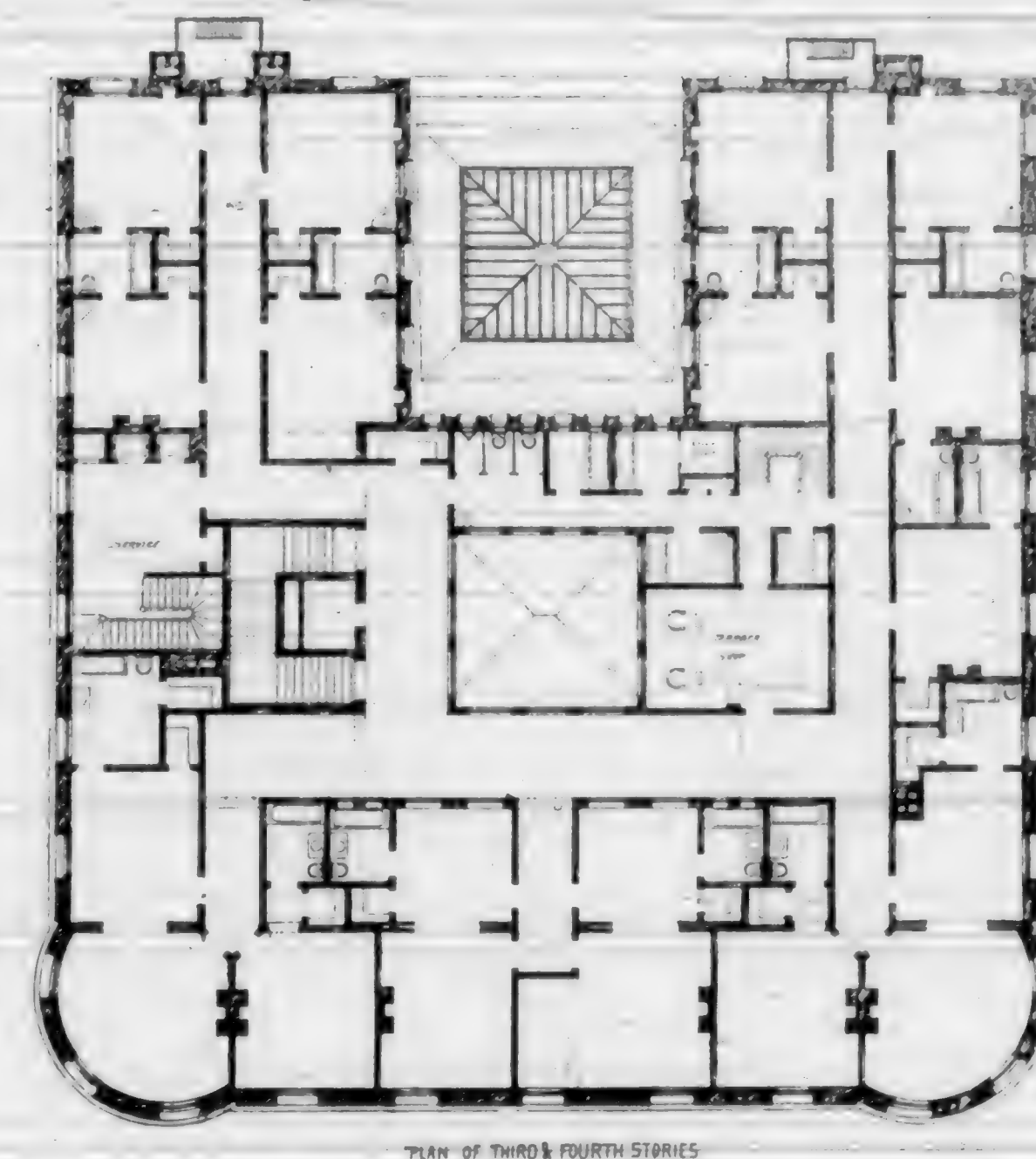
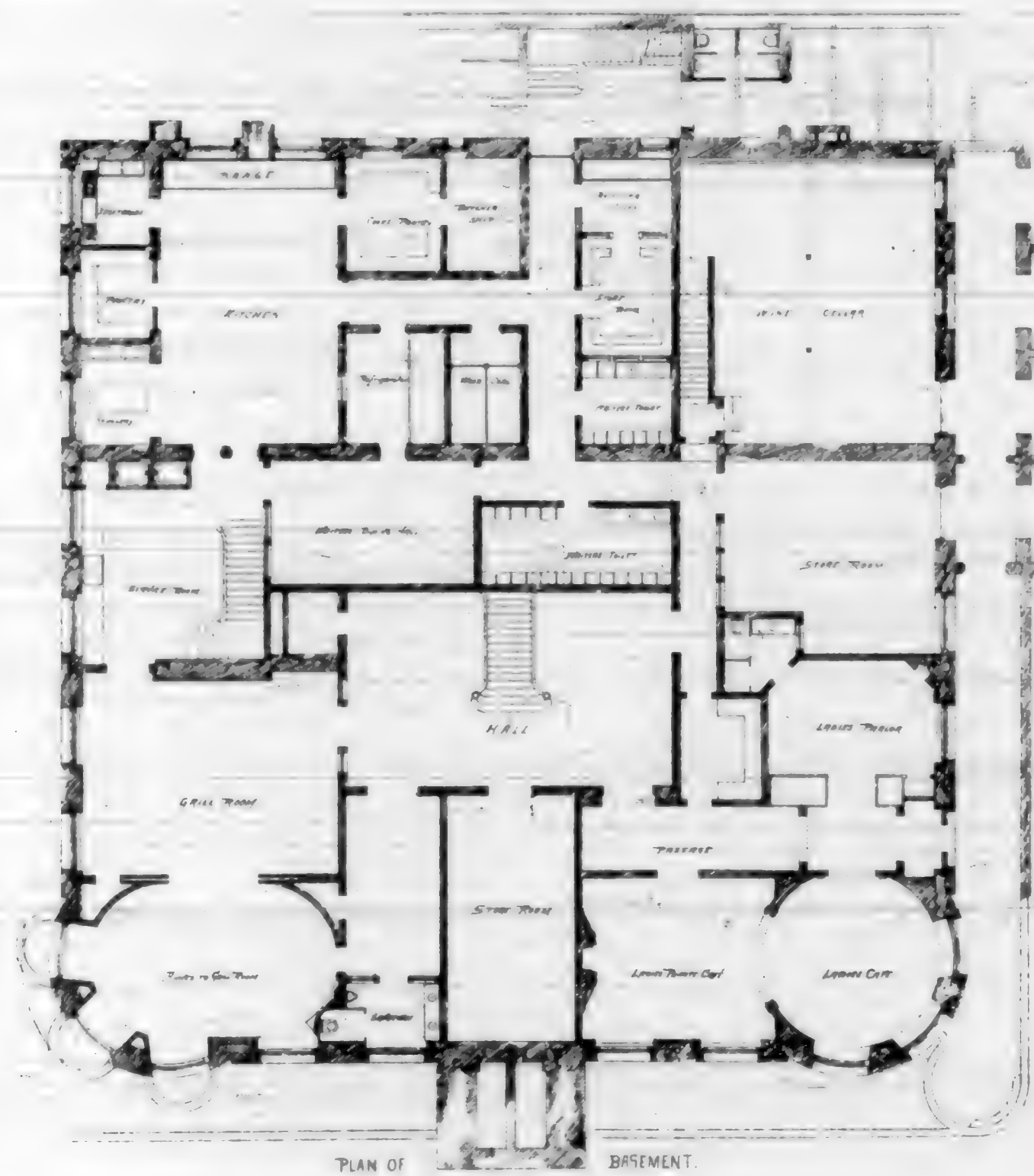
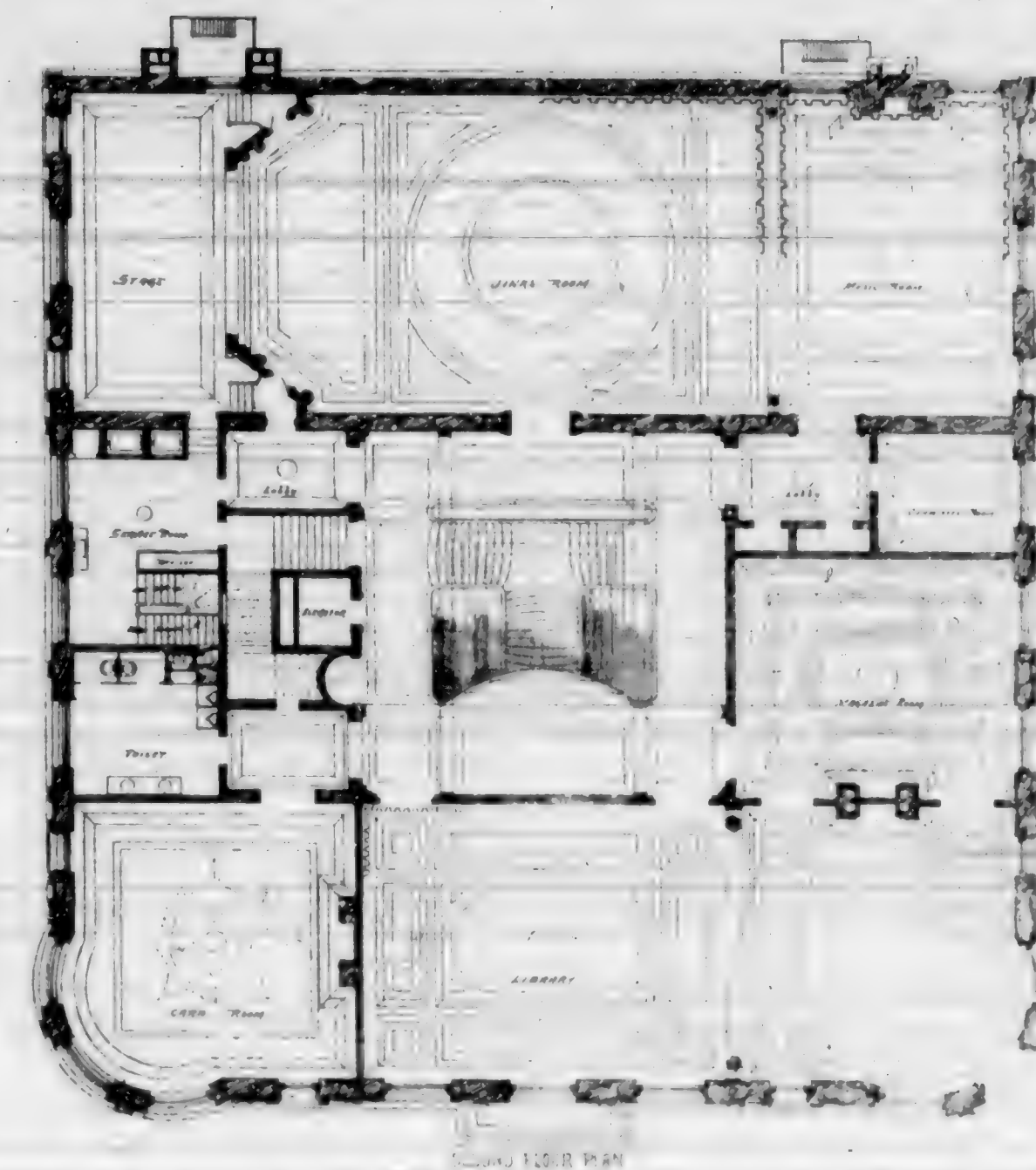
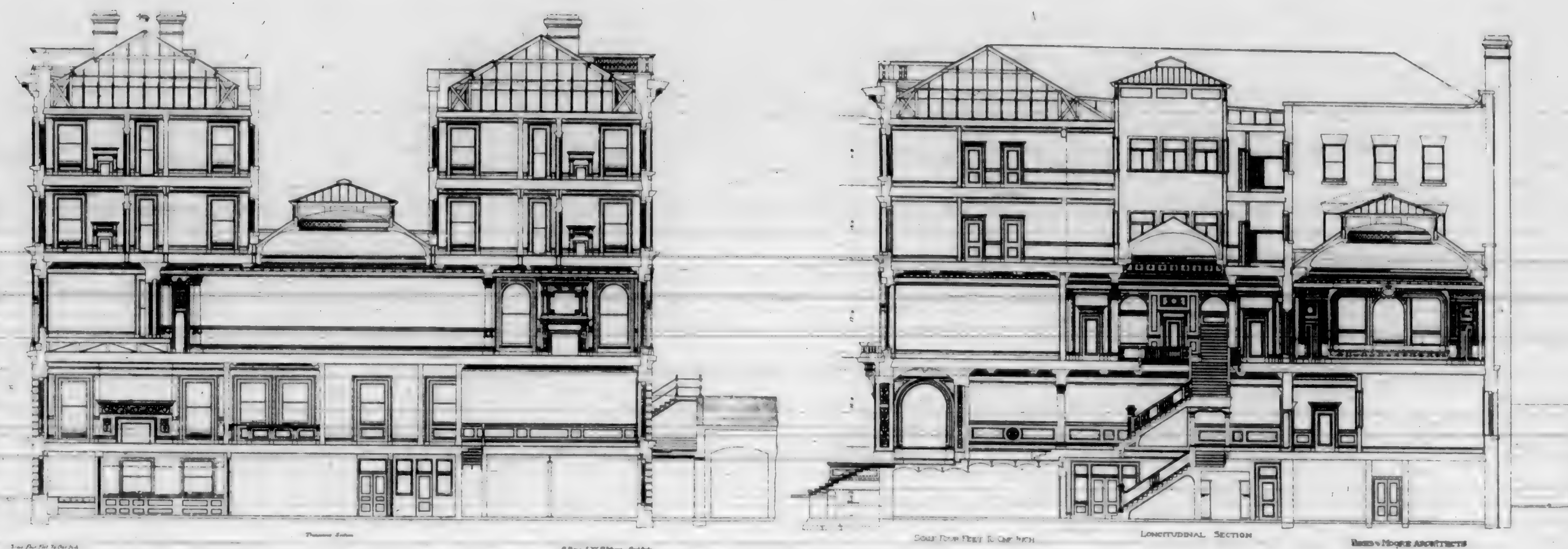
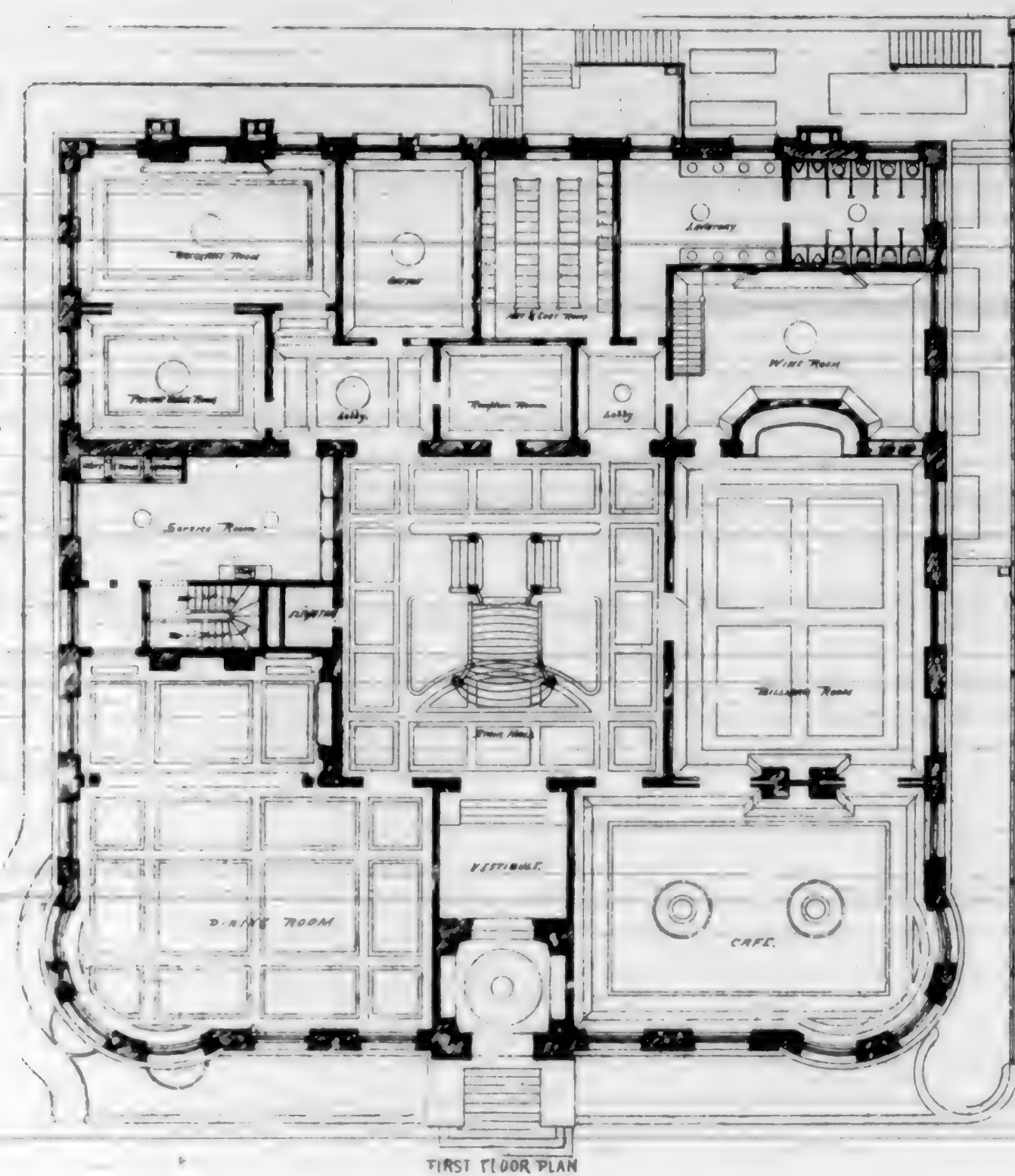




— BOHEMIAN CLUB BUILDING —



A Towne Clock Tower



In an editorial on improvements in electoral methods, the *Examiner* has the following:

It is manifest that the party system, under present conditions, is inconsistent with true democracy. The people do not rule, except possibly in one thing at a time. To have their way in that one thing they must give their agents power to thwart them in everything else.

The imperfections of the present political methods could be remedied by two devices, the referendum and proportional representation. It is unfortunate that the advocates of these reforms do not always work in harmony. They should not exclude, but supplement one another. The referendum can never supersede representative legislative bodies, and proportional representation can never make a legislative body so good, wise and responsive to all the complexities of public opinion, as to dispense with the need for the referendum. But both together would give us an ideal political system, would destroy bossism and the rule of party machines, would eliminate bribery, disarm corrupting corporations, and enable the people to express their will on each subject by itself without entanglements with any other.

Proportional representation was made the subject of one of the World's Fair congresses, participated in by a number of the leading thinkers of the country. Various plans were discussed, some recognizing parties and some ignoring them, but the most promising of all seems to have been the Hare Preferential system, now in operation in the elections for Trustees of the Mechanics' Institute in this city. By this scheme all necessity for party organization is dispensed with. Candidates are elected in groups, each voter having a right to name as many as he pleases in the order of his preference, but his vote being counted for only one. The total number of votes cast is divided by the number of places to be filled, and the result is the quota which each candidate must reach to be elected. In an election for Supervisors in San Francisco, for instance, there would be twelve places to be filled. If there were 60,000 votes cast, each candidate would have to receive 5,000 votes to be successful. The first-choice votes would be counted first. Any candidate who received more than his quota of these would be declared elected, and the surplus transferred to other candidates, according to the preference expressed on each ballot. If an elector voted for Smith as first choice and Brown as second, and Smith proved to be elected without his help, his vote would go to Brown. If the quotas were not all filled in this way the candidates receiving the smallest number of first-choice votes would be successively eliminated, and their ballots counted for the highest in order of preference. This process would be continued until there were no more candidates left than there were places to be filled, when all the survivors would be declared elected.

If this plan had been in force at the last election the present Board of Supervisors would have consisted of the most popular men on the Democratic, Non-Partisan and Republican tickets. In the same way the Congressional delegation of a State could be made perfectly representative of all the

political elements within it, and the gerrymander would become extinct.

Proportional representation would give us servants in whom the people had confidence at the time of election, but it would not preserve them from temptation after they were elected. To do that we need the referendum. We have had Legislatures, Railroad Commissions and Boards of Supervisors apparently composed of the best men in the community, and has seen them succumb to the advances of the sack as the chaste snowdrift yields to the ardent wooing of the summer sun. Such things may be expected whenever men are placed in a position in which their interests as individuals are opposed to their interests as citizens. The corrupting power of corporations, which is comparatively harmless when spread over the whole body of the people, becomes irresistible when concentrated upon a few legislators. The referendum would relieve legislative bodies of this pressure, since it would not be worth while to buy a decision that could be reversed by an appeal to the people. California has tried the referendum sufficiently to know how it works. The people have voted on constitutional amendments, bond issues, city charters and expressions of opinion, and they are satisfied that they know how to act for themselves without serious mistakes. With officials elected by a plan that would dispense with bossism, and the power of popular review of legislation as a check upon the officials, we should have as good a government as we deserved, and no community can expect anything much better than that.

A New York company is now manufacturing a white brick. It is so hard burnt as to be almost vitrified, and when broken shows a texture much like white marble. It is made of porcelain clay, and shows great crushing strength. The manufacturer's claim that it will not discolor when exposed to the atmosphere.

In view of the great scarcity of black walnut, once so plentiful in Canada, Mr. Joly has proposed to the farmers of Quebec that they should cultivate the walnut tree, as has been done in some of the Western States. The nuts after being left out all winter in heaps, covered with earth and straw, are in the spring planted two inches below the surface of the ground. The walnut tree is said to have a rapid growth. Mr. Joly's suggestion seems to be a valuable one, and we hope will receive the attention of the Forestry Department of the Government.—*Canadian Architect and Builder.*

A new idea has been carried into effect in hardwood flooring. It is simply tonguing and grooving the ends of each board. The idea itself is not new, but until recently no plan was hit upon to do the work cheaply enough. It is said, says the *Southern Architect*, that the work can be done by the new process for a cost of one dollar per thousand feet.

Where the end joints are made on a sleeper, or floor beam, and both ends nailed down well, we do not see any great advantage in the end tongue and groove. But where the joint is made between the supports it is certainly a good idea. Besides preventing the ends from rising or being depressed above or below the general surface, it will save a great deal of labor and considerable lumber in laying a floor.

INDIVIDUALITY IN ARCHITECTURE.

There is no more interesting problem than the question of the architect's individuality in his work and the part it takes in his success. A painter may be as individual as he please, may invent a wholly new style, introduce a totally fresh vogue, if he is so minded and has the ability to carry out his innovations. The same liberty is given the sculptor, and all the schools of painting and of sculpture have their origin in this circumstance. The architect has none of this freedom. He must conform to styles and conditions, to limitations and to circumstances, to men and to times as no painter or sculptor need. But there should be no complaint on this score. These are the conditions the architect will meet throughout his professional career, these the circumstances he knew would attend him the moment he chose his career.

It is quite a mistake to place the architect in the same category with the painter and the sculptor. Sister arts all three undoubtedly are, and in the Renaissance there were numerous artists in one branch who were also accomplished in others. This, however, implies no organic union, nor does the later differentiation of these arts imply a retrogression. All three have gained by specialism and must continue to do so. But the architect, every now and then, looks at his brother artists and sighs for their unrestricted fields, and wonders why it is he cannot follow the same unrestrained path, quite ignoring the fundamental position of his own art and the wide differences between it and the others.

The architect is thus hemmed in by conditions that may be broadly stated to be unartistic; his possibilities for producing individual work are therefore relatively small. But though not so free as the painter there is no reason why the architect should despair of impressing his personality and his individuality upon his work. He cannot create a style, it is true, and he should above all things avoid setting the fashion for a fad, but between these two extremes he can accomplish a great deal of earnest, thoughtful, individual work, which will be his own as entirely as the picture of the painter or the statue of the sculptor. Not every architect can accomplish this, perhaps, but certainly it is in some men to do so. The possibility of doing it is wholly within the architect himself. The conditions of his art, the limitations under which he works, do not in the least prevent it.

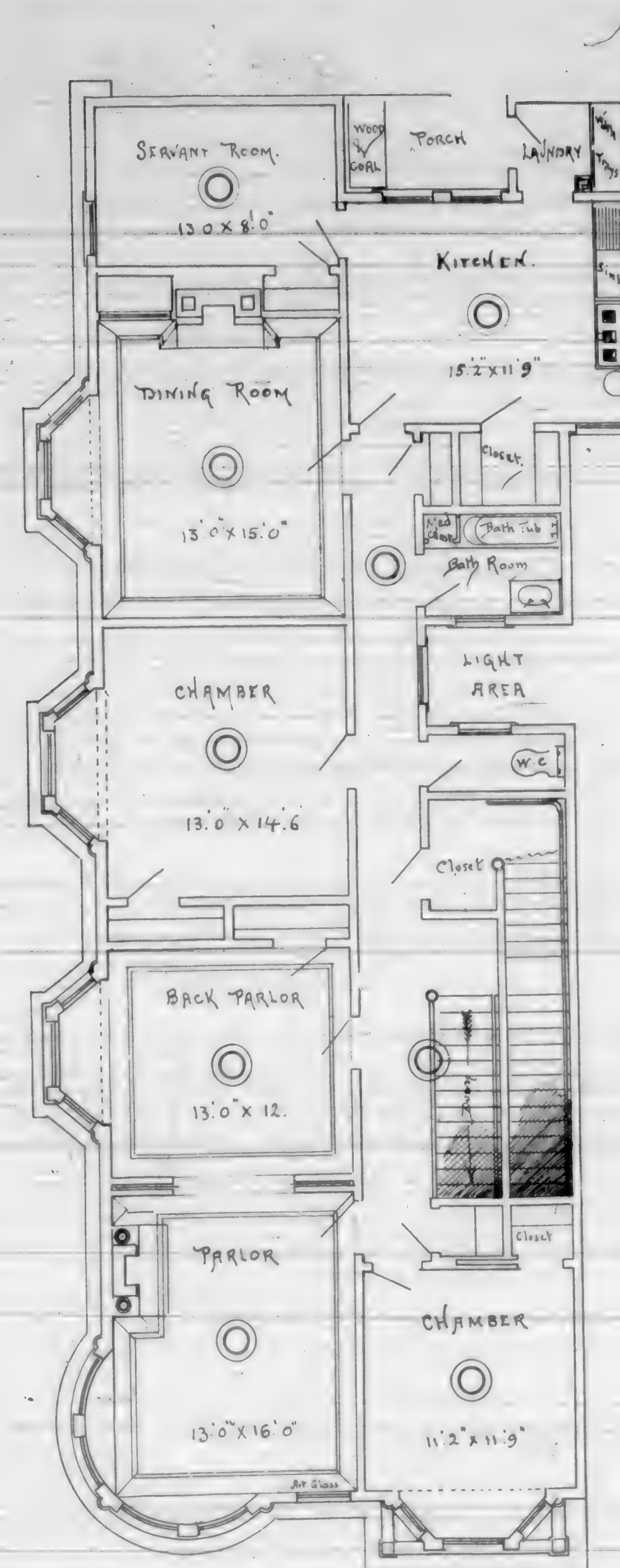
However the architect may strive to make his work individual the conditions cannot be forgotten. The design

may be wholly his, but he has followed another's programme, or rather a programme made up by limitations that have no architectural meaning or signification. Hence there would seem to be no reason why an architect should sign a building in the same sense the painter will sign a painting. The architect has made the design, he has superintended the erection of the structure, he has impressed it with his personality so that the ideas are his own self, but with all this he is contending with limitations of site, of municipal restrictions, with the individual wishes or desires of the owner,



PERSPECTIVE VIEW OF FLATS, CORNER OF FRANKLIN STREET AND HICKORY AVENUE.

which last, in many cases, frequently dominate the design as much as any part of the architect's thought. There is, therefore, a limit to the exercise of the architect's individuality. Even the great structures of the World's Columbian Exposition, which were designed under conditions practically unlimited, were designed with reference to each other, and the architect's own personal feelings and inclinations were held in check on more than one occasion. And this limiting of individuality which is found in these buildings is much more marked with the smaller structures that make up the bulk of the architect's practice.—*Architecture and Building.*



SECOND FLOOR PLAN OF FLATS CORNER OF FRANKLIN STREET AND HICKORY AVENUE.

TENDERS TO BE RECEIVED.

Treasury Department, Office Supervising Architect, Washington, D. C., November 20th, 1893. Sealed Proposals will be received at this office until 2 o'clock P. M. on the 27th day of December, 1893, and opened immediately thereafter, for all the labor and materials required for Mail Platform Enclosure and Approaches at the U. S. Post Office, etc., building at Sacramento, California, in accordance with drawings and specifications, copies of which may be had at this office or at 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 and all bids or 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 Mail Platform Enclosure and Approaches at the U. S. Post Office, etc., at Sacramento, California," and addressed to, Jeremiah O'Rourke, 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.

RIGHTS OF ABUTTING OWNERS.—Where one erects a building on his own lot the fact that it shuts out light and air from the adjoining owner gives the latter no remedy, though he has enjoyed the same for more than fifty years.

Knabe v. Levelle, Superior Court of N. Y. City, 23 N. Y. Supp. 818. 36.

ACTION TO FORECLOSE MECHANIC'S LIEN.—Where the statute relating to mechanic's liens requires that twenty-five per cent of the whole contract price shall be payable at least thirty-five days after the final completion of the contract, and also authorizes a claimant on establishing his lien, to recover costs and an attorney's fee, in an action by a material man to enforce his claim against the twenty-five per cent of the contract price retained by the owner, the costs and attorney's fees are chargeable against the premises, where the sum so retained was not sufficient to satisfy the claim, and the contractor suffered a default, while the owner, contested the claim.

De Camp Lumber Co. v. Tolphy, Supreme Court of California, 34 Pac. Rep. 438. 108.

NECESSITY OF FILING CONTRACT.—The statute requiring contracts for buildings or improvements, where the price to be paid exceeds \$1,000, to be in writing, and the contract, or a memorandum thereof, setting forth, among other things, a statement of the general character of the work, to be done, to be filed for record, failing in which, the contract to be void, and the owner liable for work and materials, is for the benefit of laborers and material men, as well as the owner, and failure to file the plans and specifications for a building which are an essential part of contract for its construction, is fatal. It is immaterial that the contract does not expressly refer to the plans and specifications as a part thereof, where it appears that they did in fact form a part of it, and without them it would be too infinite and uncertain to meet the requirements of the statute.

Creig v. Riordan, Supreme Court of Cal., 33 Pac. Rep. 913. 158.

RIGHTS OF SUBCONTRACTORS TO MECHANIC'S LIENS.—Under the statutes requiring the contract for erecting a building to specify times when payments are to be made, and requiring twenty-five per cent of the price to be retained until thirty-five days after completion, partial payments, however they are specified as to time, may be safely made, provided no notice is given of their subcontractors by material men, in the absence of which they must rely on the responsibility of the contractor, and the twenty-five per cent, required to be retained; and in such case they are not injured by any uncertainty as to the times of payment specified, nor by payments in advance of the specified time. All that material men can require, in such case, is that at the time they serve written notice upon the owner, or, if no notice is served, at the time their lien is filed, there shall be in his hands the amount required by the contract and the statute.

Dunlop v. Kennedy, Supreme Court of Cal. 34 Pac. Rep. 93. 166.

CONTRACT OF PURCHASE SUPERIOR TO MECHANIC'S LIENS.—Where building improvements are made on premises for one in possession under a parol contract of purchase only, a mechanic's lien for the improvements does not attach against the true owner. The fact that he knew the contractor was making improvements on land owned by him, for one in possession under a parol contract of purchase, does not estop him from denying the right to a mechanic's lien, where he did not know the contractor was in ignorance of the condition of the title.

Smith v. Huckaby, Court of Civil Appeals of Texas, 23 S. W. Rep. 397. 91.

WORK TO BE DONE TO SATISFACTION OF ARCHITECT.—A certificate which is not signed by the architect, but by his assistant for him, it is not such a certificate as is called for by a building contract which requires the contractor to do and finish the work, under and to the satisfaction of the architect, and provides that the payment shall be made on certificate of the architect, that the work has been done to his satisfaction; that any question arising respecting the contract shall be referred to the architect, whose decision shall be final; and that no certificate made under the contract shall be conclusive evidence of its performance.

McEntyre v. Tucker, Common Pleas of N. Y. City and County, 25 N. Y. Supp. 95. 113.

NOTICE OF MEETINGS.

SAN FRANCISCO CHAPTER, AMERICAN INSTITUTE OF ARCHITECTS, meets second Friday of each month at 408 California street.
 SETH BABSON, Pres. GEO. W. PERCY, 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 SAN FRANCISCO CHAPTER OF THE AMERICAN INSTITUTE OF ARCHITECTS.

THE regular monthly meeting of the San Francisco Chapter A. I. A. was held on Friday afternoon, December 8th, at the hour of 2 o'clock P. M. instead of in the evening at 8 P. M. as usual.

The innovation brought forward an unusually large attendance. The principal business of the meeting was the election of officers to serve the coming year, and after some lively balloting the following were declared elected:

Seth Babson, President; Geo. W. Percy, Vice-President; John M. Curtis, Treasurer; Oliver Everett, Secretary.

For Trustees the following member were selected:—Bryan J. Clinch, W. P. Moore, Jas. W. Reid, Geo. H. Sanders and Edmund Kollofrath.

After the adjournment many of the members remained and talked over matters of interest to the profession; and discussed means for advancing the welfare of the Chapter. Several promising suggestions were made, and will probably be tested by practical experiment some time in the near future.

PHOTOGRAPHING THE FAIR.

THE managers of the World's Columbian Exposition at Chicago, having received a large sum for the privilege of selling photographs of the buildings and grounds, were obliged in turn to protect those who had purchased that right, by prohibiting the taking of views by the general public, both professional and amateur.

This action, however, was the subject of such vigorous protests, that the managers were forced to modify their just intentions, and ultimately decided to allow the use of hand cameras with which pictures not over 4x5 inches in size could be taken; charging a fee of two dollars a day for each camera entering the grounds.

It is to be hoped that the managers of our California Midwinter Exposition will be more liberal in this matter, and allow the photographer, both great and small, professional and amateur, to have freedom from the annoying restrictions which were imposed at Chicago, and which the *Photographic Times* comments on as follows:

"It is a matter of no little regret in an artistic sense that the restrictions accompanying the grudgingly bestowed pri-

vilage of photographing at the Columbian Fair have deprived the world of many a picture it would gladly cherish after the glories of that Fairyland has disappeared like the fading of a dream. For albeit the work of amateur photographers (worthy of being so designated) is nearly always vastly more artistic and satisfactory than that of professionals, save in portraiture alone, as witness the samples in the British Loan Collection at the Fair, and the Annual Exhibition of the Photographic Society of Philadelphia, New York and Boston—the barring of all save hand cameras not larger than 4x5 inches, left little scope for the exercise of their taste or skill. Had the best workers among our foreign visitors or of our own land been at liberty to use such apparatus as they choosed, without restriction as to size, we should have had illustrations of this unrivaled and unapproachable wonderland now, alas, unattainable. For be it remembered that the negatives from which the larger views sold at the Fair are printed, were all made by wage workers, men whose daily business is to make a certain number of exposures for a specific compensation. Excellent though their technique may be, for "practice makes perfect," the spirit which would lead the artist amateur to spend hours if not days, in the composition and lighting of his subject must perforce be absent in them. Never before, at least in this country, have such combinations of architecture and landscape been made possible, and it is not a little exasperating to have had the wonderful beauties within one's reach, and been unable to grasp them in a larger degree than that bounded by the dimensions of a 4x5 plate. Under these circumstances it is little wonder that a majority of the most capable amateurs who visited the Fair did not do so in company with their cameras. They have not objected to the stiff charge of two dollars per day for the privilege of using one, but to the fact that the results obtained would not be satisfactory to their artistic consciences. The fashion of making negatives purposely for lantern-slides has not obtained to any great extent on this side of the Atlantic, and their small size are not generally very satisfactory for prints, while the work of the ordinary hand camera is not good enough to admit of enlargement to any considerable extent. Hence, as stated, the best workers are greatly in the minority among those who have paid for permits to photograph in the White City. A great number of "push the button" amateurs have been in daily attendance, making snap shots on any and everything in their way, especially upon the Midway Plaisance, but the results of their labors, in so far as I have observed them, have not been above the average of their now well-known performances. Most assuredly the world's desire for artistic picture remembrances of the Fair will not be greatly benefited by them.

AN ELECTRIC ROAD FOR TOKIO, JAPAN.

WHEN an electric street railway was completed for public use in Bangkok, the capital of Siam, last year, by Ohio capitalists, the Rev. J. M. Law, a medical missionary in Japan, thought that a similar enterprise would be profitable and of great public benefit in Tokio, the capital of the Japanese empire, containing 1,400,000 persons.

A few months ago he got Ohio capitalists to subscribe \$100,000 to the scheme, with the assurance of additional capital after the plan was further advanced. Dr. Law then went to Japan, and, backed by the influence of American and other Ambassadors, obtained one of the most liberal charters ever granted by Empero Mutso Hita. The intention is to run a line from Tokio to Yokohama, a distance of thirty miles, and built a network of lines in both cities. J. W. Goss and Engineer Riblet have just sailed for Japan to inaugurate the scheme.—*Electrical Review*.

BUSINESS MOSAICS.

For Stairs, Rail, Posts, Balusters, etc., try the Excelsior Mill, Geo. R. Jesse, Bryant street near Fifth, who have constantly on hand a large stock and will promptly manufacture to order.

"What are you crying for, Fritz?" "Because my brothers have a holiday and I haven't!" "But why haven't you a holiday, too?" "Because I'm not old enough to go to school yet!"—*Fliegende Blätter*.

If you do not happen to know where you will be sure to get good paper of all kinds go to A. Zellerbach & Sons 419-421 Clay street, Telephone 1133—we speak from personal knowledge.

Traveler—"The Chinese make it an invariable rule to settle all their debts on New Year's day." AMERICA HOST—"Y-e-s; but the Chinese don't have a Christmas the week before."—*Dollar Weekly*

The Joshua Hendy Machine Works are still at the front, as manufacturers of all kinds of machinery—making a specialty of engines and pumps for building, as well as architectural iron work, both light and heavy castings, 39 to 51 Fremont street; foundry and warehouse, Kearny, Bay and Francisco streets.

Mrs. Wimbleton—"Come, Mr. Twickenham, and let me introduce you to Mr. Shingle Nail, the coming architect." TWICKENHAM—"Thanks, but I have already met the young man. In fact he built a house for me." MRS. WIMBLETON—"Really? And was it a success?" WICKENHAM—"He seems to think so. He is living in it."—*Dollar Weekly*.

Todd & Peters General House Smiths, 53 Beale street and 230 Mission street—not only manufacture wrought iron doors, fences, railing, cresting, etc., but also promptly attends to all kinds of repairing.

Darley—"My dear, what plant bears the brightest flowers?" MRS. DARLEY—"I'm sure I don't know. Which is it?" DARLEY—"The electric-light plant."

W. H. Wickersham, building contractor, is still to be found at his old headquarters 1125 York street, he is too well and favorably known to architects to need any recommendation from us.

West Coast Wire Works 13-15 Spear street near Market under charge of Trowbridge & Son, is a place where all kinds of useful and ornamental wire work are made to order.

Stranger—"What a cheerless, dreary, depressing-looking build that is." NATIVE—"Oh, that's only a school. Do you like fine architecture?" STRANGER—"I do." NATIVE—"Then wait till you see our new jail."—*Good News*.

Now that the Mayor has advised us all to have our houses got in good shape for the Midwinter Fair—is the time to call upon J. L. Cahill that prince of painting and decorating, 107 Sixth street near Mission, with branch store 1115 Market street.

Tommy—"Say pa, when the world comes to an end and the last card of the game of life has been played what will happen?" FATHER—"I suppose Gabriel will trumpet."—*Rochester Democrat*.

D. C. Condon of the Western Engineering Company, Mills Building, San Francisco, make specialties of accurate computations of stresses and strains, including bridges, buildings, etc., in iron, steel, masonry and wood. One of the large domes at the Midwinter Fair is a specimen of his work in this line.

New Girl—"What does your papa like for breakfast?" LITTLE MABEL—"He always likes most anything he hasn't got."

Merchant's Roofing. We call attention to Merchant & Co's well known extra coated roofing, architects and contractors will be particularly interested in a new departure from the old style, this as will be seen from their advertisement in another part of this paper, is nothing less than American Continuous Roofing Plates. These plates are made in a continuous roll, are straight, 100 square feet. Each sheet is formed and joined automatically, and thoroughly soldered while in the process of coating. A stock of the above described plates are now in stock at the various agencies of Merchant & Company in New York, Brooklyn and Chicago, as well as at their headquarters in Philadelphia where full information as to price, etc., will be cheerfully given upon application.

In considering this well known brand of roofing it should be remembered it is manufactured at their works in Philadelphia under their personal supervision by the Palm Oil process only, thus it may be considered one of the softest and most reliable plates offered in the market to-day; affording protection to home industry, at the same time securing an unequalled article of roofing.

CITY BUILDING NEWS.

- Buchanan** and Golden Gate Ave. Two-story frame; owner, Bernhard F. Bruce; contractors, Patterson & Person; signed, Dec. 5; filed, Dec. 7; cost \$2,500.
- Bush and Gough.** To fit complete all electric and gas combination fixtures, etc.; owners, Rich Rectory, Vistory and Wardens; architect, A. Page Brown; contractor, S. F. Novelty Works; signed, Nov. 10; filed, Nov. 11; cost \$2,300.
- California** street No. 38. All interior finish and office fixtures; owner, C. E. Blackford; architect, Edward Kollofrath; contractors, F. W. Kreling & Sons; signed, Nov. 21; filed, Nov. 22; cost \$1,812.
- California** near Drum. One passenger service and two sidewalk elevators; owners, Luning Co.; contractors, Cahill & Hall Elevator Co.; signed, Nov. 21; filed, Nov. 22; cost \$3,071.
- Castro** and 26th. All work to build; owner, Frederick Raup; contractor, Henry P. Connady; signed, Nov. 11; filed, Nov. 11; cost \$3,200.
- D** street near 5th Ave. Alterations and rebuilding; owner, Louis Metzner; architect, Chas. M. Rousseau; contractor, Louis Oregino; signed, Dec. 6; filed, Dec. 7; cost \$1,000.
- D** street near 6th Ave. To build; owner, Margaret Richardson; architect, Chas. I. Haven; contractor, John W. Wissinger; signed, Dec. 13; filed, Dec. 13; no cost given.
- Douglas** near 17th. To build; owner, F. Rupland; contractor, Casper Zwierlein; signed, Nov. 1; filed, Nov. 20; cost \$2,000.
- Dolores** near 21st. To build; owner, Emily McNab; contractor, C. S. Emmons; signed, Nov. 19; filed, Nov. 20; cost \$3,000.
- Ellis and Mason.** All the steam heating and ventilating pipes and fixtures; owners, The Y. M. C. Assn.; architect, A. Page Brown; sub-contractors, W. W. Montague & Co.; signed, Nov. 1; filed, Nov. 12; cost \$1,230.
- Ellis and Mason.** Marble work; orig-contractors, Mahoney Bros; signed, Nov. 1; filed, Nov. 13; cost \$1,135.
- Ellis and Mason.** Painting and varnishing; owner, The Y. M. C. Assn.; architect, A. Page Brown; contractors, Frazer & Keefe; signed, Nov. 1; filed, Nov. 13; cost \$3,200.
- Golden Gate Park.** Exposition building for the Northern and Central Mid-winter Fair Association; owners, R. M. Green and others; architect, Geo. A. Bordwell; contractor, Silas Carle; signed, Nov. 13; filed, Nov. 15; cost \$8,682.
- Golden Gate Park.** To build Oriental Concession on streets in Cairo; architects, Geo. Bonet & Co.; contractors, Hurlbut & Logan; signed, Nov. 15; filed, Nov. 15; cost \$25,000.
- Golden Gate Park.** To build an Arena; owner, E. D. Boone; architect, Samuel Newsom; contractor, C. P. Moore; signed, Nov. 15; filed, Nov. 18; cost \$5,527.
- Golden Gate Park.** A frame Exhibition building; owner, Cavston & Orr; architects, Percy & Hamilton; contractors, Ingerson & Gore; signed, Nov. 18; filed, Nov. 25; cost \$1,340.
- Golden Gate Park.** Painting Mechanical Arts building; owners, Executive Com. Cal. Midwinter Fair; architect, E. R. Swain; contractors, Frazer & Keefe; signed, Nov. 25; filed, Nov. 28; cost \$3,100.
- Golden Gate Park.** San Joaquin County building; owner, P. A. Buell Commissioner San Jose Co.; architect, Geo. Rushforth; signed, Dec. 1; filed, Dec. 1; cost \$7,483.
- Golden Gate Park.** Los Angeles, Ventura, Riverside, San Bernardino and San Diego counties exhibition building; owner, Chas. Forman; architect, Sumner P. Hunt; contractor, Alex. L. Campbell; signed, Dec. 1; filed, Dec. 2; cost \$10,291.
- Golden Gate Park.** One-story frame; owner, W. E. Von Johannsen; architect, J. Cather Newsom; contractor, D. T. Pierce; signed, Dec. 2; filed, Dec. 4; cost \$3,900.
- Golden Gate Park.** San Mateo Concession; owners, San Mateo County Mid-winter Fair Commissioners; architects, Martens & Coffey; contractor, John Morton; signed, Dec. 9; filed, Dec. 13; cost \$2,407.
- Grove** bet. Lyon and Loft. A two-story dwelling; owner, Rose A. Pritchard; contractor, T. C. Cochran; signed, Dec. 2; filed, Dec. 4; cost \$2,000.
- Greenwich** near Baker. Two-story and basement; owner, Adolph Vitz; contractor, J. Schuler; signed, Nov. 13; filed, Nov. 13; cost \$3,327.
- Harrison** near 25th. Two-story frame; owner, Mrs. E. G. Bond; architect, E. A. Hermann; contractor, John N. McLeod; signed, Dec. 8; cost \$1,449.
- Hubbard** near Howard. Converting a space now used as a door way into a flat, to correspond with adjoining flat; owner, T. H. Burke; architect, W. H. Little; contractor, George Connon; signed, Dec. 2; filed, Dec. 4; cost \$895.
- Masonic** Ave. near Page. All work to build except sidewalks and fences of a frame church; owner, Rev. James Flood; architect, T. J. Welsh; contractor, John J. O'Brien; signed, Dec. 8; filed, Dec. 9; cost \$3,330.
- Mission** near Plymouth Ave. One-story frame; owner, J. Dunne; contractor, Wm. Plant; signed, Nov. 13; filed, Nov. 14; cost \$1,313.
- O'Farrell** near Octavia. Excavating, grading and cutting down lot and complete bulkheads; owner, George Hess; architect, J. H. Littlefield; contractor, F. W. Schallike; signed, Nov. 21; filed, Nov. 22; cost \$525.
- Post and Powell.** Brickwork, stonework, terra cotta and pressed brick; owner, Mrs. A. M. Parrott; architects, Pissis & Moore; contractor, John McCarthy; signed, Oct. 28; filed, Dec. 15; cost \$18,000.
- Post and Powell.** Wood, metal, lathing and plastering; owner, Mrs. A. M. Parrott; architects, Pissis & Moore; contractor, D. O. Sullivan; signed, Oct. 28; filed, Dec. 12; cost \$8,775.
- Post and Powell.** Tin roofing, metallic shingle work, etc.; owner, Mrs. A. M. Parrott; architects, Pissis & Moore; contractors, Forrester Cornice Works; signed, Oct. 28; filed, Dec. 12; cost \$3,382.
- Post and Powell.** Brick fire place, etc.; owner, Mrs. A. M. Parrott; architects, Pissis & Moore; contractors, L. E. Clawson & Co.; signed, Oct. 28; filed, Dec. 12; cost \$3,229.
- Post and Powell.** Illuminating tiles; owners, Mrs. A. M. Parrott, architects, Pissis & Moore; contractor, P. H. Jackson & Co.; signed, Oct. 28; filed, Dec. 12; cost \$1,750.
- Post and Powell.** Painting and polishing; owner, Mrs. A. M. Parrott; architects, Pissis & Moore; contractor, J. St. Denis & Co.; signed, Oct. 28; filed, Dec. 12; cost \$2,880.
- Post** near Stockton. Carpenter work on a six-story basement and brick building; owner, V. Menesini; architect, Chas. R. Wilson; contractor, James J. O'Brien; signed, Nov. 13; filed, Nov. 13; cost \$5,900.
- Post** and Leavenworth. Terra cotta work; owners, S. F. Verein Assn.; architects, Saffield & Kohlberg; contractors, Gladden, McBean & Co.; signed, Nov. 6; filed, Nov. 17; cost \$5,125.
- Post** near Leavenworth. Lathing and plastering; owners, S. F. Verein Assn.; architects, Saffield & Kohlberg; contractors, Pacific Patent Plaster Co.; signed, Nov. 9; filed, Nov. 17; cost \$4,350.
- Post** near Leavenworth. Gas-fitting and plumbing; owners, S. F. Verein Assn. architects, Saffield & Kohlberg; contractors, Samuel Ickelheimer & Bros.; signed, Nov. 8; filed, Nov. 17; cost \$2,600.
- Post** and Leavenworth. Wrought iron and cast iron work; owners, S. F. Verein Assn.; architects, Saffield & Kohlberg; contractors, Western Iron Works; signed, Nov. 9; filed, Nov. 17; cost \$1,619.
- Post** near Leavenworth. Carpenter and mill work, hardware and stains; owner, S. F. Verein Assn.; architects, Saffield & Kohlberg; contractor, Thos. H. Day; signed, Nov. 7; filed, Nov. 17; cost \$21,557.
- Post** near Leavenworth. Granite work; owner, S. F. Verein Assn.; architects, Saffield & Kohlberg; contractor, John Sheedy; signed, Nov. 7; filed, Nov. 17; cost \$2,855.
- Second** Ave. near Clement. To build; owner, Wm. P. Johnson; contractors Lyons & Bazer; signed, Nov. 9; filed, Nov. 14; cost \$2,10.
- Stanyan** near Page. To build; owner, J. R. Holdson; architect, W. H. Hamilton; contractor, Silas Carle; signed, Nov. 16; filed, Nov. 18; cost \$4,500.
- Turk** and Seymour Ave. Alterations and additions; owner, Sarah Hoffer; architect, Oliver Everett; contractor, Ben Wallace; signed, Dec. 1; filed, Dec. 1; cost \$3,050.
- Valencia** near 23d. Raising and moving a one story frame; owner, Martin Fragley; architect, M. J. Welsh; contractor, A. T. Batten; signed, Nov. 28; filed, Dec. 1; cost \$2,467.
- Valencia** near 23d street. Addition to a frame stable; owner, Martin Fragley; architect, M. J. Welsh; contractor, A. S. Batten; signed, Dec. 8; filed, Dec. 9; cost \$1,200.

ALAMEDA COUNTY.

- Ashby** Ave. near Raymond street, Berkeley. To build; owner, Chas. Mansfield; contractor, J. J. Rose; signed, Nov. 15; filed, Nov. 16; cost \$2,157.
- Alameda County** Hall of Records. Wrought and cast iron work; contractors, Fortin Brick Co.; sub-contractor, H. Ralston; signed, Nov. 15; filed, Nov. 16; cost \$5,450.
- Clinton** near 8th Ave., East Oakland. Doors, sash, blinds, etc.; owner, Mary R. Smith; architect, W. J. Mathews; contractors, Burnham & Standeford Co.; signed, Nov. 16; filed, Nov. 18; cost \$1,832.
- Simpson** Ave. near Telegraph, Oakland. To build; owner, Mrs. C. Terney; contractor, Chas. S. Shaver; signed, Oct. 9; filed, Oct. 9; cost \$1,960.
- Sixteenth** street and 6th Ave. Carpenter work, etc.; owner, Emil Nushaumer; architect, W. J. Mathews; contractor, Wm. W. Winnie; signed, Oct. 12; filed, Oct. 13; cost \$2,630.
- Thirty-fourth** near West street, Oakland. To build; owner, C. W. Hunt; contractor John S. Whalin; signed, Nov. 16; filed, Nov. 16; cost \$1,800.
- Webster** near Central Ave., Oakland. To build; owners, Geo. W. & H. H. Perkins; contractors, A. W. Pattiani & Co.; signed, Nov. 16; filed, Nov. 20; cost \$4,100.

TITLE THE CALIFORNIA ARCHITECT AND
BUILDING NEWS
FORMERLY THE CALIFORNIA ARCHITECT AND
AUTHOR BUILDING REVIEW
FORMERLY THE QUARTERLY ARCHITECTURAL
REVIEW
VOLUME XV

DATE 1894

PUBLISHER WORLD MICROFILMS PUBLICATIONS in association with THE
ROYAL INSTITUTE OF BRITISH ARCHITECTS

COPYRIGHT © 1974 THE ROYAL INSTITUTE OF
BRITISH ARCHITECTS

CONDITION OF SUPPLY In accordance with the terms of supply under which this reel of microfilm was supplied the purchaser has agreed that it will not reproduce the material contained in this reel of microfilm in any manner or for any purpose whatsoever except that in the case of a library it may reproduce the above-mentioned microfilmed material in accordance with the normal current practice of providing copies solely for the personal use within such library of persons entitled to use the facilities of such library. The above condition shall be expressly passed on and shall apply to any person to whom the purchaser sells or grants any rights over the above-mentioned microfilmed material.

INDEX

I N D E X

INDEX

The California Architect and Building News.

Copyrighted 1894, by the California Architectural Publishing Company.

OFFICE, 408 CALIFORNIA STREET,

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

VOL. XV.

INDEX.

1894.

INDEX TO CONTENTS.

Advertiser's Index.....	VI	IV	California Midwinter Exposition... 8, 9, 10, 11, 26, 27,	28
Agricultural and Horticultural Building, California			Concrete Construction.....	14, 15, 16, 17
Midwinter Fair, Report on Strength of Dome.....	4		Concrete Construction, Its Practical Application.....	122, 123, 124, 125, 126
Annual Building Summary.....	6		California Marble.....	5, 6
Air and Water Purifier.....	17		California School of Mechanical Arts.....	34
American Institute of Architects, San Francisco			Color on Brick and Terra Cotta.....	41
Chapter..... 8, 20, 32, 67, 80, 104, 105, 118, 130.....	139		Correspondence.....	42, 43, 54, 55, 76, 102, 103, 114
Architect's Ownership of Drawings.....	29		Casting in Canada.....	53
Annual Exhibition San Francisco Chapter American			Castles in the Air.....	81
Institute of Architects.....	38, 39, 40,		Constantinople, the Golden Chamber of.....	82
Advertising, Does It Pay?.....	56		Clark Robert Testimonial.....	98, 99
Architects and Builders.....	58		Cast Iron, Strength of.....	103
A Curious Question.....	58		Consult the Architect.....	140
Acting Secretary of the United States Treasury,			Cement Floors.....	140
Letter of.....	62		Dust to Dust.....	19
Architects of Washington Organize.....	70		Detailing of the Roof Trusses of Liberal Arts Building	
A Summer Hotel in the Atlantic Ocean.....	70			26, 27
A Waning Fashion.....	82		Does Advertising Pay?.....	56
Acoustics in Architecture.....	88, 89		Disinfection of Sewage by Means of Lime.....	79
A Sad Accident.....	89		Electric Wires, Shall Two be Run in a Single	
A Threatened Outrage.....	98		Conduit.....	50, 51
A Demand for a Telephone.....	101		Electrical Equipments, Decline in Price of.....	80
A Simple System of Filing Clippings.....	106		Index to Advertisers.....	IV, VI
Architects, Women as.....	134		Illustrations.....	18, 30, 54, 90, 102, 138, 114, 126
A Good Example.....	140		Inter-Oceanic Ship Canal.....	30, 31, 32
Architecture and Politics.....	110		Inroads on the Art of Illustrating.....	51
Annual Meeting of Stockholders.....	130		Importance of Slow Burning Construction for Build-	
Books and Periodicals.....	6, 7, 22, 34, 44, 56, 68, 82,		ings.....	99, 100
Building News.....	12, 24, 36, 48, 59, 60, 72, 84, 96, 107,		House Moving, Long Distance.....	142
.....	108, 119, 120, 132,		Legal Decisions.....	7, 21, 32, 57, 69, 81, 94, 105, 117, 130, 139
Business Mosaics.....	23, 24, 35, 36, 46, 47, 58, 59, 72,		Letter of the Acting Secretary of the U. S. Treasury...	62
.....	83, 95, 106, 107, 118, 119, 131,		Lightning Strikes a Chicago "Skyscraper".....	80
Builders, Exchange Banquet.....	51		Laver vs. City Hall Commissioners.....	86, 87
Building Stone, Qualities of.....	77,		Long Distance House Moving.....	142
Bequest for a School for Manual Training.....	110		Marble, California.....	5, 6
			Mechanical School of Art, California.....	34
			Municipal Ownership of Rapid Transit Systems.....	141
			Notice of Meetings.....	8, 20, 32, 44, 56, 69, 80, 94, 104, 118, 130, 139

On Strength of Dome of the Agricultural and Horticultural Building.....	3	Study of a Spanish Chateau.....	“
Paraffine Paint Co's Factory at Berkley.....	11	School House at Redwood.....	August
Columbarium, Cypress Lawn.....	18	Alameda City Hall Accepted Design.....	“
A Country Cottage.....	21	Alameda City Hall, Competitive Design.....	“
Cottage at Ross Valley.....	32	Competitive Design for a State Capitol, Wash.....	September
Roof Trusses, Manufacturers and Liberal Arts Building	28	Oakland High School.....	“
Residence of V. J. A. Rey.....	38	Rag Pickers Alley, Chinatown.....	“
Burlingame County Club Stables.....	38	Competitive Design State Capitol.....	October
Hotel near Montalvo, California.....	39	Placer County Court House.....	“
Episcopal Chapel, Coronada Beach.....	39	Residence, Carthage, Ill.....	“
Burlingame Railroad Station.....	39	Native Sons of the Golden West Building.....	November
Residence of George Whittell.....	40	Alameda County Crematory.....	“
Montgomery Memorial Chapel.....	40	Competitive Design Placer County Court House.....	December
A Bit of Venice.....	41	Crematorium.....	“
Cottage at Oakland.....	44	Competitive Design of the N. S. G. W. Building..	“
		Sketch of Country Place, San Mateo.....	“

Cottage on Franklin street.....	56
Pele, the Hawaiian Goddess of Fire.....	67
Cottage for Two Small Families.....	68
A Country Residence.....	80
Alameda County Court House.....	91
Cottage and Plan.....	105
Hot Water Heater.....	143
Country Cottage and Plan.....	116
Cottage at Mill Valley and Plan.....	128
Building with Plan on Lombard and Jones.....	14
Agricultural Building, California Midwinter Fair...January	
Administration Building, " " " " " "	" "
Fine Arts Building, " " " " " "	" "
Mechanical Arts Building, " " " " " "	" "
Paint Factory and Storage Sheds of Paraffine ...	" "
Paint Co.....	" "
The Suggestive Sketch for Entrance to Midwinter Fair.....February	
A Study for a Sutter Street Front.....	" "
Residence for J. S. Butler.....	" "
A Cottage for R. George Zahn.....	" "
Evangelical Swedish Mission Church.....	March
An Entrance.....	" "
Chateau Chevalier Wine Cellar.....	" "
A Dwelling.....	" "
Taber's Photographic Gallery Midwinter Fair.....	April
California Art Glass Works Midwinter Fair.....	" "
Paraffine Paint Co. Exhibit Midwinter Fair.....	" "
A Steiger Son's Exhibit Midwinter Fair.....	" "
Sketch of a Ranch House.....	May
A Study for a Public Library.....	" "
A Residence on Washington street.....	" "
Oahu College, Honolulu, H. I.....	" "
Hindes & Co's. Exhibit California Midwinter Fair.....	June
Napa Soda Springs.....	" "
Park Panorama and Observatory.....	" "
Studebaker Bros. Carriage Repository.....	" "
Building for Mrs. A. M. Parrott.....	July
Study of Railroad Station.....	" "
A Cottage at Stockton.....	" "
Study of a Spanish Chateau.....	" "
School House at Redwood.....	August
Alameda City Hall Accepted Design.....	" "
Alameda City Hall, Competitive Design.....	" "
Competitive Design for a State Capitol, Wash.....	September
Oakland High School.....	" "
Rag Pickers Alley, Chinatown.....	" "
Competitive Design State Capitol.....	October
Placer County Court House.....	" "
Residence, Carthage, Ill.....	" "
Native Sons of the Golden West Building.....	November
Alameda County Crematory.....	" "
Competitive Design Placer County Court House.....	December
Crematorium.....	" "
Competitive Design of the N. S. G. W. Building..	" "
Sketch of Country Place, San Mateo.....	" "

Copyrighted 1893, by the California Architectural Publishing Company.

OFFICE, 408 CALIFORNIA STREET,

SAN FRANCISCO, CAL, U. S. A

VOLUME XV.

JANUARY 20th, 1894.

NUMBER I.

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:

Space	1 Month.	3 Months.	6 Months.	12 Months.
1 Inch.....	\$ 4.50	\$ 7.50	\$ 13.00	
3 Inch.....	4 00	10 00	18 00	35 00
6 Inch.....	7 50	18 00	32 00	60 00
1 Column.....	12 50	35 00	65 00	125 00
1/2 Page.....	20 00	57 50	105 00	200 00
1/4 Page.....	40 00	110 00	200 00	350 00

ESTABLISHED 1879. INCORPORATED 1889.
NOW IN THE FIFTEENTH YEAR.
W. J. CUTHBERTSON, President. 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.

THE year just passed has not been as prosperous a one as could have been wished. But in entering upon the year 1894 we do so with brighter hopes for the revival of business and better prospects for the successful prosecution of new enterprises. The uncertainty of the passage of legislation proposed by Congress and now under consideration, has had the effect of making manufacturers, producers and importers extremely cautious and conservative in their operations. This uncertainty will be ended in a few weeks, and a long spell of quiet can safely be anticipated, when plans for the future can be made with the certainty of calculation born of a thoroughly understood condition of the market.

Manufacturers that have temporarily suspended or run on half time, in the hope of obtaining cheaper raw material, will be started up on full time, to replenish exhausted stocks, and this revival will furnish the employment so much needed at present for the unemployed.

New enterprises will be started and business generally be conducted on a firmer basis. While on this subject we cannot refrain from again calling attention to the great desirability of patronizing home industries. Why should we import building materials from abroad when they can be better produced at home. The quarries of slate, of marble, of building stone in this state cannot be surpassed; what more profitable industry could be desired than the opening up of these quarries on a more extensive scale. Why should we go east for iron and steel when they can as well be produced here. Why import hundreds and thousands of tons

of cement, when the materials for its manufacture are at our door. The paints manufactured on this coast are equal to the best.

Let the capital now idle, be employed in extending these enterprises. Let the citizens co-operate by giving the preference to these home products. Let saving in freight be retained, and the money so saved used to prosecute new and as yet undeveloped fields, and riches and prosperity will be the rewards that will come.

IN our article last month, we made the assertion that in a well regulated social state there should be no valid excuse for idleness and destitution among its citizens. The fact that enforced idleness and underserved destitution exist to-day, in this and other countries, proves that the present industrial system could be improved on. As long as a bountiful nature yields ample returns for man's labor, so long will there be means for sustaining prosperous communities, which constitute the bases of all great and contented nations.

If the present state of society does not distribute justly and evenly the rewards of man's toils, if the private interests of any particular class produce results detrimental to the well being of the whole people, it should be the duty of the government to intervene.

Mr. Bierce, in a recent article, has the following to say on this subject:—

It is ridiculous to recognize an obligation to support the

helpless indigent, and deny the duty of doing what can be done to prevent helpless indigence! What nearly all the citizens of the Union are now doing hastily, wastefully and imperfectly by private effort under semi-official supervision, the State should do always.

So unfortunate and dangerous a creature as a man willing to work, yet having no work to do, should be unknown outside of the literature of satire. Doubtless there would be enormous difficulties in devising a practicable and beneficial system, and doubtless the reform, like all permanent and salutary reforms, will have to grow. That it is already in course of evolution the private and semi-official movements referred to may be taken as evidence.

As Mr. Bierce says, the difficulties in the road of improvement are many and serious, yet who doubts they will have to be met and overcome—the continued existence of our government depends on the prosperity of its people.

In considering the different methods proposed to relieve the temporary distress of the unemployed, several points must be taken into consideration—first, the action proposed should be such as not to compete with already established industries in such a manner as to injuriously affect their prosperity, else the benefit done to one party would be counterbalanced by the injury to the other—second, the employment must, at the inception of the scheme at least, be of necessity confined to such as requires mainly unskilled labor for the present purpose should be to simply secure temporary employment for the idle, till such time as they can secure steady and remunerative employment elsewhere.

In view of the above requirements, the work provided should be of public benefit, and not for the profit of an individual.

Following out this course of reasoning, we would advocate what has already been suggested on numerous occasions by the press all over the country, viz.: Set the unemployed at work building and maintaining public highways from city to city, county to county, and state to state.

The need of better accommodations in this respect than what are now available, is very evident even to a superficial observer, and the benefit that would result from any improvements, would be enjoyed by the community at large; consequently it is only right that the community at large should bear the burden in the shape of the taxes necessary.

There is no doubt they would be paid more willingly and cheerfully than if paid for the maintenance of the jails and prisons, and courts and police departments that are now kept up in the hope of suppressing, and for the necessity of punishing crime; a considerable portion, of which, at least, can be traced directly to the degrading effects of abject poverty.

That government can best be called civilized, which by its practical results, shows the highest average standards of intelligence and prosperity among its people.

If only statesmen could be elected to govern, and if politicians could only be relegated to private life, who can doubt that a higher purpose would animate our legislatures, and correspondingly better results be achieved.

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.

REPORT OF THE STRENGTH OF THE DOME OF THE AGRICULTURAL AND HORTICULTURAL BUILDING, CALIFORNIA MID-WINTER FAIR.

By D. E. CONDON, M. E., C. E., A. M. INST. C. E.
MILLS BUILDING, SAN FRANCISCO, NOVEMBER, 1893.

IN making an analysis of the strength of the Dome of the Agricultural and Horticultural Building as designed for the California Mid-Winter Fair by Mr. Samuel Newsom, architect, I have divided the problem into three parts, namely:—

I. A determination of the effects of the *dead loading*, that is to say the entire weight of the material forming the dome, regarded as symmetrically distributed.

II. A determination of the effects of the *wind force* when acting on one side only.

III. A determination of the effects produced on the various dome members by the *combined* action of the dead loading and wind force.

I. DEAD LOADING.

It is evident that the effects of the dead loading, since it is symmetrically distributed, will be uniform on the various dome members.

The dome has 24 circular ribs or principal lines of rafters supporting the dead load, and 24 panels or spherical spaces between the ribs.

The dome proper, or part between AB and GH on accompanying diagram, is divided into three spherical zones by circular rings or 24-sided polygons connecting the ribs at GH, CD and EF.

In the design the ribs are made secondary to the rings; that is to say the rings are made continuous and divide the ribs into three section or series of *rib rafters*.

Of course the idea is to have the ribs practically continuous also by firmly connecting the rib-rafters together and to the rings at their intersections, so that the whole structure will be bound together and act cohesively.

The intersections of the rings and ribs are the *panel points*.

Each rib consequently carries 1-24 of the entire dead load, or that of one panel to the base, and in doing so different compressive strains are produced in the three rib-rafters or sub-divisions of rib between the rings.

There is a compressive strain produced in the upper ring GH, zero strain in the ring EF, a tensile strain in the ring CD, and also a tensile strain at A, B. These strains are marked on diagram.

So that if the dome were to be constructed to carry its own weight only, as designed, on the assumption that the latter is symmetrically distributed as I have supposed, then all that would be necessary would be to proportion its various members and their connections to the strains marked on diagram. We would require simply a compressive ring or polygon GH strong enough for 15,000 lbs. or $7\frac{1}{2}$ tons through 4 ft. distance between ribs or panel points; with a factor of safety 3, $4" \times 4"$ would be sufficient for this purpose. In addition to the ring I would have a series of pieces less than 14' long radiating from a central block to each rib, and strong enough to carry 4000 lbs. or 2 tons, for which $4\frac{1}{2}" \times 4\frac{1}{2}"$ would be ample with the same factor of safety.

The ring EF would be free from strain.

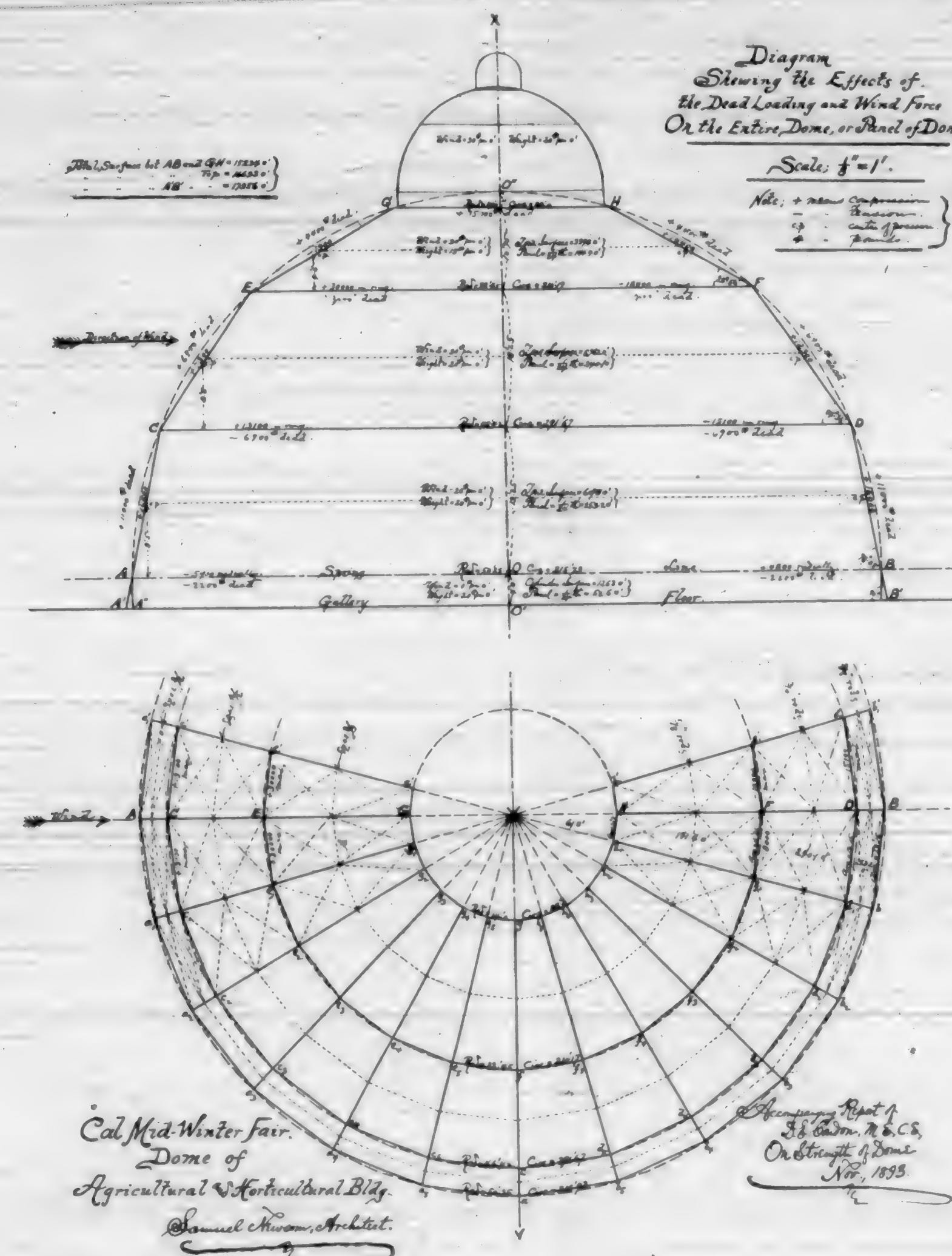
The ring CD would be free from compressive strain; but

as there is a tensile strain of 6900 lbs. it should be provided for by connecting the panel points with $1\frac{1}{8}"$ rods. At A, B we would require in a similar manner a rod polygon strong enough for 8400 lbs., or $1\frac{1}{4}"$ rods.

If the ends A, B are firmly fixed; or if the tangent AA' of the ribs be continued to the gallery floor or base (which is

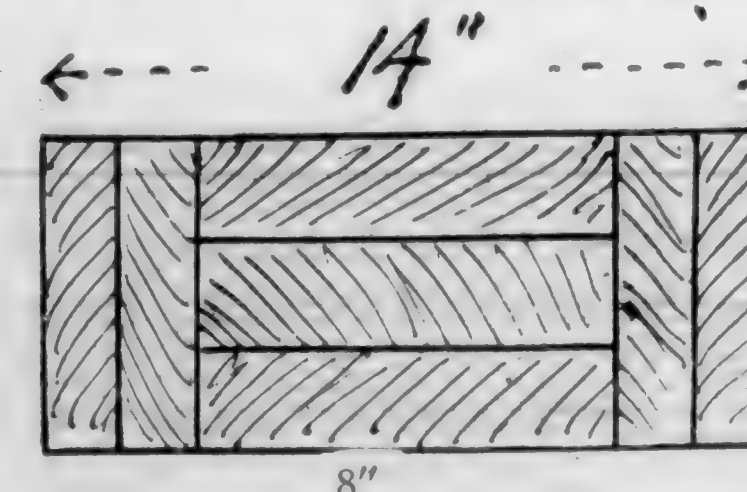
lbs. per sq. inch, which is as much as the present ribs could be expected to bear with safety.

If the various members as thus dimensioned be properly connected at the panel points, we would, so far as the *dead loading* (in accordance with our assumption) is concerned, have a perfect system of balanced strains, and perfect stability.



the design), then the rod polygon can be dispensed with, as the outward tendency of the rib toes at A is taken up by the struts AA', which conveys the rib strains directly to the base.

The maximum compressive strain to be provided for in the ribs would be 11,000 lbs. The ribs are bent to a radius of 30 ft., with a versed sine of about 16 inches, and of the section shown in annexed sketch. So that the maximum compressive fibre strain would be about 1100



II. WIND FORCE ACTING ON ONE SIDE.

There are three kinds of forces brought into action on the dome by the wind force distributed over the panels of its exposed semi-surface, viz:—

I. The vertical components of the resultant wind forces, tending to hold down or preserve the stability of the dome as a whole.

II. The horizontal components of same, tending to bend over the dome from the wind to the lee side, and overturn it or destroy its stability as a whole.

III. The resultant forces, or the combined action of these components, have at the same time a tendency to distort or destroy the spherical shape of the dome by producing unequal strains in its various corresponding members.

In the first place we will consider the distorting action of the wind force.

The maximum effect of the wind will evidently be pro-

duced on the panels (2 opposite and rib) directly opposed to its line of action, will be less on the adjoining panels and ribs, still less on the next, and so on in proportion as the angle between the panel face and wind direction becomes less, and will be a *minimum* on the panels (2 opposite and rib) at right angles to its direction. I have regarded the wind as distributed above AB (the spring line) as shown on diagram, and the ribs as fixed at A, B, etc.

If we imagine the ribs AX, XB, with a half-panel on each side (including the two small top domes), and the rings GH, EF, CD as standing alone; and resolve the wind pressures on the sub-panels AC, CE, EG, and the two small domes GX, into their components at A, C, E, G, H, we get a series of forces which we compound into a single force at each of the panel points A, C, E, G, H. These will be the *maximum* forces at the panel points, and the corresponding strains in the rib-rafter and rings will be the *maximum* strains—which are marked on the diagram.

The strains in the rib-rafter (AG, GB) and rings due to the panel forces at a-1 c-1 e-1 g-1 will be less than the maximum strains; and as the *minimum* panel forces act at a c e g, the corresponding strains in the rib-rafter (eg and opposite) and rings will be a *minimum or zero*.

In the ring EF for instance the maximum compressive strain will act from E towards e-1, and from E towards e-1. The compressive strain due to the panel forces at a-1 c-1 e-1 g-1 will act from e-1 towards E and from e-1 towards e-2 the former having a tendency to balance the maximum strain from E towards e-1—but being less the result is a tendency to move E and e-1 towards XY; and there will be an actual movement of these points unless the rigidity of the ring and connections with the rib-rafter are sufficient to counteract this tendency—which will be a maximum at e as the minimum or zero radial force is at that point. Consequently if the ring is rigid enough in itself, but the ribs are not capable of (or designed to) taking up the outward and forward tendency of the panel points, the circular form will become distorted into that of an oval having its major axis in the direction XY, and its minor axis in the direction XA; unless we counteract this by connecting the panel points of each ring with horizontal tie rods, and those of the different rings and the base by means of a system of diagonal tie rods. In this manner we convey (without distortion) the maximum strain from E to e and from e to F—where it will be balanced by the same strain coming from the opposite side.

So much for the wind side. On the lee side the tendency will be to produce an exactly opposite effect. The maximum tension at F will tend to draw the panel points inwardly and forward; the rigid ring and diagonal tie rods will prevent this, while the horizontal tie rods will convey the maximum tension from F to e and from e to E, where it will be balanced by the same strain coming from opposite side.

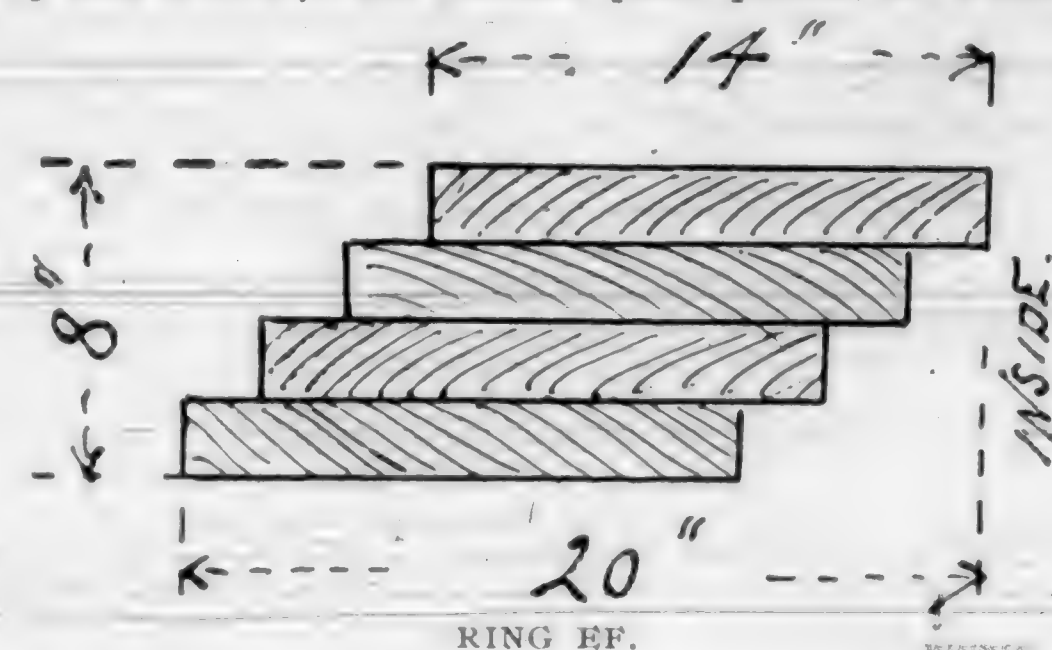
But now we have, at the same time, a resultant radial (horizontal) tendency to move the whole ring bodily forward. There is also a similar tendency to move the other rings GH and CD forward at the same time, but in less and greater degree. Hence in order to make this tendency relative between the rings it becomes still more necessary to connect them by means of a system (analogous to the web in girders) of diagonal bracing or tie rods between the panel points, as indicated on diagram. This system connecting the different rings together and to the base gives (in conjunction with the ribs) the entire structure the nature of a homogeneous shell.

III. DEAD LOADING AND WIND FORCE COMBINED.

The combined maximum strains to be provided for are marked on diagram.

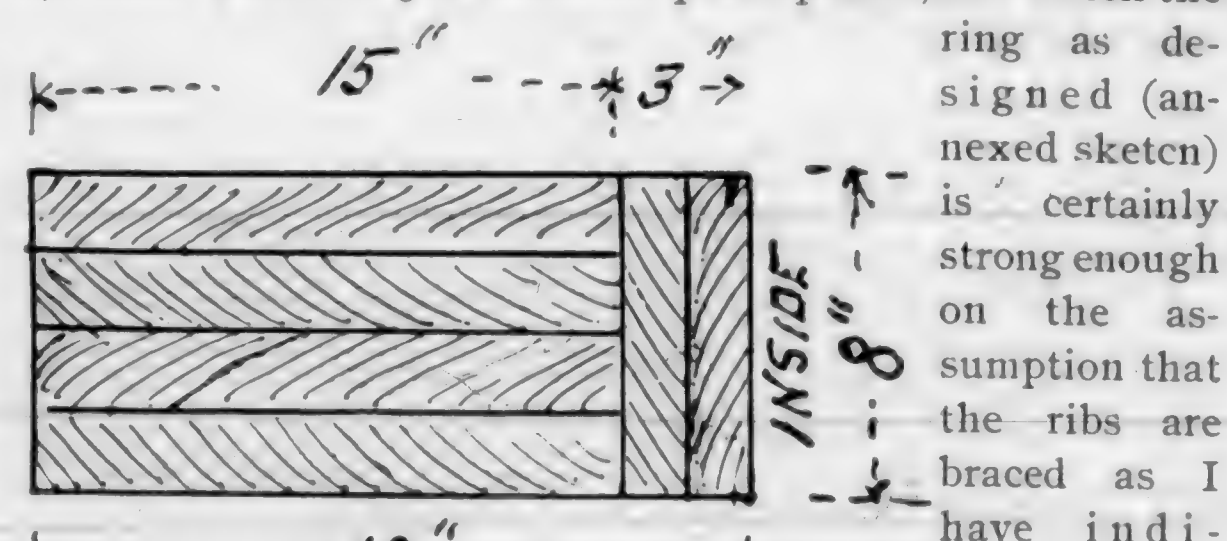
The maximum rib strain is 16,000 lbs. compression. The ribs being bent to a radius of 50 feet, and consequently having a versed sine of about 16 inches, with about 22 feet between panel points, the section as designed would have to bear a maximum fibre strain of about 1600 lbs. per sq. inch, which is too great for a laminated rafter. Hence it would be necessary to introduce three additional polygons of struts and tie rods connecting the ribs midway between the base AB and ring CD, between the rings CD and EF, and between the rings EF and GH, as shown on diagram by broken lines.

It remains to provide for the strains in the rings EF and CD. The maximum compressive strain in EF is 30,000 lbs. or 15 tons with 8.76 feet between panel points, for which the



ring as designed (annexed sketch) is strong enough. The maximum tensile strain in EF is 18,000 lbs., for which a 1 3/8 inch rod would be ample. The design provides for 1 1/4 inch rods.

The maximum compressive strain in CD is 13,100 lbs. or 6 1/2 tons, with 12.15 ft. between panel points, for which the



ring as designed (annexed sketch) is certainly strong enough on the assumption that the ribs are braced as I have indicated, and firmly secured to the rings, and that the panel points are connected by means of a system of diagonal tie rods as also proposed. I fail to see the necessity of the cumbrous truss, 6 ft. deep, designed for this ring—which will destroy the appearance of the inner surface of the dome, unless it can be utilized for some purpose (such as a display of flowers for instance) which will off-set this effect.

The maximum tensile strain in CD is 15,400 lbs., for which a polygon of 1 1/4 inch rods connecting the panel point will be sufficient. The design provides for only 7/8 inch or 1 inch rods.

My suggestions for changes, are marked on diagram by broken lines.

"So you used to be in business for yourself, eh?" asked the business man. "How does it happen you are looking for employment?" "I guess I wasn't up to business ways," answered the applicant. "Every time I failed I made a failure of it."—*Indianapolis Journal*.

CALIFORNIA MARBLE.

STRANGERS visiting San Francisco and other cities of California are at once struck by the absence of the use of marble in the construction of our dwellings and business blocks. This fact is brought more forcibly to their minds when after a short stay here they become convinced that there are a great many men of wealth in this state, also that they reside in beautiful and costly homes; at the same time these houses are constructed almost entirely of wood, thus the impression is forced upon the visitor that marble is not to be had here only at such a price that almost prohibits its use, that we must depend solely on our vast forests of redwood and other timber for our building material.

It is with a view that some of these same visitors may read this article and become convinced that the conditions here are just the reverse that we publish it; at the same time may it serve to call attention to the residents of our state and those intending to build, that we have confined in the hills and mountains of California vast deposits of white, variegated and colored marbles. Material that for strength, durability and appearance will compare with any produced in the world, and above all cheaper than the imported article.

It is my intention in this review of the different marble deposits of the state, to show no favor to any particular material, but as near as in my power make a fair statement of the various kinds and qualities, where they are quarried, and such other information as I may have, when the purchaser can judge for himself after an examination of the different materials. However, I do not hesitate to say that if there is a deposit of poor marble being worked in California to-day I do not know of it. They are all good, will take the place, and in many cases, give better satisfaction than the imported article.

Inyo county marble.—Near the base of the Inyo mountains in Owens valley near the lake of the same name, lies what is perhaps the largest and most wonderful deposits of marble that has been as yet discovered. It is impossible to describe truthfully these vast deposits of beautifully colored stones.

There is white, black, blue and yellow in pure colors, purple veined, black and gold, making a grand variety of colored marbles very beautiful for interior decoration. The white marble is perfectly clear, the grain is fine, very compact and will stand great pressure; it is a pure dolomite, therefore, will take on and retain a very fine polish.

The first two stories of the Mills Building in this city are, as well as a greater part of the interior finish of same, done in this material and is a most creditable piece of work, the main entrance to the building shows what may be done in the way of relief with the white marble.

The black is almost identical in color with the Belgian black marble, it is very difficult to distinguish one from the other when polished. The yellow marble varies from a delicate cream to a dark mottled orange, there are veins of deeper yellow with fern like markings similar to moss agate is particularly adapted for furniture and interior decorations.

Inyo moss agate marble.—The color of this runs from light to dark lively browns with beautiful fern like markings and I understand is the only marble of the kind known; it takes a fine polish.

Much more could be said of the colored marbles of Inyo county but I must retain space for some of the other counties and their marble. Yet before passing from Inyo it is but just that I mention the fact of it being my extreme good

fortune a few days since to be shown a very large collection of fancy colored marbles (in sample) from Italy, and at the time I took pains to obtain from the party the pieces of the different varieties on board the vessel at Genoa, Italy, and also delivered here in San Francisco. I found the prices of these colored marbles were far in excess of the Inyo colored material, and while I must admit that there was some very beautiful specimens of marble in the collection from Italy, I say without fear of contradiction, that the colored marble of Inyo county is fully up to their standard and in my judgment much more beautiful. The question may be asked, are the Inyo deposits being worked? I answer yes, and with a plant of the most improved machinery, capable of turning out as high a grade of work as can be done any place in the world.

AMADOR COUNTY MARBLE.

Situated about six miles from Jackson the County Seat of this County, is vast deposit of True Marble and what is perhaps the truest material (of the marble family) yet discovered in the United States. There are many points about this material which are pleasurable to note.

As yet there are but two varieties developed although the vein is uncovered on the face of the hill for a length of about 275 feet and a height of over 400. This marble is variegated in color, one a gray black vein and the other a pure white with jet black veins. The markings of the variety is similar to some of the Italian marble and is far more beautiful from the fact of the black veins standing out in bold view, while in the case of the Italian marble of this grade the black veins seem to be beneath the surface and are more of a gray than black; a comparison of the two materials leads to a verdict in favor of the Amador Marble. A feature of this material which I have not seen in any marble yet discovered in the United States, is that it is very compact of great strength when put under pressure, yet very easily worked, saws much better than the Italian and for relief work is much preferable to the imported material. I have talked with several marble workers about this and in each case they informed me that the Amador Marble worked up better than the Italian. These quarries were first opened by an Italian of years experience in the quarries at Carrara, Italy, recognizing the excellent features of the material, he came to San Francisco and organized a company composed mostly of his own countrymen who were fully alive to the fact that in the Amador marble they had a material that compared with what they had seen in their own country. The company was named "The Carrara Marble Co. of Amador," after the City of Carrara, Italy, about \$50,000 has been spent in the opening of the quarries by these parties. The most prominent piece of work done in this material was the interior work and grand stairway of the Stanford University Museum and is really a magnificent piece of marble work. I am reliably informed that samples of this material have been shown to Mr. Vechhi one of the largest quarry owners in Italy he pronounced it equal to the best (outside of the statuary) Italian material, and predicted that it would eventually drive the imported article out of the markets of the Pacific Coast. This marble received the highest recommendation from the United States Supervising Architect of all the different varieties of stones presented to the government (in samples) for use in the construction of the proposed new Post Office in San Francisco.

SAN BERNARDINO COUNTY MARBLE.

Here again we have an immense deposit of marble very different in character from that of Inyo or Amador counties, at the same time it is a very fine material of different varieties, there is black, dark gray and blue, these are variegated; also pure white. The deposit is situated about one mile from the town of Colton, has excellent railroad facilities and an improved plant of machinery for working the marble into slabs, pillars, wainscoting and tiling. A company was organized some four years ago to work this deposit. Their principal marble job was done in the interior of the new Academy of Sciences building in this city.

I am informed that the property or the business of the company has now passed into the hands of two experienced marble men from the eastern states, and I understand that these men are fully able to handle the quarries as well as the mill. I trust their efforts will be successful, for the marble from these quarries is worthy of the consideration of every one intending to build or desiring to use marble in any form.

San Diego county also contains a deposit of green marble, a beautiful stone very much the nature of onyx. Sometime since, the parties owning these quarries started in to open them. I have no knowledge of what is being done there at present. I have seen the marble in the rough and finished, it takes on a beautiful polish and is worthy of a place among the best marbles on the market.

In many of the other counties of this state deposits of fine marble have been discovered, none of them have been opened to any extent and are only awaiting capital to develop them.

After calling attention to the above array of material lying at our doors, the thought comes to me why it is that the people of this state do not use more of this material for building purposes and why if they want marble steps, wainscoting, mantles, washstands, etc., that that do not call for the California article? Surely it is far better for themselves and the state in general that they buy home material; not alone can it be bought for less but generally speaking is much more preferable.

Aside from this, by patronizing the home quarries one is fostering an industry that will at no late day make it self felt in the affairs of our state. I am in a position to say that there is plenty of capital awaiting the demand for California marble to show itself, when this same capital will be embarked in the business, both in the development of the present and new quarries, as well as in the erection of mills for working the material. A fair demand in a few years will find the quarries of California as large a source of revenue to this state as the quarries of Italy are to that country, and as the marble quarries of Vermont and Tennessee are to those two states.

Quarrymen and marble workers as a rule are very thrifty men and make intelligent citizens; they are paid good wages when employed. We have very few of them here from the fact that there is no call for their skill. When we want marble let us demand the California article and take no other (it is cheaper and better) we will find it will be but a short time when these same quarrymen and marble workers will come to make their homes with us and find employment in beautifying our homes and business blocks.

Nothing can take the place of a pair of marble steps, they are always bright, clean looking and require no painting; never out of place be it leading to cottage or mansion, and while the first cost may be a slight advance on wood or cement, in the long run they are far cheaper.

In conclusion let me say that I trust the architects will use their efforts in behalf of California marble.

ANNUAL BUILDING SUMMARY.

In the following table we present the number and value of buildings erected in San Francisco during the past year, as shown by the contracts filed at the City Hall.

FOR FIRST SIX MONTHS, 1893.

1893	No. of Buildings	No. of Contracts	Brick Building Value	No. of Buildings	No. of Contracts	Frame Building Value	No. of Buildings	No. of Contracts	Alterations & Additions Value	No. of Buildings	No. of Contracts	Total Value
January	3	7	\$ 70,770	27	35	\$ 143,988	12	6	\$ 6,040	32	47	\$ 220,788
February	1	3	22,400	40	47	202,447	18	25	61,052	59	67	288,889
March	9	9	290,458	48	65	277,324	18	39	280,221	65	81	848,002
April	7	17	124,793	57	67	231,827	12	18	41,667	76	83	420,287
May	1	1	15,050	65	77	280,129	10	11	20,409	81	90	316,488
June	7	11	78,347	60	73	332,827	8	11	18,850	75	95	450,024
Total	24	49	\$ 614,518	297	354	\$ 1,498,541	68	109	\$ 425,239	298	475	\$ 2,524,498

FOR SECOND SIX MONTHS, 1893.

1893	No. of Buildings	No. of Contracts	Brick Building Value	No. of Buildings	No. of Contracts	Frame Building Value	No. of Buildings	No. of Contracts	Alterations & Additions Value	No. of Buildings	No. of Contracts	Total Value
July	4	10	\$ 80,381	47	67	\$ 303,252	22	37	\$ 40,482	73	114	\$ 404,118
Aug.	1	5	36,500	22	33	79,423	7	10	13,777	30	48	129,703
Sept.	5	11	53,212	35	41	193,629	6	7	20,710	46	59	267,542
Oct.	2	17	102,855	32	51	130,785	38	46	39,003	70	114	273,243
Nov.	2	4	59,145	20	30	139,542	5	9	4,728	27	44	203,415
Dec.	1	7	27,800	22	39	118,849	4	7	13,367	27	51	190,016
Total	15	56	\$ 339,896	178	267	\$ 965,480	80	116	\$ 132,067	273	430	\$ 1,438,034

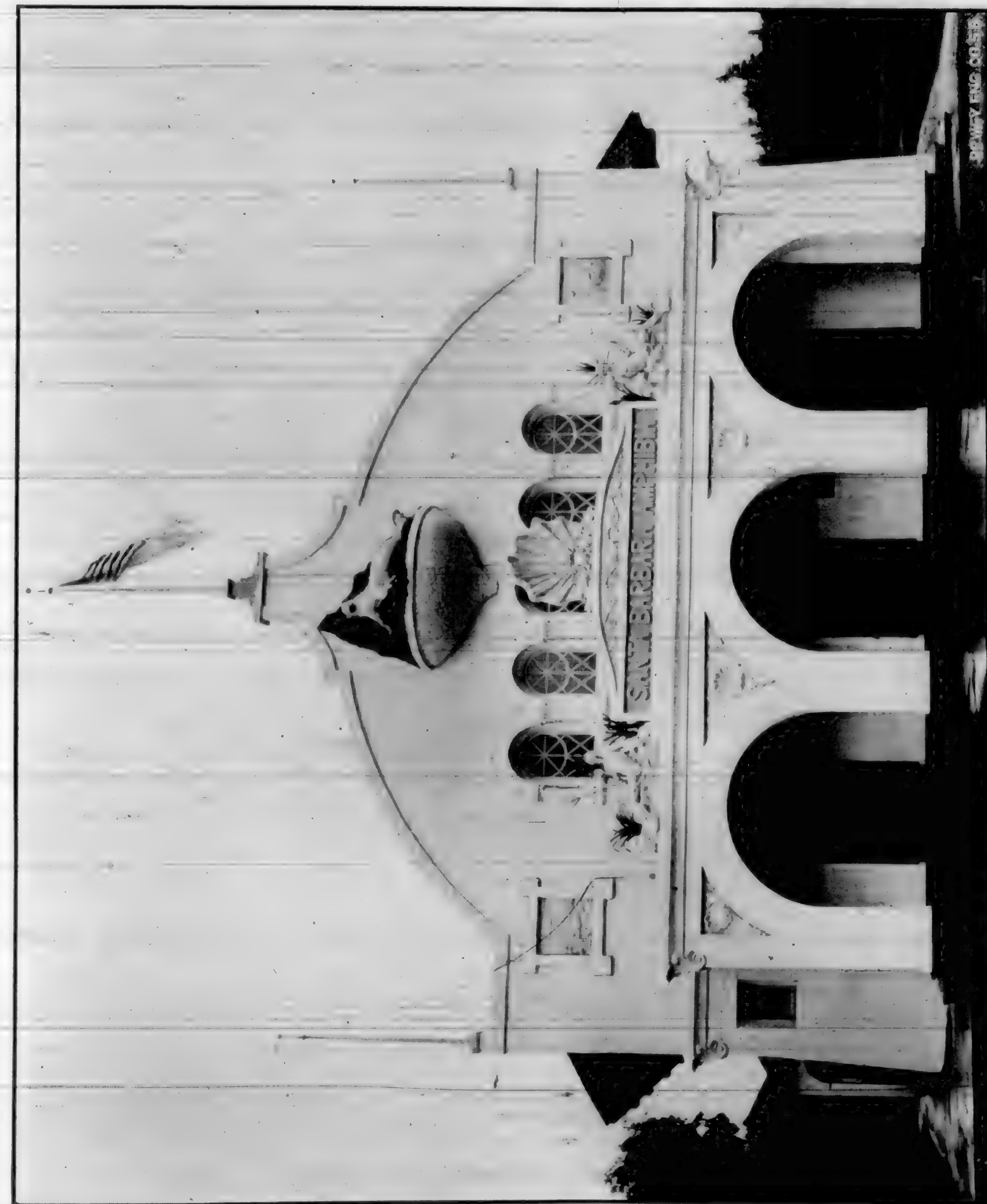
In addition to the above recorded contracts, there should be included an estimate of about \$500,000 for work done and not recorded, making a grand total for the year 1893 of \$4,462,532.

We give the total values and numbers from 1880 so that our readers may make a comparison:

1880—	397 engagements, value.....	\$1,754,435
1881—	533 " " " " " " " " " " " "	3,790,732
1882—	785 " " " " " " " " " " " "	3,896,212
1883—	803 " " " " " " " " " " " "	5,261,689
1884—	1,127 " " " " " " " " " " " "	6,202,807
1885—	1,457 " " " " " " " " " " " "	7,043,999
1886—	1,148 " " " " " " " " " " " "	6,401,669
1887—	1,093 " " " " " " " " " " " "	6,605,054
1888—	891 " " " " " " " " " " " "	6,244,220
1889—	1,081 " " " " " " " " " " " "	7,500,000
1890—	1,037 " " " " " " " " " " " "	7,095,013
1891—	1,162 " " " " " " " " " " " "	6,946,056
1892—	920 " " " " " " " " " " " "	5,856,341
1893—	905 " " " " " " " " " " " "	3,962,532



LIPPINCOTT'S MAGAZINE for January, 1894. The complete novel in the January number is "The Colonel," by Harry Willard French. Based on a romantic adventure, in which the hero saves the heroine's life at sea, the tale goes on to study the characters of these two highly-gifted idealists, and to trace the fortunes of a mutual passion which neither is willing to own. The sentiment throughout is the purest and loftiest of which human nature is capable, and the chapters appeal to the reader's heart no less than to his brain.



THE SANTA BARBARA AMPHIBIA.
CALIFORNIA MIDWINTER INTERNATIONAL EXPOSITION.

CALIFORNIA ARCHITECT AND BUILDING NEWS.
SAN FRANCISCO.

VOL. XV. No. 1. JANUARY 1894.



MANUFACTURERS AND LIBERAL ARTS BUILDING.

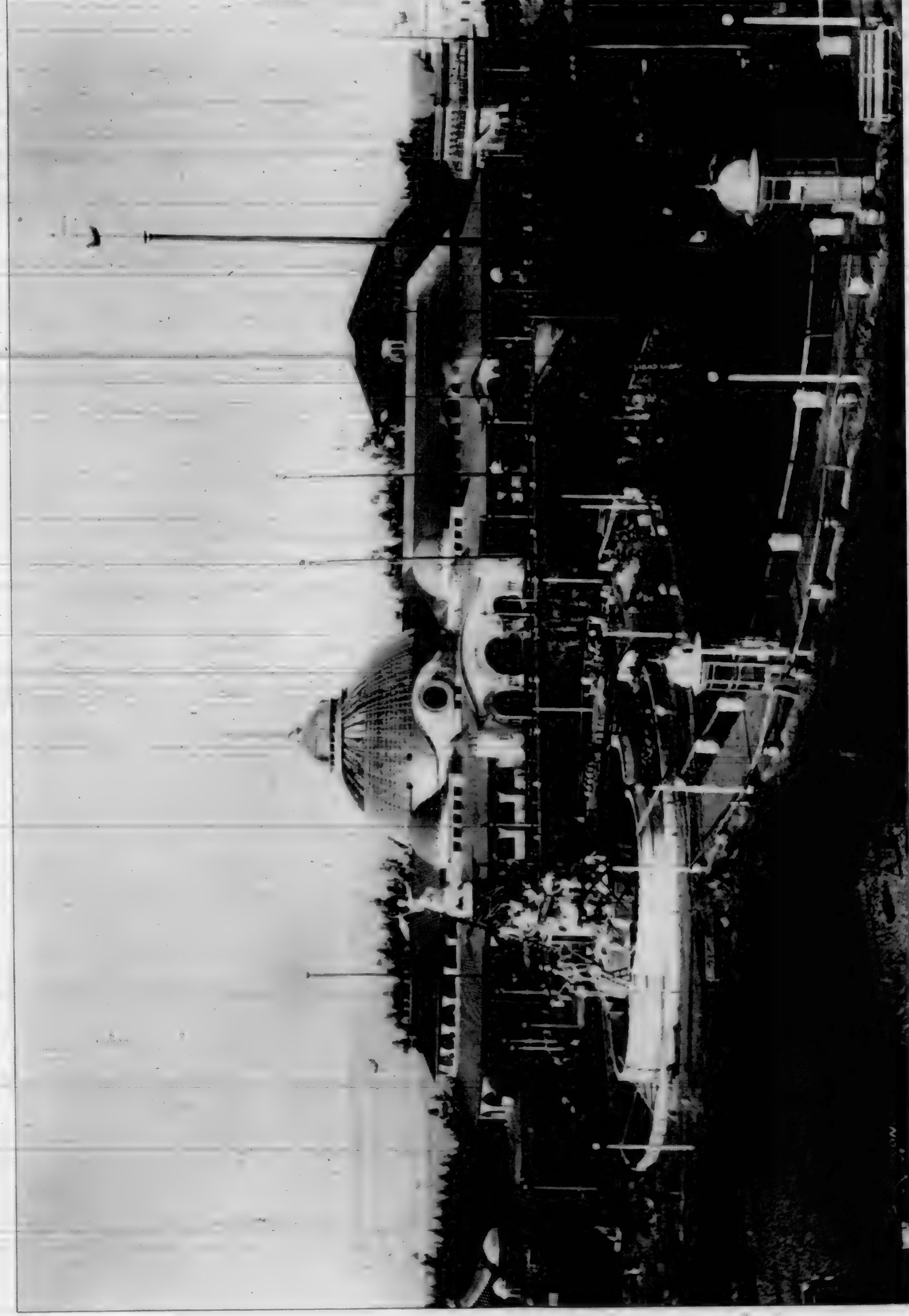
CALIFORNIA MIDWINTER INTERNATIONAL EXPOSITION.

A. PAGE BROWN, ARCHITECT.

CALIFORNIA ARCHITECT AND BUILDING NEWS.
SAN FRANCISCO.

SMILLIE BROS., CONTRACTORS.

VOL. XV. No. 1. JANUARY 1894.



AGRICULTURAL AND HORTICULTURAL BUILDING.
CALIFORNIA MIDWINTER INTERNATIONAL EXPOSITION.
SAMUEL NEWSOM, ARCHITECT.

CALIFORNIA ARCHITECT AND BUILDING NEWS.
SAN FRANCISCO.

VOL. XV, No. 1. JANUARY 1894.



FINE ARTS BUILDING.
CALIFORNIA MIDWINTER INTERNATIONAL EXPOSITION.
B. McDUGALL & SON, ARCHITECTS.

CALIFORNIA ARCHITECT AND BUILDING NEWS.
SAN FRANCISCO.

VOL. XV. No. 1. JANUARY 1894.



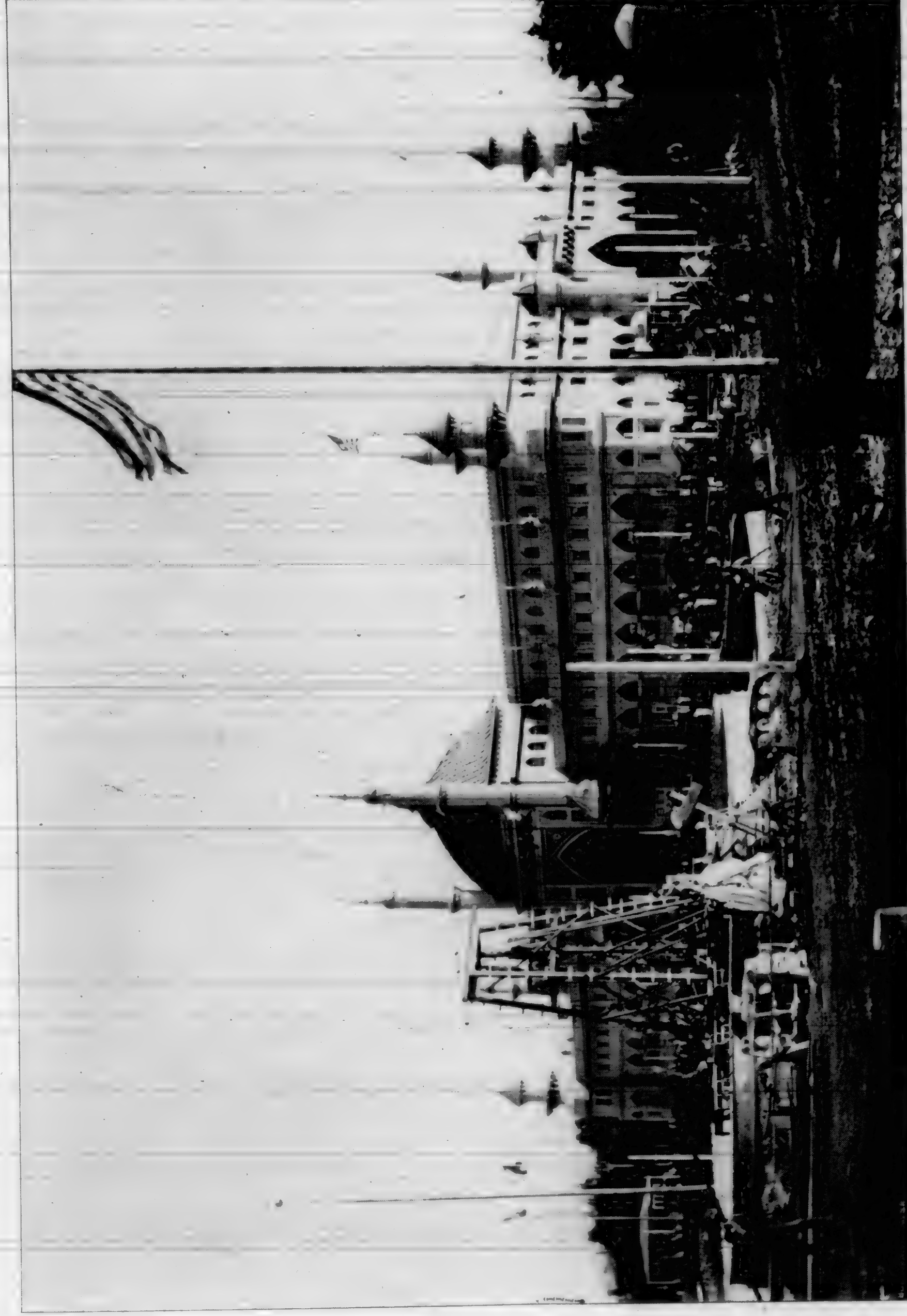
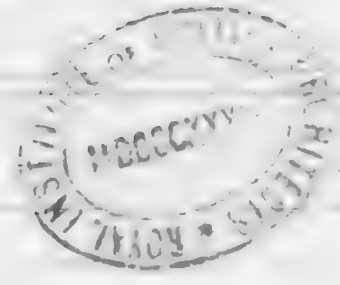
ADMINISTRATION BUILDING.

CALIFORNIA MIDWINTER INTERNATIONAL EXPOSITION

A. PAGE BROWN, ARCHITECT.

CALIFORNIA ARCHITECT AND BUILDING NEWS.
SAN FRANCISCO.

VOL. XV. No. 1. JANUARY, 1894.



MECHANICAL ARTS BUILDING.

CALIFORNIA MIDWINTER INTERNATIONAL EXPOSITION.

HURLETT & LOGAN, CONTRACTORS.

E. R. SWAIN, ARCHITECT.

CALIFORNIA ARCHITECT AND BUILDING NEWS.
SAN FRANCISCO.

VOL. XV. No. 1. JANUARY 1894

We have received the initial number of a new monthly periodical called, **THE ARCHITECT AND BUILDER**, published by H. T. Bestor at 408 California street.

The publication presents a very neat appearance and is to be devoted to Architecture, Building, General Improvements and the Fire Department. The subscription price is \$2.50 a year.

Besides the opening chapters of a paper on the History of Architecture, there is a very interesting article on the recent pilgrimage of the Veteran Volunteer Firemen of California to the east, where they were royally entertained, and returned from their visit with memories of a most enjoyable vacation.

We wish the new publication long life and prosperity.

PHOTOGRAPHIC TIMES has a Christmas number that is a pleasure to look at, among other good illustrations snap shots in the south cannot fail to please both old and young. In giving Mrs. E. Main a place among the distinguished photographers of to-day the illustration "Along the Mountain Road" and other views in Switzerland will convince the reader that Mrs. Main has not been misplaced.

Astromical Photography at the Lick Observatory by Prof. E. S. Holden will interest astronomers.

ECONOMY IN SLATE ROOFS.

THE San Francisco Slate Company is striving to convince the public of the practical economy of building in a permanent and substantial manner. While the first cost of a cheap roof is say one-half the cost of a good one, yet if the latter last four times as long as the former, who can deny the economy of the latter method. A tin roof requires constant care and attention and if left too long without paint will rust and ruin in a short time; a shingle roof exposed to the summer sun will warp and split, and the heat drying the pores of the wood renders it very inflammable.

A burning brand on a shingle roof is a great danger, let the same fall on a slate roof and no harm results. But a slate roof, from its very nature, is permanent, and as it is economy in the long run to procure the best article to be had; so when you are considering that most important of all elevated subjects, decide in the favor of a slate roof and you may safely consider yourself above criticism.

THE PARK COMMISSIONERS.

WE had occasion in a late number of this journal to speak of the Park Commissioners as gentlemen who had the faculty of making a little money go a great way in the way of improvements at the park. Now they have proved themselves to have the same faculty in the way of giving the children a day of enjoyment and the use of the park and play grounds, by inducing the railroad company to send and return the children free, enabling thousands of children to enjoy a day of recreation that will long be remembered by many. Thus the surplus derived from the playground was certainly made to go a great way, and do a great deal of good.

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.

CONSTRUCTION OF CONTRACT AS TO PARTY WALLS.—Where one erected a wall partly on his lot and partly on an adjoining lot, under an agreement with the then owner, by which the wall was to be mutually used and enjoyed by the respective parties hereto, and their respective heirs, successors, and assigns, for all the purposes of a party wall. One half of the cost of the wall was to be paid by the adjoining owner when it should use the wall. The contract further provided that if the adjoining owner should at any time elect, that it would not use the wall, then it should convey for a certain sum, so much of its lot as the wall occupied. The wall was a party wall under the agreement, and its character could not be altered by a failure to make the election.

Cutting v. Stokes, Supreme Court of N. Y. 25 N. Y. Supp. 365. 128.

DELAY IN PERFORMANCE OF BUILDING CONTRACT.—The fact that a builder of a house does not terminate the contract with a subcontractor for the failure of the latter to complete his work within the time specified, does not prevent the builder from recovering by way of counterclaim, damages for the delay. A builder who has failed, to complete, in time, work which was required to be done, on his part, before the work of a sub-contractor could be commenced, cannot complain that the sub-contractor failed to complete his work within the time specified in the contract.

Grannis vs. Hurd Lumber Co. v. Deeves, Supreme Court of N. Y., 22 N. Y. Supp. 375. 94.

FORCLOSURE OF MECHANIC'S LIENS.—When a building contract stipulates that the architect's certificate shall be conclusive evidence of the builder's right to a final judgment, and the certificate is produced, and not impeached, there is no reason to deny foreclosure of the lien.

Snaith v. Smith, City Court of N. Y. 25 N. Y. Supp. 513. 42.

ABANDONMENT OF CONTRACT.—A building contract provided for payments to the contractor every thirty days, in such sum as shall be certified by the architect, but twenty per cent shall be retained until the final completion of the contract. The contractors abandoned the work, and it was completed by the owners. The sum retained by the owner never became due the contractor, and there was nothing in which a material man's lien filed after the abandonment by the contractor could attach.

Kelly v. Bloomingdale, Court of Appeals of N. Y. 34 N. E. Rep. 919. 79.

COVENANT IN AGREEMENT FOR PARTY WALL.—The adjoining owners of a party wall and the land covered by it have each an easement in that portion owned by the owner, by virtue of the party wall contract which runs with the land, but this is entirely independent of the original cost or expense incurred in erecting it. It is competent for the parties to provide how, when, and to whom the cost of his portion should be paid by either party, and to make the covenant to pay, a mere personal covenant, with the covenantee, and severable from his ownership of the land.

Pillsbury v. Morris, Supreme Court of Minn. 56 N. W. Rep. 171. 93.

INSURABLE INTEREST IN BUILDINGS IN COURSE OF CONSTRUCTION.—The owner of land has an insurable interest in buildings in process of construction thereon by a contractor who is to furnish all materials and labor, and be paid after completion of the work.

Foley v. Farragut Fire Insurance Co. Supreme court of N. Y. 24 N. Y. Supp. 1131. 42.

CONSTRUCTION OF BUILDING CONTRACT.—A contract to repair an old building and build an addition, the old part to be turned around, stipulated a certain sum for the whole work, to be paid as follows: "Old part placed in position, \$200; foundation in and frame up, \$300; inclosed and roof on, chimneys up and the building completed according to agreement, and specifications, \$300." The work on the new part not being in condition to entitle the contractor to the third installment, when the building was destroyed by fire, no recovery on such installment could be had for work on the old part, though that was substantially completed, the contract being an entirety. The second coat of paint not having been put on the new part two doors not having been hung, and no lock or fastenings having been put on the front door or windows, and the house not having been delivered to the owner, it was not substantially completed.

Clark v. Collier, Supreme Court of California, Pac. Rep. 677. 611.

NOTICE OF MEETINGS.

SAN FRANCISCO CHAPTER, AMERICAN INSTITUTE OF ARCHITECTS, meets second Friday of each month at 409 California street.
 SETH BABSON, Pres. GEO. W. PERCY, 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 of the American Institute of Architects was held on the afternoon of the 12th inst. in the rooms of the Society, 408 California street.

The Executive Committee reported that it had secured the promise of four papers on as many subjects, which would be read during the course of the year and which, it was hoped, would furnish interesting topics of discussion for members present, and cause an interchange of the ideas and experiences of the professional brethren.

The first paper will be by Geo. W. Percy, on the subject of the Use of Concrete in Architecture, its Successes and its Failures, and will be read on February 9th.

Members of the Chapter will receive the usual notice. Other persons interested in the subject are requested to procure admission tickets from the president, Mr. Seth Babson, 408 California street.

CALIFORNIA MIDWINTER EXPOSITION

AND A DESCRIPTION OF THE WORK DONE AND MATERIAL FURNISHED TO MAKE IT A NOTABLE SUCCESS.

THE formal opening of the California International Midwinter Exposition will take place with the appearance of this number of the CALIFORNIA ARCHITECT AND BUILDING NEWS. The event is a notable one in the annals of the state, and one that will long be remembered by our own citizens and those visitors who will desert the rigorous climate of the eastern states to enjoy the equitable climate and proverbial hospitality of the Golden State. A few words of commendation can well be bestowed upon those individuals and firms who have by their individual support and assistance, rendered these results possible and we take pleasure in awarding them the credit their exertions so fully merit.

THE Midwinter Fair owes a great part of its success, if not the greatest part of this success, to the skill, courage and perseverance of the contractor who built the beautiful structures to house the exhibits.

As it was absolutely essential that the buildings should be ready on time, it was necessary that the contractors should bind themselves to forfeit hundreds of dollars a day

THE PORTLAND CEMENTS, "JOSSON" AND "NORTH".

AMONG the most notable of the improvements of modern times ranks the discovery and production of Portland Cement. This cement is not named for any particular place where manufactured but was so christened on account of the close resemblance that the artificial stone made with it, bore to Portland stone.

The various brands now on the market are the results of a long course of experiments, resulting in improving the quality, and establishing the uniformity of recognized brands.

The best proof of these qualities may be sought in the experience of architects, engineers and builders.

When a particular brand of cement is chosen over others in open market, the reason is that the purchaser has found by experience that the brand he chooses possesses quality that make it more desirable than other brands. For example when the United States Government employs 85,000 barrels of cement manufactured by a particular firm, it is good proof that the cement is one to give satisfaction.

This amount of "Josson" and "North" Cement has been used in the construction of fortifications on the Pacific Coast, principally at Lime Point and North Point in San Francisco Harbor, and at the Cascades in Oregon.

A supply of these brands is received every month, and purchasers are thus assured of fresh cement, that has lost none of its strength by months of storage in warehouses.

A TENANT went to see his landlord about a house he had rented, and about which he had some fault to find. He mentioned several drawbacks, and then said: "And furthermore, Mr. Oppenheimer, the cellar is full of water." "Mr. Oppenheimer, the landlord, eyed him with reproach, and then exclaimed: "Full of water? Well, vat you expect? Full of champagne?"—*Harper's Bazar*.

for every day's delay in the completion of the buildings beyond the limited time allowed. Under these circumstances it required a deal of nerve to step forward and offer to assume the heavy burdens and serious responsibilities inseparably connected with the enterprise. Unknown difficulties could be counted on to arise, with the certainty that delay would be fatal. Nevertheless the builders of this city eagerly welcomed the opportunity of showing to the people of the state that they were equal to any contingency that might arise, and there was certainly no lack of bidders for the work.

Smilie Brothers were the successful contractors to whom was awarded the contract for the construction of the Manufacturers and Liberal Arts Building, the largest of the buildings, and night and day for many weeks pushed the work to final completion; for when the light of day was no longer available, electricity, the light of night, was called into service; and thus the Californians of a later day showed the pioneers that the push and energy of early days had descended unimpaired to present times and in the realization of this fact there is quite as much satisfaction, as in the enjoyment of the more substantial profits coming there from.

THE SAN FRANCISCO LUMBER COMPANY.

THE buildings that form the principal architectural attraction of the Midwinter Fair, are with one exception of wooden construction, covered with staff. An immense quantity of lumber necessarily entered into their construction, and yet this one firm alone in this city furnished more than two-thirds of the amount required.

This firm was incorporated in May, 1887, and the officers and directors are as follows:—W. J. Adams, Pres.; C. S.

explain why they are able to furnish any amount of lumber as soon as the order is received.

While the above description will give our readers an idea of the extent of the business, the accompanying illustrations will be of interest, showing as they do their yard at Fourth and Channel streets, San Francisco, their mills at Tacoma, Port Blakely, Port Gamble and Port Hadlock, Washington, four out of the nine mills controlled by the company.

The extent of the trade can be imagined when we state that there is no country in the civilized world but what



PORT HADLOCK
PORT BLAKELY

SAN FRANCISCO LUMBER CO'S YARD,
FOURTH AND CHANNEL STREETS, SAN FRANCISCO.

TACOMA MILL
PORT GAMBLE

Holmes, Vice-Pres.; W. H. Talbot, Treas.; Chas. Hanson, A. W. Jackson, A. D. Moore, R. L. Taylor, Directors; James Greig, Sec.; J. N. Curtis, General Manager.

This company and its connections outside of San Francisco, generously responded to the appeal of the promoters of the Fair, and devoted outright five hundred thousand feet of lumber for use in the buildings. The enormous stock of lumber carried by this company can be readily imagined, when we say that in their yards at the foot of Third street and at Fourth and Channel streets, are stacked twenty million feet of pine and ten million feet of redwood.

This immense stock enables them to fill orders for any size and kind of timber, without the least delay, and will

purchases the products of these mills. However the principal foreign countries with which the largest proportion of the business is carried on, are Australia, Chili, Peru and The Hawaiian Islands, while the trade in this country takes in the entire Pacific Coast.

Besides the millions of feet of lumber kept in stock to meet the demands of the local market, the company keeps a complete list of dry, clear and surface redwood and Humboldt shingles for eastern shipment.

Their place of business uptown is at 303 Montgomery street, and their offices and yards are situated, one at the foot of Third street and the other at Fourth and Channel streets.

WESTERN IRON WORKS.

THE lightening rapidity with which events take place in this latter part of the 19th Century, was never better illustrated than at present, at our own doors, and by our own people. Think of an exposition, international in character, conceived, elaborated and carried to completion within the space of six months; yet that is what we have just witnessed, and we are becoming so accustomed to the marvelous that it will soon fail to excite surprise.

Think of the capacity for organization that is required; the rapid and intelligent thought, supplemented by as rapid execution. Every detail to be thought of, and men and means provided for its realization.

The general public see and applaud the results. The scientific mind realizes the strain that is necessary to foresee obstacles and provide in advance the means to be employed in overriding them.

The delay of an hour in the arrival of reinforcements in a battle means defeat—the delay of a day in the arrival of the necessary material for a building, causes quite as serious consequences in the progress of the work, and if when it comes it does not come in proper shape to fit to a nicety, everything is thrown into confusion. No such possibilities can be admitted in work of the magnitude of the buildings we now see before us, in the Midwinter Fair, and such confidence had the contractors in their resources, that they bound themselves by a forfeit of \$400 per day for any delay.

Under such circumstances no chances of failure could be taken, and as in instance of good judgment in this regard, we will instance the iron work used in the combination trusses and girders of the Mechanical Arts building designed by E. R. Swain, architect, and of the Fine Arts building designed by C. C. McDougall & Son, architects.

This work had to be delivered early in the course of construction, and to have it ready on time the large establishment of Sims & Morris worked day and night. Notwithstanding the haste, however, everything was ready promptly, and \$15,000 worth of work when wanted was found to fit to a hair. By such care and attention to details The Western Iron Works, Sims & Morris, have reached their present high standing, and they can safely be relied on to continue in the way that has led them to such business success. Their address is 123-125 Beale street.

ARTISTIC DECORATION AND PAINTING.

AFTER the construction of the buildings of themselves the next most important point is their decoration in a fitting manner. The points of beauty should be made more attractive by color, and from this point of view the buildings surpass those of the White City.

Fraser & Keefe, one of our oldest and best known firms, have carried out the ideas, in this respect, of the designers of some of the main exhibition buildings, and the artistic work done on the Manufacturers and Liberal Arts Building, the Mechanical Arts Building and the gilding on the Fine Arts Building, secured them various other contracts, notably the decoration of the Cairo and Oriental Concessions and the Festival Hall. Messrs. Fraser & Keefe personally supervised this branch of the work, and it will be interesting for our many readers who will admire their work during the next six months, to know whose taste and skill they are indebted to for the pleasure.

As the best method of expressing our appreciation of good work is to patronize the workman, make a mental note that the address of Messrs. Fraser & Keefe is 310 Stockton street, San Francisco.

FRESCO PAINTING AND INTERIOR ART DECORATING.

NO matter how well a building is planned and constructed, all will acknowledge that unless good taste in designing and good judgment in the execution of the design of decorating and ornamenting, the full effect may be lost, and the result fall far short of what the architect intended to produce. A. Page Brown, architect of the Administration Building, may therefore congratulate himself upon having Messrs. Moretti & Trezzini, fresco painters and interior art decorators, employed for that purpose. We feel sure that upon the completion of their work upon the building, the verdict of the public will be unanimous in declaring that the interior of this stately and imposing building has gained much by having the work intrusted to such skillful hands as Moretti & Trezzini's. Among the many buildings that they have decorated may be mentioned the following:—St. Ignatius Church, St. Mary's Cathedral, of this city, Macdonough Theatre in Oakland, also most of the best residences and banks in this city. Their fame in fact extends all over the coast from Portland to Los Angeles.

EXHIBIT OF THE JOSHUA HENDY MACHINE WORKS AT THE MIDWINTER EXPOSITION.

AMONG the exhibits which are to be placed in practical operation in the Mechanical Arts Building at the California International Midwinter Exposition in Golden Gate Park, we are informed that the Joshua Hendy Machine Works of 51 Fremont street, this city, have in process of construction and erection, a five (5) stamp quartz mill complete with all of the latest and most approved forms of Hercules rock-breakers, Challenge ore feeders, Triumph ore concentrators, silver-plated copper plates and as well all of the usual accessories constituting an entire plant for the perfect amalgamation and concentration of gold bearing quartz ores.

They will also place on exhibition their specialties of hydraulic gravel elevators, giants, water-gates, air valves, hydraulic pipes, etc., as adopted in the conduct of hydraulic mining enterprises in all of the placer mining districts of the world.

In conjunction with their exhibit of Quartz Milling Machinery there will be presented a complete line of horse-whims for the raising of ores from mines in the early stages of their development, also ore buckets, mining cars, etc.

They will further place in operation a Russell Automatic and an Ore and Smbower engine for use as power in certain of the departments of the Exposition for the sale of which they are the agents for the Pacific Coast States.

It is deemed proper to state that we are credibly informed that these works were awarded the highest premiums by Award Committees of the Columbian International Exposition at Chicago for their display of ore-feeders, Triumph, concentrators, Hydraulic, Gravel Elevators, Giants, etc., such as are enumerated above in the proposed exhibit at the Exposition to be held in this city.

An examination of their extensive foundry plant and machinery works may be of interest to some of the persons who intend to visit the Midwinter Exposition, situated as they are conveniently near several street car lines on the corners of Bay, Kearny and Francisco streets in the vicinity of the seawall in the northern part of the city, where will be found a complete equipment for furnishing any description of machinery for any conditions of use and as well architectural iron work and light and heavy castings.

ON HOME INDUSTRIES AND INCIDENTALLY TOUCHING ON THE PRODUCTS OF THE PARAFFINE PAINT CO.

THE manufacturing industries of the Pacific Slope are few in number and small in proportion to the consuming power of the population it contains. The reasons for this are many, but they are now gradually disappearing under the spirit of enterprise and independence which is taking possession of the west. Of late years there has been a tendency on the part of live citizens to aid and encourage such manufacturing concerns as ventured into the field, by giving preference to their products. In Colorado, the Board of Trade of Denver, adapted a label which certified that the contents of the package on which it was placed, was of home manufacture and they appealed to the citizens of that state to give such articles preference wherever and whenever possible—and report says that the people have generously responded to the advantage of all concerned. In other states of the west the same has been tried with varying success.

In California no organized attempt has been made up to the present time to give home products the preference, though it has on several occasions, been suggested. At the same time, however, there is a strong feeling being developed that home manufacturers should be encouraged in every legitimate way provided, of course, that their quality is up to the standard, and their price reasonable. This is the right spirit and it is no injustice to eastern manufacturers, to ask the people of the west for support for home enterprises.

Among the manufacturers of California, the Paraffine Paint Co. of San Francisco, is of special interest to the architects and builders of the state. A few years ago building papers and patent roofings were almost unknown west of the rocky mountains. In the east, building papers were extensively used, and were deemed essential to the proper construction of frame dwellings, but here the genial climate and short rainy season did not seem to warrant such additional expense. Under adverse circumstances, then, began the Paraffine Paint Co. its work of introduction and education. Thousands of dollars were spent in advertising and drumming up trade, but the architects were conservative and the owners and builders obstructive. Finally the entering wedge was driven—and to-day not a house of any pretension is constructed without building paper. Though cheap eastern papers have at times flooded the market—yet P. & B. papers have captured and held the field by reason of their superior qualities and reasonable prices. These papers are entirely of home manufacture. In the construction of the cold storage rooms of the packing houses at Rodeo and Baden over a million and a half square feet of P. & B. paper were used for insulation. As these buildings were designed

by eastern architects, familiar with building papers, the selection of P. & B. Paper by them was a high testimonial of the merits of the home product.

P. & B. Roofing, was for a long time, regarded with suspicion, but now after being subjected to severe tests for years, it is being specified and used by leading architects as a substitute for tin and asphaltum. Its cheapness, durability and fire-resisting qualities have compelled this recognition. A strong argument in favor of the encouragement of home manufactures arises in the fact that the construction of the immense buildings at the Midwinter Fair would have been almost impossible without P. & B. Roofing. The canvas, coal tar and paper roofings used on the World's Fair Buildings at Chicago were a source of continual annoyance and danger, and the Executive Committee and Architects of the Midwinter Fair were determined not to use them. Tin was too expensive and in addition there was not enough of it in San Francisco to roof the proposed buildings. Shingles and slate were in a large measure unsuited to the

styles of architecture which the architects desired to use. It was then that P. & B. Roofing met its proper recognition—a Pacific Coast Roofing for a Pacific Coast Fair. The result is that nearly five hundred thousand square feet of P. & B. Roofing has been used to cover the main buildings, county buildings and buildings belonging to the Concessionary.

These roofs are watertight, virtually fire-proof, and permanent and would not have to be replaced if the committee should decide to let the buildings remain. Such a fire as has just occurred at the World's Fair Grounds, Chicago, is not possible at Golden Gate Park, the roofs will not take fire from sparks and burning brands, should they fall on them.

P. & B. Paint is of especial interest and value wherever it is necessary to protect iron or wood work from rust or decay. It is acid and alkali proof and leaves no taste or odor when dry. On the water main of the Portland City Water Works nearly ten thousand gallons will be used. The pipes which conveyed the Hygia Mineral Water from Waukesha, Wisconsin, to World's Fair Grounds, Chicago, a distance of one hundred and thirty miles, were coated with P. & B. Paint. There are other P. & B. Products which have established reputations both here and in the east. P. & B. Insulating Company, which won a gold medal at the World's Fair, is required by the Pacific Fire Insurance Union to be used in the installation of electric wires. Many fires have been prevented by its insulating properties and many more would have never happened had the electrician known his business, or been honest. Everything used in the manufacture of P. & B. goods is of Pacific Coast production—and they are probably the only goods of which that can be truly said. In giving them the preference, a large amount of money which would otherwise go to eastern and foreign manufacturers and railroads is retained at home to the manifest benefit of all concerned.



PAINT FACTORY AND STORAGE SHEDS OF PARAFFINE PAINT CO., AT BERKELEY, CAL.

AMERICAN WIRE GLASS MANUFACTURING COMPANY.

WIRE Glass, as its name implies, consists of a sheet of glass (which can be made by our process of any size or thickness) having imbedded in its centre a sheet of wire netting of any required size of mesh, or wire, or of any desired design. It can be made of any grade, from rough skylight up to the best polished plate. The advantages of this combination of metal and glass over the ordinary glass for most purposes are manifold.

For skylights in train sheds, this glass fills a long-felt want. It is a great deal stronger than ordinary skylight, enabling thinner glass to be used, or larger sheets, thus reducing weights in the roof. The wire netting which is now stretched under or over most skylights to protect passengers from dropping glass, can be entirely dispensed with, thus saving not only a large initial, but also the continual expense of replacing the wire netting, which is quickly eaten away by the sulphurous gases and steam from the locomotives. Our wire netting, being placed in the centre of the glass, cannot be reached by the gases or the atmosphere, and will of course last as long as the building itself. As is well known, glass when kept clean will transmit a great deal more light than when covered with soot and dirt; which will unavoidably accumulate in buildings used for this purpose. With the wire netting tacked underneath or above, it is very difficult to clean the glass, and this is therefore most always neglected. Wire glass, as is self-evident, can be readily cleaned, and when kept in this clean state many less lights would be required to have the same lighting effect.

Wire Glass resists fire as long as the same thickness of iron would. This quality makes it very useful for partitions in buildings. A skylight which will not crack and fall out at once in case of fire, and thus cause strong upward drafts, which aid the conflagration, will retard the progress of the fire at the start, when every second of time is of the utmost value.

Wire Glass has been ordered and is now being used in the train sheds of the Penn. Railroad, at Broad street, Phila.; Mantua Avenue Station, train sheds and Kensington Station, Pennsylvania Railroad; Grand Central Station, New York City; train sheds of the Boston and Main Railroad, Boston, Mass., the latter sheds contain an area of three and one-half acres of glass and is the largest single order for skylight glass ever placed in this country; New Congressional Library, Wash., D. C.; Post Office Bldg., Scranton, Pa.; Post Office Bldg., New York City; Newark Post Office, Newark, N. J.; the U. S. Cruiser New York; observatory taken out by Lieutenant Peary to the Arctic regions, and in countless other buildings not here enumerated.

In this city Wire Glass has been used in the *Mechanical Arts and the Horticultural and Agricultural Buildings of the Midwinter Fair*; in the Bath and Boiler House of the Olympic Salt Water Co.; in the new Bohemian Club, and has been specified for use in the two large Parrott Buildings, now being erected, one on the corner of Post and Powell streets, and the other on Market street. Other large contracts are now being figured on, to early to mention.

Any architect, contractor or builder desiring samples or other information can secure the same from the agent, Mr. Jas. A. Maguire, 130 Sansome street, San Francisco.

CITY BUILDING NEWS.

Ash Ave. near Octavia street. A two-story building; owner, B. Bernhard; architect, Edward J. Vogel; contractor, F. V. Steinman; signed, Dec. 15; filed, Dec. 15; cost \$2,500.

Baker and Sullivan Alley. Alteration and addition; owner, Estate of Jno. Sullivan; contractors, Ingerson & Gore; signed, Jan. 15; filed, Jan. 15; cost, \$3,920.

Carl and Stanton. Alterations and repairs; owner, Thomas Lund; architect, T. J. Welsh; contractor, James J. O'Brien; signed, Dec. 20; filed, Dec. 28; cost \$2200.

East near Mission. Excavating, etc.; owner, Claus Flatman; contractors, Henry, Tibbitts & Co.; signed, Dec. 18; filed, Dec. 18; cost \$7,500 a pile.

Elis and Mason. Incandescent electric light wiring; owners, Y. M. C. A.; architect, A. Page Brown; contractors, California Electrical Works; signed, Jan. 10; filed, Jan. 11; cost \$9,350.

Flint Tract. Alterations and additions; owner, B. Pehrsson; contractor, Carl Ahlgren; signed, Dec. 22; filed, Dec. 29; cost \$1150.

Florida near 22d. To build; owner, Geo. W. Werner; contractor, Henry P. Conrady; signed, Dec. 15; filed, Dec. 16; cost \$2800.

Fourth near Clement. A frame building; owner, Adolph Winterberg; contractors, Lyons & Boyer; signed, Nov. 24; filed, Dec. 19; cost \$2,000.

Golden Gate Park. Decorating, etc.; owners, Vienna Prater Co.; architect, E. Kollofrath; contractors, Bush & Wacker; signed, Dec. 28; filed, Dec. 29; cost \$3000.

Golden Gate Park. All work except painting, plumbing, electric work, concrete hall and annex for kitchen, etc.; owners, Vienna Prater Co.; architects, Edward Kollofrath; contractors, Mahoney Bros.; signed, Dec. 23; filed, Dec. 23; cost \$27,800.

Golden Gate Park. A wooden wall and stable; owners, Oriental Syndicate; architect, Edward R. Swain; contractor, Thomas H. Day; signed, Dec. 22; filed, Dec. 26; cost \$2,550.

Golden Gate Park. Mill work and rough framing for Vienna Prater; architect, E. Kollofrath; contractors, Mahoney Bros.; signed, Dec. 27; filed, Dec. 28; cost \$2,402.

Golden Gate Park. Plumbing for a Concert Hall, etc.; owners, Vienna Prater Co.; architect, E. Kollofrath; contractor, Ickelheimer Bros.; signed, Dec. 28; filed, Dec. 28; cost \$1261.

Golden Gate Park. Electrical fountain; owner, Ex. Com. Cal. Midwinter Fair; contractor, J. M. Weir; signed, Dec. 23; filed, Dec. 28; cost \$1000.

Golden Gate Park. All work to build; owners, Cosmopolitan Restaurant Co.; architect, Ira Fancher; contractor, Geo. Cannon; signed, Dec. 13; filed, Dec. 15; cost \$3050.

Hayes near Webster. All work to build; owner, Peter Sullivan; architect, Henry T. Munson; contractor, David Ross; signed, Jan. 2; filed, Jan. 3; cost \$400.

Josephine and Point Lobos Ave. Concrete and asphaltum work; owners, Olympic Salt Water Co.; architect, E. Ernest Melliss; contractor, A. E. Buckman; signed, Dec. 27; filed, Jan. 9; cost 9 cents per sq. ft., for concrete and asphaltum 4 inch thick; 11 cents per sq. ft. for concrete and asphaltum 5 inch thick; 25 cents per sq. ft. for massive concrete 1 to 8 composition; 22 cents per sq. ft. massive and concrete 1 to 14 composition.

Kenny near Filbert. To build; owners, John or Giovanni Ghiglieri and Martin Segarini; architect, Chas. R. Wilson; contractor, E. Dalgero; signed, Jan. 11; filed, Jan. 12; cost \$6250.

Larkin street. Alterations and additions; owner, Fred and Kate Lumblade; contractor, J. G. Chase; signed, Jan. 2; filed, Jan. 3; cost \$1065.

Laurel near California. Two-story and basement; owners, Jacob and Peter Schaefer; contractor, W. W. Rednall; signed, Dec. 18; filed, Dec. 18; cost \$4650.

Market near Fourth. Excavating and bulkheading; owner, Mrs. A. M. Parrott; architects, Pissis & Moore; contractor, A. E. Buckman; signed, Jan. 9; filed, Jan. 9; cost \$10,500.

Market bet. 2d and New Montgomery. Finished wood work except hard floors, alterations and additions Hoffman Cafe; owner, W. J. Sullivan; architects, Wood, Lovell & Claflin; contractor, R. Herring; signed, Dec. 30; filed, Jan. 11; cost \$3000.

Market bet. 2d and New Montgomery. Marble work, etc., Hoffman Cafe; owner, W. J. Sullivan; architects, Wood, Lovell & Claflin; contractors, Ruffino & Bianchi; signed, Jan. 5; filed, Jan. 11; cost \$1075.

Page street near Masonic Ave. To build; owner, S. N. Woods; architect, Edward Burns; contractors, Jas. & M. E. Rountree; signed, Jan. 6; filed, Jan. 10; cost \$8725.

Rail Road near Farragut Ave. To build; owner, Ada M. Plath; contractors, Bates & Deuel; signed, Jan. 5; filed, Jan. 9; cost \$1500.

Shotwell street. To build; owner, Henry C. Herbst; contractor, J. H. Pauls; signed, Dec. 11; filed, Dec. 14; cost \$2980.

Sutter and Mason. Plumbing, gas-fitting, sewerage and marble work to Bohemian Club; owner, S. Wenban; architects, Pissis & Moore; contractors, Sam. Ickelheimer & Bros.; signed, Jan. 4; filed, Jan. 5; cost \$15,000.

Twenty-Sixth and Folsom. Alteration and additions; owner, Henry Mohr; architect, Julius E. Kraft; contractors, Ackerson & Peterson; signed, Dec. 18; filed, Dec. 20; cost \$2240.

Twentieth near Noe. To build; owner, Frank Hayes; contractor, R. B. Hicks; signed, Jan. 8; filed, Jan. 11; cost \$2025.

Turk near Lott. To build; owner, Wm. Boyle; architects, Shea & Shea; contractor, James Cochran; signed, Dec. 16; filed, Dec. 19; cost \$1875.

Water Lot 645, 45, 10, Mission. Brickwork; owner, C. Flatman; architect, A. B. Farr; contractor, J. Wagner; signed, Jan. 8; filed, Jan. 9; cost \$2442.

Western Addition, block 326. To grade; owner, H. H. Buhne; contractor, Edward Owens; signed, Jan. 8; filed, Jan. 9; cost \$250.

The California Architect and Building News.

Copyrighted 1893, by the California Architectural Publishing Company.

OFFICE, 408 CALIFORNIA STREET,

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

VOLUME XV.

FEBRUARY 20th, 1894.

NUMBER 2.

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.

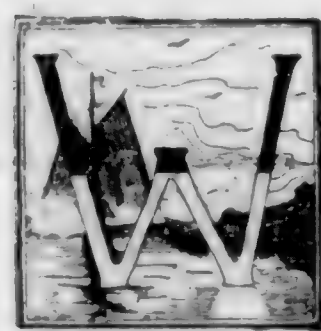
SUBSCRIPTION TO THE JOURNAL, \$3.00 PER YEAR IN ADVANCE.

ESTABLISHED 1873. NOW IN THE FIFTEENTH YEAR. INCORPORATED 1889.

W. J. CUTHBERTSON, President. 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.

ADVERTISING RATES:				
Space.	1 Month.	3 Months.	6 Months.	12 Months.
1 inch.....	\$ 1 50	\$ 4 00	\$ 7 50	\$ 13 00
3 inch.....	4 00	10 00	18 00	35 00
6 inch.....	7 50	18 00	32 00	60 00
1 Column.....	12 50	35 00	65 00	125 00
1/2 Page.....	20 00	57 50	105 00	200 00
1 Page.....	40 00	110 00	200 00	350 00



WARE among the five from which they intended to select the final one. H A T decision the Capitol Commissioners of the State of Washington will reach in regard to the designs recently submitted in competition for their capitol building is a matter of great doubt. Prof. Ware who was called in as an expert reached his conclusions without any hesitancy. He recommended six designs out of the one hundred and eighty seven submitted from which he hoped the commissioners would make their final choice. From reports in the Washington papers it seem that the local architects and builders are inciting opposition to Mr. Ware's report.

It seems that the commissioners regard his decision as too hasty. It should be remembered that Mr. Ware was employed as an expert, and that very fact should be regarded as sufficient reason for his reaching a conclusion without delay.

Mr. Ware, as every architect knows, has acted as judge in every important competition held in this country in recent years. Having acted in this capacity oftener than any other member of his profession. He stands by common consent at the head of the architectural profession in America and the splendid success of the Chicago Exposition buildings proves that the United States leads the world.

If Prof. Ware in his keen judgment decided without hesitation that six certain designs were more meritorious than all the others submitted it can be safely assumed that he had sound reasons for his decision. Yet the Capitol Commissions only included two of the plans selected by Mr.

Ware among the five from which they intended to select the final one.

By "turning down" their expert's report they will not profit fully by his advice, which will of course be a matter for the profession to regret. It seems that the governor who is chairman of the Capitol Commission desires to run things his own way, for according to report, he summarily removed one of the commissioners from office who had had the temerity to decide against the executive. The vacancy thus caused will delay the decision of the commission and it is to be hoped that they will reconsider Mr. Ware's report and give his recommendations the full weight that they deserve.

It is charged that Mr. Ware overestimated the cost of a capitol building when he determined that fifty cents per cubic foot would be required to construct the one at Olympia. The local builders stated that thirty cents per foot would be sufficient.

This has been made an important issue between Mr. Ware and his opponents. From an artistic point of view it is immaterial. But from the practical side it can be easily shown that while thirty cents per cubic foot should be ample to construct any building, most state capitols and other public buildings have cost from fifty cents to one dollar per cubic foot. Indeed some noted examples exist that cost considerable above the last figure.

For the sake of architecture and as a matter of State pride the Washington Commissioners should at least recall Prof. Ware and give his conclusions a fair hearing.

CONCRETE CONSTRUCTION.

THE FOLLOWING PAPER WAS READ AT THE EVENING SESSION OF THE SAN FRANCISCO CHAPTER OF THE AMERICA INSTITUTE OF ARCHITECTS, FRIDAY, FEBRUARY 9TH, BY MR. GEO. W. PERCY.



On January 6th, 1888, the author read a paper before the Technical Society of the Pacific Coast on the general subject of "Practical Application of Concrete and Iron to Resist Transverse Strains," in which paper many of the early tests and experiments were recorded in detail, together with several examples of executed work. The interest by the writer in perfecting some economical method of fire-proof and permanent construction, has not diminished, and he is glad to report a fair measure of progress and success in the particular direction outlined in the paper referred to.

One of the most important problems that should find a solution in our day is of finding some method of erecting ordinary buildings with enduring materials and largely with cheap or unskilled labor, thus bringing the cost of buildings that shall resist the ravages of fire and other elements, within the means of the average house owner.

Owing to the abundance and general distribution of suitable materials for concrete, and the ease with which it may be prepared and put in place, the writer believes the desired solution may be found in that direction. The advantages of concrete for foundations and all masonry work under water or underground, are recognized by every one; also its adaptability for basement floors, side-walks and other positions where surface wear and compression are the principal forces to be resisted. For walls and partitions, floors and roofs of buildings, its adaptability has not been so apparent, or its application as successful as might be desired. On account of the small and very uncertain tensile strength of ordinary concrete, it has appeared to be entirely unadapted for horizontal beams or floors, or any parts of a structure subject to other than compressive force, nor did it appear a hopeful field for investigation and experiment. However, many efforts have been made during the past twenty years to unite the tensile strength of iron with the compressive strength of concrete in such a manner as to secure the full value of each material for its respective position. These experiments demonstrated many years ago the feasibility of the union, but the methods were more or less complicated, and wasteful of the more expensive material, iron, for which reason little use was made by the discovery until Mr. Ernest L. Ransome, of our city, invented and applied plain, square, cold, twisted iron bars for this work, and demonstrated clearly that this simple process was perfect in its results, even showing a much greater advantage than the original tensile strength of the iron.

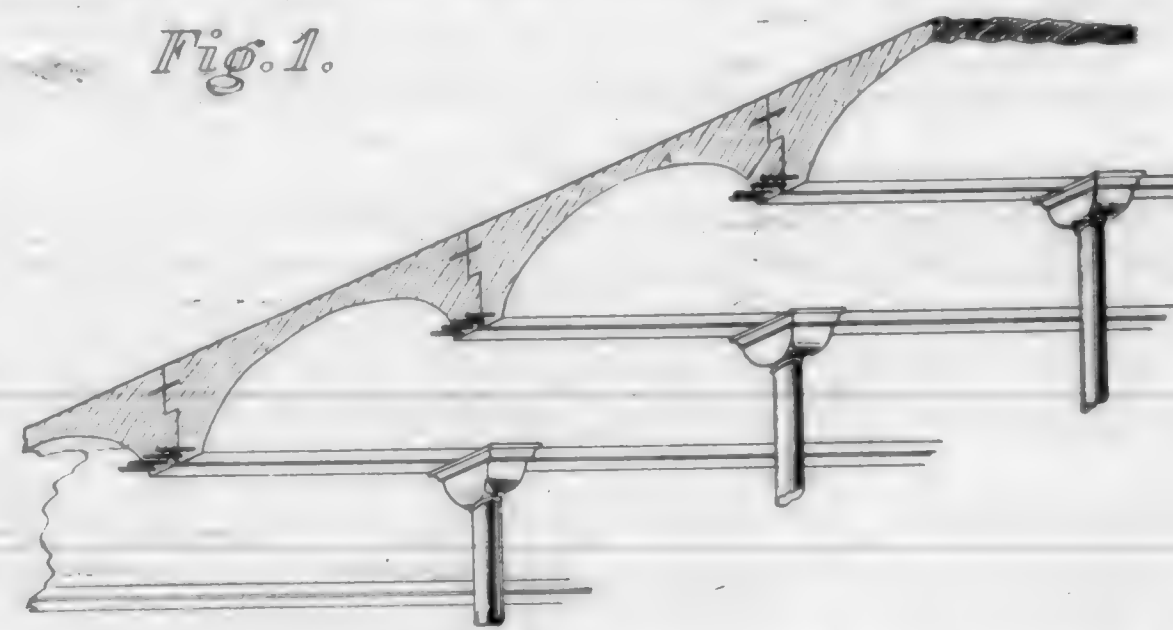
Hundreds of tests have been made by experts in various parts of this country, and in England and Scotland, with the uniform result that cold twisting of plain iron bars increases their tensile strength from ten to twenty-five per cent, and even as high as fifty per cent, increase was obtained in one case by Lieut. Gilmore, at the Union Iron Works in this city. This, together with the fact that the process of twisting will clearly reveal any hidden defects or weak places in the bars, makes the process a valuable one, while the simplicity and effectiveness of the combination of such bars with concrete, makes a long stride towards the solution of our problem, and greatly broadens the field of concrete construction. Mr.

Ransome proposes a further saving in iron by rolling the iron bars with largest section in middle of bar, and diminishing toward each end, thus proportioning the area of iron to the required strength. A similar saving can be obtained with the ordinary bars by placing shorter bars in the center of beams, in addition to those extending the entire length.

The present paper will contain notes of the principal work that has been executed in this vicinity and that has come under the writer's observation since the date of the paper referred to.

The first example in point of time is the Bourn & Wise wine cellar at St. Helena, erected in 1888. This building is 400 feet long, seventy-five feet wide and three stories high. The entire site is cut into the side of a gentle sloping hill and so arranged as to have driveways fifteen feet wide along the entire length at the rear, and at the levels of both first and second floors, while beyond the driveways and retaining walls are thirteen tunnels, sixteen feet wide, penetrating the hill about 200 feet. On the site of the building and immediately surrounding it, were an abundance of boulders, of very hard basaltic stone, quite unsuitable for rubble stone work, owing to their rounding form, but excellent material for concrete when crushed; the finer materials were obtained in the form of gravel from a neighboring creek. A good quarry of the soft but durable volcanic tuffa so common in Napa Valley, was found within half a mile of the building, and as it could be quarried, hauled and built into the walls for seventeen cents per cubic foot, it was employed for all walls and partitions of the building. The foundations, retaining walls, lining of tunnel entrances, and main floor laid on the ground, were formed of concrete in the usual manner. The entire second floor, together with the driveway at that level, was constructed with concrete and twisted iron rods in the form of beams and elliptical arches, as shown in figure 1, and as here described. Two rows of iron columns seven feet four inches on center, were placed lengthwise of the building, dividing the width into three sections of about twenty-five feet each. The floor was constructed with concrete beams seven feet four inches on centers, passing entirely across the building, with their soffits resting on the iron columns. The beams were twenty-four inches deep from soffit to surface of floor, and each had four $1\frac{1}{4} \times 1\frac{1}{4}$ " twisted iron rods near the bottom, with a verticle joint

Fig. 1.



along the center of each beam, protected against leaking by a strip of lead embedded in each half of the beam. The arches between the beams were elliptical in form, and the concrete five inches thick at crown of arches.

This floor was estimated and intended to carry with safety on each beam, for each twenty-five foot section, two casks each containing 2,000 gallons of wine, or a total weight, including cooperage, of 40,000 lbs., on each section $7'4 \times 25'$, or about 220 lbs. per square foot, uniformly distributed. The arrangement of the casks was intended to leave a gang-way eight feet wide in the center of each section, thus giving

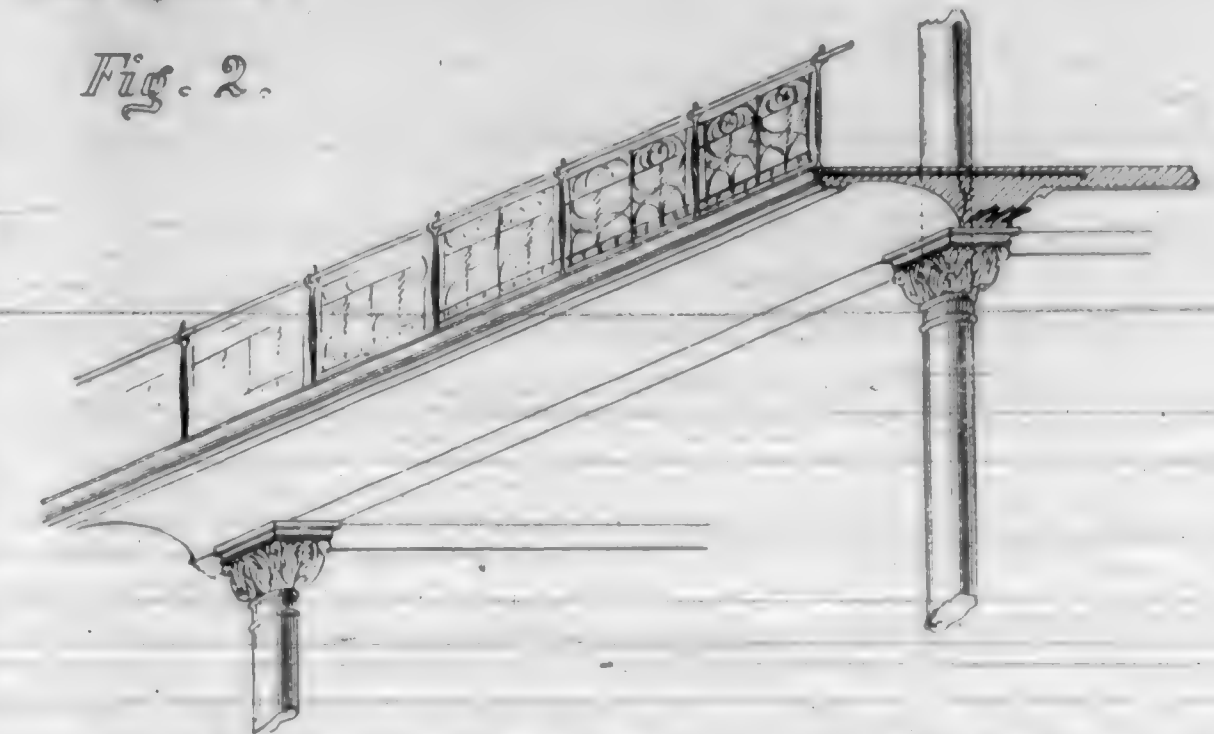
less stress than a uniformly distributed load. Before the building was finished, one of these sections was tested with a uniformly distributed load of 300 lbs. to a square foot, and produced a deflection of $\frac{1}{8}$ of an inch at the centre; on removing the load the beam returned to very nearly its original position. Since the building has been occupied, many of the gang-ways have had tiers of large casks placed two in height along the entire length, and smaller casks set between the upper bilges of the large casks, thus loading the floor largely in excess of its intended capacity. Implicit faith seems to be placed in this construction by those engaged about it, that it will carry anything that can be put on it. These floors have now been in use four or five years, and answer the purpose for which they were designed by making a strong and non-absorbing floor, and assisting in keeping a uniform temperature throughout the building.

The next building of importance in which the writer employed concrete and iron floors, was the California Academy of Sciences in this city. In this case a careful estimate of cost was made of the usual steel beam and hollow tile construction, and compared with the cost of this method. The result was a saving of fifty cents per square foot, or \$20,000, for the entire building in favor of the concrete and twisted iron method. After due investigation, the latter method was adopted by the Board of Directors, and executed by Mr. Ransome. This work was subject to much adverse criticism by certain architects and builders, and some members of the Academy of Sciences, and persistent efforts were made by some to have the work condemned by the fire wardens on the ground that it was not provided for in our valuable compilation known as the building ordinances. Several visits were made to inspect the work by parties connected with the Fire Department, but as they could not find anything about the construction that could be injured by fire, and having sense enough to perceive its great strength, they declined to take any action in the matter. To satisfy all skeptics in regard to the strength of this work, a test was made on a section of the second floor twenty-two feet span and fifteen feet wide; this was loaded with gravel uniformly to 415 lbs. to a square foot, and showed a deflection of only one-eighth of an inch at the centre of the beam. The load was left on this floor four weeks, and during that time many of the critics were invited to examine it. That very few availed themselves of the opportunity may indicate an unwillingness to have wrong opinions corrected. To those, however, who were directly interested in the work and had entertained honest doubts of its strength, this test was satisfactory and conclusive.

The floors in this building were constructed with large beams about fifteen feet apart and flat panels eight inches thick between, with the plastering applied directly to the concrete and cornices run on the splayed sides of the beams, while the colored cement floor was laid directly on the concrete and marked off into tiles. The tension rods in these floors are hooked into wall anchors at the wall ends, and into holes cast in the flanges of iron columns at the other ends, while all around the large light well the rods clamp the iron columns together. After these floors were put in it was considered advisable to extend the floors four feet beyond the line of columns, thus narrowing the light shaft with balconies four feet wide all around. This was readily accomplished by placing the forms and filling in the concrete, with $\frac{3}{4} \times \frac{3}{4}$ " twisted iron rods near the top, placed 1' 6" apart, and extending from two to four feet into the old concrete (by cutting grooves and grouting the rods) as it

is evident the tensile strain is at the top in this example. (See figure 2.)

Fig. 2.



The Leland Stanford, Jr., Museum at Palo Alto is probably the largest and most important building in the world constructed entirely of concrete. It was designed to have dressed San Jose sand stone for the external walls, backed up with brick, and to have brick partitions, with concrete floors. Owing to the great cost of stone work, it was decided to build the walls of cement concrete colored to match the sand stone used in the other university buildings, and to carry out the classic design first adopted. This led to making the entire structure, walls, partitions, floors, roof and dome, of concrete, making it in that respect a unique building.

Having some knowledge of the disadvantages and defects natural to a monolithic building, such as result from the shrinkage and the expansion and contraction of walls, floor and roof, several new experiments were tried to overcome them, with varying results of success and failure. It was thought to overcome the cracking of walls by inserting sheets of felting through the walls following the lines of the joints as near as practicable on each side of windows. The lapping bond of the concrete, however, proved too strong to allow the cracking to follow these joints; in most cases the weakest points were found at the openings, and small cracks appear from window head to sills above.

Joints were formed through the floors about fifteen feet apart and in most cases the cracking has followed these joints and confined to them. To prevent the possibility of moisture penetrating through the walls, and also to render them less resonant, hollow spaces five inches in diameter were moulded in the walls within two inches of the inside face, and with about two inches of concrete between them. These are successful for the primary object, and partially so for the secondary.

Fig. 3.

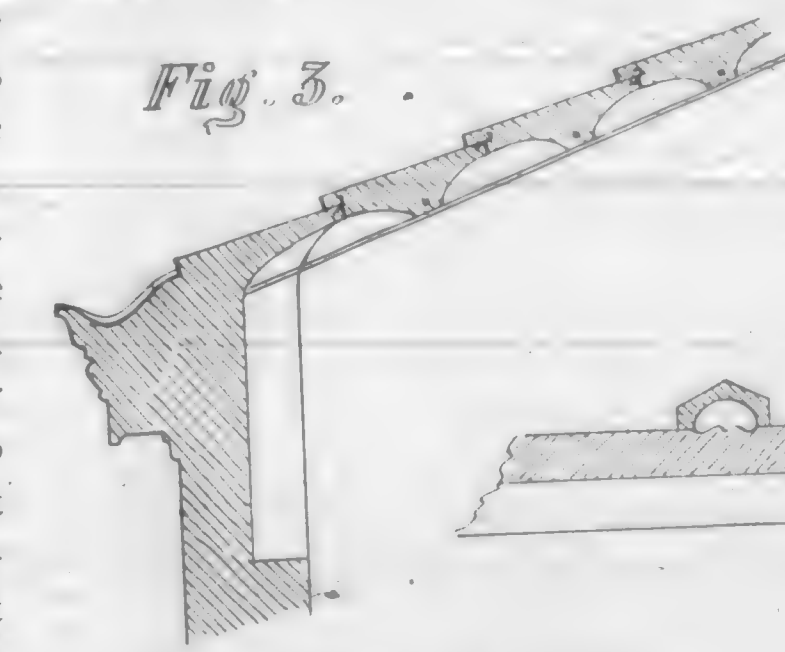
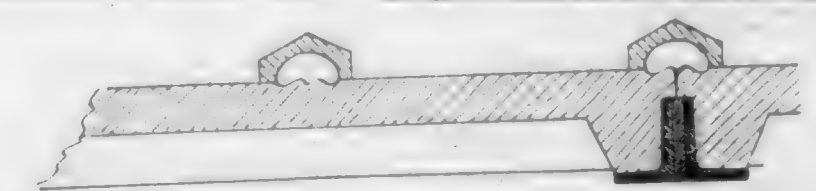


Fig. 4.



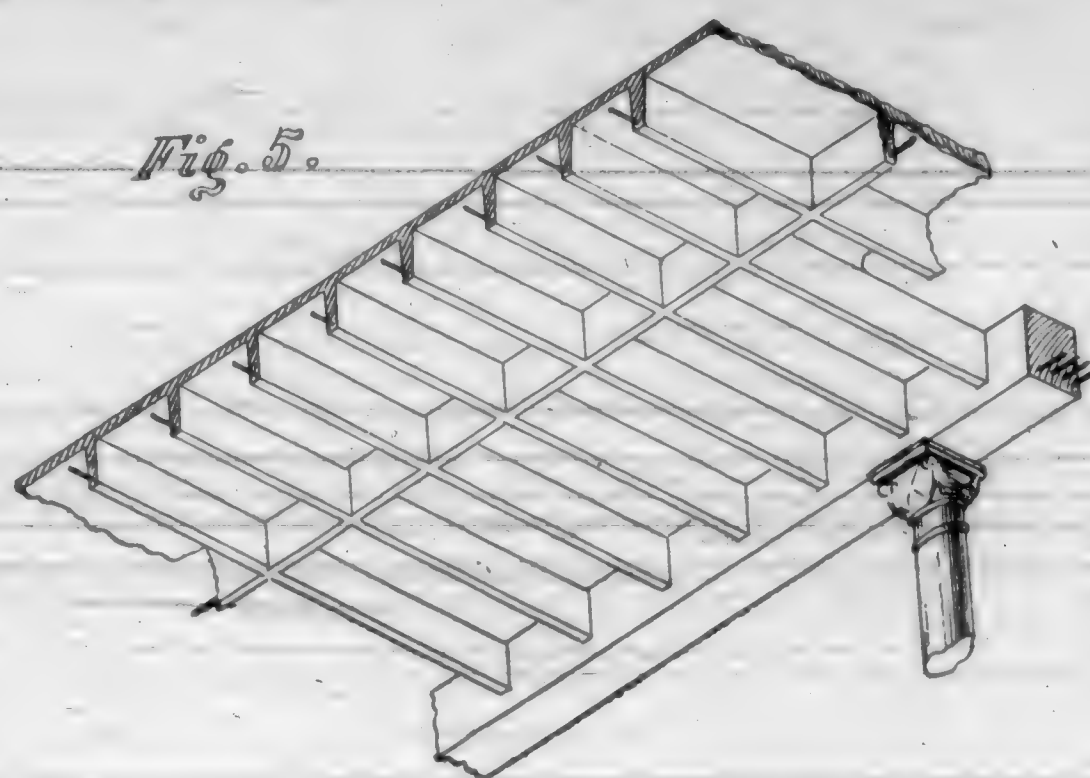
The roof being the greatest innovation, and the first attempt known to the writer of forming a finished and exposed roof entirely in concrete, required the greatest care and consideration. The result in form and appearance is shown by

figures 3 and 4, and is described as follows: The roof is supported on iron trusses ten feet on centre, and has a pitch of twenty degrees. The horizontal concrete beams rest on the iron rafters, and with the half arches form the horizontal lines of tiles about two feet six inches wide, with the joints lapping two inches and a strip of lead inserted as shown. Vertical joints are made through the concrete over each rafter with small channels on each side. These joints and channels are covered with the covering tiles shown on drawings, and similar rows of covering tiles are placed two feet six inches apart over the entire roof, thus forming a perfect representation of flat Grecian tile or marble roof. Notwithstanding the precautions taken, this roof presented several unexpected defects. The most serious proved to be in the Venetian red used for coloring matter and mixed with the cement. This material rendered the covering tiles absolutely worthless, many of them slacking like lumps of lime, and all were condemned and re-made. The same material injured the general surface of the roof, rendering it porous and necessitating painting. The roof over the central pavilion being hidden behind parapets, is made quite flat and covered with asphaltum and gravel over the concrete. This roof, with its low, flat dome, is without question the largest horizontal span in concrete to be found anywhere on earth, being 46'x56', the flat dome having all its ribs and rings of concrete, with the panels or coffers filled with one inch thick glass, and weighing about 80,000 lbs. This structure, covering 21,000 feet and containing over 1,100,000 cubic feet of space, and requiring about 260,000 cubic feet of concrete, was completed in seven months time from the commencement of the foundations, and at a cost of about eighteen cents per cubic foot of space. This the writer believes to be a very low figure for a thoroughly substantial and fire proof building with marble stairs and wainscoting, cast iron window frames and sashes, and other parts equally enduring, and would call attention to the fact that concrete walls with iron rods imbedded, when cracked are not in the bad condition of stone or brick walls without bond, but the iron ties are always good to prevent spreading or falling, while several methods may be devised for allowing free expansion and contraction without producing unsightly cracks. Some such method should be employed on all finished structures.

One of the rooms in this building was designed to be the receptacle of many valuables, and to render it burglar-proof the floor, walls and ceiling had copper wires embedded in the concrete not over three inches apart, forming a continuous circuit, and designed to strike an alarm bell at the university if any wire should be cut. This device has been in use at the United States Sub-Treasury vaults in this city for several years, and would be very effectual for prison walls and cells, as it would be almost impossible to cut a hole through strong concrete large enough to admit a man's body, without cutting or breaking one or more of the wires, thereby giving an alarm.

Other important works have been executed in concrete in this vicinity, among which may be mentioned the Girls' Dormitory at the Stanford University, a three-story building, completed in ninety days from the time the plans were ordered. Also the Torpedo station on Goat Island, 80'x250', with walls about thirty inches high, built under the direction of Col. Mendill; and the addition to the Borax Works at Alameda. In the latter the walls, interior columns and all floors are of concrete, and are remarkable for the lightness of the construction and great strength. These floors are constructed as shown in figure 5. In these floors the clear

span is twenty feet. The floor consists of beams four inches wide at bottom, five and one-half inches at top and one foot six inches deep from bottom of beam to top of finished floor.



The beams are placed two feet six inches on center and the floor over the beams is only three inches thick. A section of this floor 10'x20' was tested February 28th, 1893, with the following results: Before testing there was a uniform load of 195 lbs. to a square foot, when the scale was set to indicate deflection.

With 234 lbs. per sq. ft., deflection	1-16 inch.
" 273 " " " " "	1-8 "
" 312 " " " " "	1-8 "
" 390 " " " " "	3-16 "
" 468 " " " " "	3-16 "
" 551 " " " " "	1-4 "

This deflection is in addition to any that may have existed with the initial load. In November, 1893, the writer visited the building with Mr. H. G. Jacobs, Government Inspector of Buildings, and in our presence a test was made on a section of the third floor, that was selected as an apparently weak spot owing to several cracks showing on the ceiling. A sliding rod was adjusted under the center of the beam. There was a distributed load of about 200 lbs. per foot at the commencement; 225 lbs. per foot additional were applied, and the deflection noted was less than 1-16 of an inch. This type of floor appears to be the best form yet devised for obtaining great strength with the minimum weight of concrete and least expense of carpenter work, the forms used being standard size to be used over again. With the present price of materials and labor, such floors can be built with twenty feet span of safe strength for 250 lbs. per square foot, and with finished cement surface, for forty-five cents per square foot, and without the finished floor surface for forty cents per foot. Level plastered ceilings may readily be suspended from the beams and wood or tile floors laid over it, as in other methods of fire-proof construction. This method of forming floors with the minimum of very rich concrete, is lighter than the common method of steel beams and hollow tiles, for the same strength. The concrete should be composed of one part of Portland cement to three parts of selected aggregates.

The results given above are much better than could have been expected or hoped for a few years ago, and it is quite possible we have not yet reached the highest development. Portland cement may be brought to a higher grade of strength, and intelligent handling may produce better results with what we have. Several tests recently made with various brands of Portland cement, to ascertain what effect on the strength of concrete would be produced by a delay between the time of mixing and tamping in place, have given surprising results which the writer believes have never

been made public. These tests, as far as carried, show that the initial setting of the cement, (when mixed with sand or gravel,) is not the strongest that may be obtained, and that while a delay of one hour or less may be injurious, a delay of one to three hours may be beneficial. Thus in a test made with Knight, Bevan & Sturgess' cement, one of cement to two of sand, the result obtained was as follows:

Delay in hours:	0, 1, 2, 2½, 3½, 4½.
Test in lbs.:	252, 228, 240, 256, 306, 228.

In this case the delay up to two hours was detrimental, while a delay of 2½ to 3½ hours gave higher results. Similar tests with White's cement gave the best results with a delay of 1½ hours, after which the strength fell rapidly. The writer would suggest that this line of investigation could be profitably followed up, with many tests made with different cements and different mixtures, and the results tabulated, thus adding to our knowledge of cement and showing the way of obtaining the best possible results.

In conclusion the writer would say, that while he does not think that concrete in any form is likely to take the place of stone, brick and terra cotta for architectural work, he feels quite certain that in combination with iron it is destined to fill a large place in the construction of buildings, and for warehouses, factories, wine cellars, etc., it is now the best and cheapest material for producing substantial and incombustible work.

AIR AND WATER PURIFIER.

WE give below a description of an invention recently patented by Dr. Cornelius F. Buckley of San Francisco, which consists of a tank so made as to allow of only pure air having access to its contents.

The principal of this tank is a development of experiments made by the late Prof. Tyndall some twenty-five years ago, when the question of spontaneous generation was hotly debated by scientists. Tyndall arranged a series of tubes filled with distilled water, exposing some to ordinary atmospheric air—and covering others with layers of cotton wool of different degrees of thickness. It was demonstrated beyond a question that the tubes openly exposed to the atmosphere teemed with living organisms in a space of twelve hours, and that similar organisms developed in the protected tubes in the inverse ratio to their protection. All recent experiments corroborate these statements and go to show that diseases of all kinds are largely obtained through the atmosphere poisoning our drinking water.

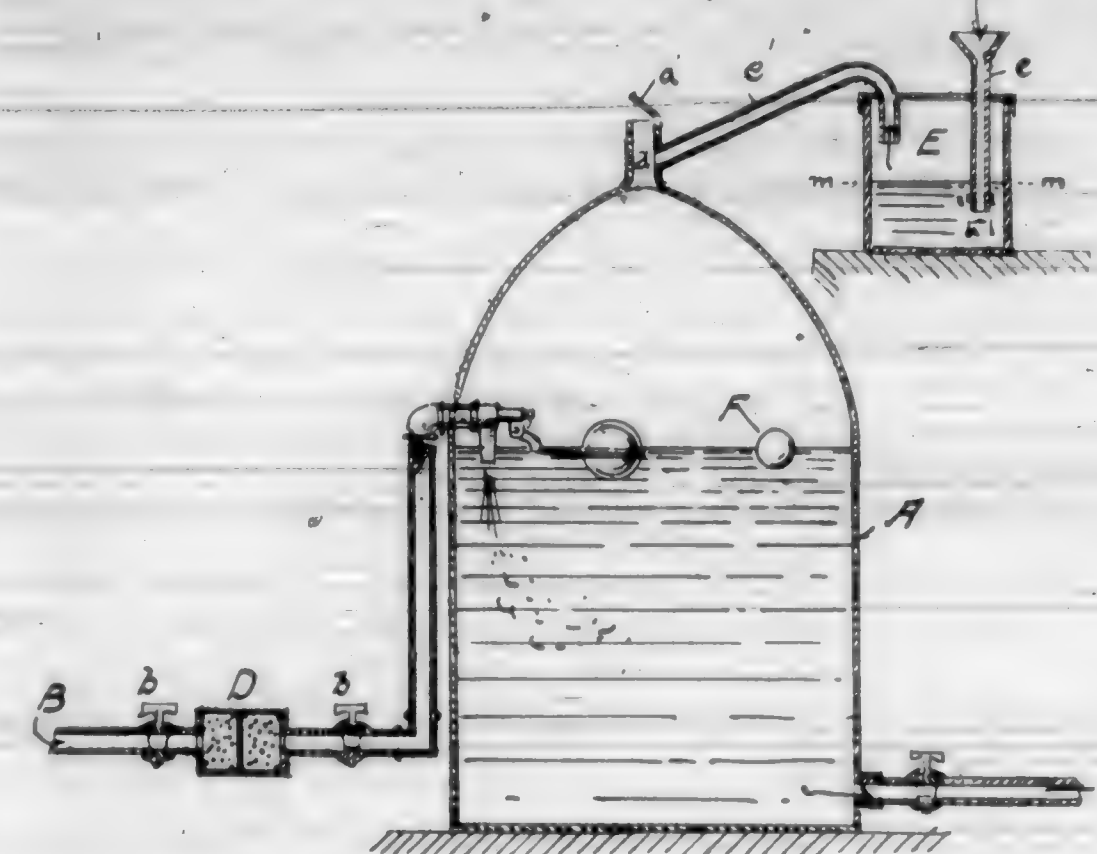
Hence, the most important, indeed the vital feature of this tank is first the complete disinfection of the air that reaches the water, second, that disinfected air in turn disinfects the water itself.

Referring to the accompanying drawing which is a vertical section of the apparatus.

A is a closed tank or reservoir of suitable construction and capacity. It is provided with the inlet pipe B, from the water main, and with the cock controlled outlet pipe C, for service. Its top is provided with the air exhaust passage a having at its outer end a check valve a'. If filtered water is to be used, there is fitted in inlet pipe B a filter D of any suitable construction and containing any desired filtering media. A cock b may be placed in pipe B, in advance of the filter, and another b' behind it, thereby the passage of water may be controlled, and the contents of the reservoir

confined, when for any purpose, as for cleansing, the filter may have to be temporarily removed.

E is a closed air-disinfecting case or bottle. It has an air inlet pipe or funnel e, and an air outlet pipe e', the latter communicating with the top of the reservoir A, or as here



shown with the air exhaust passage a. This air disinfecter may be of any suitable construction or arrangement, and its contents may be of any proper character. It is proposed to use in it a solution of chloride of iron, the level of which will be maintained, as shown by the line m-m, above the lower end of inlet funnel e and below the lower end of outlet pipe e'.

Within reservoir A is a valve for automatically closing the top of the reservoir to prevent the overflow of water therefrom. In the present case this valve is shown as a float ball F, which will rise with the water and will seat itself in the inner end of exhaust passage a, thereby preventing the outflow of water through said passage, and also preventing it from overflowing through pipe e' into the air disinfecter case or bottle E.

The operation of the apparatus is as follows: Water, from the main, passing through pipe B, enters the reservoir A. When the filter D is used, it enters as filtered water. As it fills said reservoir, the air is expelled through the passage a and check valve a', and when the reservoir is full the float valve F confines the water. Now, when the water is drawn upon by the opening of service pipe C, the check valve a' will close and cut off all direct communication with the outer air, but air will pass down funnel e, through the disinfecting medium in bottle or case E, and thence as disinfected air will pass through pipe e', into the reservoir A, to occupy the space left vacant by the lowering water therein. Thus, only disinfected air will be admitted and come in contact with the contents of the reservoir which will serve not only to avoid contamination but also to aerate the water and to permit its ready outflow for use.

The January number of the CALIFORNIA ARCHITECT AND BUILDING NEWS is particularly handsome. It is devoted to the Midwinter Exposition buildings, illustrated by five full-page, half-tone pictures and a sixth, of equal size, of the Santa Barbara Amphibia. The illustrations are very handsome and the detail is excellent. They have evidently been made from photographs taken on the ground. The letterpress is beautifully clear and clean and the new cover is a dainty design. Among the contributed articles is one on the strength of the dome of the Horticultural and Agricultural building by Civil Engineer D. E. Condon.—San Francisco Chronicle.



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 suggestive sketch for an entrance to the Midwinter Fair is by C. T. Taylor, Jr.

A study for a Sutter street front is by Polk & Polk, architects of this city.

RESIDENCES for J. S. Butler, Esq., is by architects, Martens & Coffee.

A Cottage for R. George Zahn, Esq., is by architect, J. Cather Newsom.

THE Columbarium now being built at Cypress Lawn Cemetery, from the plans of architect, Mr. Thomas P. Ross, is nearing completion. Although the interior finish has not been decided on as yet, it is intended to be in marble boxes or niches, with bronze open grille door, two galleries being necessary for height of building. The exterior walls consist of rock faced granite laid in broken ashlar. The dome will be covered with terra cotta tile and with skylight on deck in figured glass. The doors to be of heavy wrought iron with plate glass panels. The building is to be fire-proof in every respect.



COLUMBARIUM, CYPRESS LAWN CEMETERY.
SAN MATEO CAL. THOMAS P. ROSS, ARCHITECT.

"DUST TO DUST AND ASHES TO ASHES."

THE Crematory at Cypress Lawn Cemetery, built from the plans of Messrs. Pissis & Moore, which plans were published in the June issue of the CALIFORNIA ARCHITECT AND BUILDING NEWS, is now in active and successful operation.

The following article from the San Francisco Examiner, give an impressive idea of the ceremonies attending this disposal of the dead:

"Along the grass-bordered paths of Cypress Lawn Cemetery four silent men carry a burial casket. They bear it gently and their tread is slow and solemn. But they seek no grave where earth has been freshly turned and they lay their burden down when they enter a building of gray granite.

"The four men are strangely clad. Each wears a blouse of black silk and a skull cap of the same material. Nowhere is there a gleam of color. When they had placed their burdens on a dais, still treading softly, as silently as they came, they withdraw. For a time their work is done.

"The gray granite structure stands on the side of a gently sloping hill that at the crest is dark with the waving leaves of eucalyptus. The building is plain and massive in general effect, with considerable elaboration of detail. The style of architecture would be difficult to define, but to the interior decorations there has been given a distinctly Greek character. The structure is almost square, though broken in the upper lines, and with the roof terminating in a dome of glass. But for the tall chimney at the rear it might be taken for a mortuary chapel and nothing more. A double flight of stairs, all of granite, leads to the part that is really the chapel. This, a bright, cheerful apartment, the walls finished in light brown relieved by typical shades of the same. The floor is tiled. The lofty ceiling curves until it merges into the glass dome, through which pours a subdued flood of light. At the rear is an arched alcove, and at the head of the center aisle, which ends as it reaches the alcove, is a raised platform, an altar it might be. It is on this dais that the black-clad men lay the casket containing the body about to be incinerated, yet there is no suggestion here of heat or ashes. The members of the funeral party take seats on either side. Flowers have been piled about the casket. Then the minister speaks the words of comfort.

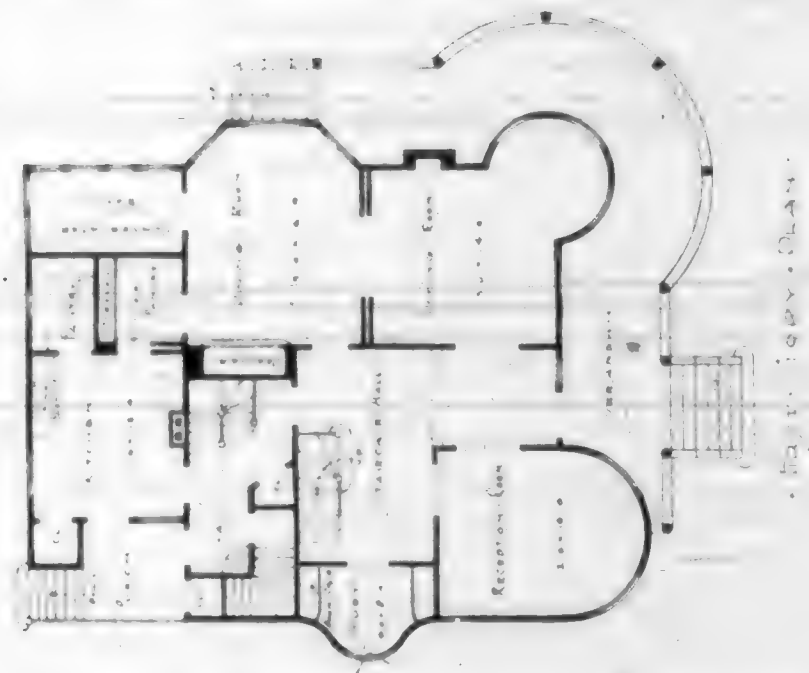
"When the prayers have been said and with hands outstretched above the dais the minister has pronounced the benediction, there is a change. A pall in the form of two extended wings springs from beside the platform and meeting above it, droops and hides the casket from sight. The spreading of the pall makes no sound, and when it has shut the casket from view, the dais and all upon it sinks from sight.

"In a few seconds the pall is removed as strangely as it came, the dais is again in place, but tenantless. In the bright chapel touched by the sun there is no longer sign of death. The mourners pass out. There is nothing more for them to do.

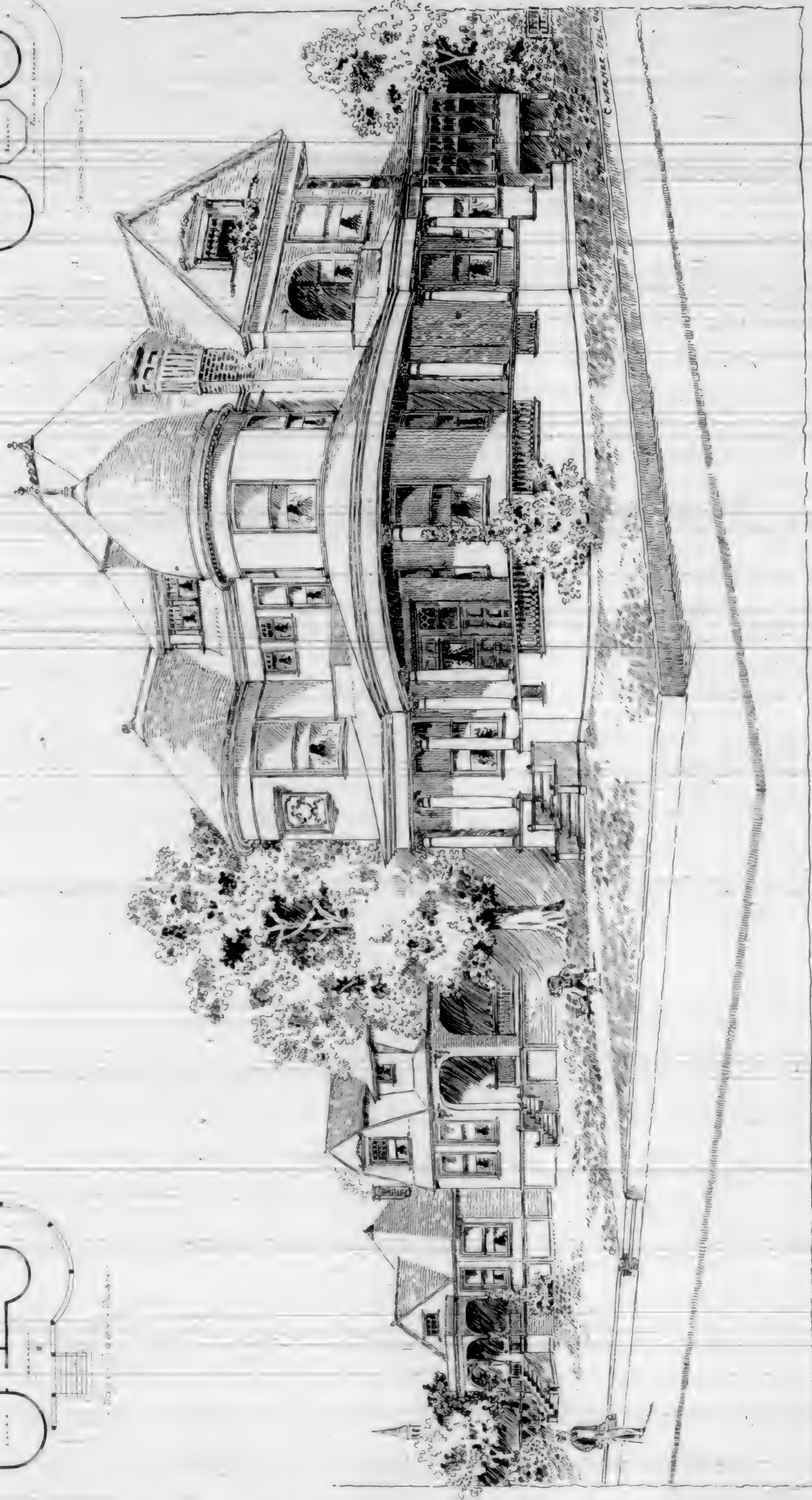
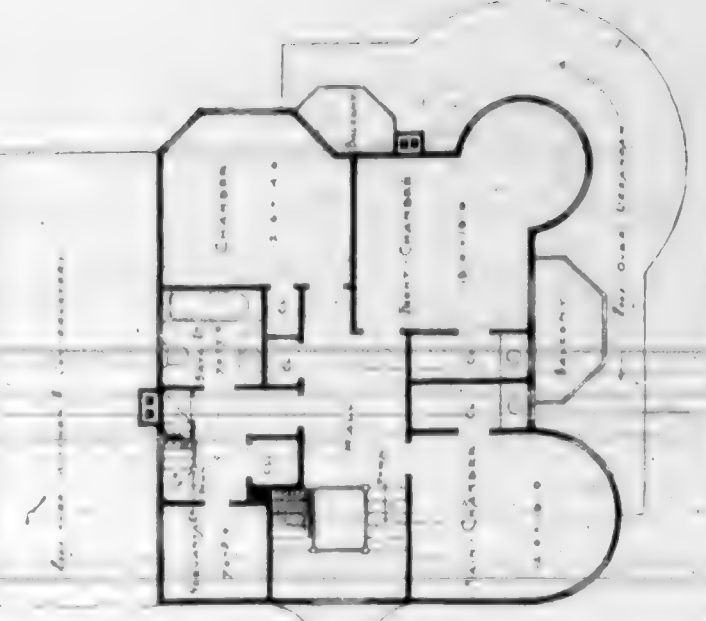
"The men in black are waiting in the furnace room below. When the casket comes down on the elevator the body is quickly removed, and, clad still in whatever raiment may have shrouded it, completely enveloped in an alum-soaked cloth. Then it is placed on an iron cradle that moves on wheels along an iron track. The furnace door is opened so deftly that one marvels how, and so without a jar that it does not seem that steel can be rubbing against steel. In an instant the cradle is pushed forward.

"For a second one may look into the depths aglow with heat, and from the back see flames leaping forward. The track is movable, for no metal could long withstand the temperature of the furnace. The track glides into the rosy interior and the cradle follows. Both are immediately withdrawn, the cradle comes back empty, the furnace door is closed once more and the dead left to turn speedily back to original elements. From the time the rigid form in white was deposited in the cradle to the time when the cradle left it in the retort eight seconds have scarcely elapsed.

"Then for once there is noise, the clamor of blows. The



RESIDENCES: PAUL DUTLER, Esq.
HARTNESS & CUFFY, ARCHTS.

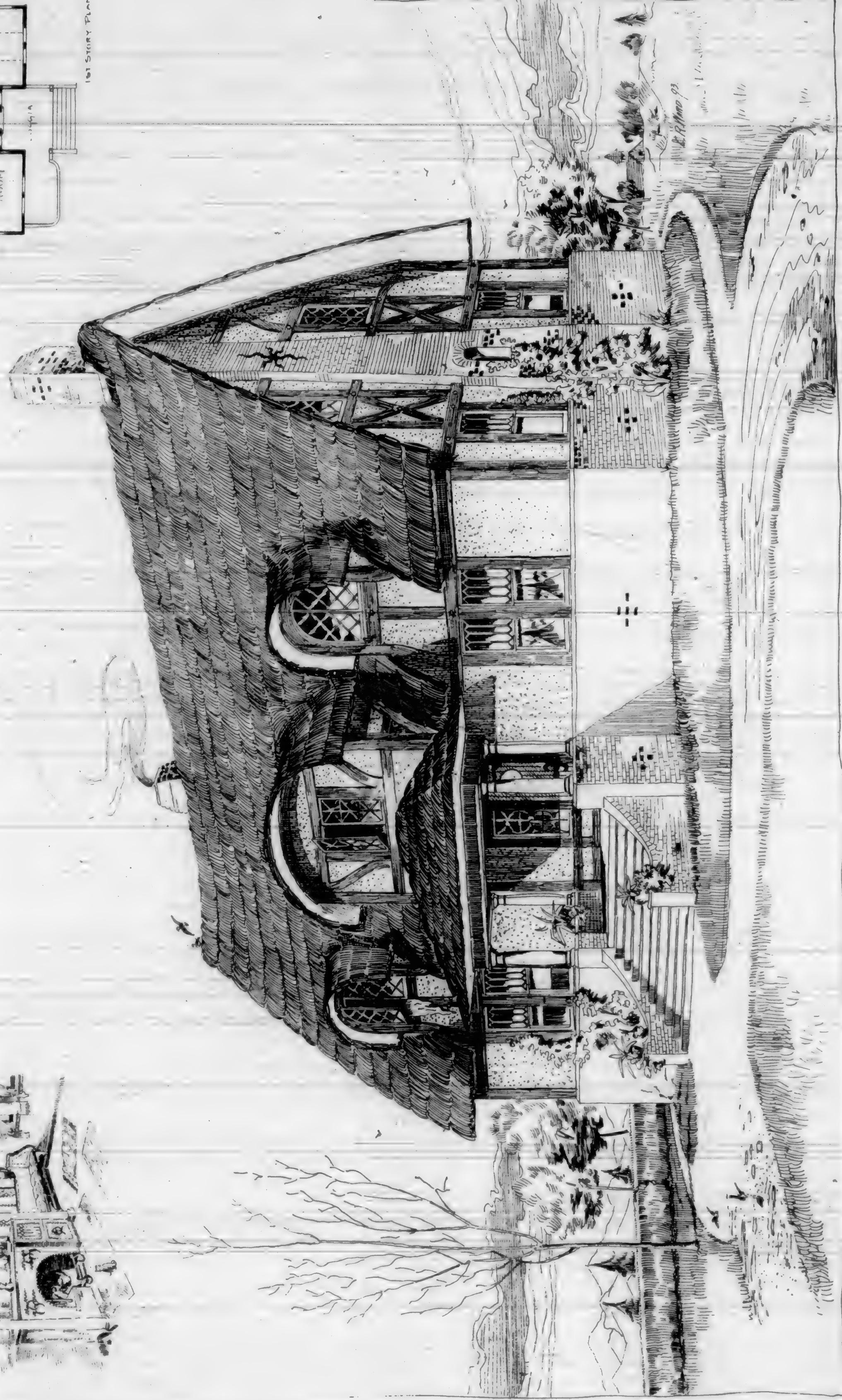
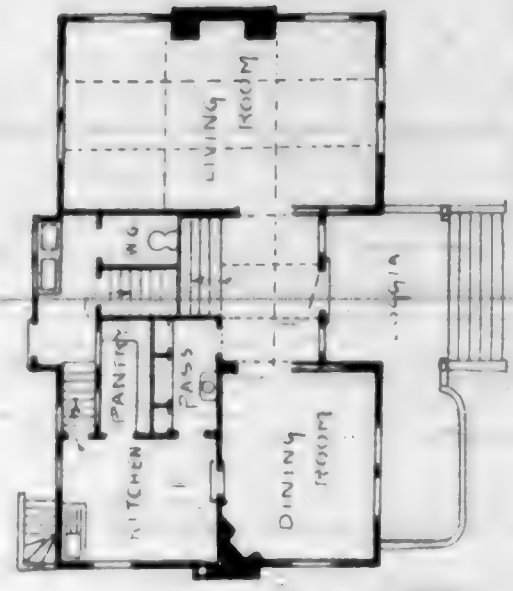
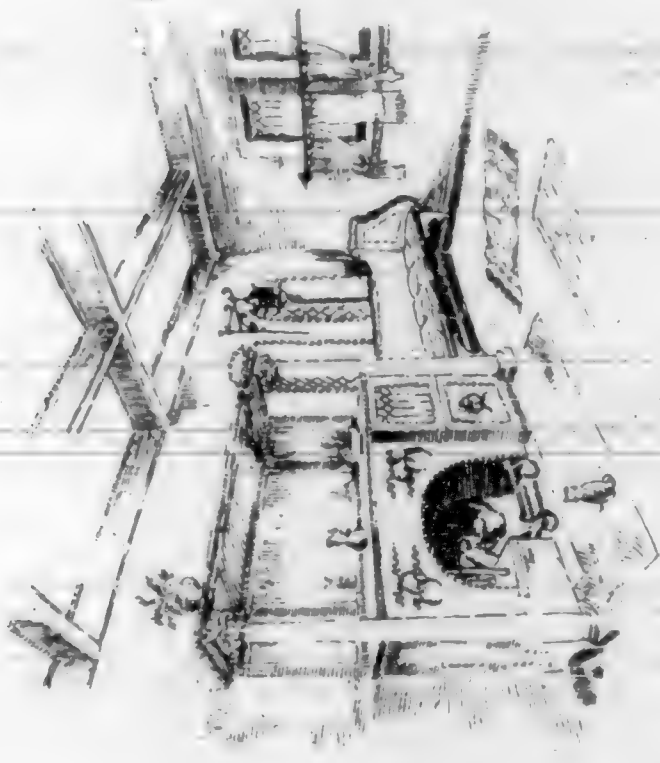


CALIFORNIA ARCHITECT & BUILDING NEWS
SAN FRANCISCO.

BRITTON & REY PHOTO LITH.

VOL. XV No 2. FEBRUARY 1894.

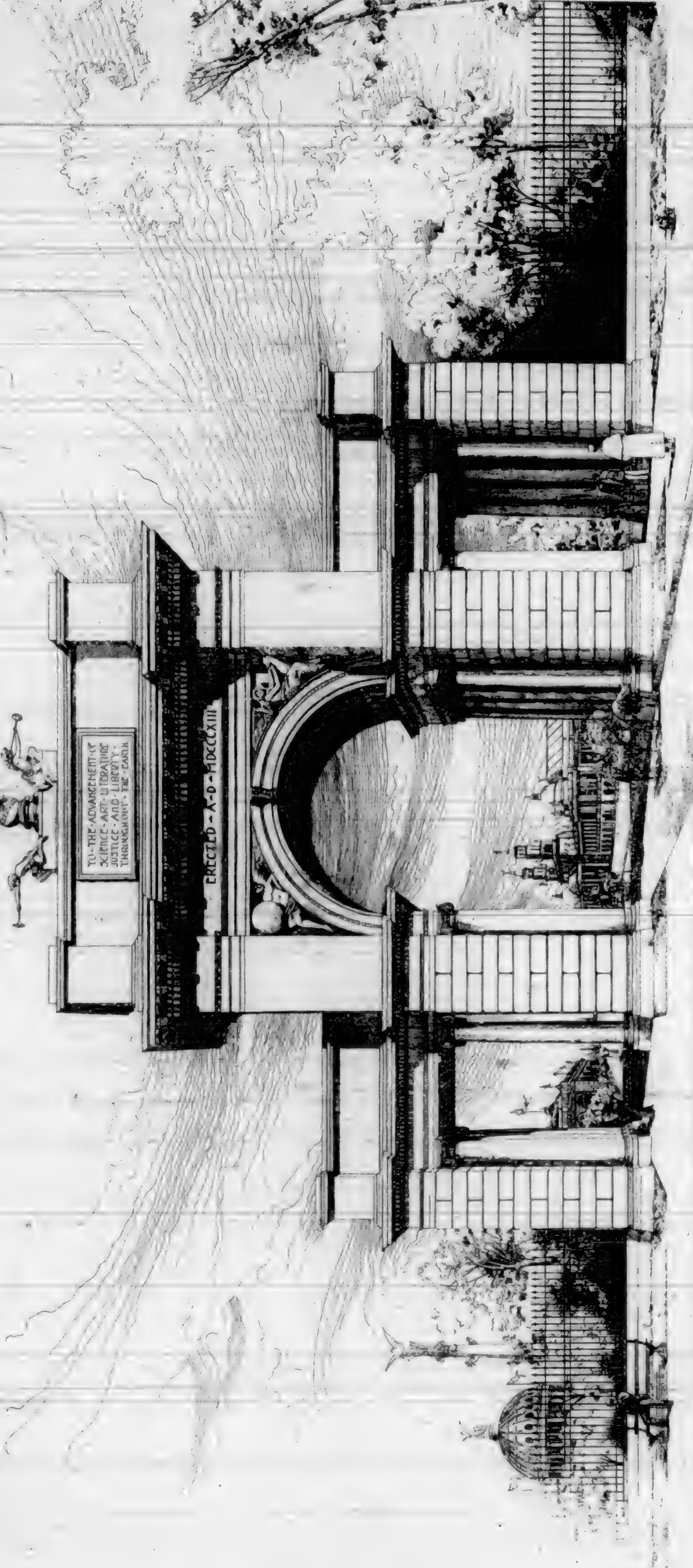
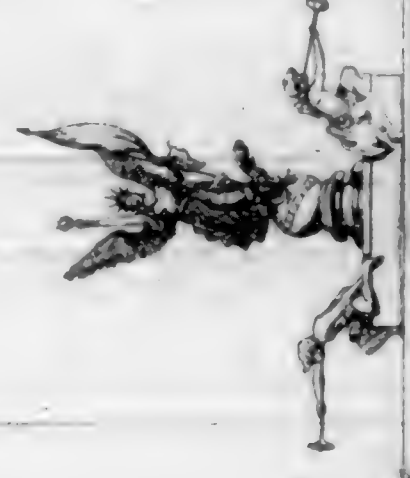
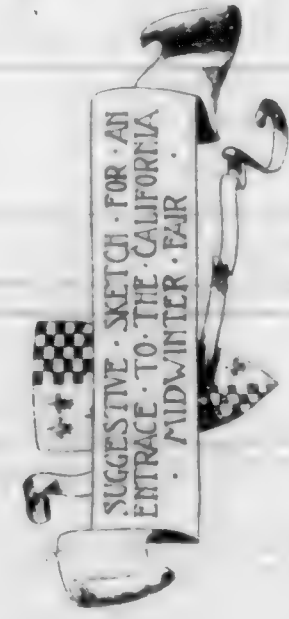
COTTAGE FOR R. GEORGE ZAHN, JR.
 J. Carter Newson, Architect.
 Academy of Science Bldg.
 S.F.



CALIFORNIA ARCHITECT & BUILDING NEWS
 SAN FRANCISCO.

BRITTON & REY PHOTO LITH.

VOL. XV NO. 2. FEBRUARY 1894.



CALIFORNIA ARCHITECT & BUILDING NEWS
 SAN FRANCISCO.

BRITTON & REY PHOTO LITH.

VOL. XV NO. 2. FEBRUARY 1894.



San Francisco

STUDY FOR A SUTTER STREET FRONT POLK & POLK ARCHITECTS SAN FRANCISCO