in the United States that is not increasing in debt; Consul General Edwards tells me that Berlin makes a profit of 5,000,000 marks or \$1,250,000 every year over all her expenses. The city here owns two-thirds of the gas stock and it sees that its people have good light. There are gas lamps on the corners of every street, and the posts are of a tasteful pattern. Each lamp has four burners and the lamps are so aided by reflectors from above that there power is doubled. The posts are higher than

ours, and some of them have argand burners. It is the same with fire insurance.

The city insures its own buildings, and it is against the law for another insurance company to give out policies on buildings. The city, in the first place, sees that the buildings are properly put up and that the protection against fire is of the best character, and it then makes every man take out an insurance policy to prevent loss in case of fire. The insurance stock is good, and the city, of course, makes money by it. The only other insurance companies of Berlin are those which insure life and personal property. You can have your furniture insured by a private company, but the police are likely to step in and see that you don't overinsure it. All foreign insurance companies have to own enough city bonds to guarantee any losses which their subscribers might sustain. The Equitable, the New York Life and other American companies have offices here and they do quite a large business.

The streets are well kept. Berlin is fast becoming a city of asphalt, and you can drop your handkerchief almost anywhere and pick it up without soiling. The city takes care of its own sewers, and it has a number of farms on its outskirts over which these street-sweepings are scattered by the paupers of the city. The sewage is pumped out of the sew-



A COUNTRY RESIDENCE.

ers on to the farms, and thus the land has become the most fertile in Germany. A large part of the cleaning of the streets is done by boys who get something like twenty-five cents a day and who are at work on every block gathering up the dirt as it comes, and on a wet day scrubbing off the streets with rubber hose. These boys sometimes work in gangs, and a half a dozen of them will take up a street and push the dirt on to the sewers, leaving the road as clean as though it had been scrubbed. If these scrubbing are done at night clean sand is scattered over the street to prevent horses or men from falling. The whole city, in fact, is run in the interest of the people and of health and beauty, rather than in the interests of politicians. It costs more than 2,000,000 marks a year to keep the streets clean. There are 700 street cleaners. The civil service rules obtain even as to these boys, and their wages are raised after they have been working on the streets for three years.

The buildings are kept as clean as the streets. Every man has to wash down his house so often, and it is against the law to put up bill boards or to paste posters on the houses. When Buffalo Bill was here he was almost crazy because he could not get any place to plaster up his big posters of his "Wild West" show. The only arrangement by which posters can be put up is in connection with round sheet iron tubes, which are on the corners of the streets and which are about fifteen feet high and of the diameter of a hoghead. They are especially for the pasting of big bills. They are not unsightly and on them you find the theater advertisements and business posters. Within the last few months the Urania company has been putting up advertis-

ing pillars all over the city, after a plan which forms perhaps the best advertising scheme in existence. These pillars are about fifteen feet high and they are by no means unornamental. They are as big as a flour barrel, but are octagonal in shape, and they are the most valuable guide that any city can have.

These advertising pillars are connected with the observatory of the city, and there is a clock on each of them that always gives the correct time. Above the clock there is a star showing the points of the compass, so that you can tell the directions from any place you may happen to be. Below this star there is a globe which moves by machinery and which tells you the positions of the stars from day to day. Besides this stands the clock, which has four round disks in different sides of the pillar. One of these gives the time at Berlin. Another gives the world time and a third shows how the earth stands in the solar system from day to day. Below this, with shades throwing an electric light upon them at night, are places for advertisements, which are in frames under glass. These revolve every minute and mixed up with the advertisements are tables of information about the city.

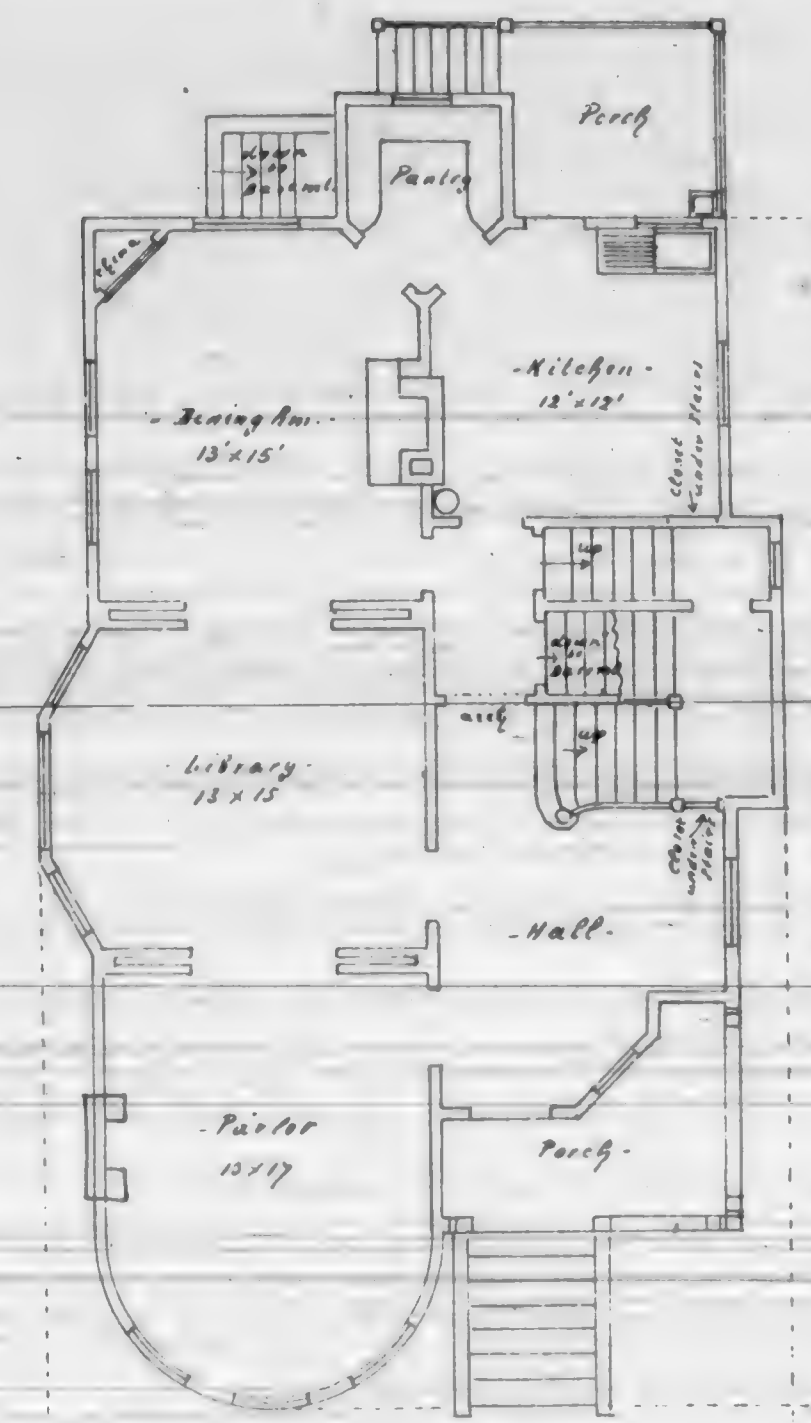
In one of the plates below them there is the time of the trains leaving the city by all the roads, and another plate shows you the condition of the barometer, the thermometer, and of the humidity of the air from hour to hour and keeps a record of it. Upon these pillars you can always find the nearest police station and the nearest branch post office, and there is a little plan of the section of the city in which the pillar stands, with the streets plainly marked, so that by going to one of these you can always find just what you want without asking questions. I do not know the cost of these advertising pillars but as new ones are being rapidly put up I judge they must be profitable. Such other street advertising as is done is with the sandwich men or by dodgers. You find men distributing bills everywhere and there are plenty of grotesquely dressed figures carrying bill boards. The people advertise very well in the

newspapers, and manage to make their wants well known without defacing the buildings.

They tax you here on your income, and they get at your income by looking at your style of living. It is generally estimated that a man spends one-third of his income for house rent, and as I paid 150 marks for rent they estimated that I made 450 marks a month. If I had had better rooms I would have paid more tax, and if a man lives in fine style here he cannot evade taxation. Every man who makes more than \$105 a year here is taxed on his income, and everything under the sun in Berlin pays a tax of some sort or other.

One of the curious institutions of the city is an intelligence office, as it might be called, where records of passports are kept, and where you can go and find out just where any man or woman is stopping. If John Smith, who owes you a bill, moves to another part of Berlin to escape you, you have only to go to this office, and by paying a few cents you will get a report which will tell you just where he has lived in the city and where you may find him at present. There is no chance for a man to escape or hide here, for the argus eyes of the government are always upon you.—*The Press*, New York.

A RAID ON INDECENT WIRES. ANTHONY COMSTOCK (Rushing into an electric light office)—"Where is that naked wire?" The office boy faints.—"*Popular Electric Monthly*."



First Floor
PLAN OF COUNTRY RESIDENCE.

LEGAL DECISIONS.

From a large number of Legal Decisions of the higher Court, of the different States of the Union, we select and publish in this column, such as appear applicable to this section of the country.

WHAT CONSTITUTES NOTICE OF MECHANIC'S LIEN.—A statement in a lien notice that claimant agreed to furnish the contractors certain windows, doors, etc., for a building, without specifying the quantity in any way, or that the same were all the doors, windows, etc., used in the construction of the building, does not give the owner sufficient notice.

Tacoma Lumber and Manfg Co. v. Wolff, Supreme Court of Wash. 31, Pac. Rep. 753, 57.

MECHANIC'S LIEN FOR MATERIAL USED IN PUBLIC IMPROVEMENTS.—Under an act which provides that one claiming a lien for material furnished, etc., towards the performance of any public improvement by the city of New York, shall file a notice of his lien, with the comptroller and with the head of the proper department, stating the amount of his demand after deducting all just credits and offsets, and also "that the work was done or materials were furnished to the contractor," and they were actually performed or used in the execution of the contract with the city," a sub-contractor who willfully and fraudulently misrepresents in his notice of a lien the amount which is due him, by including therein a large quantity of material which he knows to have been rejected by the contractor and not used in the work, is not entitled to a lien for the portion of the materials actually used in the execution of the contract.

Goodrich v. Gillies, Supreme Court of New York, 21 N. Y. S. 400, 156.

INNOCENT ALTERATION OF CONTRACT WILL NOT AVOID SAME.—Where one contracted to purchase a saw mill of another and paid a portion of the purchase price down, afterwards bringing action to cancel the contract, and to recover the amount paid there under, claiming that the seller had lowered the dam which regulated the supply of water to the mill about thirty-four inches, in consequence of which the power of the mill was reduced about one-half; that the seller had been compelled to do this by an abutting owner, whereas he had represented to the purchaser that he had a clear right to maintain the dam at its height at the time of making the contract, and it being shown that the dam was not lowered more than six inches, and that the seller had informed the purchaser at the time of making the contract that he might have to lower it that much, the purchaser was not entitled to be released from his contract. The contract for the sale of the mill included all the

lumber in the mill yard, at a certain rate per thousand feet, but as at the time of executing the contract no measurement of the lumber had been made, it was agreed that blank spaces should be left in the contract, and when the amount had been ascertained and agreed on, it should be entered therein. Thereafter, the purchaser measured the lumber and informed the seller of the amount, and some time later the seller made another inventory, and reported the amount to his attorney, who had the contract, and the attorney at the request of the seller, inserted therein the amount of his measurement, which was larger than that found by the purchaser. It appeared that there were several piles of lumber which the purchaser did not count, and the seller understood that the purchaser intended that he should finish the estimate, and then enter the amount. The seller's act was not such a willful alteration of the contract as would render it void.

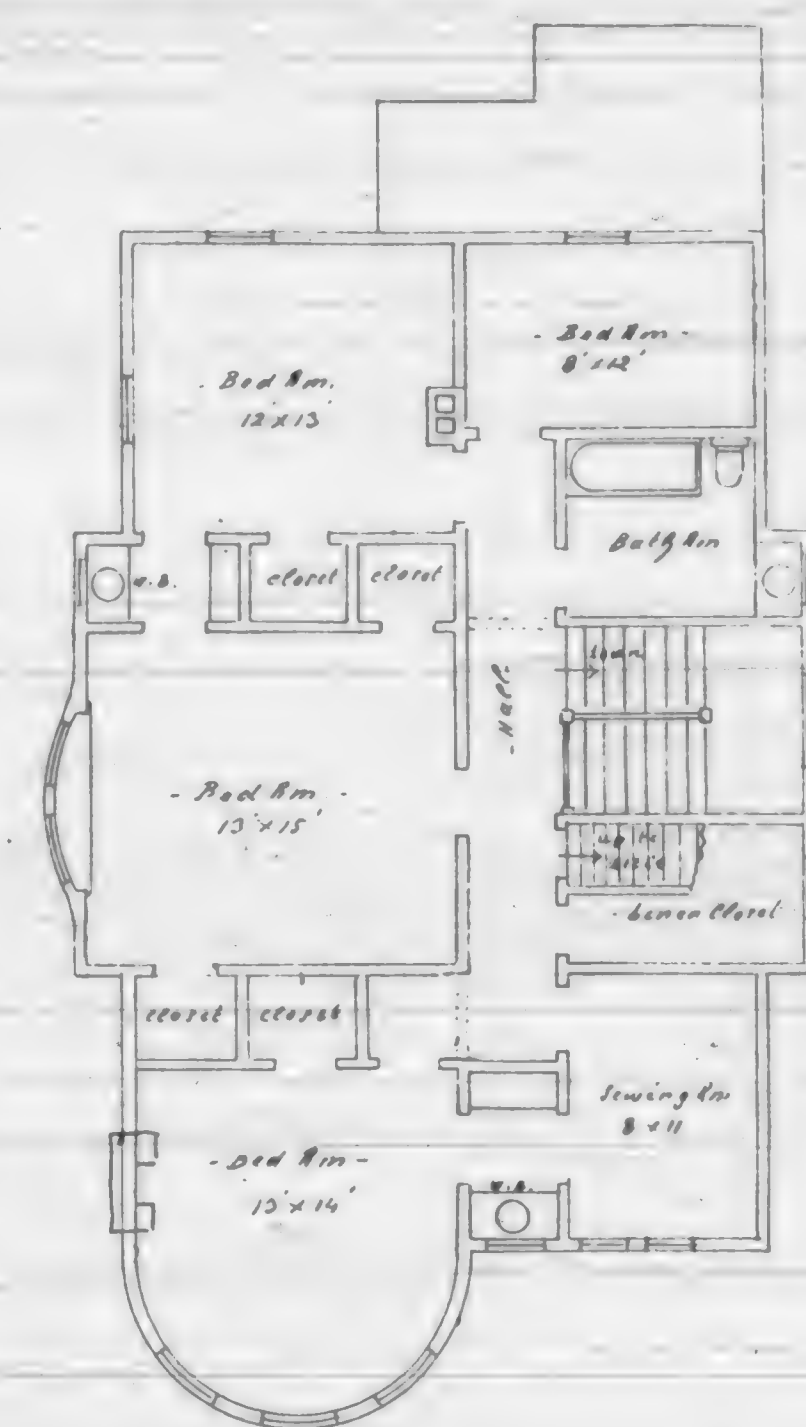
Cline v. Goodale, Supreme Court of Ore. 31 Pac. Rep. 956, 333.

WHEN CONTRACTORS' SURETIES ARE NOT LIABLE.—The lien of a material man for materials furnished certain building contractors, by him, cannot be enforced against persons who entered into the original building contract merely as sureties that the contractor would turn over the building to the owner when complete, free from liens; the material also being charged to the contractors, and furnished solely on their credit. Lien notices must be recorded or filed for record; and where a notice was filed which was invalid, because there was no notarial seal attached to the affidavit thereto, no subsequent proof could be made as to any material fact to render such notice valid, and make it relate back to the time it was filed. Where parties enter into a trial on the merits of the case, without any objection, or demand to have the case tried by a jury, they cannot appeal or raise such objection.

Stetson and Post Mill Co. v. McDonald, Supreme Court of Wash. 32 Pac. Rep. 108.

CITIES CANNOT DESTROY WOODEN BUILDINGS WITHOUT PROCESS OF LAW.—It is not a part of the functions of a city government to enforce the terms of an agreement by forcible measures without process of law. So where a wooden building is maintained in defiance of a city ordinance and in derogation of the terms of the permit granted by the city for its erection, the city government has no power to enforce the terms of the permit by destroying the building without process of law, and a restraining order will be granted the owner until the final hearing and determination of the cause.

Northern Pac. R. R. Co. v. City of Spokane, U. S. Circuit Court, Washington, 52 Feb. Rep. 428, 103.



Second Floor
PLAN OF COUNTRY RESIDENCE.



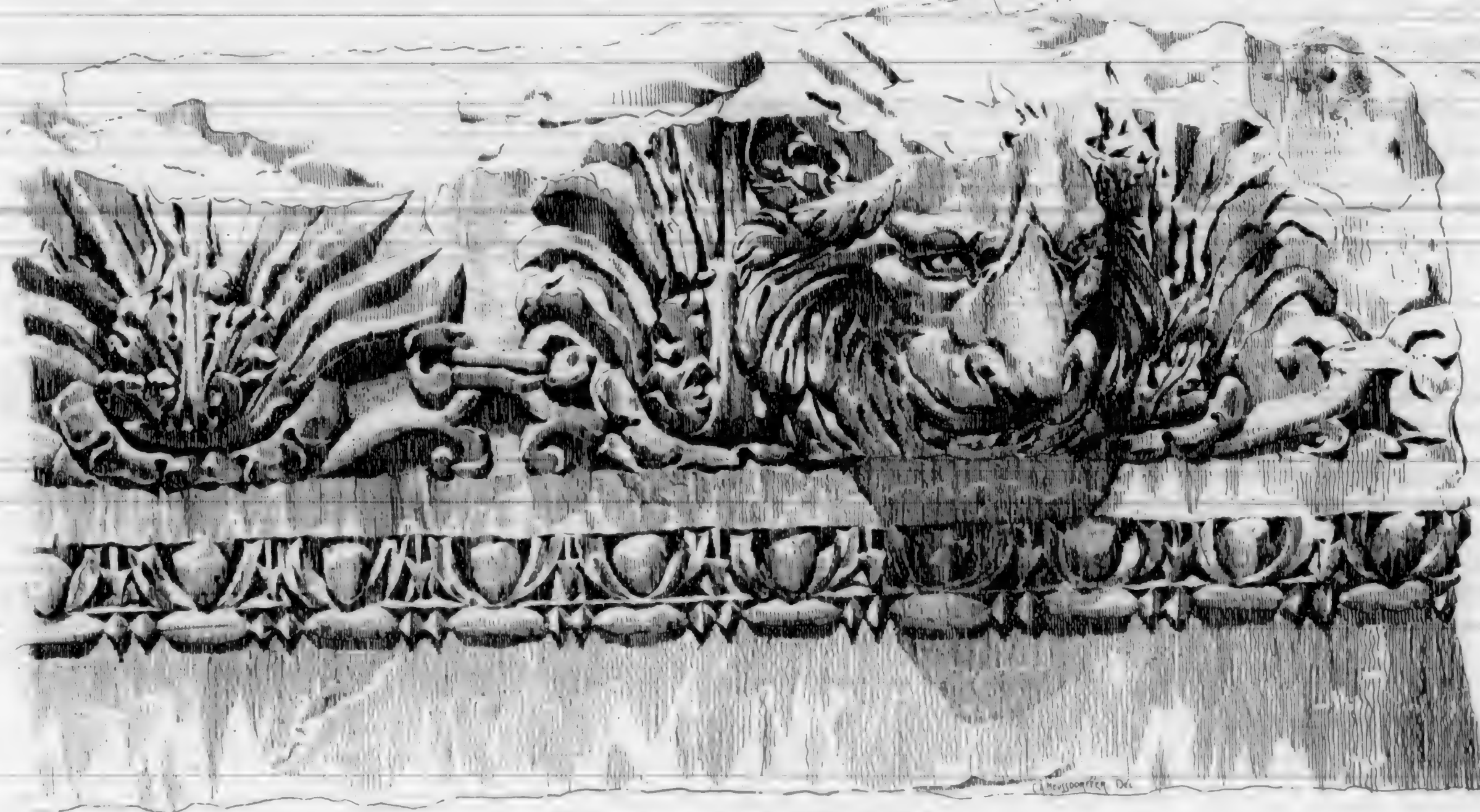
The State of Washington is to have a Capital Building to be erected at Olympia. The last legislature passed the bill which Governor McGraw has recently signed.

The Santa Rosa Board of Education have called an election for April 29th, to vote on the proposition to issue bonds for \$30,000, for school purposes. It is proposed to build new school buildings.

The orange and banana fiend is now getting in his work on pavements. Now is the time for the Supervisors to make it a misdemeanor to do such.

New and valuable deposits of onyx and opals have been recently discovered near Colfax. The onyx is reported to be of a varied and rich color, and large blocks free from seams may be taken out.

The auger that bores a square hole consists of a screw auger in a square tube, the corners of which are sharpened from within, and as the auger advances, pressure on the tube cuts the hole round.



EXISTING FRAGMENT OF A FRIEZE. (ROME.)

BUSINESS MOSAICS.

Commercial Fire Dispatch Co.—This is a new convenience for the commercial men, bankers and manufacturers, though as it has been established and in successful operation for the last three years it can hardly be called new. The city has been districted in such a manner that they are enabled, by their efficient messengers to notify their subscribers of a fire within a few moments after the alarm is given. At the main office of the company, 61 Flood Building, details of the workings will be given.

A bridge is to be built across the Sacramento river, near Anderson, for the Shasta railroad.

Mr. J. J. Jones, the genial manager of the Westminster Slate Company is in the city at the present time. Since his arrival here he has sold several hundred squares of slate to the principal roofers here and has convinced them of the superior quality of the Westminster Slate and the facilities for the prompt delivery of orders. Further information and particulars can be had of Mr. W. A. Jones who is the local agent for the company.

A. H. Johnson's Automatic Perspective Machine has grown to be a necessity in the office of the architectural draughtman. By the use of it much time and labor is saved and there is no possibility of making mistakes. The construction of this machine is exceedingly ingenious and it accomplishes a marvelous amount of work and is highly recommended by all who have used it.

Chicago City Council has passed an ordinance limiting the height of buildings to 130 feet.

The Sturts Burglar Alarm is superior to all other alarms on account of the simplicity of its construction. New devices are hard to introduce but this alarm having merit will undoubtedly make its way to the front ranks the more it becomes generally known. For further particulars apply at the office of the company, room 15, Thurlow Block, San Francisco.

Messrs. Coppieters & Mockel, manufacturers of Art and Metal novelties wish to call the attention of our readers to their advertisement on page vii.

Fifty-one metals are now known to exist; four hundred years ago, only seven were known.

The Joseph Dixon Crucible Co. has at last been awarded space in the Columbian Exposition—a space 25x28 feet in the Mines Building for a general exhibit of graphite productions such as crucibles, lubricating graphite, graphite axle grease, plumbago facings, graphite machine and railway grease, Dixon's stove polish, silica-graphite paint, core wash, electro-typing graphite, graphite cylinder oil, graphite specialties for electrical and other work, etc.

The cost of the Capitol at Washington has exceeded \$30,000,000.

A new glazed tile for partitions, etc., has been put on the Market by Messrs. Gladding, McBean & Co., the well known manufacturers of terra-cotta work for buildings. These partition tiles are glazed on both faces and when set in cement will form a wall having all the desirable qualities as a fire-proof or sanitary partition. This firm also makes a superior quality of glazed bricks, which improvement will recommend them for use in many places. For foundations, setting and backing for kitchen ranges their superiority over those in common use is at once apparent.

The Mott Iron Works still lead in their specialties. See advertisement on page v.

AT THE PHOTOGRAPHER'S.—“One more question, sir, before you begin.” “Well madam? “Is it possible to distinguish real stones from false ones on the photo?”—*Wilson's Photographic Magazine.*

If you are in need of rubber, corrugated matting, hose reels or any kind of fire protective supplies call on Frank McAllister, No. 24 Beale street.

A new sleeping car has a space between the sections to allow the occupant of the upper berth to get in by the end and avoid disturbing any one in the lower berth.

Inlaid Floors.—Messrs. Kenney & Wells, 422 Sutter street are the coast agents of J. W. Boughton's Parquet Floors, Wood Carpets and Wainscoting, which have won such an enviable reputation throughout the country. Mr. Boughton began manufacturing Inlaid Floors over twenty-five years ago and now has the largest and most complete factory in the world.

Besides floors, Messrs. Kenney & Wells carry a large line of Mirrors, Frames, Pictures, and manufacture Fret work and Grills. They have lately been awarded all the inlaid floors in the Mutual Life Insurance Co's building corner Sansome and California street. Branch office 408 and 410 Twelfth street, Oakland.

CITY BUILDING NEWS.

Alcazar Theatre. An electric elevator; owner, M. H. De Young; architect, Wm. Patton; contractors, Otis Bros.; signed, March 21; filed, March 28; cost \$5,000.

Bay, Powell and Mason. All work to build; owner, A. Meringo; architect, W. H. Baylis; contractor, W. N. Nelson; signed, March 28; filed, March 28; cost \$2,343.

Baker near Washington. To build; owner, J. A. Hosmer; contractor, Phillip Rive; signed, April 10; filed, April 10; cost \$2,925.

Broderick near Jackson. Carpenter, Mason and plastering; owner, E. P. Paddock; architects, Smith & Freeman; contractor, Jas. Mix; signed, March 4; filed, March 7; cost \$5,785.

Butte and York. Two-story frame; owner, Cornelius Eagan; architects, Laver & Mulaney; contractor, H. P. Conrady; signed, March 8; filed, March 9; cost \$3,200.

Broadway near Van Ness. Alterations to a two-story house; owner, Mary E. Leonard; architect, E. A. Herman; contractor, Joe Ogie; signed, March 15; filed, March 16; cost \$2,315.

Broadway near Laguna. Three-story frame; owner, Jane C. Burnett; contractor, S. C. Bozzell; signed, April 1; filed, April 6; cost \$3,000.

California and Powell. Grading and concrete work; owner, F. L. Parker; architect, G. A. Boardwell; contractor, W. R. Patterson; signed, March 10; filed, March 10; cost \$2,075.

California near Webb. Alterations, etc., to bank building; owner, San Francisco Saving Union; architect, Wm. Curlett; contractors, Smilie Bros.; signed, March 16; filed, March 16; cost \$178,890.

California and Powell. To build; owner, F. L. Parker; architect, Geo. A. Boardwell; contractor, J. J. Boyle; signed, April 6; filed, April 7; cost \$10,340.

California and Webb. Taking down old walls, all excavations, brick, terra-cotta, cutting openings for windows, resetting vaults, etc.; orig.-contractors, Smilie Bros.; architect, Wm. Curlett; sub-contractor, E. Mitchell; signed, April 7; filed, April 8; cost \$30,750.

Church near Ridley. One-story and basement; owner, E. F. Leonard; contractor, Jas. Campbell; signed, April 7; filed, April 7; cost \$2,030.

Clay street, No. 409. Alterations and additions; owner, Estate of Agnes Bowler; architects, Mathison & Howard; contractor, W. I. Forde; signed, March 27; filed, March 28; cost \$1,655.

Devisadero near California. Two-story frame; owner, M. Spiro; architect, P. A. Slott; contractors, Wheeler & Warner; signed, March 7; filed, March 13; cost \$1,880.

Eddy near Scott. Frame building; owner, R. C. Dawes; architect, Jno. Marquis; contractor, Jno. Strand; signed, March 2; filed, March 6; cost \$3,035.

Eighth and Brannan. One-story brick warehouse; owner, Alvinza Hayward; architects, Percy & Hamilton; contractor, Jno. McCarthy; signed, March 15; filed, March 18; cost \$19,084.

Eleventh and Bowie Ave. To build; owner, Patrick McTamney; architect, John T. Kidd; contractor, W. E. Bailey; signed, March 3; filed, March 4; cost \$1,445.

Eleventh Ave. near Pt. Lobos Ave. One-story cottage; owner, Mich'l. D. Williams; contractor, Nelson & Marshall; signed, March 21; filed, March 23; cost \$1,400.

Ellis and Larkin. To build; owner, Cuth Hennebery; contractor, Houston Bros.; signed, March 15; filed, March 20; cost \$4,820.

Ellis and Webster. Additions to house; owner, Methu Robe; contractors, Cook & Patterson; signed, March 20; filed, March 21; cost \$1,400.

Ellis near Polk. Alterations; owner, Philip Hessler; architect, Chas. M. Rousseau; contractor, L. B. Schmidt; signed, April 6; filed, April 6; cost \$1,175.

Ellis near Mason. Grading, supporting, underpinning all adjoining buildings, concrete stone and brickwork; orig.-contractors, Mahoney Bros.; owners, Y. M. Christian Assn.; architect, A. Page Brown; sub-contractors, McGowan & Butler; signed, April 8; filed, April 10; cost \$50,739.

Eugenia near Mission. Two-story frame; owner, L. G. Fitzgerald; architect, Oliver Everett; contractors, Lundy & Gillogley; signed, March 21; filed, March 21; cost \$1,570.

Fell and Masonic Ave. To build; owner, M. B. Sturges; architects, Salfeld & Kohlberg; contractor, Wm. Plums; signed, March 3; filed, March 8; cost \$4,225.

Fell near Lyon. To build; owner, Isador Zellerbach; architect, A. J. Barnett; contractor, Jno. Ogie; signed, March 22; filed, March 24; cost \$10,000.

Folsom near 17th. Two-story frame; owner, M. Silseovich; architect, C. E. Corrigan; contractors, W. and C. L. Hinkle; signed, March 18; filed, March 27; cost \$2,675.

Fulton near Lyon. To build; owner, Howard Morton; contractor, W. W. Rednall; signed, April 5; filed, April 8; cost \$3,100.

Geary near Laguna. Alterations and additions; owner, M. De Smith; contractors, Godin & Beaudet; signed, March 21; filed, March 23; cost \$1,237.

Guerrero near Fifteenth. To build; owner, Sophie Mendel; architects, Martens & Coffee; contractor, F. Weinreich; signed, Feb. 20; filed, March 4; cost \$3,500.

Guerrero near Nineteenth. Three-story frame; owner, Fred Meyer; architect, C. I. Havens; contractor, Robert Currie; signed, March 2; filed, March 4; cost \$8,140.

Hayes near Lyon. Two-story frame; owner, M. McGowan; architects, Copeland & Pierce; contractors, Towle & Broadwell; signed, March 4; filed, March 8; cost \$1,395.

Hayes near Lyons. Carpenter work; owner, M. McGowan; architects, Copeland & Pierce; contractor, Geo. Healing; filed, March 8; signed, March 4; cost \$1,400.

Hayes near Webster. Carpenter work; owner, D. Ross; architect, J. F. Kenna; contractor, T. W. Arnold; signed, March 23; filed, March 25; cost \$3,720.

Hayes near Webster. Carpenter work of a two-story flat; owner, D. Ross; architect, J. F. Kenna; contractor, T. W. Arnold; signed, March 23; filed, March 25; cost \$2,250.

Harrison and 1st. Alterations and repairs; owner, Geo. M. Ahorns; architect, H. Gellfuss; contractor, F. Kiatt; signed, March 10; filed, March 11; cost \$1,330.

Harrison near 21th. To build; owner, G. A. Gaeteke; contractor, Caspar Zwierlein; signed, April 6; filed, April 8; cost \$2,100.

Howard near Fourteenth. Alterations and additions; owner, A. W. Bode; architect, Chas. M. Rousseau; contractor, John Miron; signed, April 4; filed, April 6; cost \$2,800.

Howard near Valencia. Two-story frame; owner, Jno. F. Boyd; architects, B. McDougall & Son; contractors, P. J. & M. Brennan; signed, March 16; filed, March 21; cost \$17,555.

Jones near Geary. To build; owner, Geo. W. Morgan; architect, W. H. Armitage; contractor, Wm. J. Field; signed, March 18; filed, March 20; cost \$7,100.

Kearney near California. Wrought iron work; four-story brick; owner, E. L. Heuter; architect, H. Gellfuss; contractors, P. H. Jackson & Co.; signed, March 2; filed, March 7; cost \$2,200.

Kissling near Twelfth. Two-story frame; owner, Jane T. Dowling; architect, Julius E. Kraft; contractor, Daniel Powers; signed, March 15; filed, March 16; cost \$2,110.

Leavenworth near Lombard. One-story frame; owner, F. Ballhaus; contractor, Peter Johnson; signed, April 10; filed, April 10; cost \$1,500.

Lombard near Gough. Story and basement; owner, Peter Michelette; architect, C. R. Wilson; contractor, P. Antonilli; signed, March 14; filed, March 15; cost \$3,300.

Lyon near Washington. To build; owner, Mrs. M. E. Verleger; architects, Pissis & Moore; contractor, Jas. Geary; signed, March 9; filed, March 22; cost \$3,000.

Market near Eighth Street. Plumbing, gas-fitting, etc., and sewer work to four-story brick; owner, Louis Schoenberg; architect, Chas. M. Rousseau; contractors, S. Ickelheimer & Bros.; signed, April 5; filed, April 6; cost \$1,025.

Masonic Cemetery. Granite and marble work of a Mausoleum (except cement and concrete work of foundation or floors, etc.); owner, N. W. Cole; architect, Jas. E. Wolfe; contractor, A. McLennan; signed, April 7; filed, April 8; cost \$3,719.

McAllister and Devisadero. Two-story frame and attic; owner, H. Braunschweiler; architect, C. W. Kenitzer; contractor, Adam Miller; signed, March 21; filed, March 23; cost \$15,300.

McAllister and Devisadero. Brick and iron work; owner, A. Miller; architect, C. W. Kenitzer; contractors, T. Hoek & Son; signed, March 23; filed, March 25; cost \$2,250.

Mission near 23d. Grading; owner, Emma Mangels; architect, H. Gellfuss; contractor, J. O. Sullivan; signed, March 28; filed, March 29; cost \$2,444.

O'Farrell near Jones. All work to build; owner, Alice Pease; architect, T. J. Welsh; contractor, H. Jacks; signed, March 8; filed, March 28; cost \$2,285.

O'Farrell near Scott. To build four flats; owner, A. Pastene; architects, Coffey & Lemme; contractors, Mix & Hope; signed, March 6; filed, March 8; cost \$2,285.

Oregon and Front. Carpenter work, etc.; to add two stories; owner, Jas. G. Fair; architect, H. A. Schulze; contractor, J. B. Gonyeau; signed, March 7; filed, March 23; cost \$3,250.

Oregon and Front. Brick, iron and terra-cotta work; owner, Jas. G. Fair; architect, H. A. Schulze; contractors, Riley & Loane; signed, March 7; filed, March 22; cost \$3,824.

Post near Grant Ave. Alterations and additions; owners, H. Liebes & Co. architects, John & Balczynski; contractors, Schutte & Kreeker; signed, April 4; filed, April 7; cost \$18,566.

Post street, No. 2112. Alterations; owner, Wm. Kaiser; architects, Salfeld & Kohlberg; contractor, H. Rohling; signed, March 1; filed, March 8; cost \$1,530.

Prosper between 16th and 17. Two-story frame; owner, Otto Bammann; contractors, Peterson & Persons; filed, March 10; signed, March 4; cost \$2,500.

Sacramento near Devisadero. Two-story frame and moving; owner, A. and R. A. Polson; contractor, C. H. Wedgwood; signed, March 7; filed, March 9; cost \$1,530.

Sacramento near Drumm. All work for a brick building; owner, D. Roth; architect, Townsend & Wyneken; contractor, J. H. Wilson; signed, March 15; filed, March 15; cost \$10,550.

Sansome and Washington. Sidewalks, lights, etc.; owner, I. Franks; architects, Wright & Saunders; contractors, Leibert & Hoffman; cost \$2,500.

Sixth near Jessie. Iron, steel, brick, cement and artificial stone work, etc.; owner, estate of E. L. Goldstein; architect, I. E. Kraft; contractor, R. Ringrose; signed, April 6; filed, April 8; cost \$1,364.

Sutter and Mason. Brick and stone; owner, S. Weber; architects, Pissis & Moore; contractors, Riley & Loane; signed, March 8; filed, March 18; cost \$23,497.

Sutter and Mason. Iron work; owner, S. Weber; architects, Pissis & Moore; contractors, O'Connell & Lewis; signed, March 15; filed, March 18; cost \$14,974.

Scott and Green. All grading; owner, A. C. Soule; architect, Fuller Claffin; contractor, J. E. Carey; signed, Jan. 28; filed, March 18; cost \$4,735.

Spruce and Washington. Inside finish; owner, O. D. Baldwin; architect, Samuel Newsum; contractor, West Coast Furniture Co.; signed, March 16; filed, March 18; cost \$5,787.

Seventeenth near Valencia. Granite, brick, concrete, etc., to two-story building; owner, Mission Parlor N. S. G. W.; architects, Shea & Shea; contractors, M. Fennell & Son; signed, March 8; filed, March 20; cost \$3,187.

Sanchez near 23d. Two-story building; owner, H. D. Matheson; architect, R. H. White; cost \$4,500.

Seventeenth near Valencia. Carpenter and iron work; owner, Mission Parlor N. S. G. W.; architects, Shea & Shea; contractor, Wm. W. Ackerson; signed, March 8; filed, March 23; cost \$11,432.

Seventeenth near Valencia. Painting; owner, Mission Parlor N. S. G. W.; architects, Shea & Shea; contractor, Ed. Hartman; cost \$875.

Seventeenth near Valencia. Plumbing; owner, Mission Parlor N. S. G. W.; architects, Shea & Shea; contractors, Newman & Mills; cost \$925.

Seventeenth near Valencia. Three-story frame; owner, Harriet Choyinski; architect, Ed. Burns; contractor, Ed. Rohling; signed, March 6; filed, March 6; cost \$5,250.

Sharon near 15th. Two-story frame; owners, T. McGrath and wife; architect, Ed. Mooney; contractor, Jno. T. Kidd; signed, March 10; filed, March 13; cost \$2,500.

Sharon near 15th. Two-story frame; owners, J. Crampton and wife; architect, Ed. Mooney; contractor, Jno. T. Kidd; signed, March 10; filed, March 14; cost \$2,500.

Sacramento St., No. 22 and 27. Alteration and repairs; owner, H. T. Holmes I. Co.; contractor, L. C. Murry & Co.; signed, March 14; filed, March 15; cost \$4,187.

Sanchez and 17th. Three-story building; owner, J. J. Hickey; architect, J. J. Clark; contractor, Wm. Linden; signed, March 16; filed, March 16; cost \$5,300.

Trent Ave. near 24th. Cottage; owner, Chas. H. Feldbusch; contractor, Wm. Hebing; signed, March 21; filed, March 22; cost \$2,000.

Turk and Buchanan. Four three-story frame buildings (except excavations, concrete and cement work); owner, H. F. Fortman; architects, John & Balczynski; contractors, Gray Bros.; signed, April 8; filed, April 8; cost \$3,850.

Twenty-first near Dolores. Two-story frame; owners, T. F. Williams and wife; architect, C. H. Skidmore; contractor, Douglass O'Connor; signed, March 7; filed, March 8; cost \$3,400.

Vandewater near Mason. Carpenter work on brick work; owner, Fontana & Co.; architect, J. Kraft; contractor, H. Holzenberg; signed, March 2; filed, March 4; cost \$3,200.

Vandewater near Mason. Brick and concrete work; owner, Fontana & Co.; architect, J. Kraft; contractor, C. Wagner; signed, March 2; filed, March 4; cost \$3,300.

Vallejo near Devisadero. Frame dwelling; owner, E. Rochat; architect, Clinton Day; contractors, Ingerson & Gore; signed, March 1; filed, March 6; cost \$9,720.

Vicksburg near 23d. A cottage and stable; owner, Earnest Hoffman; architect, Ed. Vogel; contractor, Wm. Linden; signed, March 27; filed, March 27; cost \$1,818.

Walter and Taylor. Three-story frame; owner, C. Brizzolara; architect, E. Deperre; contractors, L. Cuneo & Co.; signed, March 27; filed, March 28; cost \$8,000.

Welster near Golden Gate Ave. Two-story frame; owner, Geo. Shaffer; architects, John & Balczynski; contractors, Schutte & Kreeker; signed, March 27; filed, March 28; cost \$3,775.

ALAMEDA COUNTY.

Block A, lot 12. Two-story frame; owner, C. T. Baker; architect, S. A. Bordwell; contractor, J. J. Boyce; signed, March 17; filed, March 22; cost \$3,319.

Bowditch near Durant Ave., Berkeley. To build; owner, B. Carrington; contractor, R. Wenk; signed, April 5; filed, April 7; cost \$1,600.

Central Ave. near Hight. Five-room cottage; owner, H. H. Hagewald; contractors, Marcuse & Remmel; signed, March 20; filed, March 23; cost \$1,535.

C. P. R. R. Right of Way. Two-story frame building; owner, 23d Ave. and 14th L. I. Co.; architects, Colligan & Lassen; contractors, E. P. McGowan and J. Laughlin; signed, Feb. 4; filed, March 19; cost \$5,350.

Eighteenth and 8th Ave., Oakland. Two-story frame; owner, E. B. Hill; contractor, C. E. Nichols; signed, March 11; filed, March 15; cost \$2,912.

Forty-fourth near Grove. To build; owner, J. E. McElarth; contractor, W. M. Campbell; signed, April 5; filed, April 6; cost \$1,400.

Grand near Railroad Ave. One-story frame building; owner, J. H. Alders; architect, F. P. Fischer; contractors, D. Straub & Son; signed, March 17; filed, March 21; cost \$1,800.

Linden near 24th, Oakland. Six-room cottage; owner, E. A. Beers; contractor, A. D. Coplin; signed, March 17; filed, March 18; cost \$1,650.

Moss Tract, block F, lot 7, Brooklyn. To build; owner, T. D. Newsum; architects, J. J. & T. J. Newsum; contractor, W. H. Higgins; signed, March 23; filed, April 3; cost \$1,300.

Ninth near Chestnut, Oakland. Two-story frame; owner, L. Messinax; architects, Townsend & Wyneken; contractor, J. Mussoletti; signed, March 14; filed, March 15; cost \$2,080.

Pacific near Walnut Ave. Three-story frame; owner, Capt. A. H. McElreath; architect, F. P. Fischer; contractor, D. Straub; signed, March 15; filed, March 15; cost \$1,800.

Park near Dayton. Two-story frame; owner, A. W. Ward; architect, T. Claffin; contractor, R. M. Murray; signed, March 20; filed, March 24; cost \$6,068.

Parn near Dayton Ave. Two-story frame; owner, K. D. Field; architect, T. C. Chaplin; contractors, R. Knox & J. G. Cook; signed, March 10; filed, March 20; cost \$6,945.

Sixteenth near Fruitvale Ave. Two-story frame; owner, J. A. Jones; contractor, A. W. Pattiani; signed, March 18; filed, March 20; cost \$2,908.

Seventh near Henry, Oakland. Alterations and additions; owner, Mrs. M. Walsh; architect, E. Childs; contractor, J. Irwin; signed, Feb. 15; filed, March 15; cost \$1,653.50.

Seventh Ave. and 22d street, Oakland. Two-story frame; owner, Mrs. W. B. Smith; architects, Percy & Hamilton; contractor, C. L. Lombard; signed, 18; filed, March 21; cost \$2,000.

Send P's Court near R'd Ave. Five-room cottage; owner, C. T. Hoffmann; contractors, Marcuse & Remmel; signed, Feb. 10; filed, March 13; cost \$1,500.

Taylor and Sixth. Three cottages; owner, J. E. Seigfried; contractors, Marcuse & Remmel; signed, March 25; filed, March 25; cost \$3,615.

Twenty-seventh near 19th Ave., Oakland. One-story frame; owner, H. H. Beach; contractor, A. W. Pattiani; signed, March 22; filed, March 24; cost \$2,459.

Thirty-fifth near Grove, Oakland. Two-story frame; owner, K. McDonald; architect, J. J. Clark; contractor, J. R. Robinson; signed, March 14; filed, March 20; cost \$2,195.

Twenty-sixth near 14th, Brooklyn. To build; owner, S. Bonfield; contractor, T. C. Bignami; signed, Feb. 11; filed, March 13; cost \$1,562.

Verdi near Railroad Ave. Five-room cottage; owner, F. E. Baker; contractors, Marcuse & Remmel; signed, March 6; filed, March 25; cost \$2,325.

Weber near Central Ave. One-story cottage; owner, W. T. Chipman; architect, Wm. Levinson; contractor, R. Christenson; signed, March 21; filed, March 22; cost \$2,700.

The California Architect and Building News.

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OFFICE, 408 CALIFORNIA STREET,

SAN FRANCISCO, CAL., U. S. A.

VOLUME XIV.

MAY 20th, 1893.

NUMBER 5.

A MONTHLY JOURNAL DEVOTED TO THE ARCHITECTURAL INTERESTS OF THE PACIFIC COAST.

Published on or about the 20th of each month by The California Architectural Publishing Company. The Stockholders being Architects and others interested in the profession.

SUBSCRIPTION TO THE JOURNAL, \$3.00 PER YEAR IN ADVANCE.

ADVERTISING RATES:				
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ESTABLISHED 1879. NOW IN THE FOURTEENTH YEAR. INCORPORATED 1880.

W. J. CUTHBERTSON, President. OLIVER EVERETT, Secretary.

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THIS journal is prepared to take charge of rendering perspective drawings in pen and ink or color. Charges will depend on size and kind of drawing wanted.

Upon receipt of plan and elevations, with a description of what is wanted, we will submit our estimates for the performance of the work.

A National Gallery of History and Art is a matter of importance to every citizen of America and more especially to students of architecture and art. On Saturday evening the 6th inst, the San Francisco Chapter of the American Institute of Architects, gave a reception in the parlors of the Palace Hotel to Mr. Franklin W. Smith, a retired Boston merchant, who on account of an inherent predilection for architecture, has by constant study and oft repeated visits to European countries familiarized himself with the conditions of the arts and their needs, has conceived the magnificent project of a National Museum of History and Art. He proposes to establish at Washington, D. C., a vast series of courts and corridors constructed on the side of Observatory Hill, arranged in historical sequence to contain collections, replicas and original examples of architecture, painting and sculpture, each in its appropriate environment so that each art and industry may be traced from the beginning to the present day.

These collections and examples to be illustrated by the most notable specimens of art placed in their proper connection and explained in that connection by lecturers who are to be appointed by the various universities, and who shall be selected in accordance with a carefully formulated programme for the benefit of visitors.

This is not a substitution, but a preparation for travel by those who can afford that greater luxury. In a word the proposition embraces a rearranged and improved South Kensington on a vastly enlarged scale.

THE use of cast iron soil and waste pipes for buildings has brought forward the question of the merits of the cast iron pipe with leaded and packed joinings in comparison with the wrought iron pipe with screw joints. It has been contended that cast iron pipes were not sufficiently flexible to prevent breakage by the vibratory motion by wind or other causes.

The article on another page, by J. B. Crockett, descriptive of an experience with a 24-inch cast iron gas main, shows that cast iron pipes where joined with lead packing may be moved and its direction changed to a considerable extent without breaking. The general conditions and results are of especial interest to architects and we invite their attention to the subject.

OUR article in last month's issue of this Journal on "Wiring of Buildings for Electric Lights," was written by an expert in that line and will well repay a careful reading and study of the subject. We cannot ignore the fact that electricity is destined, before many months, to be the coming light; therefore, buildings in course of erection, or in contemplation should be arranged for the most effective work in that line the present state of knowledge will warrant.

SANITARY SCIENCE.

To the Editor of the California Architect.

HAVING occasion to be in Oakland the other day taking in the many improvements and otherwise now going on in that thriving burg, I, being interested in things Architectural, looked over most of the plans of the new school-buildings about to be started there, and was grieved to see that those having the say in the matter have turned back from the ideas most progressive in sanitary science—and have attempted to apply rules appropriate for the Eastern States to buildings here on the Pacific Slope. In, I believe all of these buildings, we find the basement cumbered up with latrines and urinals. The basement, which above all should be kept sweet and clean. The latest and best method, when they have to be placed in the building, is to place all these necessary nuisances on the top of the building so that evil gases may disseminate themselves in the upper atmosphere without having to pass through the stratas of breathable air.

What excuse have we then for men in these latter days who with ample yards and grounds around their buildings persist in placing the latrines in the basement.

This comes in great part from the habit of Californians of having no faith in themselves, but putting their trust in eastern teachers, forgetting that they of all are the worst possible guide for us western people. In the east with their frost and snow they are compelled to put their conveniences where they may be kept warm and where their water pipes may not be broken with frost and so that their children may not endanger their noses and ears by having to go out into the death-dealing air. But the conditions here are totally different and generally the rule ought to be to do exactly the opposite to what they do in the east, and you will be more often right than wrong.

In this climate the latrines and urinals of a public building such as a school house should by all odds be kept entirely separate from the occupied building. A covered walk there should be for rainy weather and the edifices devoted to the purpose under consideration ought to be made as architectural as can be. I believe it is, and if not ought to be, a law of

Ethics that it is not necessary to emphasize a disagreeable thing for the sake of absolute truth, and there need not be anything about these separate buildings to indicate their use, as all the occupants of the building can be made acquainted with that without it being advertised on the building itself.

Such being the case I cannot conceive of one good reason why these conveniences should be put in the basement especially when the fresh air furnaces are there too, and if there is I would very much like to have it given; and it seems to me that a little more consideration on the part of those having authority might lead them to undo what they have done and start on a more scientific and humanitarian basis.

STROLLER.

AN EXPERIENCE WITH A 24-INCH GAS MAIN.

BY J. B. CROCKETT, MEM. TECH. SOC.

[Read March 8, 1893.]

USUALLY, large engineering operations, such as any class of construction work, are attended with a certain amount of pleasurable anticipation, as the plans are being perfected, and a degree of pardonable pride as the final results are contemplated; but once in a while we are confronted with engineering emergencies that require more skill and watchfulness for successful handling, yet are totally devoid of any of these compensations. This paper deals with one of the last.

What is now known as the Potrero Station of the San Francisco Gas Light Company, was built from 1869 to 1871. It is situated on the Bay Shore, and is bounded by Georgia, Humboldt, and Sierra Streets on the land sides.

The situation of the plant is favorable, with one exception, that the extreme southern part of the City is isolated from the large gas-consuming districts, by water-ways and marshes, extending westward far into the city. To provide an outlet for the gas made at these works, and avoid crossing Channel Creek, or the mud flats which mark the former boundaries of old Mission Bay, it became necessary to lay a twenty-four-inch cast iron main from the works to a point crossing Kentucky street at Solano street, thence over the high hills to the west to Mission street, and thence in a northerly direction down the hill to the marsh at Santa Clara avenue.

The pipe was laid beneath the surface of the marsh on Santa Clara avenue, from Missouri to De Haro streets, a distance of 1,424 feet, then in a northerly direction, 510 feet, to Center street. From Center street the large main enters the heart of the City through Ninth street, and is there connected with the ramification of pipes which supply the city with gas.

Where the pipe crosses the marsh on Santa Clara avenue, it was laid with about three feet cover of earth, and to all appearances on as good foundation as many other gas mains in the city. At this place the ground was below the official grade, from two feet at the highest, to eighteen feet at the lowest points, but at the time the pipe was laid, no other nor more desirable location was available, nor could the ultimate grading of these streets be anticipated. On a sunny day, with the pipe snugly laid in the marsh, Santa Clara avenue was like a peaceful valley, but after notice was served that the streets in the vicinity were to be graded, it proved to be a veritable "slough of despond." The first notice was the intention to grade Santa Clara avenue from Missouri to Carolina streets, and the intersecting streets. This covered four blocks or about twelve hundred feet of the twenty-four-inch main, and it became necessary to uncover and raise it before the filling was begun.

Before proceeding with a description of the raising of this large pipe, I want to lay stress upon the fact that this pipe

was the main artery of the city's gas supply, which was constantly under pressure, and through which over three-fourths of all the gas supplied by the San Francisco Gas Light Company was drawn. This was previous to the building of the new works at North Beach, and there was no substitute of any kind for it.

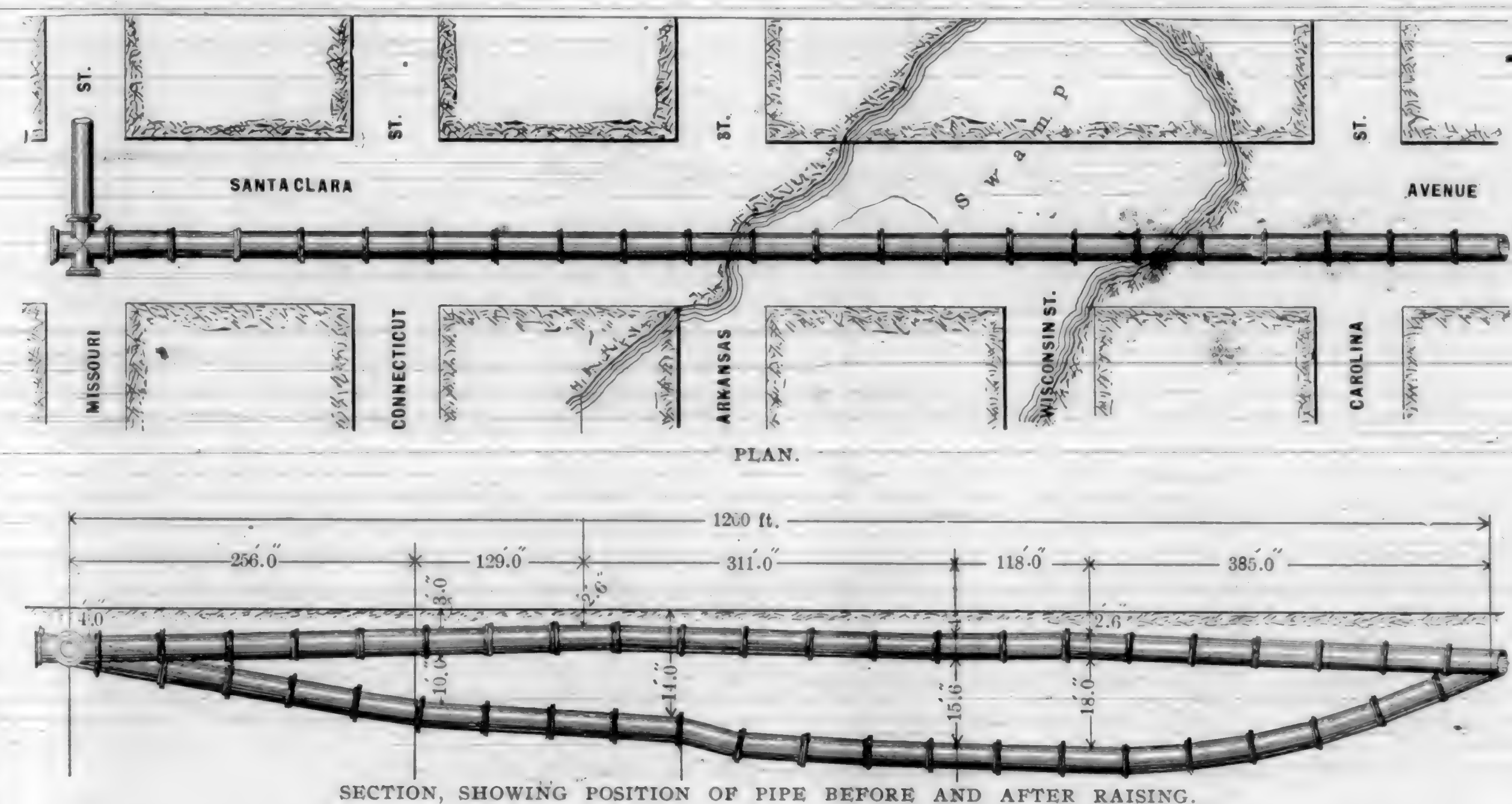
On December 16, 1890, work was commenced raising the pipe on Santa Clara avenue, between Mission and Carolina streets. It was necessary to raise the main without cutting or breaking it, and its success depended in a great measure on its flexibility due to lead joints. Had the joints been of cement, as they are almost uniformly made in Eastern cities, the rigidity of pipes and joints would, without doubt, have caused a break, or perhaps many serious breaks, but with about one hundred lead joints, $4\frac{1}{4}$ inches deep and half an inch thick, it became possible to raise the main without a fracture.

The first section to be raised, weighed about 260,000 pounds, and the method employed in raising it was as

and twelve feet wide at the bottom. They were made of 8x8-inch uprights with a sill underneath, and a cap at the top of the same dimensions, and braced diagonally by pieces 2x10-inches on each side. After the completion of the trestles, all the other supports, including the house frames used for raising, were removed, and apparently nothing remained to be done but to fill in the street with solid filling. The pipe had been raised without accident of any kind, all the joints had been re-caulked where they had drawn, and the permanent supports were amply strong.

The filling of the street was commenced immediately after the pipe was raised. This was done by taking the rock from the hills east and south of the fill, and transporting it in cars to the dump. This work was done by a contractor for the city.

As fast as the street was filled to grade, a gang of men kept the twenty-four-inch pipe uncovered, and all went well until the fill reached the corner of Santa Clara avenue and Arkansas street, when, on Saturday April 11, 1891, at



follows: The pipe was first uncovered, the trench extending to the bottom of the main, and at intervals of 12 feet of its entire length, house mover's frames were placed on each side, one above another, to the desired height. A 12x12-inch timber was placed across these tiers of frames, passing over the pipe just behind each joint. Heavy chains were passed around the pipe, back of each heel, and what is known as a two-inch "holder screw," was hooked to each chain and passed through a hole in the timber above. On the upper surface of the timber was an iron washer, and on this rested the large nut on the thread of the holder screw.

After taking up the slack on each chain, a man was detailed with a wrench to each screw, and at a signal from the foreman each man took one turn of the wrench, and the pipe was gradually raised. As the main was raised from the marsh, a gang of men was employed in blocking under it, to prevent its falling in case of the accidental breaking of any part of the lifting machinery, until finally, when it was raised to the desired height, or about three feet below the official grade of the street, the pipe was temporarily supported by house frames. Seven hundred and eighty of these frames, each 2½ feet high, were used in raising and supporting the pipe.

The next step was the permanent support of the pipe previous to the filling of the street. This was done by constructing a series of wooden trestles, five feet wide at the top

eleven o'clock P. M., the northerly side of the street began to slide toward the north, carrying the pipe and its supports with it. The main settled four feet and slid to the north three feet, and the wooden trestles were canted over in the direction of the slide.

A gang of men was immediately put to work shovelling the rock and earth away from the trestles to remove the pressure against them, and to distribute the material under the pipe. The following day a number of teams were employed to cart the material from the face of the dump, and to spread it along the line of the pipe, under and on each side of it. The object in thus carting the rock was to distribute evenly the load on the marsh, and gradually raise the whole street to the level of the pipe, instead of keeping up to the street grade, and presenting a steep face at the dump. Carting rock was continued until we had filled in solid under the pipe and had built a cartway about nine feet wide on each side of the pipe, level with the bottom of it. This required the handling of five thousand loads or stone. As the stone was hauled ahead and loaded on the marsh, the street continued to settle, carrying the pipe with it.

Four days after this first trouble, the crossing of Arkansas street commenced to settle very rapidly, and in fifteen minutes the street had gone down four feet. The large body of rock settling in the mud, raised the surface of the

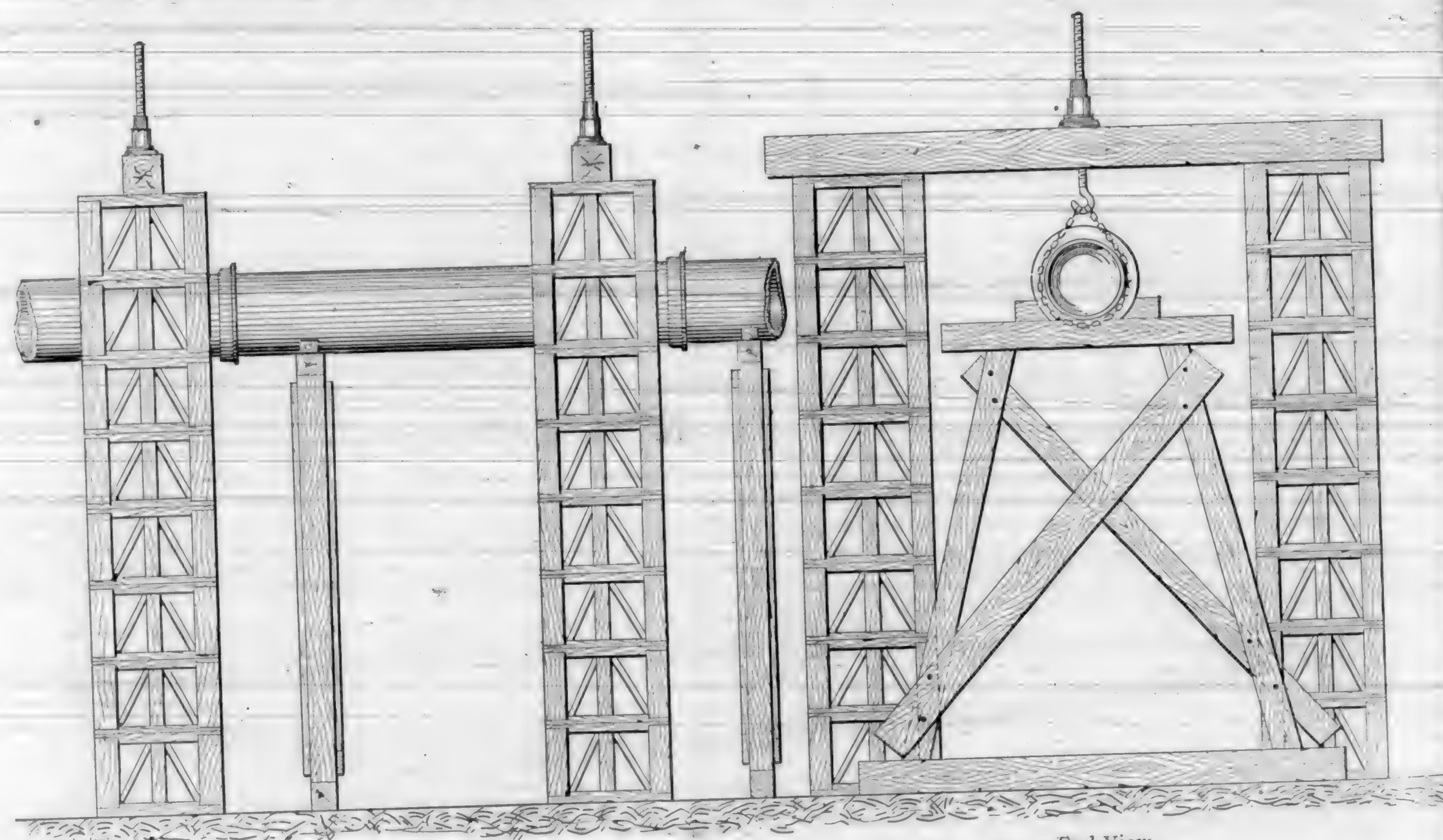
marsh at a point about one hundred feet north of the street, about five feet high, and opened a crevice a foot wide. This was a natural consequence of the displacement of mud by the heavy fill of stone, but why over half of the filled street should slide bodily toward the north, at the same time, and where and when it would bring up were perplexing questions? To ascertain the exact nature of the underlying strata of the marsh, and solve at least one of these problems, we caused soundings to be made in lines ninety-six feet long, extending from south to north, at right-angles to the pipe, by driving a half-inch iron bar into the ground. The crust of the marsh was found to be fairly firm to a depth of three feet, consisting of a sort of marl.

At the northerly side of the street, after passing through the crust, the bar sank into nineteen feet of soft mud, and then reached hard bottom. At the middle of the street the bar went down through seven feet of the same mud, while

wedges, we arranged to keep the pipe in its place, until May 1st when another settlement occurred, opening long fissures in the fill, and raising the surface of the marsh to the north about nine feet, and at the same time opening several long cracks nearly two feet wide. This was the most trying period of the whole undertaking, and as a safeguard I laid a line of twenty-inch pipe on the surface of the marsh, south of Santa Clara avenue, and cut the twenty-four-inch pipe between Missouri and Arkansas streets, and at Carolina street, and put in T's twenty-four by twenty.

This was done so that in the event of the construction of the twenty-four-inch main, we could, by making short connections with the twenty-inch main, provide a way to deliver gas to the city temporarily. Fortunately, however, this new line was never used, but its presence was a source of relief.

The last serious settlement occurred on May 15, 1891.



Side View
STRUCTURE SHOWING FIRST MANNER OF LIFTING AND SUPPORTING PIPE.

on the south side there were but two feet and six inches of the mud under the crust of the marsh. The stratum underlying this mud was an extremely hard clay.

These soundings explained to my satisfaction the cause of the body of rock sliding towards the north. The surface of the marsh was nearly level, but the thick body of soft alluvial mud was resting on a subterranean side hill of hard clay, sloping toward the north with a trend of fourteen degrees, and as the rock fill sank into the mud it slid, mud and all, down the slope of the hard bottom.

The soundings also explained the sudden and spasmodic settling of the fill. The three feet of firm crust over the marsh offered a resistance to the load of rock piled upon it, until the load was sufficient to overcome the resistance, when the crust broke, letting the entire fill settle from four to five feet at a time.

After the second settling of the pipe it was necessary to resort again to the house frames for raising it, as the wooden trestles had sunk into the marsh and were almost useless. After raising the pipe with screws to the proper height, jack screws were used for forcing it laterally toward the south, back into proper line. By continuous wedging under the pipe, using in all about ten car loads of wooden

when 12x12-inch timbers, thirty feet long, were placed under each length of pipe, back of the joints, and the end of the timber towards the north was blocked up about two feet higher than the south end. With this precaution we were enabled to keep the pipe wedged up in place, although it was a constant source of worry and annoyance, until the rock fill had found a bottom on the hard clay and the street was brought to grade. At the crossing of Arkansas street, which was the worst part of the marsh, the main was raised at the beginning sixteen feet, and the sum of all the settlement at that point, was fourteen feet, that is, the entire fill settled into the marsh a distance of fourteen feet, so that it was necessary to raise the pipe in all, thirty feet, to maintain it at the sixteen-foot level.

The contractor continued filling in, until July 31, 1891, and the average amount of material dumped each day, from May 1st to July 31st, was twenty-three train loads of nine cars each, or about two hundred and seven cubic yards per day. As the contractor completed filling the street to grade, the pipe was kept uncovered, and a 12"x12" timber was placed across each length of pipe, resting on blocking and wedges, chains were passed around the pipe and holder screws were used for sustaining it. For months it was

necessary to keep careful watch of the pipe, and men patrolled its entire length day and night, driving wedges and taking up the slack on the chains, wherever needed. In fact, during all this time Santa Clara avenue became one of the company's telephone stations, and for a while was the one most frequently used.

Finally, in November, 1891, the street had stopped settling, the timbers and screws were removed, and after carefully tamping the earth under the pipe, the trench was filled. Early in October, 1891, notice was received of the intention to grade Santa Clara avenue west from Carolina street, and as the twenty-four-inch main extended west as far as De Haro street, (304 feet) it was necessary to raise it out of the marsh. At De Haro street the pipe turns at a right-angle, and extends to Centre street, (510 feet), and it was necessary to raise the entire 814 feet an average of about eight feet in height.

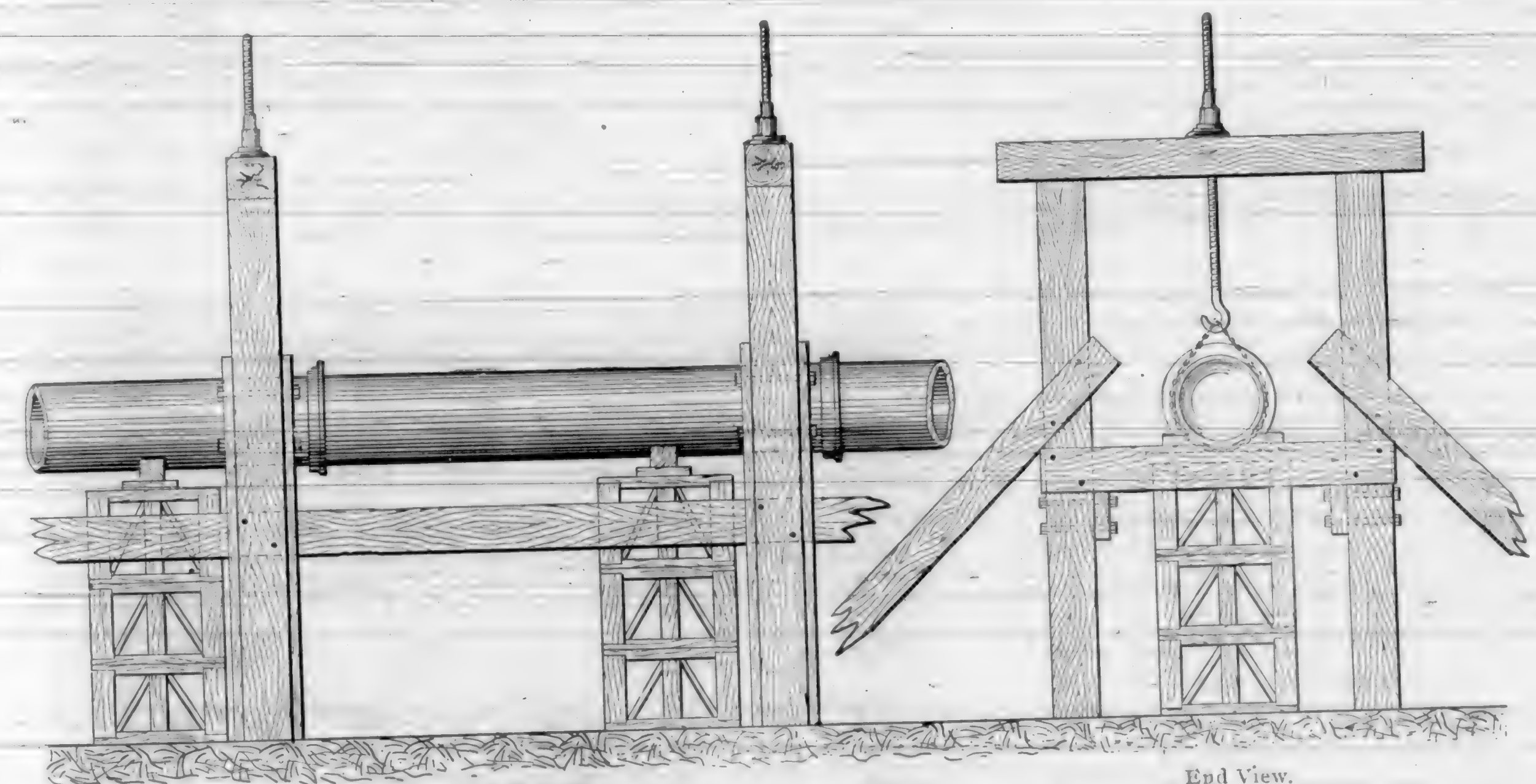
A pile structure was built to raise and sustain the pipe. Sixteen-inch piles, fifty feet long, were driven through the

drawing apart, iron bands were bolted around it at the corner, and these bands connected on each side by rods with turn-buckles.

After the pipe was raised and supported, the 12"x12" caps were removed and the tops of the standard piles were sawed off below the grade of the street. As the street was filled, the pile structure stood the strain of the street settling, but there was little or no lateral thrust, as the clay under the marsh was nearly level at this point, and the fill did not slide.

This piece of work was not subject to any of the unfavorable conditions that so seriously affected the first part of the work. In fact, the method employed to raise the first section would have been successful in raising the second section; but it is doubtful if any wooden structure would have withstood successfully the various forces exerted to overthrow it, at the crossing of Santa Clara avenue and Arkansas street.

[Taken by permission from the transactions of the Technical Society of the Pacific Coast.]



Side View.
STRUCTURE SHOWING SECOND MANNER OF LIFTING AND SUPPORTING PIPE.

marsh into the hard clay bottom. These piles were spaced twelve feet apart, and were five feet from the pipe on each side. Ten feet outside of each standard pile a brace pile was driven and sawed off two feet from the ground. On each side of the standard piles, extending down to the brace piles, were diagonal braces 4"x12". Caps 12"x12" were placed over the main, resting on the top of the standard piles, and a screw passed through a hole in the middle of each cap. The pipe was raised as before described.

When the pipe reached the proper grade, waling pieces 4"x12" were bolted on the inside face of the standard piles, and across these were placed two planks 4"x12", on edge, resting on the waling pieces and bolted through the piles. The pipe rested on these 4"x12" cross pieces, and was prevented from rolling by pieces of 4"x4". The entire wooden structure was securely bolted together.

The standard piles were for raising and permanently supporting the pipe, and the brace piles and the diagonal braces were to withstand any side thrust caused by sliding of the marsh.

One of the difficult features of this piece of work was the bracing of the right-angle in the main, at the corner of Santa Clara avenue and De Haro streets. This was accomplished by driving ten piles around the T at the corner, and by a system of diagonal braces. To prevent the pipe from

TO ARCHITECTS.

INVITATION to make plans is extended to Architects generally, for a Stone and Brick Building to be erected at De Coto, 26 miles from San Francisco, to be used as an Orphanage for the Masonic Widows' and Orphans' Home.

The Building to have a capacity for the accommodation of one hundred orphans and twenty-five widows.

Cost not to exceed \$60,000.

Plans to be submitted to us by July 13, 1893, at 2 P. M., Masonic Temple, San Francisco.

The Board of Trustees reserve the right to reject any or all plans.

For further particulars apply to

G. L. Spear, Chairman,
Jacob Voorsanger,
Albert Hanson.

Spudkins, who has been refused by eleven girls, says he thinks of becoming a photographer, because he is so successful in producing negatives.—*Philadelphia Record*.



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 California Home at Glen Ellen, Sonoma County, for the care and training of feeble-minded children, is by Messrs. Copeland & Peirce, architects, of this city.

THE Perspective sketch of a residence for Geo. R. Sanderson on Jackson street is by architect C. I. Havens.

THE Japanese M. E. Church to be built on Pine street in this city, is by Maxwell G. Bugbee, architect.

CONCRETE AND TWISTED IRON.

AS USED AT THE STANFORD JR. UNIVERSITY, PALO ALTO, CALIFORNIA.

THE distinctive features of the Stanford Jr. University relate not alone to the course and methods of training, but as well to the character of the buildings which have been erected. The style of architecture is modeled after the low, tile-roofed, abode structures of the mission period. The buildings first erected were of hewn stone, massive, costly and enduring. The later edifices are upon the same general plan, but are also unique and peculiar in mode of construction. They are monolithic, being moulded, walls, floors and roofs of artificial stone or concrete, with the addition of iron rods as an element of supporting strength for the floors.

The real problem of successful architecture clearly lies not so much in a choice of material as the proper use of materials common to all structures. Essentially the same elements enter into the construction of all important edifices. The great difference is in the way these are handled; whether the articles in question are used in their natural condition, or shaped and fitted by art, modified by preparation or manufacture, to meet the taste and means of the designer.

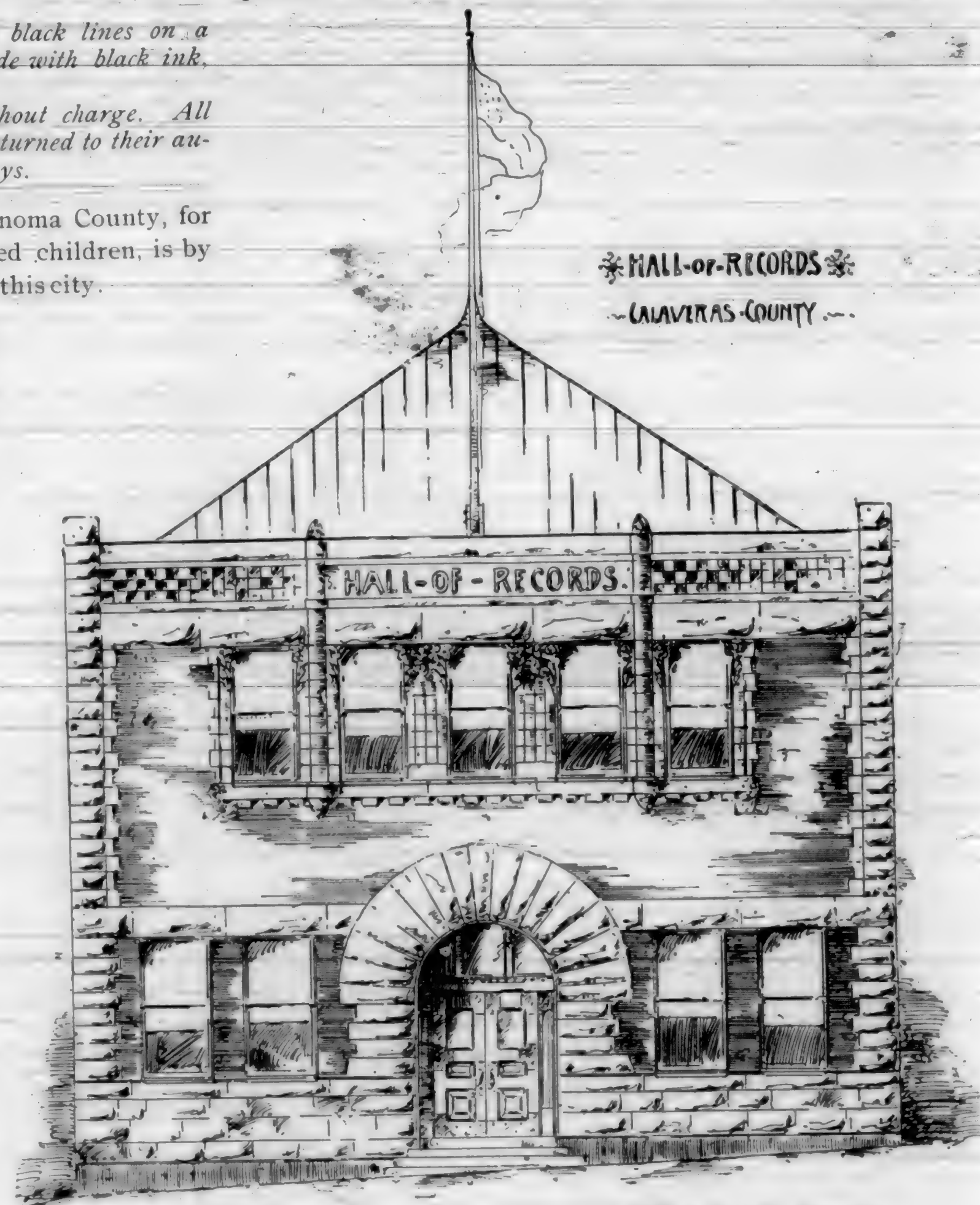
Buildings of stone are conceded to be most enduring, and to best resist climatic changes, but they have been the most costly, where the granite or marble has to be transported from the quarry and dressed by hand for use in the walls. The same materials, broken in fragments, and again united by machinery with cement, and utilized in the form of monolithic (single stone) structures of concrete, prove cheaper, and, as use has demonstrated, more enduring, and resist heat better than natural stone.

Such structures are not new, but have heretofore been too massive and imposing. There was needed some device by which floors of stone need not be of excessive weight. In the construction of the new Museum Building and Girls' Dormitory at Palo Alto, this final problem seems to have

been solved by a method first introduced upon the bay of San Francisco, which in effect utilizes the principle of the suspension bridge in every separate floor beam.

The floors, though formed of single slabs of artificial stone, are light and graceful in design, though capable of supporting great weight. This requisite strength has been secured by means of bars of twisted iron imbedded within the mass, whereby the tensile strength of the iron—firmly held in place by the surrounding concrete—supports the floor.

The common iron floor beam can be depended upon to the safe limit only of its lateral or transverse strength. Were it possible to use the same weight of iron as a suspension rod,



WILLIAM MOOSER, ARCHITECT.
SAN FRANCISCO, CAL.

the safe limit would be the cohesive or tensile strength, which is about three times as great. In other words, a floor can be sustained by a suspension rod one-third the weight of the lateral beam. To break a beam by overloading, it is necessary to separate the particles forming the lower chord of the beam, by tension, or to disintegrate the upper member by compression. Incorporating the twisted bar in the lower portion of the beam, it acts as a suspension rod, and being firmly held at every point, the weight is distributed over the length of the bar. The iron thus imbedded is also safe from corrosion and protected against fire, enduring with the concrete, which hardens as the years pass.

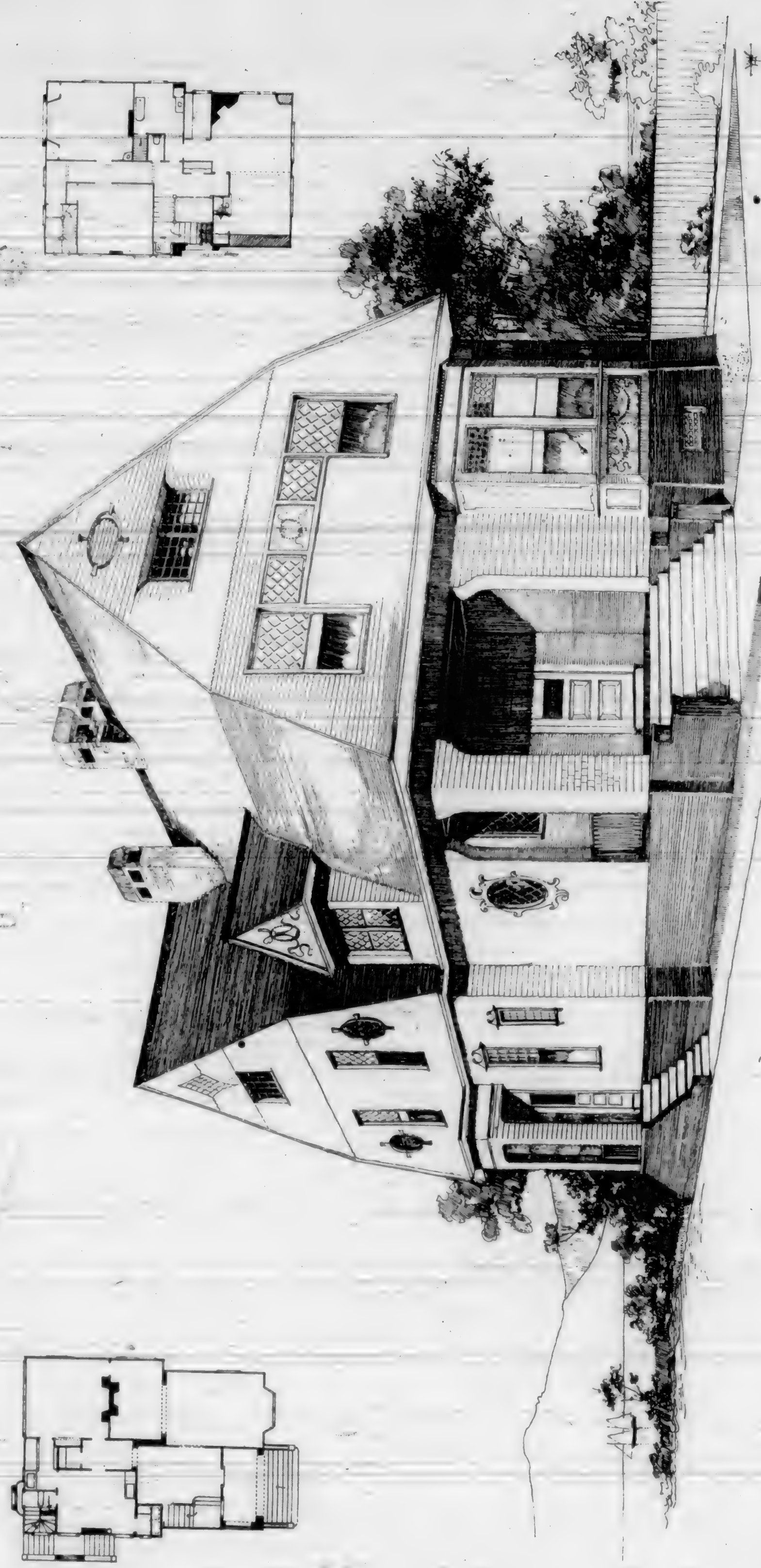
There is yet another feature of large interest here. It has been demonstrated that bars of iron, twisted while cold, and left awhile before use, have their cohesive strength increased fifty per cent. The one-third weight is thus again reduced, showing that less than one-fourth the weight of iron affords equivalent strength.

May not this departure at least indicate somewhat the character of the ideal building of the future?



PERSPECTIVE: SKETCH:
 CLARENCE ARCHT.:
 J. FLOOD: PLDG: 517

RESIDENCE FOR: GEORGE ANDERSON
 JACKSON: BAY MAPLEVIEW ST. 3.5

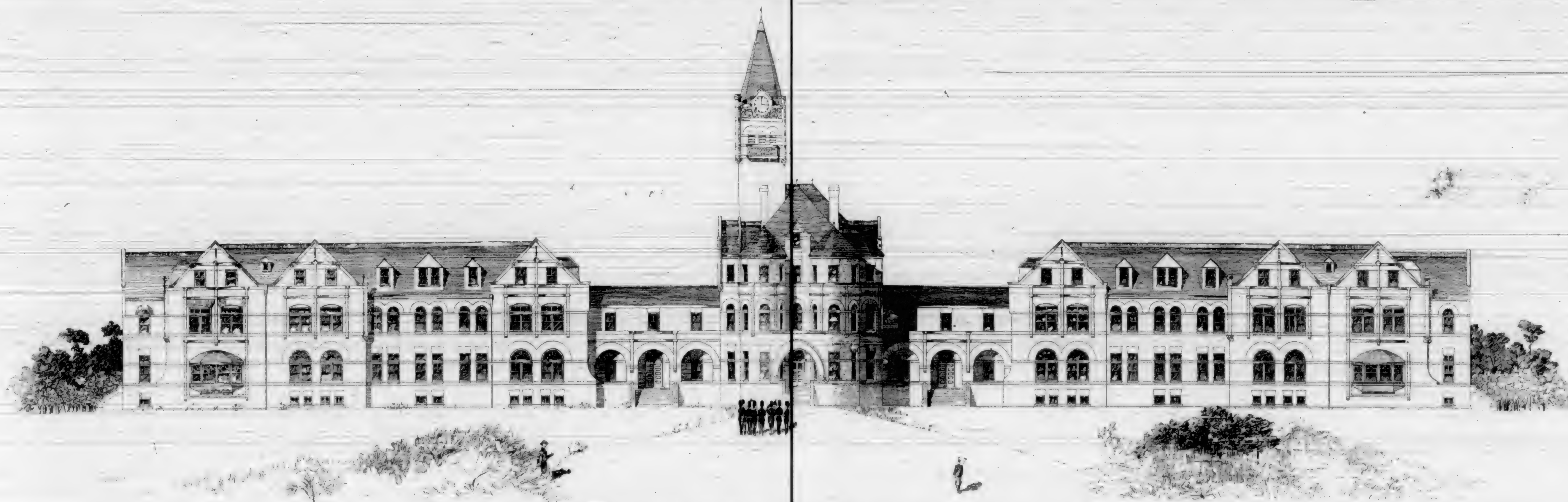


CALIFORNIA ARCHITECT & BUILDING NEWS
 SAN FRANCISCO.

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VOL. XIV No. 5, MAY 1893.

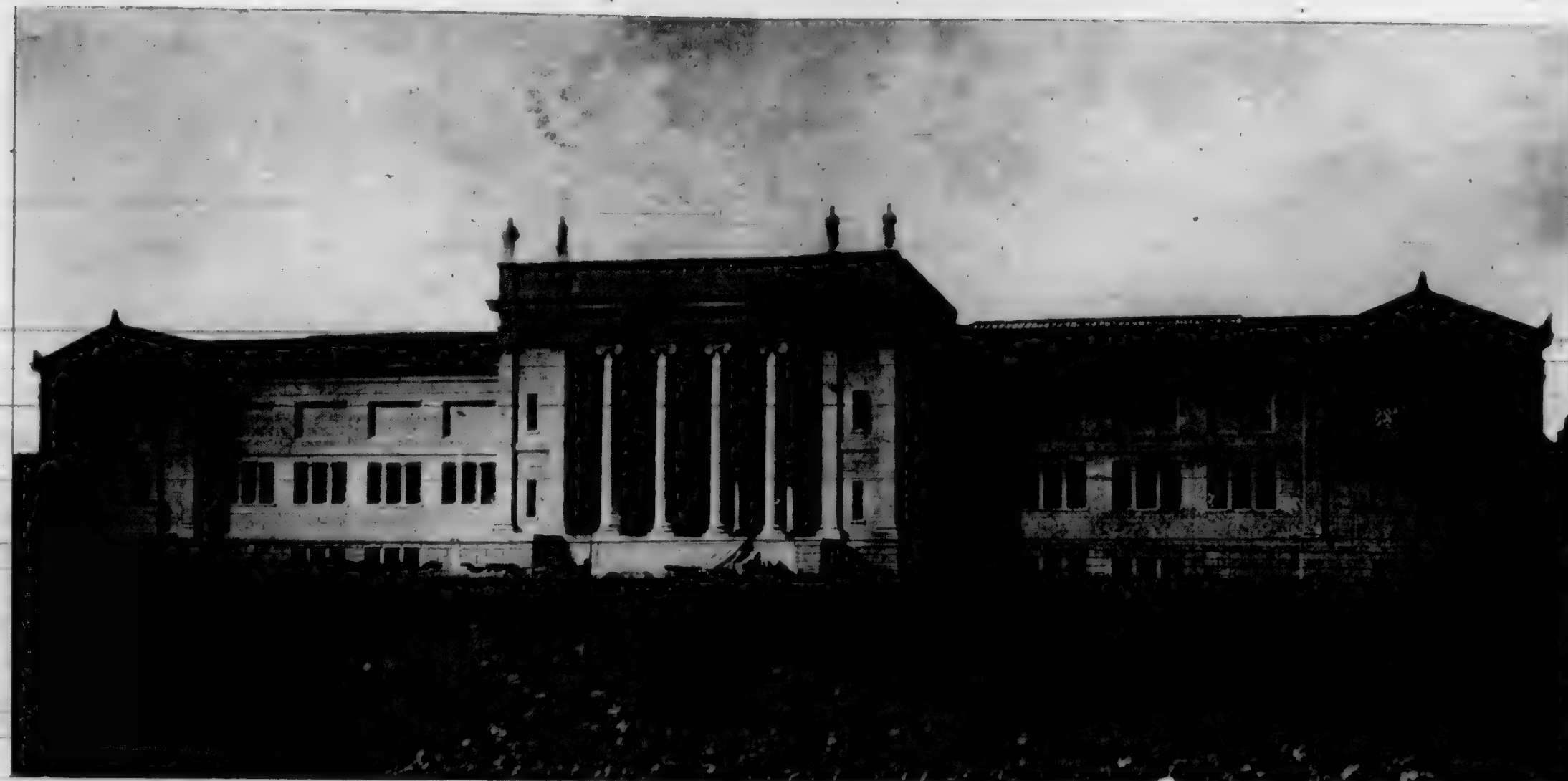




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INTERIOR OF DOME, MUSEUM.



INTERIOR OF WING, MUSEUM.



GIRLS' DORMITORY, PALO ALTO, PERCY & HAMILTON, ARCHITECTS.