

THE MONTHLY MEETING OF THE SAN FRANCISCO
CHAPTER OF THE AMERICAN INSTITUTE OF
ARCHITECTS.

AT the monthly meeting of the San Francisco Chapter of the American Institute of Architects held in their rooms Friday June 8th, the Exhibition Committee reported a very favorable exhibit of architectural drawings at the Art

PELE, THE HAWAIIAN GODDESS OF FIRE.

THE traditions say that she was the most beautiful woman that ever lived, and the most capricious. She made her home on various islands from which she was successively driven by the Water God "Kamapuaa," who had the body of a man and the head of a hog. She finally took re-



PELE, THE HAWAIIAN GODDESS OF FIRE.

Institute. The application of Architect M. J. Lyon for application for fellow membership, was favorably reported by the executive committee, and will be balloted on at the next meeting.

The paper on "Hospital Planning," read by Mr. Geo. H. Sanders, will be found in another column of this number.

POLITENESS is the result of good sense and good nature.

BOOKS AND PERIODICALS.

YELLOWSTONE NATIONAL PARK—An illustrated pamphlet giving information about Yellowstone Park and the Northern Pacific Railroad is well worthy of mention; this brochure in the way of a guide to the northwest will well repay a careful study. Seldom do we find so much information about what may be seen upon a journey placed before the reader in such a charming manner.

The illustrations are not only well executed and printed,

of both gold and silver to the currency of the world; without the aid of England the desirable object cannot be obtained.

LIPPINCOTT'S Monthly Magazine for June as usual is full of good things "The Wonder Witch" by M. G. McClelland is the complete novel, while the last installment of the "Tresspasser" by Gilbert Parker finishes what may be called a sentimental story that we are glad to see the last of; "My First Library Acquaintance" by R. H. Stoddard will call to the recollection of old timers the New World with its motto

"No pent up utica contracts our powers
The whole boundless continent is ours."



A SUBURBAN COTTAGE FOR TWO SMALL FAMILIES.

but give a delightful insight into a comparatively unknown region; already it requires two steamers to accommodate the travel of this line upon Puget Sound to Alaska, thus proving it will not remain an unknown region much longer.

For six cents in postage stamps the agent of this line will send a copy of "Indianland and Wonderland" giving a detailed account of routes, price of fare, etc.

THE FORTNIGHTLY REVIEW for May contains among other interesting articles one upon the "Appreciation of Gold" by Robert Barclay, Director of the Manchester Chamber of Commerce. This timely article is well worthy the serious consideration of every one, and is certainly very encouraging that the evils of a single gold standard of value is beginning to open the eyes of the English people to the fact that the maintenance of a single standard is likely to react upon the English people in a way not favorable to either their commerce or manufacturers, thus inducing them to urge the Government to take steps to restore the use

ORNAMENTAL IRON—A monthly journal devoted to industrial art. The April and May furnishing a double number and completing the first volume gives us a good opportunity to review the good work done and the many excellent specimens of ornamental iron work presented in this volume, this style of metal work so essential to modern commercial use and public buildings has come among us to stay; it is therefore important to have at hand a standard authority on the subject and certainly the Winslow Bros. Co., 759 The Rookery, Chicago, have furnished exactly what was wanted. Architects will do well to see that this very clever magazine is always at hand and often referred to.

"How did Algy get so frightfully burned?"

"He was warming before the grate, just after a bath, when his clothes caught fire."

"Didn't he jump back into the bath tub?"

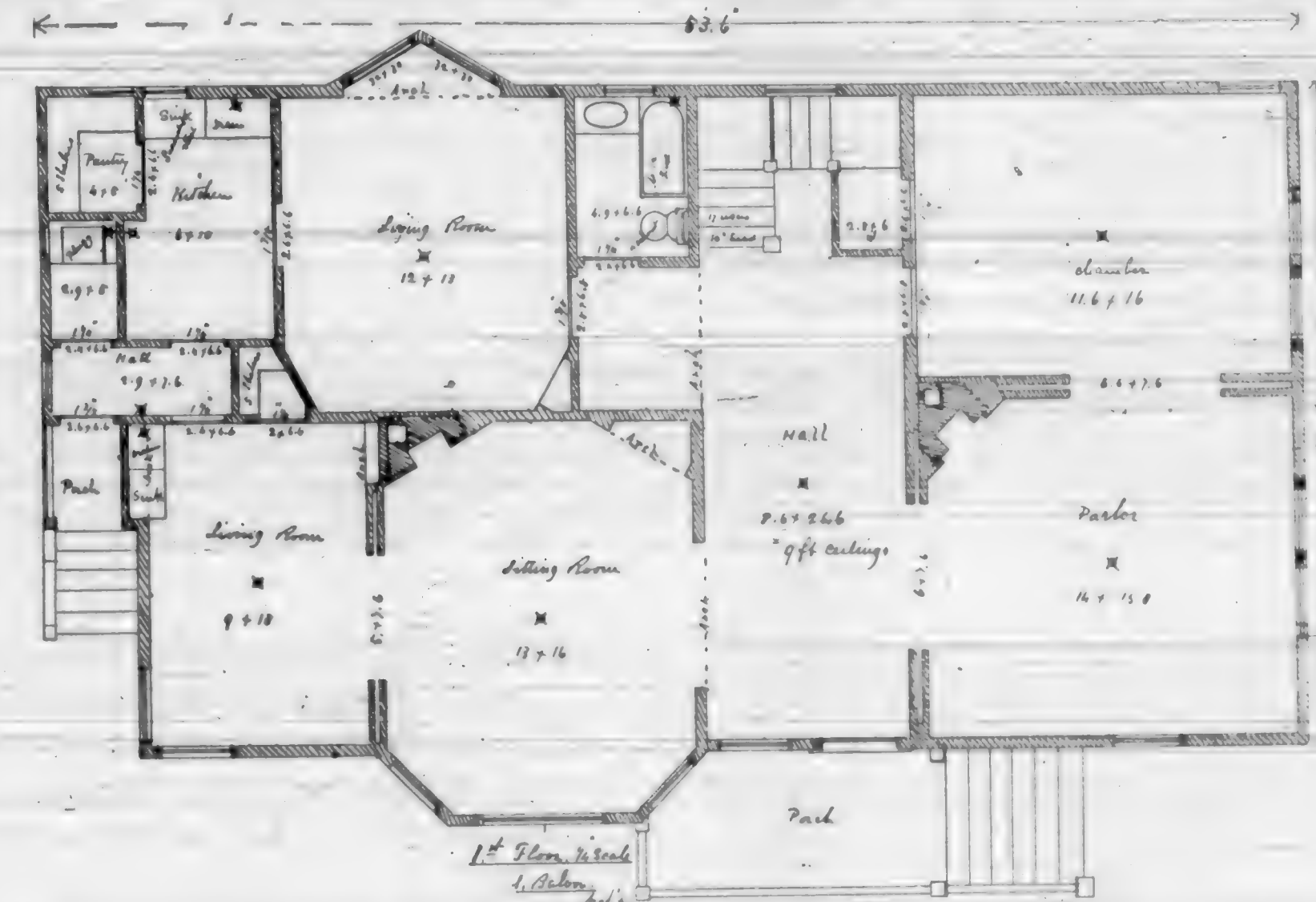
"No. He ran out on the fire escape."—*Life*.

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. GEO. W. DICKIE, Vice-Pres.
OTTO VON GELDERN, Sec. W. C. RALSTON, 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.



PLAN OF SUBURBAN COTTAGE FOR TWO SMALL FAMILIES.

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.

RIGHT OF REDEMPTION BY JUDGMENT CREDITOR.—A mortgagee who has obtained a decree of foreclosure is a "decree creditor," within the meaning of the statutes, which declares that "any decree or judgment creditor" may redeem from an execution or foreclosure sale after twelve and within fifteen months from the sale. *Whitehead v. Hall*, Supreme Court of Illinois, 35 N. E. Rep. 871. 50.

LIABILITY OF AGENT FOR UNDISCLOSED PRINCIPAL.—An agent who fails to disclose his principal is personally liable to a person with whom he contracts, though such person might have discovered the agency; actual knowledge being necessary to relieve the agent of liability.

Mahoney v. Kent, Common Pleas of New York City and County, General Term, 28 N. Y. Supp. Rep. 19. 42.

LIABILITY OF CORPORATION FOR ACTS OF PROMOTOR.—A promotor is not an agent, for agency implies the exercise of a principal, and a delegation of authority from the principal to the agent. Therefore a corporation is not responsible for acts performed or contracts entered into by a promotor before it came into existence. But a corporation may, however, make itself responsible for such acts and representations by adoption. The adoption of an agreement made by a promotor of a corporation may be implied from the

acts of acquiescence of the corporation without any express acceptance. After a corporation has knowingly received the benefits of an arrangement or understanding entered into by its promoters, it will not be permitted to deny that it did not agree to it. *Huron Printing & Bindery Co. v. Kittlesome*, Supreme Court of South Dakota, 57 N. W. Rep. 235. 78.

BREACH OF CONTRACT TO REPAIR.—Where a lessor agreed to put in a new furnace, but there was no stipulation as to the amount of heat that it should give, and it failed to give out heat according to its capacity because of a defect in the pipe connections. Failure of the landlord to remedy such defect which could have been done at a small expense, was not an eviction, as the lessee could have done it, and set off the cost against the rent.

Doolittle v. Selkirk, Common Pleas of New York City and County, General Term, 28 N. Y. Supp. Rep. 43. 85.

LIABILITY FOR DEFECTIVE APPLIANCES.—The owner of a building is not liable for injuries to one of the workman employed thereon, caused by the breaking of the joist, in consequence of an obvious defect, where the person injured was an experienced carpenter, and assisted in placing the defective joist.

Griffiths v. New Jersey & N. Y. R. Co., Superior Court of New York City, General Term, 28 N. Y. Supp. Rep. 75. 49.

LIABILITIES OF OWNER FOR MATERIAL FURNISHED CONTRACTOR.—A personal judgment cannot be obtained against the owner of a building for material furnished the contractor on his own account, if the owner had no knowledge of the purchase of the material by the contractor.

May & Thomas Hardware Co. v. McConnell, Supreme Court of Alabama, 14 S. Rep. 768. 43.

INTERPRETATION OF CONTRACTS.—Where a building contract provides that the contractor shall receive as compensation the cost of material and labor used in the building, "and ten per cent, added thereto as profit," the accounts paid by the contractor on sub-contracts for various portions of the work, including the customary profit of the sub-contractors, will be considered as "the cost of labor and material," in estimating the amount due to the contractor.

Hamilton v. Coogan, Common Pleas of New York City and County, General Term, 28 N. Y. Supp. Rep. 21. 73.

COUNTY PROPERTY EXEMPT FROM MECHANICS' LIENS.—The public buildings of a county are wholly exempt from the operations of the mechanics' lien law, and cannot be sold under execution or other process. The county court of a county cannot be compelled by a bill in chancery to issue an order against the county funds for any debt or claim, just or unjust, against the county. The statutory law furnishes the remedy in all such cases, and it must be strictly pursued.

Hall's Safe & Lock Company v. Seites, Supreme Court of Appeals of West Virginia, 18 S. E. Rep. 895. 80.

WASHINGTON ARCHITECTS ORGANIZE.



N the afternoon of May 10th, a meeting of architects of Tacoma and Seattle was held in the city hall council chambers of Tacoma. The object was the formation of an organization of architects with the final object of becoming a Chapter of the American Institute. The meeting was composed of eight members from Seattle together with eight architects of this city, making sixteen who signed the constitution and by-laws. It is proposed to hold a meeting at Spokane a little later to interest the architects in that city and give them an opportunity to join. The Tacoma members are as follows: G. W. Bullard, Wm. Farrell, Albert Sutton, A. L. Robinson, Louis Mendell, L. C. Houser, A. J. Russell and C. B. Talbot. The Seattle members are: Messrs. Boone, Wilcox, Saunders, Chas. H. Bebb, James Stevens, Albert Wickersham, G. H. Parks and Emil De Neuf. The officers are: President, W. E. Boone of Seattle; First Vice-President, W. H. Wilcox of Seattle; Second Vice-President, G. W. Bullard of Tacoma; Secretary, C. W. Sanders of Seattle. At the meeting in this city an interesting paper was read by architect G. W. Bullard on the subject of "Architects as Pioneers." President Boone's opening addressed was listened to with interest. A condensed report of it is as follows:

"For some time past the architects of this state have, in a desultory and unsystematic way, been debating with one another the advisability of establishing a chapter of architects which should bring together and organize all the worthy members of the craft within the boundaries of Washington. The necessity for such an organization was admitted by everybody. Its absence was deplored by all who desired to preserve in their integrity, on this virgin soil, the honorable traditions and gentlemanly practices of the profession. As a check and deterring restraint upon the greedy and unscrupulous, it was rightly held that an organization would be not less beneficial to the great body of upright architects than to the entire community. It was also strongly desired that we should take the necessary steps for admission to that important body, the American Institute of Architects, whose influence upon American architecture has already become most extensive and beneficial. Firmly impressed with the very great importance of organization, the architects of the city of Seattle resolved to take some practical measure for the establishment of a chapter of architects in this state. What form this measure should assume was the first matter for decision. It was deemed better to create a chapter out of the material at hand, and then solicit the cordial co-operation of the entire profession in the state making it really and truly what it is already in name—the Washington Chapter of Architects. We accordingly organized this chapter by the adoption of a constitution and by-laws and the election of officers; and we are now before you, gentlemen of Tacoma, for your approval and co-operation, of which, indeed, we have never entertained a doubt. Your brethren in Seattle claim no primacy, pre-eminence or privileges in the chapter. The work which they submit to you is provisional only, and they expect it to be amended, improved and strengthened by your zeal, intelligence, wisdom and experience. Their hope and wish is, that after you have subscribed the by-laws and thus become members of the chapter, a meeting of the chapter be held, as early as possible, in the city of Spokane, to afford our brethren there an opportunity of joining hands with us. With Seattle, Tacoma and Spokane thus enrolled under the banner of the chapter, we can arrange for further meetings in the large towns of the state, so as to enable all the reputable and honorable architects of Washington to affiliate with us.

When the organization is thus perfected, with every part of the state represented, the permanent home of the chapter can be fairly and satisfactorily located. Within the past decade no part of the United States has done more building relatively than Washington. Much of it has been of a highly important character, and still more important work is to be done in the near future. It behooves the profession to exert all its influence in the most systematic and effective manner for the establishment and maintenance of a high standard of professional ethics, architectural skill, and solidity of construction. The public judge us favorably or unfavorably in proportion as we erect and aim for our own guidance and control a high or low standard and rule of action in these transcendently important respects."—*The Pacific Builder*.

A SUMMER HOTEL IN THE ATLANTIC OCEAN.

FROM *The New York World*, we learn of the proposition to build a summer hotel in the Atlantic Ocean.

The exact spot in the ocean where the buildings will be erected is not made public. Mr. Coen said yesterday that it had been selected and the soundings had been made and the exact location marked by buoys. It is off the Long Island coast, probable somewhere between Fire Island and New York, and it will be fourteen miles from the shore. Atlantis, as it is to be called, will not be built upon a sand-bar. It will not even be built over shoal water. Now, at the first thought it seems ridiculous that any structure could be made strong enough to resist the power of the waves of the ocean in a storm, but Mr. Coen says the engineers have declared that the scheme is feasible.

The chief engineer is Captain R. D. Evans of the United States Navy, who is practically at the head of the Light-House Board. He is recognized both in this country and abroad as one of the ablest of engineers in deep-sea construction and has a very high reputation in Government circles. Associated with him is J. C. McGuire, who has charge of the steel construction in Government buildings, and who is just now in charge of the new Appraiser's stores building in West street. Captain Howard Patterson, formerly of the United States Navy, formerly Professor of Naval Science in Brown's College, and who was admiral of the Haytian navy, is another of the engineers.

The engineers, it is said, have agreed to put down the foundations under a forfeit of \$1,000,000. This convinced those who hesitated about putting money into the scheme. The structure will rest upon cylinders. Atlantis will include a number of structures, of which but one will be built this year. It will be a great pavilion, constructed in the form of a square, two stories high in the main and three in the towers, and will rest upon large iron cylinders, filled and sunk in Portland cement.

The main floor will be thirty feet above the water, and the Roman order of architecture will predominate.

The edifice will be built entirely of steel, iron, glass and tiles, thus making it entirely fire-proof. Within will be a grand amphitheatre. It is calculated that the lower floor will accommodate 10,000 people, while the gallery will hold 7,000 more. There is also provision for a spacious esplanade or roof garden, seating 3,000. There will be 120 large rooms for hotel accommodation, a cafe, restaurant, billiard-room and all accessories of that sort. Then there is the anglers' pavilion, which ought to increase the popularity, because the structure will be located in the midst of the fishing grounds.

The promoters of the enterprise say that it offers all the advantages of a sea voyage without the discomforts of seasickness. It is promised that it will be within two hours sail of this city.

Mr. Coen expects that the building will be opened before the summer is over.

BUSINESS MOSAICS.

The San Francisco Repository of Studebaker Bros., is located at the corner of Market and Tenth streets, and is one of the finest and most extensive carriage repositories in America, or, for that matter, in Europe; it has a 90-foot frontage on Market street and 145-foot frontage on Tenth street, has five floors the full size of the building devoted to salesrooms for Carriages, Buggies, Carts, Spring, Farm and Team Wagons, also Harness of every kind and price, Robes, Blankets, Whips and Stable Supplies. In addition to their repository they have extensive warehouses near the depots on the railroad tracts, having 75-foot frontage and running through an entire block. Vehicles are shipped from their factories in their own cars and never break bulk until unloaded at their warehouses. Almost any kind of vehicle or harness known to the trade can be had at the San Francisco Repository of Studebaker Bros. Mfg. Co.

Mr. E. E. Ames, well known as one of our leading and prominent citizens, has been manager of the San Francisco Branch for over twenty years. With the Studebaker Wagons and Carriages he has built up the most extensive business of any house on the Pacific Coast.

She—"Cease your flattery, sir, or I shall put my hands over my ears." He (wishing to pay her a compliment)—Impossible! your hands are too small for that."—*Le Petit*.

The McMillan Sash Balance and Lock is an article which commands the attention of every one interested in having a reliable and perfect attachment that will allow you to easily work the window without fear of breaking the sash cord or slamming of windows and at the same time feel secure that the windows are fastened when ventilation is desired. Advantages claimed for the McMillan Sash Balance and Lock, are that you can take out the sash to clean the glass by locking and throwing back the left wheel (when two locks are used) and taking off left hand strip. You can lock either sash at any point, open any distance, to ventilate, or



SASH BALANCE.

tightly shut together. It will not allow the sash to rattle with the wind. It balances the sash perfectly by a coiled flat spring inside the wheel. It cannot be picked as there is no way to reach it from the outside. It cannot be broken by any pry placed under the sash, as other locks can.

It can be put into old houses as well as new, and at a very small cost for labor. No boxing necessary, therefore no place left through which cold air can rush in as in the case with ropes and weights. For durability it surpasses anything in the sash balance line, being made of best metal and sheet steel. The rack in sash is made of sheet steel and will last as long as the house stands.

The balance is hidden, therefore no cords or ribbons are

exposed to view. The balance is made to carry windows from three to five hundred pounds. The World's Fair Medal was awarded by the Columbian Exposition, Chicago.

The Common Sense Bead Fastener is also an indispensable attachment where it is desired to remove the windows at any time without injuring window casing or stop bead.

Smith & Young of San Francisco and Los Angeles are General Agents for the McMillan Sash Balance and Lock combined as well as the Common Sense Bead Fastener and on application will send price list and other information relative to the same.

She—"I beg your pardon, monsieur, for having trodden on your toe." He—"Don't mention it, mam'selle; it is I who ask pardon for having a toe."—*Tid-Bits*.

If you are about to paint your house and want it well done, you must use good materials, do this and you will not be troubled with cracks and blisters and all the evils that follow when poor materials are used; this being granted all you have to do to obtain what you desire in this line is to call upon W. P. Fuller & Co. manufacturers of Phoenix Pure Paint, this article is made of white lead, zinc, oxide and linseed oil, thoroughly mixed by heavy machinery and is sure to give satisfaction to all concerned.

Their new wall finish is a splendid thing for the good housewife, as it is claimed to be a washable water color that petrifies on the wall and will not crack or chip off. What more can be asked of a wall finish?

Bradford—"Binks and his wife make a good match." Robinson—"Yes; he's a stick and she the brimstone."—*Harlem Life*.

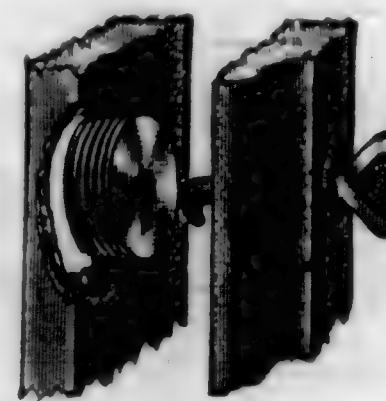
We furnish with this issue a half-tone of Edw. B. Hindes & Co's. beautiful exhibit, located in the SE corner gallery of the Manufactures and Liberal Arts building. On entering, to the left is shown their Rolling Wood Partitions for Churches, Sunday School Rooms, etc.; next a Self Coiling Noiseless, Burglar and Fire-proof Corrugated Steel Shutter.

The next opening contains one of the Modern Venetian Blinds, of which they are the only manufacturers on the Pacific Coast. The next two windows are devoted to their justly celebrated Hill's Patent Inside Sliding Blinds, in Hard Woods and White Cedar. The last window to the right shows the Hill Patent Sliding Fly Screen, acknowledged to be the most perfect screen in use, covering either top or bottom sash and can be instantly removed to clean windows or when not needed. The architecture and finish of this exhibit is conceded to be among the finest making it one of the most attractive features of the Midwinter Fair.

The main office and factory of this firm is at 411 Mission street, San Francisco.

Farmer Squashead (observing a metropolitan daily on the counter of the village store)—"What! Aint that air paper busted up yet? Why, I quit taking it fifteen years ago."—*Time*.

Union Pressed Brick and Terra Cotta Co.—We cannot find the space in these pages for an enumeration of the various kinds of pressed, moulded and ornamental brick to say nothing of the varieties of Architectural Terra Cotta and fire-proofing, paving tile, etc., but if you send for a catalogue to their main office, SE corner Bush and Sansome streets you can find out all about it.



BEAD FASTENER.

CITY BUILDING NEWS.

Army near Folsom. To build; owner, P. Leo Bruener; architect, R. A. Van de Pavert; contractor, Robert Trast; signed, May 23; filed, May 24; cost \$23,350.

Baker near Bush. To build; owner, T. Randall; architect, R. H. White; day work; cost \$3500.

Baker near Bush. Painting; owner, T. Randall; architect, R. H. White; contractor, J. F. Sullivan; cost \$330.

Broderick near Fulton. To build; owner, Henry Dederky, Jr.; architect, Chas. M. Rousseau; contractor, Philip Rive; signed, May 22; filed, May 23; cost \$2500.

Buchanan and Sacramento. Carpenter work; owner, M. Hyman; architects, Percy & Hamilton; contractor, T. M. McLachlan; signed, May 24; filed, May 25; cost \$14,900.

California near Jones. Interior finish, stairs, hardware and glazing; owner, George Whittell; architects, Townsend & Wynken; contractors, W. T. Getch & Bros.; signed, May 14; filed, May 22; cost \$8500.

California near Laguna. To build; owner, R. J. Wilson; architect, Walter J. Mathews; contractor, S. J. Johnson; signed, May 23; filed, May 24; cost \$13,470.

California near Laguna. Stone work; owner, R. J. Wilson; architect, Walter J. Mathews; contractors, S. J. Johnson; signed, May 23; filed, May 24; cost \$2350.

City Hall Ave. Excavation and concrete work on City Hall; owner, Frank Happersberger; architect, Clinton Day; contractor, Thos. E. Keough; signed, May 26; filed, May 28; cost \$1050.

Day near Church. To build; owner, Wm. Edwards; contractors, A. Hanson & J. Sandeen; signed, May 18; filed, May 19; cost \$1675.

Denver near Falcon. To build; owner, John Fies; architect, J. T. Kidd; contractors, Hood & Watson; signed, May 9; filed, May 12; cost \$2700.

Diamond and Collingswood. To build; owner, Frank A. Meyers; contractor, H. R. Abrahamson; signed, April 14; filed, April 19; cost \$1555.

Diamond and Collingswood. To build; owner, J. H. Colman; contractor, H. R. Abrahamson; cost \$1555.

Eddy near Hyde. Additions and alterations; owners, Louis Cranz & wife; architects, Martens & Coffey; contractor, D. G. Chisholm; signed, May 25; filed, May 26; cost \$4330.

Eighth Ave. near California. To build; owner, Annie E. Hall; architect, Clyde Corrigan; contractor, J. E. Eastman; signed, May 23; filed, May 24; cost \$2150.

Ellis near Mason. Plumbing; owner, Maurice Casey; architect, Henry A. Schultz; contractor, H. Muddern; signed, May 7; filed, May 15; cost \$6425.

Ellis near Mason. Tin, iron and painting; owner, Maurice Casey; architect, Henry A. Schultz; contractor, William Cronan; signed, May 1; filed, May 15; cost \$2425.

Ellis near Mason. Cast iron work and painting; owner, Maurice Casey; architect, H. A. Schultz; contractor, Joshua Hendy Machine works; signed, May 1; filed, May 15; cost \$1765.

Ellis near Mason. Wrought iron, steel work, painting and fire-escapes; owner, Maurice Casey; architect, H. A. Schultz; contractor, Judson Manufacturing Co.; signed, May 1; filed, May 17; cost \$3770.

Eight Ave. near Clement. Frame cottage; owners, Marshall Newman and wife; architects, Kenitzer & Barth; contractors, Peterson & Olson; signed, May 18; filed, May 19; cost \$1350.

Eleventh Ave. near J. To build; owners, W. H. and Kate Jones; contractor, G. Larson; signed, May 7; filed, May 22; cost \$1433.

Fell near Scott. To build; owner, C. J. Kaighin; contractors, Patterson & Person; signed, May 17; filed, May 18; cost \$5500.

Folsom near 25th. To build; owner, Mary Sparks; architect, John T. Hogan; contractor, James A. McDonald; signed, May 18; filed, May 21; cost \$2400.

Folsom bet. 3d and 4th. Raising and moving; owner, T. J. Hund; architects, De Ross & Co.; contractor, F. V. Steirman; signed, May 14; filed, May 16; cost \$3535.

Fifteenth near Noe. To build; owner, Delia Ryan; architect, T. J. Welsh; contractor, A. Hawkins; signed, May 10; filed, May 12; cost \$3500.

Fulton near Lyon. To build; owner, James Reaney; architect, E. A. Hermann; contractors, Peterson & Olson; signed, May 22; filed, May 23; cost \$1600.

Fulton near Devisadero. To build; owner, Moses A. Ephraim; contractor, W. W. Rednall; signed, May 25; filed, May 25; cost \$4450.

Golden Gate Ave. near Devisadero. To build; owner, John Traynor; architects, Laver & Mullany; contractor, James Cochran; cost \$5250.

Harrison near Fourth. To paint Whittier School; owner, Board of Education; architect, Chas. I. Havens; contractors, The Painters Protective League of S. F.; signed, May 24; filed, May 26; cost \$1200.

Hayes near Polk. To build and alterations to one-story building; owner, Rose V. Jessop; architect, R. H. White; contractor, John Furness; signed, May 19; filed, May 23; cost \$7800.

Howard near 17th. Alterations and additions; owners, J. L. Fallon and Della Fallon; architect, Chas. J. I. Devlin; contractor, Jas. J. O'Brien; signed, May 19; filed, May 19; cost \$2190.

Hyde near Bush. Carpenter work to six flats; owner, Samuel Foster; architects, Smith & Freeman; contractor, S. H. Kent; signed, May 17; filed, May 26; cost \$14,446.

Hyde near Bush. Plumbing; owner, Samuel Foster; architects, Smith & Freeman; contractors, Shepard Bros.; signed, May 17; filed, May 26; cost \$2370.

Market near 5th. Plumbing, etc.; owner, Emma Spreckles; architects, Reid Bros.; contractor, W. F. Wilson; signed, May 8; filed, May 26; cost \$20,250.

Market near 5th. Certain branches of work; owner, Emma Spreckles; architects, Reid Bros.; contractors, G. Dillon and J. W. Hansbrough; cost \$41,744.

Market near 5th. Lathing and plastering; owner, Emma Spreckles; architects, Reid Bros.; contractor, Thos. Mannix; cost \$5920.

Market near 5th. Store front; owner, Emma Spreckles; architects, Reid Bros.; contractor, D. McPhee; cost \$13,300.

Mason and California. Mark Hopkins Institute of Art, to paint, tint and burn off old paint; owner, S. F. Art Assn.; contractor, P. N. Kuss; signed, May 21; filed, May 22; cost \$1400.

Oak near Webster. Plumbing; owner, Edmund Schuntenbus; architects, Salfeld & Kohlberg; contractors, Koch & Grimes; signed, May 9; filed, May 12; cost \$900.

Oak near Webster. Moving and underpinning; owner, Edmund Schuntenbus; architects, Salfeld & Kohlberg; contractor, H. Behrens; signed, May 9; filed, May 12; cost \$1264.

O'Farrell near Franklin. Carpenter work and tin beams; owner, The Deutsche Evang. Lutheran Church; architect, H. Gelfuss; contractor, F. Klatt; signed, April 27; filed, May 15; cost \$19,540.

O'Farrell near Franklin. Plastering, etc.; owner, The Deutsche Evang. Church; architect, H. Gelfuss; contractor, Chas. Dunlap; signed, April 27; filed, May 11; cost \$2090.

O'Farrell near Franklin. Brick and stone work; owner, The Deutsche Evang. Church; architect, H. Gelfuss; contractor, Adam Beck; signed, April 27; filed, May 11; cost \$16,927.

O'Farrell near Franklin. Artificial stone work; owner, The Deutsche Evang. Lutheran Church; architect, H. Gelfuss; contractors, Camp & Carillon; signed, April 27; filed, May 11; cost \$1149.

O'Farrell near Franklin. Heating appliances; owner, The Deutsche Evang. Church; architect, H. Gelfuss; contractors, Ford Bros.; signed, April 27; filed, May 11; cost \$1061.

O'Farrell near Franklin. Painting; owner, The Deutsche Evang. Church; contractor, August Fick; signed, April 27; filed, May 11; cost \$1264.

Pacific Ave. near Devisadero. Excavation, concrete, etc.; owner, Annie Meyer; architect, E. A. Hermann; contractor, Carl Greise; signed, May 25; filed, May 26; cost \$1822.50.

Post and Montgomery. Elevator; owners, Masonic Hall Association; architects, Kenitzer & Barth; contractor, John Hammond; signed, May 4; filed, May 10; cost \$6875.

Ridley and Scott. To build; owner, B. Tenderlein; contractor, A. De Fair; signed, May 10; filed, May 11; cost \$7000.

Seventeenth near Dolores. To build; owner, Eugene Kelly; architect, Oliver Everett; contractor, Ralph Carey; signed, May 22; filed, May 24; cost \$244.

Sutter street, 1525. Alterations and additions; owner, Mrs. H. Hug; architect, Edmund Kollofrath; contractor, John Furness; signed, May 15; filed, May 16; cost \$3922.

Twenty-fourth and Guerrero. Two-story frame and three-story frame; owner, C. Branagan; architects, Martens & Coffey; contractors, Ackerson & Paterson; signed, May 14; filed, May 14; cost \$10,425.

Union and Jasper. To build; owner, G. Rocca; architects, Townsend & Wynken; contractor, G. Masoletti; signed, May 5; filed, May 10; cost \$2385.

Union near Laguna. Carpenter work; owner, Jno. M. Allyne and W. H. White; architect, Chas. Geddes; contractor, Jas. McLean; signed, May 25; filed, May 28; cost \$6925.

Union near Laguna. Plastering and brickwork; owner, John Allyne and W. H. White; architect, Chas. Geddes; contractor, H. H. Larsen; signed, May 25; filed, May 28; cost \$1184.

Utah and Santa Clara. Alterations and additions; owner, Michael Fogarty; architect, Jas. P. Brady; contractor, Thomas F. Mitchell; signed, May 10; filed, May 11; cost \$1400.

Valencia and Quinn. Excavation, brickwork; owner, Sarah B. Melone; architect, Clinton Day; contractor, G. Cannon; signed, May 25; filed, May 25; cost \$395.90.

Washington bet. Powell and Mason. To erect two three-story frames; owner, M. Ghisla; architect, Emile Depliere; contractor, P. A. Antonelli; signed, May 14; filed, May 15; cost \$9000.

Washington and Laurel. Two semi-detached frame buildings; owner, John Dempster McKee; architect, W. H. Little; contractor, R. P. Hurlbut; signed, May 17; filed, May 19; cost \$10,612.

Washington near Locust. To build; owner, Chas. Clark; contractor, Casper Zwierlein; signed, May 23; filed, May 23; cost \$7140.

Webster and Pine. Two-story frame except plumbing; owner, Jacob Claus; architect, Wm. H. Wharf; contractor, Jacob Schafer; signed, May 23; filed, May 28; cost \$1137.50.

The California Architect and Building News.

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OFFICE, 408 CALIFORNIA STREET,

SAN FRANCISCO, CAL. U. S. A.

VOLUME XV.

JULY 20th, 1894.

NUMBER 7.

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.

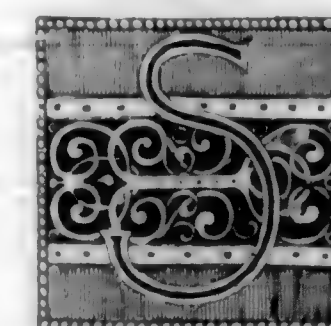
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SINCE our last issue the all absorbing topic of discussion throughout the length and breadth of the United States, is the present struggle for supremacy between organized labor and organized capital. Deplorable as are the immediate results of this bitter fight, yet we look for good as its ultimate result.

If the present struggle shall awaken society to a realization of the gravity of the present situation, and the absolute necessity of devising laws to establish a just equilibrium between the conflicting demands of Capital and Labor, the price the country is now paying will not be too much for the lesson.

It is doubtful, however, if that point has yet been reached. The absolute necessity of finding a just and equitable solution of the problem, is not yet realized by the public or its government. The law has very properly put down the lawless element, when it reached the point of violence and disorder. The true aim of government, however, should be to find means of preventing the cause of violence and disorder, and it will probably take more serious uprisings to bring this truth home to the people.

But as all progress in human affairs is achieved solely by and through strife, the desired improvement can only be ex-

pected to come through this means. To improve the condition of the people of France, humanity waded through the blood and horrors of the revolution. To solve the problems of the present age, may take equally as deplorable means. How disastrous the temporary results may be, only the future can determine.

If capital endeavors to push a temporary advantage to such a point as will drive defeated labor to desperation, or should labor become so exacting as to demand more than its just share of the benefits of production, the solution of the question will become infinitely more difficult. But it is not unreasonable to hope that progress is being made to a solution that will result in ultimate benefit to the growth and prosperity of this American government, and American people.

Possibly the material struggles could be averted, and peace attained at less cost, if the disputants would be content to substitute reason for brute force, and a christian spirit of conciliation in place of the arbitrary use of power and the threats and intimidating methods now employed.

A peaceful result, however, is too much to expect at the present stage of human progress, and it is extremely doubtful if vital questions will ever be solved without an appeal to force and violence.

ON THE USE OF COLOR IN ARCHITECTURAL DESIGN.*

BY H. LANGFORD WARREN.



It is hardly beyond the truth to say that, so far as the exterior of buildings is concerned, there has been until recently no use of color in architectural design since the close of the sixteenth century in Italy. And even now, though some attention has of late been given to this subject, both here and in Europe, which has produced some successful color design, the most striking fact with regard to our use of color in architecture is probably our timidity. This modest caution in the first unwonted essays at color treatment after so long disuse is certainly wise and right, since too great boldness in this matter is more likely to lead to failure than success. But the possibilities of the use of color in architectural exteriors and the right treatment of it certainly demand more serious consideration than they have generally received. To treat the exterior of a building in a single material and in absolute monotone is doubtless the safest procedure, and is vastly preferable to an ambitious but faulty color scheme, but it is clearly to give up one important source of beauty in architectural design.

Ruskin, in a characteristic passage in his "Seven Lamps of Architecture," thus expresses his opinion on the subject: "I do not," he says, "feel able to speak with any confidence respecting the touching of sculpture with color. I would only note one point, that sculpture is the representation of an idea, while architecture is itself a real thing. The idea may, as I think, be left colorless and colored by the beholder's mind; but a reality ought to have reality in all its attributes; its color should be as fixed as its form. I cannot, therefore, consider architecture as in anywise perfect without color."

In this opinion most architects nowadays will probably concur, though monotone is still largely the rule in the exteriors of our buildings, and there are not wanting those who maintain that it is the ideal and the only dignified treatment. Such a view, however, receives but little support from the authority of the past. Most ancient buildings, it is true, are of one color in their present condition, and our architectural ideals are doubtless largely formed by the noble buildings of the past as we have seen them; yet we know that when their builders left them most of them were glowing with color.

To recall briefly the history of the color treatment of buildings will show the extent to which color has been employed in architecture.

The columns and walls of the Egyptian temples were covered with rich color decoration which, in most instances, still remains to this day. The capitals, which borrowed their form from the lotus flower or bud, were painted in red and green and white, with ornaments closely imitated from the same plant. The shafts were similarly decorated in color or with hieroglyphics incised and painted. If most of this color is to be found in the interior of the temples, it is because the architecture itself was mainly internal. But little external architectural effect was sought in Egyptian temples until a comparatively late date, except about the entrances, and these were always decorated with color.

In Greece, the marble of the temples (or the fine stucco which covered walls and columns where a coarser stone was

*Prepared by invitation of the American Institute of Architects, to be read at its annual convention, but by its courtesy made a part of the programme of the Congress of Architects.

all that could be obtained) was regarded as a field for ornamental color treatment. Indeed, the marble seems to have been chiefly prized for its excellent surface for color decoration. The Greek temple did not stand out entirely white against the blue sky, as we are apt to picture it to ourselves but was a glowing mass of color. Since the day of Hittorf's color restorations this is no longer matter for conjecture, but has been clearly proved by the numerous colored fragments and traces of color which have been found. Mr. Edward Robinson has recently fully shown, both by literary evidence and by traces of color which he has found, that even the statues were fully colored in a somewhat conventional manner. The Romans, heirs to the arts of Greece, followed the same methods. The well-known statue of Augustus, for instance, retains such complete traces of color as not only to show that it was entirely painted, but to make on accurate restoration of the color possible. But in the decoration of their buildings the Romans seem to have used applied color much less than the Greeks. Instead of this they obtained their color effect by the use of variegated marbles and precious stones, though applied color was used, especially when expense precluded the use of the more precious materials. The use of applied color in the provincial towns has been made familiar to us by the discovery of Pompeii and Herculaneum. And similar treatment was employed in many buildings of Rome itself; though here in the more important public buildings columns were made of porphyry, verde antique, and rich marbles from the East, and variegated marble was used in slabs as a covering for the walls. Gilding was also lavishly employed in capitals and other members. This method of obtaining color effect by the natural color of rich materials continued in the Byzantine empire, which added to it the use of mosaic. (The marvelous church of St. Mark at Venice is the most familiar and the most beautiful example of this style.) And it continued in Italy through the various styles that followed until the later Renaissance.

The medieval architects of the northwest of Europe did not have these richly colored materials at their command, but they were far from giving up, on that account, the use of color. The very fact of the fairly complete preservation in which the great cathedrals have for the most part come down to us, so far as their general form is concerned, makes especially difficult to us the realization of what their appearance must have been when they still had all their color decoration. But enough traces of color are still clearly visible to show their original condition with tolerable certainty. In a general view, these venerable buildings seem to have no color but the natural gray of the weather-beaten stone—no more variety of tint than can be found in some old cliff of which their walls so much remind us, stained and worn as they are by time and with weeds and brambles growing in their crannies. But if we carefully scrutinize the hollows and protected portions of the carvings, especially in the porches, we shall almost certainly find unmistakable remains of applied pigment. Especially is this the case, for instance—or was before the restorations—in the porches of the cathedral of Amiens, where the pigment used on the molding of carved roses and of the hawthorne in its natural colors could still be plainly seen in places. The most striking and complete example I have seen and noted of medieval color decoration on the exterior of a building is to be found at the Church of St. Martin at Laon, in the central porch of the west front—which dates from the fourteenth century. Enough remains to show that this porch was completely covered with color. The columns and arch moldings were painted in red and yellow chevron stripes and similar patterns, which can be clearly traced. In the tympanum are carved two angels swinging censers on each side of a figure (probably of Christ or the Virgin) which has disappeared and which stood on top of the center mullion of the door. The angels' wings were gilded and their robes were tinted. The background was filled in with other painted angels, and the under side of the tabernacle roofs over the figures in the

porch was painted blue. These colors and other similar remains are quite crude. What the general effect of this treatment must have been in an interior, one gets a clear and undoubtedly substantially correct idea from the restoration of the Sainte Chapelle at Paris, especially in the upper chapel. In the interiors the remains of color are more frequent and in better preservation, as would be expected, and are especially to be noted in the chapels and on tombs and rood-screens. A very interesting and complete example of color applied to interior architecture is to be found in the rich late Romanesque porch now walled up, on the north side of the cathedral of Rheims.

It is clear that one should picture to himself the completed cathedral of Medieval France as richly decorated with color inside, besides the stained glass windows; the color overflowing, as it were, and covering the porches, which were probably entirely covered with rich coloring. Color was, it seems likely, also, more sparingly applied to other portions of the exteriors.

The interiors of the cathedrals of Italy at this time were also fully decorated by applied color, for mosaic, which had been introduced from Byzantium, fell more and more into disuse as fresco painting developed. But in the exteriors, in connection with colored marbles, which, as we have seen, were principally relied on for color, mosaic continued to be used, as in the gorgeous fronts of the cathedrals of Siena and Orvieto. With the coming of the Renaissance mosaic becomes still more unusual. But colored marbles were never used with more delicate taste or more beautiful effect than they were by the architects of the early Renaissance in Italy, and there are few classes of buildings so fruitful of lessons in the right principles of the application of color to buildings. The little Monte di Pietà and the palazzo publico at Brescia, or Fra Giocondo's loggia, at Verona (in which sgraffito is also employed), or the Ca' Dario or Ca' Trevisan, at Venice, may be named as examples of these.

With the further advance of the Renaissance, color gradually disappeared from the exteriors of buildings, first in Rome and Florence, later in Venice, whose delight in color led her; while other cities were already contenting themselves with monotone, to cover even the exteriors of her buildings with paintings by Giorgione, Veronese or Sebastiano del Piombo, the faded remnants of which may still be dimly seen on her walls.

In this rapid survey, no mention has been made of the styles of the East or of the Moors in Europe—styles essentially dependent upon color for their beauty. Attention has been purposely confined to those styles which have been developed in, or have directly influenced, western Europe.

What has been said recalls enough of the history of color in architecture to show clearly that the later, and especially the debased, Renaissance is the only style which, until modern times, has attempted to dispense altogether with color as a means of architectural effect, and that in most styles color has been regarded as of essential importance, the apparent exceptions being due, until the time of the Central Renaissance, to lack of means rather than to preference.

In the face of this unanimity of opinion and of precedent, it would be difficult to argue in favor of a general use of monotone in the exteriors of buildings. The strength of argument lies, however, altogether in favor of the employment of color. But it must be confessed that many of the recent attempts at external color treatment are far from successful. Such use of color is as yet new to us, and it is not matter for surmise that there should be some bungling. Especially to be regretted, for instance, is the placing of color emphasis on the quoine at angles and on window and door jambs. This treatment was first, I believe, brought into prominent use by the late H. H. Richardson, and has since been much imitated; but like most great men it has been Mr. Richardson's fate to find more imitators of his faults than of his good qualities.

In view of the growing desire for color treatment and its difficulty, a statement of the principles which should govern color design in architecture is often asked for.

In the first place, it must be said that there is perhaps no subject more difficult to consider by means of words, inasmuch as almost any color scheme which it is possible to de-

scribe in words can be made harmonious and perhaps beautiful in the hands of a true artist, or may be discordant and ugly, arranged by a person without color sense. The delicate variations and the proportioning of one color to another, which make the difference between beautiful and unpleasant, are too subtle to be described in words. In the next place, while the color sense may undoubtedly be trained and strengthened by proper instruction and by observation and practice, yet it is useless for anyone without that inborn color sense to undertake to have anything to do with it. So that of color more than of any other object to study, the paradox is true that instruction is unnecessary for those that are gifted and useless for those that are not. Finally, while for the reasons above given, dogmatism with regard to color is especially out of place (for a master will upset all rules), yet there is, perhaps, no subject so difficult to treat without dogmatism, since it is too subtle for argument, and conclusions with regard to it are necessarily based on observation and experience, guided by taste and feeling—not by reasoning. So much premised, a few general principles may be stated as marks to shoot at.

The first principle I feel inclined to lay down is that any theory of color design, taken as a guiding rule for practical work, is certain to be fatal to the result. What horrors have not been perpetrated in the name of the old theory of the primary colors—red, blue and yellow, with their secondaries, tertiaries, complementary colors, and what not; a theory which, to be consistent, would have us refuse to see any beauty in the colors of a peacock's tail or a for-get-me-not. But this theory has been exploded. Very true. But as a guide to color design the Jung-Helmholtz theory is not much better. It can to some extent analyze and explain, but it cannot construct. And an artist is not concerned with analysis and explanation, but with creation and enjoyment. Ruskin's theory that the principles upon which nature applies her color must be right, and that therefore color as applied to architecture must not follow constructive lines, because in nature it does not (as in the tiger-skin,) would, logically followed, lead to absurd conclusions.

Furthermore, the different styles demand different color treatment, so that general principles are the more difficult to lay down.

In approaching the study of color, let us then clear the ground by getting rid of all theory at the outset, and let us follow our sense of what is beautiful.

In what has been said above it is not meant to imply that nothing is to be learned from nature for our color treatment of architecture. A few broad principles we may perhaps glean from her, but our lessons will be for the most part in learning what is beautiful, rather than by opportunity for deducing recipes or theories. The English architect, E. L. Garbett, in his little book on design, mentions one of the few general principles it may be safe to deduce. "In nature," he says, "sameness of coloring is the rule, variety the exception; the former being found in all large or grand objects and broad surfaces, and the latter only in small and scattered organisms." A general law is no doubt here pointed out—by "sameness of coloring" Garbett cannot, of course, mean absolute sameness, but the sameness of a green tree where the whole is green, but there is great variety of green in the individual leaves; or of a gray cliff, where the whole is of one prevailing color, but with much variety of shade and tint within certain limits. But the principles here indicated in so far as valuable as guides in color design, are so not because we find them in nature, but because we see by observation that they apply also to art. A small building may, if you please, be a glowing mass of color; but a large one, all of vivid and varied color would be tiresome; to have dignity and impressiveness it must have one dominant prevailing tone. This may be seen by comparing two such buildings as the quomos of Florence and of Pisa. The Pisan color is much pleasanter and gives greater dignity of effect on account of its broader massing. The building is mainly of one color (white marble, now a rich gold with age), with mosaic patterns of various marbles in tympana and spandrels, while the cathedral of Florence is checkered all over with colored marbles—dark green, white and reddish brown. The dominant color must be selected with the greatest

care with regard to the surroundings of the building and the colors of adjacent objects, of whatever kind, with which it will come in contrast. This is a point too often not enough considered in the choice of building material. But this dominant color will not be of absolutely uniform tint. If there is to be any beauty of color there must be some variety, as in the leaves of a green tree where light and shade add to the variety of local color, or in a cliff, or mountain side, or pebbly beach. If stone is used, the different blocks will not be accurately matched in shade, but will be so placed as to make slight contrasts in tint between the different blocks. If the structure is brick, the brick will not be culled, but used with all the accidental variety the kiln affords. No surface could well be uglier than the respectable brownstone front, or the wall of culled red pressed brick. Indeed, it is strange how, when traveling in Europe, we can admire the variety of color in old brick and stone walls, and tile roofs, and then when we return home continue to build with the utmost monotony of tone our great mechanical skill can attain, and proceed to wonder why our wall surfaces are lacking in beauty. The dominant shade may be further varied by delicate contrasts of other material in friezes or spandrels, as is so beautifully done in the cathedral of Pisa or the palazzo municipale at Brescia already referred to.

If vivid color is to form a part of the scheme, it should be mainly confined to the recesses of loggias and porches, and should be focused at some one point—for instance about the entrance—which should form the key and climax of the whole design. But the mistake is often made of supposing when color treatment is mentioned that vivid color is necessarily intended. Every building necessarily has its color, whether vivid or subdued, greatly varied or largely in monotone, and this color should receive careful study and consideration, and should not be left to be decided by accident, or by the whimsies of inconsiderate building committees. Indeed, the whole design should from the outset be made with a certain material and a certain color treatment in view. The fact that the color scheme may seriously affect the apparent proportions of the building is often overlooked.

Whether the color of a building should be natural or applied, will necessarily depend largely on circumstance and on climatic considerations. The climate, indeed, and the kind of light it brings with it, is of the utmost importance as a determining influence in the color scheme. In our climate there can be no doubt that we should depend for our color largely on the natural colors of materials. Applied color and rich decoration being confined to porches and loggias, as has been so effectively and for the most part so beautifully done at the World's Fair buildings.

Another principle too often overlooked is that, as Ruskin has pointed out, a certain mystery is necessary to perfect beauty and delightfulness of color. There must be constant change. The eye must be continually confused. Anything like mechanical regularity inevitably injures the effect. Thus, in using stones of different colors in the decoration of a building in bands or patterns, one color should be allowed to run over somewhat into another. In decorating a wall with bands of color—say, red and white marble, for instance—let occasional white stones find their way into the red bands and occasional red stones into the white. In the same way in using diaper patterns, let the pattern be broken by allowing the ground color to run into the bands—that is, let the bands occasionally disappear. This treatment will often be noticed in old English and Dutch brick diapers, and can be seen in the front of the Ducal Palace at Venice. Or if bright colored stones are used between the brackets of a cornice over a dull colored wall, as at the palazzo pubblico at Perugia, let some of the spaces between the brackets be filled with the wall color. In all these cases care must be taken not to lose the pattern; the eye must always unconsciously complete it.

Another principle seems to be that the contrast between two colors, used in anything like equal quantities, and either in large masses or pervading a whole design, must never be great. They must harmonize, as dull red and brown, greenish or purplish blue and gray. The vivid and strongly contrasting colors must only be used in small points to give value to the whole composition, and on the judicious use of

these small points of bright color will depend the brilliancy and beauty of the whole. A single point of color may change a whole color scheme—may ruin it or may give it just what it lacked. Thus, a point of light red may make a gray wall look blue by contrast, or it may make a brownish gray look red by sympathy. The effect of the stronger colors in changing the apparent color of duller hues placed near them is a matter always to be carefully considered, and is one of the things which makes color composition so difficult if not guided by that unerring instinct we speak of as "a strong color sense."

The marking of jambstones and quoins has already been spoken of as a thing to be avoided. Jambes and corners are essentially part of the wall, and should not receive a different color treatment. In general, the common practice with us of making the trimmings uniformly of one color and the rest of the work uniformly another is rarely effective and is generally a thoughtless or indolent subterfuge to avoid the serious study of color treatment, or to disguise inability to handle it. There can be no such rule-of-thumb for arranging the color of a building. It must always be a matter of feeling, and of separate feeling in each case; but feeling always, rather than thought. Good color can never be worked out like a mathematical problem.

Of late the perfecting of enameling of terra cotta and the richness of color obtainable in blocks of all sizes in this material opens a new and rich field for color design. But it comes with danger in one hand, though with promise in the other, and its rich possibilities will need to be used with reserve and caution if they are to lead to success.

The safe rule is, if you are a colorist, use color freely—indeed, you cannot help doing so when opportunity occurs; if you are not, have as little to do with it as may be.—*World's Congress of Architects.*



CHICAGO, June 19, 1894.

To the Editor of the California Architect and Building News:

DEAR SIR:—In the several articles lately appearing in your columns respecting the fire resisting qualities of concrete, I have noticed no allusion to the tests carried out by Professor Bauschinger of Munich which were published in this country some years ago. They were instituted I believe by the government, for the purpose of ascertaining the pre-resisting qualities of iron, stone, brickwork and concrete, and resulted in concrete standing out pre-eminent from them all in this respect.

Sometime ago a nitro benzine factory near Lyons, France, the walls of which were of concrete, took fire. The fire was of such a destructive character that the machinery was partly melted and the only effect on the walls, was to partly vitrify their inner surface.

At a fire at one of the government shops at Benicia some time back. I examined the ruins, and whilst the granite and freestone trimmings had suffered severely, the artificial stone window head made of Portland Cement Concrete, were but slightly injured although they had stood the brunt of the fire; the bricks about them were badly injured.

Take any face brick made on the Pacific Coast, heat it to redness and plunge it into cold water and it will go to pieces. Firebrick even, often suffers under such a test.

With due care in the selection of the aggregates Portland Cement Concrete, will withstand fire better than any of our ordinary building materials. Yours Respectfully,

ERNEST L. RANSOME.

QUALITIES OF BUILDING STONE.*



THE qualities necessary to the best possible building stone are: Workability, durability and beauty. It must also be cheap.

Workability includes in its meaning accessibility, a ready yielding to quarrying operations, the absence of refractory qualities under the hammer and chisel, and a texture and grain that will hold decorative finish.

Stone that cannot be quarried readily has the disadvantage of great cost to begin with. If the "raw material" is expensive, the finished product must be costly. On the other hand, if nature has so deposited her stores that the stone is easily taken from the quarry, still, if the material is refractory in the final cutting and finishing, no matter what may be its other qualities, it cannot be a very cheap material for the builder, as it will demand an over amount of expense and delay in preparation. Still less will it be desirable if it obstinately refuses to hold finish or decoration. Stone that comes from the quarry soft and yet somewhat tough, but hardening after a time, has the finest quality of workability. This renders it easy to quarry, very responsive to the tools of the cutter, and capable of taking easily and holding permanently the finish and decorative designs of the architect's specifications. It must be kept in mind, however, in examining stone, that if it comes from the quarry wet, and for that reason easily workable, it may again take up water after drying, which would be most objectionable; but if in the process of drying in the first place it passes through a chemical change which will render it ever afterward impervious to water, the quality is just what could be wished for in this regard. Usually an examination of the out-cropping surfaces of the stone in place will give a safe knowledge of its value as regards workability. Next after the character of the stone regard must be had touching the conditions of its deposit. Too much overlying matter, whether stone or earth, will usually make the quarry work very heavy and expensive. This overlying matter, technically called "stripping," is, as a rule, quite worthless, and must be entirely removed before the stone can be worked with steam channellers or other quarrying appliances, hence the necessity of a careful examination to determine its nature and extend in each case before opening a quarry.

Durability, as applied to building stone, includes every quality tending to make the material lasting and unchangeable after it is laid in a structure. These qualities are many and often seemingly conflicting in their nature. Hardness, elasticity, tensile strength, power to resist the greatest crushing force, imperviousness to water and invulnerability to the attacks of air and its corrosive and disintegrative burdens are some of the qualities, but not all. Evenness and homogeneity of composition, unity of substance, so to speak, and the power to resist extremes of heat and cold are quite as necessary. It will be seen at once that chemical analysis must be relied on to insure the best knowledge of some of these requirements. Some otherwise good and durable limestones will become corroded and discolored and have their integrity destroyed by the effect of sulphurous smoke from the burning of impure coals; others will be injuriously affected by the action of rain-water, and still others by the oxidizing power of the air. Some sandstones bear too much iron in their composition; others lack sufficient cohesion of

the particles, whilst others yet are clayey or unequal in grain or texture. Every test of practical science should be given to stone before it is used in any building intended to be a permanent structure. As a rule, if the outcroppings ledges are found to be infiltrated with water, which makes the outer surface constantly damp, the stone will not be good, for this would indicate that it would take up too much moisture in the wall. Still, it is often the case that an apparently over-hydrous stone will dry out permanently after it is quarried and cut. Many of the sandstones, notably the better qualities of conglomerate, are of this character, and so soft when first taken out that they may be cut to any rough shape with a common ax or hatchet, but hardening after a few day's exposure so that water will not affect them.

The elasticity of stone may be tested by sawing it into long, slender strips, say two inches square and three feet long, when, if it be quite perceptibly flexible, its elasticity is good. If such a bar be suspended so as to hang free by a string and is struck a light blow with a hammer, its evenness and solidity of fiber will be attested by a clear, sweet metallic note, not unlike that of a fine bell, or that of a well tempered steel bar. As a rule the best stone will break with a direct line of fracture; but it may be conchoidal or otherwise indirect and still be unobjectionable. Parallel lines of cleavage or of stratification are always favorable indications where other features are promising.

Resistance to crushing weight may be pretty safely inferred from solidity of texture and evenness of grain; but it is always necessary before a final acceptance to submit the material to the severest tests of an apparatus for that purpose. This will be described in the proper place.

In examining sandstone, with a view to building purposes, the outcropping, if there be any, should be carefully scanned with a view to discovering what effect long exposure to the atmosphere and the rigors of winter may have had upon it. If the stone has "weathered" badly this will be shown by one or another sign of disintegration or demolition and a talus of fragments and sand will be found formed at or near the base of the outcropping cliff. Often the substance of the rock will show unmistakable evidence of inequalities of structural composition, such as horizontal cavities caused by the weathering out of seams or streaks that, on account of bearing too much iron, have oxidized and crumble away. Such stone, if used in a building, would prove worthless and, therefore, dangerous. It is often the case, as I have observed during a long experience in civil engineering, that public bridges erected by counties are rendered unsafe by having their piers and abutments constructed of this kind of stone, and that, too, in places where most excellent material lay near at hand, and which a little knowledge of the nature of stone would have pointed out to the superintendent. Too frequently it happens that appearances of the most untrustworthy kind are relied upon where an ignorant person is set to do work which ought to be in charge of a skilled and well-informed engineer.

In judging of the probable durability of limestone, before subjecting it to any test of science, the same observations should be made as in the case of sandstone, with a view to ascertaining its weathering qualities. Any unequal discoloration of the face of the exposed ledge should be scrutinized carefully. Usually these are caused by the presence of iron in the composition of the rock. But limestones are much more injuriously affected by hidden faults of composition than are sandstones, and for this reason they demand a much more careful examination before any extensive quarries are opened. It is often the case that iron in limestone will do no more than discolor the outer surface on exposure to the action of air and rain-water; but even this is a serious defect when the stone is to be used in any structure wherein beauty is a chief object. For the rough masonry of

*From 17th Indiana Geol. Report.

ordinary bridges, and for the hidden foundations of buildings, a cheap and durable stone is what is most wanted, and in these discoloration is not a fatal fault.

Beauty, when applied to any building material, includes all the good qualities already enumerated with the added value of a pleasing color, or combination of colors and a general effectiveness of appearance when the structure in which it is used has been completed. The variegated granites undoubtedly are the most beautiful of all building materials. Next to granite the red and brown sandstones are most pleasing to the eye, but the white, gray and blue limestones are very effective, and they have the advantage over granite in that they work much more easily in ornamentation, while they take figures in relief with far more clearness of outline than do the sandstones as a rule. Architects have long since discovered the pleasing effects to be produced by using different kinds of stones in the same building, placing each where its particular qualities will best serve the general motive of the design. As a rule, all else being equal, the stone which holds its native color best will be most beautiful in a building, and of the stones which change color, that will be most desirable which changes least and evenly. Some of the gray sandstones, however, change color unevenly and give a striking and oftentimes picturesque cloudiness to the surface, which adds to its effectiveness of color in a wall. The nearly white limestones that take on by exposure a dark cream-brown hue, if they do not contain too much magnesia, hold that tint very well and are quite beautiful. As a rule the presence of many large animal remains in a stone is objectionable on account of the tendency of such a composition to crumble; but where fossiliferous rock is durable it will usually be found very beautiful when cut, the organic remains bossing it over with variegations that greatly heighten its appearance. Stone which contains large fossils is not, however, the best for receiving raised ornamentations, such as figures in relief, no matter how durable and beautiful it may be, for the animal form will interfere with nicety of cutting and polish, as well as with the regularity of the figures. Fossils will usually be found harder than the matrix in which they are set, but this is not always the case, for quite often the form is that of a hollow cast or impress, filled in with material which crumbles easily. As a rule fossils, though very hard, are but loosely set in sandstone, and often they are very large and rough forms of plants, extremely silicious and refractory. Blocks containing these are to be avoided as probably worthless for building purposes, however valuable and interesting they may be from a scientific point of view.

Many very beautiful stones that are not durable when exposed to the weather are very valuable for the inside finishing of buildings, where they will last for ages, holding the finest tints of their coloring without perceptible change.

From what has been said above it will be seen that every owner of stone beds should, before going to the expense of opening quarries, have his rock beds examined by an expert, whose report should show all the defects as well as all the good qualities of the material. Usually this can be done without any delay of labor or money, for the experienced geologist or engineer can quickly discover from the stone and its surroundings the nature of the deposit, and very simple chemical and mechanical tests will settle the question of strength and durability. There are beds of magnificent building stone lying undeveloped in many places, simply for the reason that the owners are not aware of the treasure they possess. In other places quarries are being industriously worked and the stone used in the erection of costly buildings, where in fact the material is wholly unfit for use on account of its lack of durability. I have examined many extensive structures whose stone was fast crumbling away. True, a few years will not show much decay, but in the long future the result will certainly be disastrous. The constant action of the atmosphere, the expansion and contraction consequent upon extremes of heat and cold, and the disintegrating effect of rain-water slowly but surely tell upon the integrity of the exposed parts.—*Maurice Thompson in Stone.*

So great is the echo in one of the rooms of the Pantheon that the striking together of the palms of the hands is said to make a noise equal to that of a 12-pound cannon.



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.

BUILDING for Mrs. A. M. Parrott, Market street, San Francisco, Pissis & Moore, architects.

STUDY for Railroad Station, by T. O'Connor '94.

A Cottage at Stockton for J. B. Paris, Esq., W. W. Oates, architect.

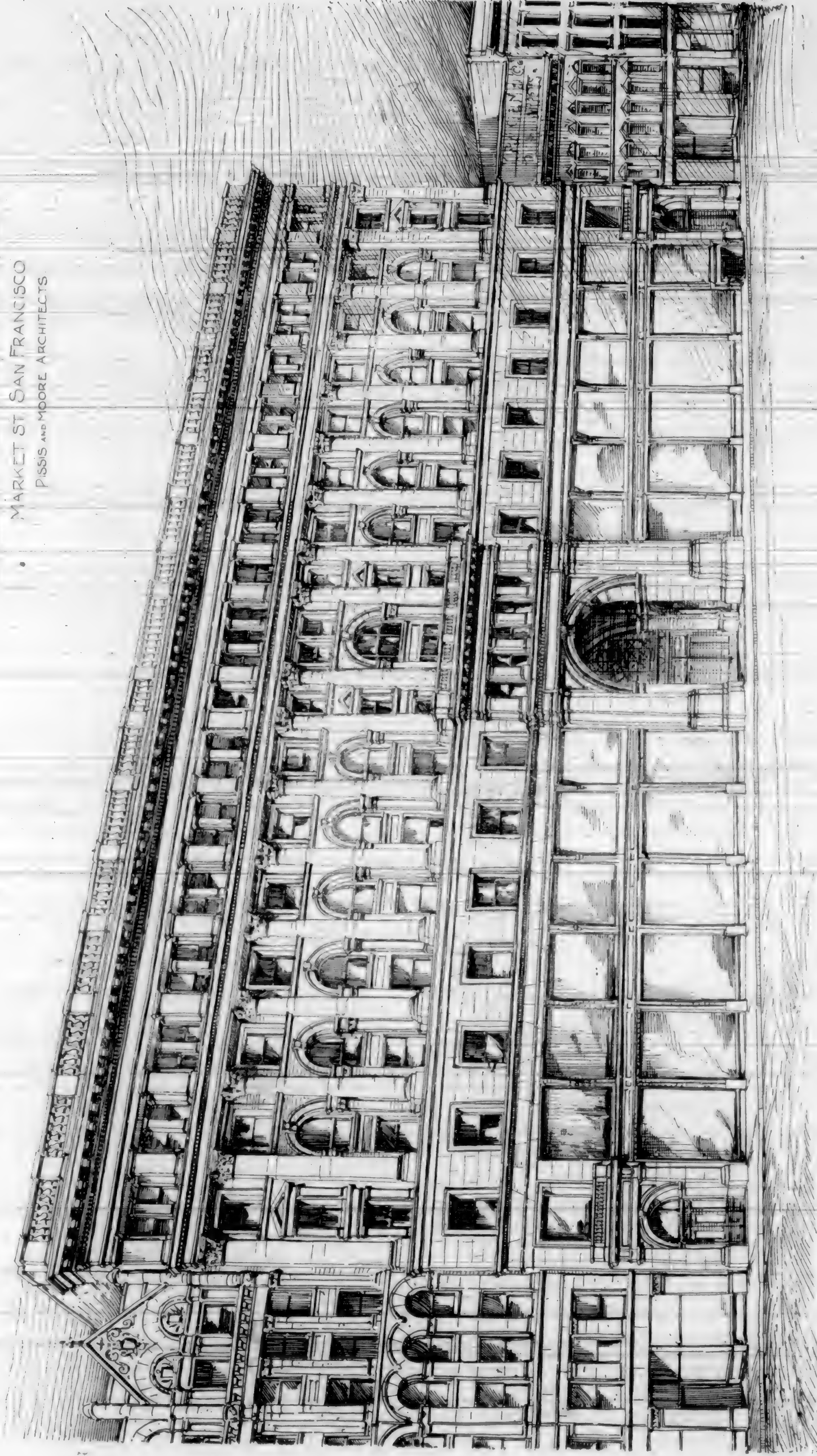
Scheme for a Spanish Chateau, Spanish Renaissance style with interior garden court, is by T. O'Connor.

CO-OPERATIVE BUILDINGS.

SOME years ago we discussed in these columns the advisability of a method of building to do away with the kitchen and many of the disadvantages of housekeeping, says *Architecture and Building*. The idea then started seems to be about to become an established fact, and the professors of the Chicago University will adopt, it is said, the scheme as elaborated by Mrs. Mary Coleman Stuckert for the erection of a model home settlement in that charming section of Chicago known as Hyde Park. Within a block of land forty-four houses of pressed brick and stone, tastefully constructed and varied, are to be erected. These houses may be of several stories, but none are to be over two rooms deep in order that they shall have essential light and air. In the centre of the flat is to be a large two-story building. Under this roof will be gathered the kitchen, laundry, cold storage plant and the machinery for heating and lighting. In the second story of this building are to be a kindergarten, library and a hall for amusements. The different houses are each to be connected with the central building by telephones and an electric conduit. The latter is to convey hampers for the meals to and from the kitchen. These hampers will be constructed of some non-conductive material in order that they will retain the heat. In the same hampers the dishes will be returned to the kitchen to be washed. There will also, however, be a central dining hall for those who wish or where large dinners may be given.

That the idea is considered feasible is proved by the action of the Illinois Chapter of the American Institute of Architects, who have invited Mrs. Stuckert to address them on the subject on July 2d. As Chicago may be considered the first to utilize the "skyscrapers," it appears that she is to be also the pioneer of another type of building enterprise which is likely to prove popular. We noticed a real estate paper claims that Mrs. Stuckert proposes to carry out an idea originated by them a few months ago, but Mrs. Stuckert is said to have spent several years in perfecting her scheme, which as we before stated, is an elaboration of our views published some years ago.

BUILDING FOR MRS. A. M. PARROTT
MARKET ST. SAN FRANCISCO
PSSS AND MOORE ARCHTCTS

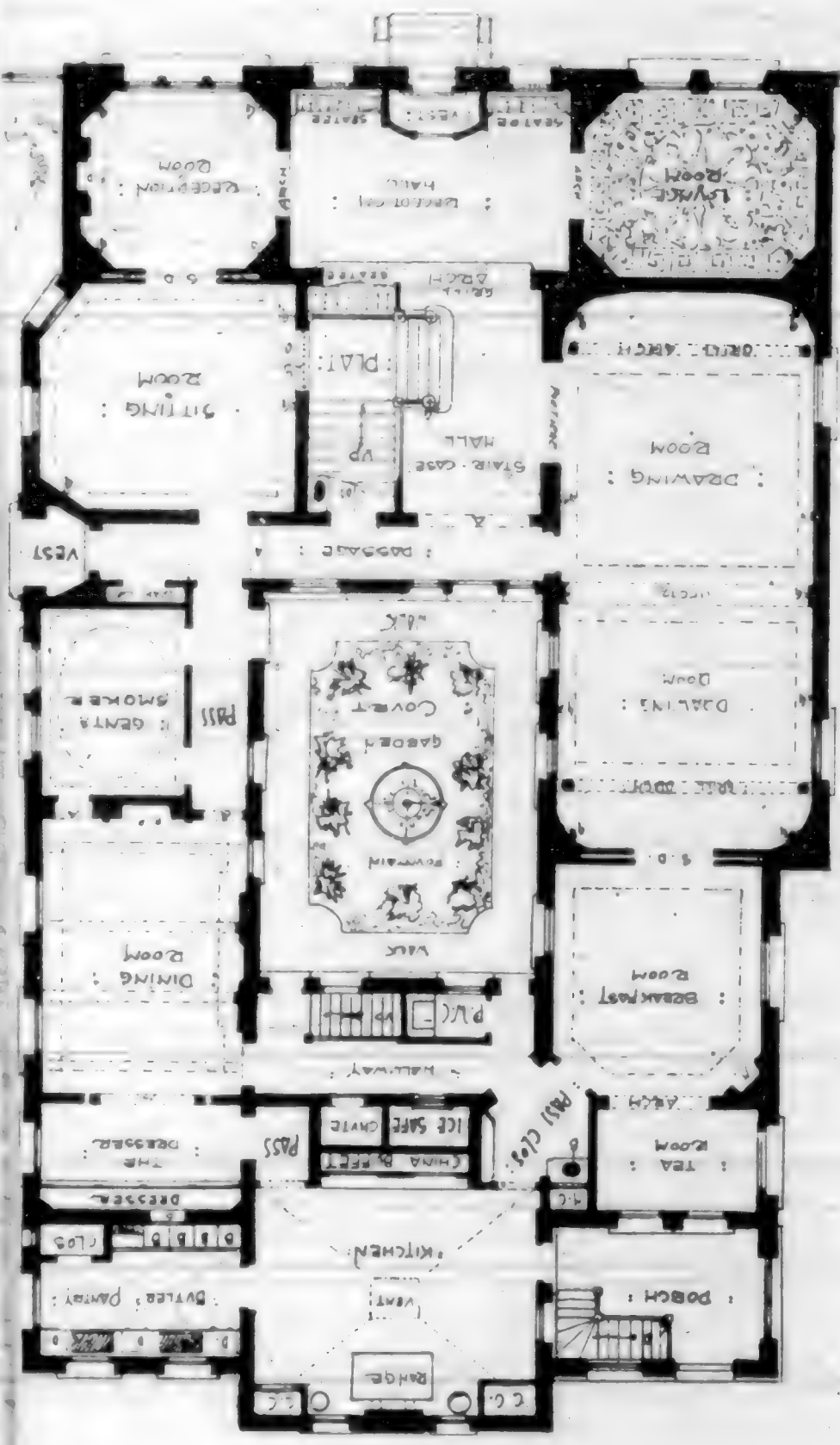


CALIFORNIA ARCHITECT & BUILDING NEWS
SAN FRANCISCO.

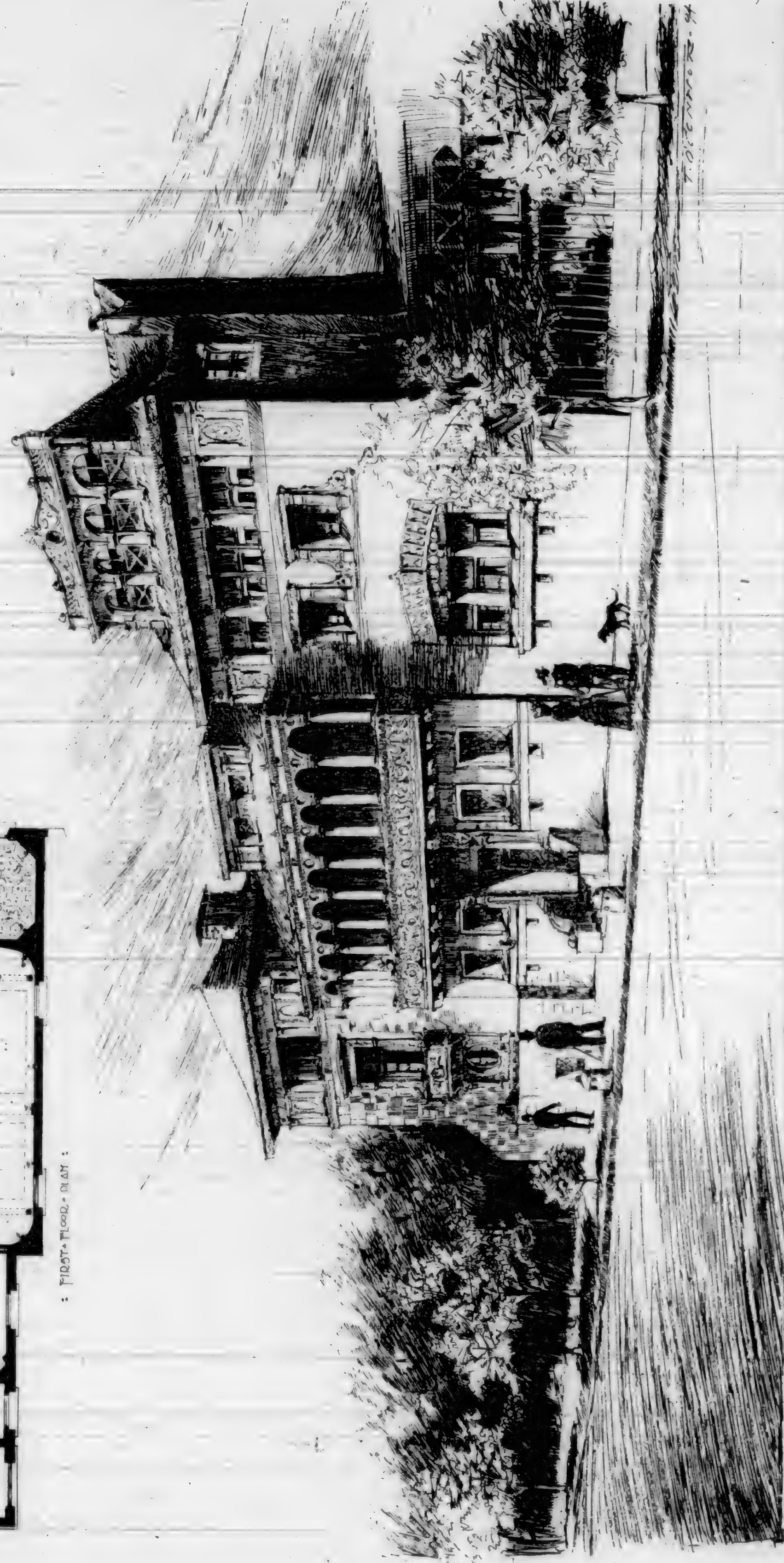
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STUDY FOR A CHATEAU :
SPANISH RENAISSANCE :
T. E. O'CONNOR DEL. & DES.

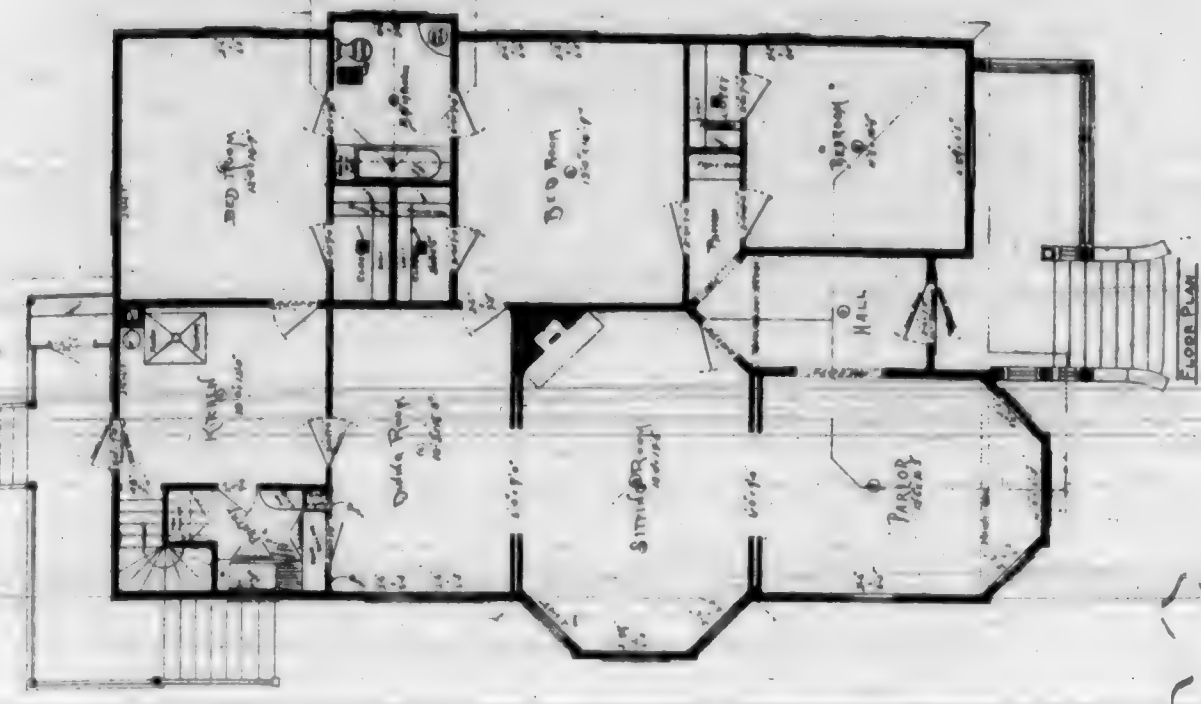


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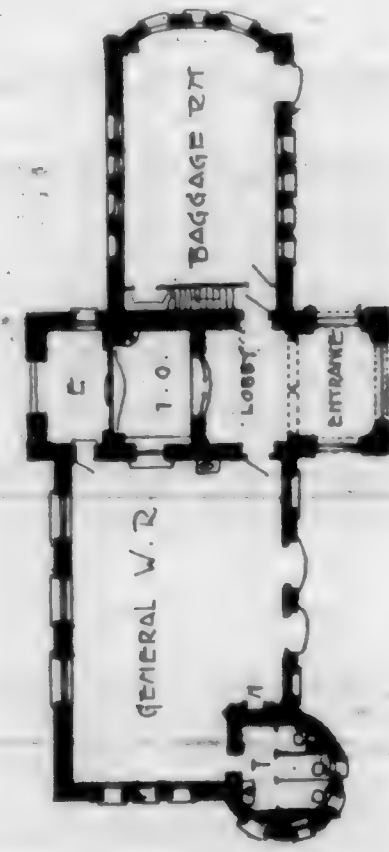
A COTTAGE AT STOCKTON
FOR J. B. PARIS ESQ.
W. W. OATES, ARCHITECT.



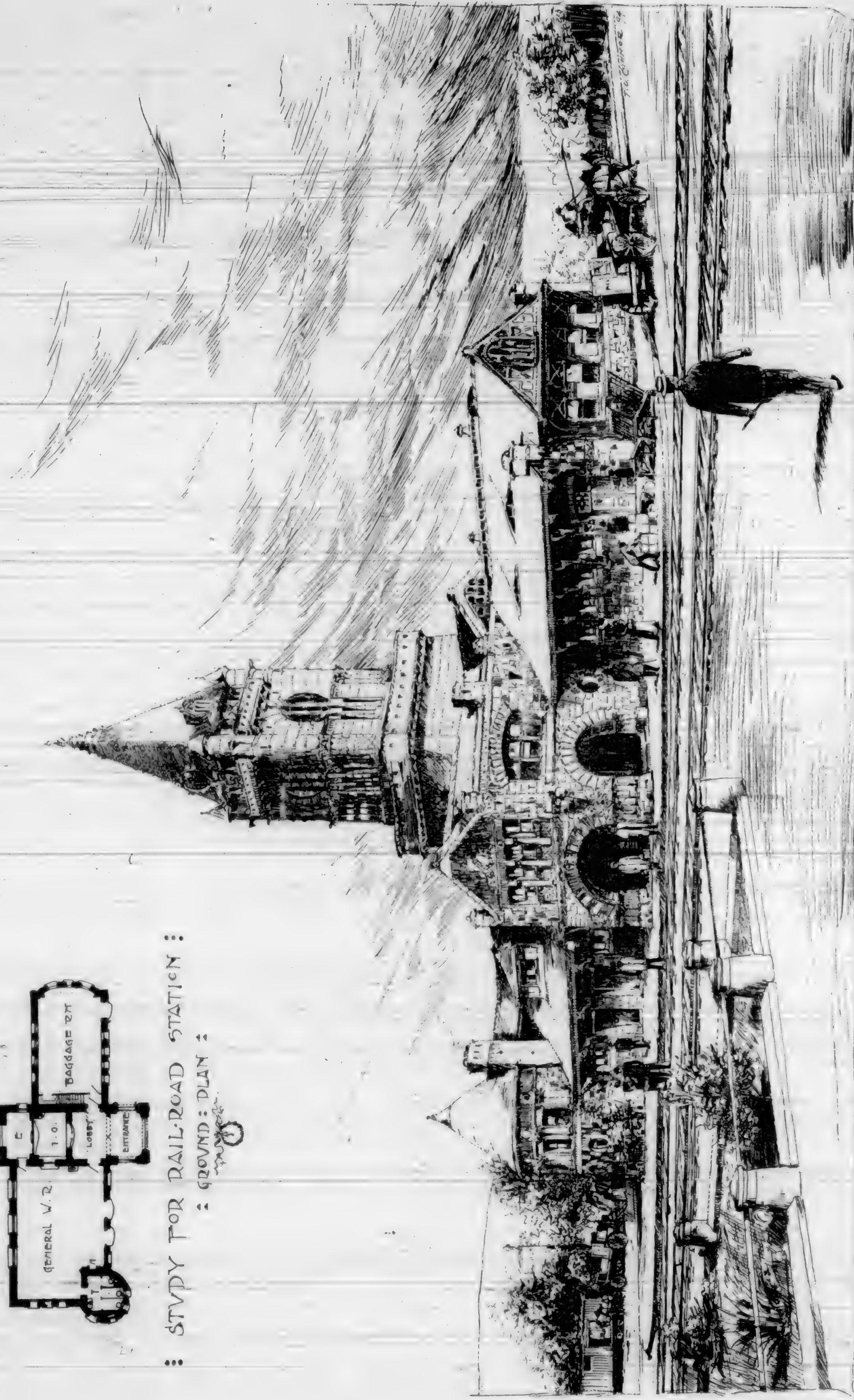
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STUDY FOR RAIL-ROAD STATION :
: GROUND PLAN :



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SEMI-ANNUAL SUMMARY OF BUILDING OPERATIONS.

THE first six months of this year has shown a decrease in value in comparison with the first six months of 1893, though an increase in the number of buildings.

FOR FIRST SIX MONTHS.—1894.

	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	1	5	\$ 64,867	27	37	\$ 124,620	19	29	\$ 46,046	47	71	\$ 235,533
February	2	6	36,438	22	31	96,975	7	12	17,432	31	49	150,883
March	1	3	11,225	56	60	385,470	14	17	34,591	71	80	441,286
April	7	15	165,437	121	144	280,214	16	21	33,004	144	180	488,255
May	5	12	126,691	35	46	199,553	16	16	50,281	56	74	376,625
June	7	11	74,704	40	46	152,992	13	13	39,166	60	70	290,862
Total	23	52	\$ 479,360	301	364	\$ 1,258,924	85	108	\$ 221,140	409	524	\$ 1,959,424

To this amount should be added the further estimated sum of \$500,000 where no contracts have been filed, which would increase the sum total to \$2,459,424.

FOR FIRST SIX MONTHS.—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	\$ 143,888	2	5	\$ 6,040	32	47	\$ 220,798
February	1	3	22,400	40	47	202,447	18	25	64,032	50	67	288,899
March	5	9	20,458	48	65	277,321	18	39	280,221	65	83	848,002
April	17	37	123,789	62	67	251,827	12	18	41,667	76	83	420,287
May	1	2	15,550	65	77	280,120	10	11	20,409	81	90	316,488
June	7	11	78,347	60	73	332,827	8	11	18,850	75	85	430,024
Total	24	49	\$ 614,518	297	354	\$ 1,498,541	68	109	\$ 425,259	293	475	\$ 2,524,498

The business of the first six months for several years is shown by the following table.

1885—754	contracts.....	value, \$4,267,375
1886—670	".....	2,486,633
1887—516	".....	3,269,914
1888—437	".....	2,719,820
1889—546	".....	3,910,600
1890—556	".....	3,793,858
1891—583	".....	3,916,973
1892—411	".....	2,942,496
1893—475	".....	3,024,498
1894—524	".....	2,456,424

THE TOWER OF THE PHILADELPHIA CITY BUILDING.

ACCORDING to the Philadelphia Press, there are signs of movement in the tower of the Philadelphia City Building, and work has been suspended on the upper portion until the substructure can be strengthened. It will be remembered that this tower was originally intended to be the highest structure in the world. Since the design was made, however, its proposed height has been far surpassed by the Eiffel Tower, and, when the building is completed, it will probably hold only the third or fourth rank among high structures. However, a tower five hundred feet high is, in any case, a rather serious matter of construction, and it is not surprising that difficulties have been encountered. According to Mr. Powell, the newly-appointed architect of the building, who seems to have been the first to discover the movement, and point out the true cause, the foundation and first story of the tower were well built, of perhaps sufficient thickness, with brickwork in cement. Above the first story, for some unexplained reason, the walls, although about six feet thick, were built, for several stories, with lime mortar, with a facing of marble ashlar, twelve inches thick. Above the fifth story, the builder seems to have re-

covered his senses, or the architect to have realized what was going on, for henceforth the brickwork was laid in cement. As the weight on the masonry increased, the natural result took place. The walls of the first story and basement, being laid in cement, kept their place, Mr. Powell having found no trace of settlement subsequent to the hardening of the cement. Where the brickwork was laid in lime, however, there has, of course, been no hardening. The mortar in the interior of the walls is still soft, and the compression of the joints, added to the shrinkage from evaporation, has not only caused serious settlement, but by bringing the pressure on the thin, but almost incompressible marble ashlar, has crushed and split this to a rather alarming extent. Mr. Powell has arranged to fill up some of the arches in the lower part of the tower, and in other ways distribute and equalize the weights, and, as we gather from the newspaper account, to reinforce the masonry in lime with proper brickwork in cement; and it is much to be hoped that his efforts to stop further mischief will be successful. It will be remembered that considerable repairs on the lower portions of this tower had to be carried out nearly ten years ago, owing to carelessness of very similar character on the part of workmen or architect. At that time a considerable portion of carved and polished stonework had to be replaced because it had been cracked and crushed through the unequal settlement between the brick filling and the facing, the joints of the latter not having been laid slack enough to allow for the greater compressibility of the brickwork filling. Accidents of this kind are not so uncommon that their causes and remedies are not known to every one, and yet there are architects and workmen whose love for a close, neat joint in stonework is such, that they make use of it at the risk of having to make costly repairs later, such as these at Philadelphia or those demanded by a similar mishap at the Statehouse at Hartford.—*The American Architect and Building News.*

DISINFECTION OF SEWAGE BY MEANS OF LIME.

THE practical employment of lime for the disinfection of sewage, as recommended by Pfuhr, is as follows: In order to render free from danger fresh sewage that may contain the organisms of typhoid fever or Asiatic cholera, it is necessary that lime be added to the sewage in the proportion of, at least, one to one thousand. In this proportion, disinfection is complete in from one hour to one hour and a half. It is necessary that during the addition of the lime the sewage be kept in motion, so that there will be a homogeneous distribution of the lime throughout it, for it has been shown by experiment that in sewage not so stirred, lime may be added often to an extent of three to one thousand, and yet living typhoid bacilli may be detected after two hours, a condition evidently due to the restriction of the activity of the lime, to and immediately about the point in the still sewage at which it was deposited. In practice, it is further to be observed that the disinfectant activity of the lime is frequently interfered with through the presence of precipitating substances, such, for example, as the salts of sulphuric acid. It is also necessary that the lime should be of the best quality and freshly burned, so that in calculating the amount necessary for a given volume of sewage, only pure calcium hydrate will come into the computation.—*International Medical Magazine.*

JUDGE—"Well, doctor, what is the condition of the burglar's victim?" DOCTOR—"One of his wounds is absolutely fatal, but the other two are not dangerous and can be healed."—*Fliegende Blätter.*

NOTICE OF MEETINGS.

SAN FRANCISCO CHAPTER, AMERICAN INSTITUTE OF ARCHITECTS, meets second Friday of each month at 408 California street.
 SETH BARSON, 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. GEO. W. DICKIE, Vice-Pres.
 OTTO VON GELDERN, Sec. W. C. RALSTON, 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 MONTHLY MEETING OF THE SAN FRANCISCO CHAPTER OF THE AMERICAN INSTITUTE OF ARCHITECTS.

THE regular monthly meeting of the San Francisco Chapter of the American Institute of Architects was held on the afternoon of Friday, July 13th, at the Mark Hopkins Institute of Art.

The ballots on the application of Mr. W. J. Lyon, for fellow membership in the Chapter were opened, and declared Mr. Lyons duly elected.

The principal topic of discussion was the proposition under consideration by the New York Chapter, on the advisability of modifying the schedule of charges as formulated by the Institute, as far as the same has reference to preliminary studies and competitive work.

The Chapter was of the opinion that the proposed changes were perfectly proper, and voted to endorse the recommendations of the New York Chapter.

THE DECLINE IN PRICE OF ELECTRICAL EQUIPMENTS.

IN commenting on the business situation and the decline in prices of electrical apparatus, the *Electrical Review* says: "Six years ago the price for a complete equipment for a trolley car, including two motors, was about \$4,500. This price held for a year and a half and then dropped to \$3,850, \$3,500, and \$3,300, until two years ago it was about \$2,850. One year ago \$2,000 was the price of the same equipment, greatly improved in quality and efficiency, while to-day the average price is between \$1,000 and \$1,200. We have been told of an electric railway manager who desired quite recently to purchase an equipment for a single car. He wrote to seven manufacturing companies, and immediately was called upon by seven salesmen, all of whom had paid traveling expenses to try for the order. The prices quoted ranged from \$1,500 to \$640. The manager bought the \$640 apparatus. Here we have a decrease in actual selling prices from \$4,500 in 1888 to \$640 in 1894, a period of six years. In 1888 there were seven electric railways in the United States. In January, 1890, there were 162 electric railways in operation and in process of construction. In January, 1891, this number has grown to 281, while to-day there are proba-

bly over 500 cities in the United States equipped with electric roads, many of them of great mileage, as in Boston, Brooklyn, St. Paul, Minneapolis and Cincinnati.

"This marked reduction in the price of railway apparatus during the short period of six years is due largely to competition between manufacturing companies, but chiefly to a reduction in the cost of manufacture, accompanied by an increase in the quality of the product. The margin of profit on the equipment mentioned at \$4,500, in 1888, was not as large as it was on a better equipment at \$2,850, in 1892, owing to the reduction in the cost of the manufacture. While prices have been fearfully cut during the last year by all the manufacturing companies, partly due to intense competition and partly to the business depression, we do not believe that any company can make and sell a satisfactory car equipment for \$640 and clear a profit on it."

LIGHTNING STRIKES A CHICAGO "SKYSCRAPER."

LIGHTNING struck the Teutonic Building, corner of Fifth avenue and Washington street, at noon of June 15th. The larger portion of the north finial of the balustrade on the Fifth avenue side was nearly split in two, a part falling to the pavement below and the remainder scattering over the



A COUNTRY RESIDENCE.

roof and the court of the building. That part which traversed the distance of ten stories to the pavement fell among the passing pedestrians and, together with the shock of the storm, produced a panic. No one was injured, though several had narrow escapes.

The tenants of the big building from the tenth to the sixth floor felt the shock severely. In some of the rooms a panic ensued. Ex-Coroner Hertz, Colonel Moore, J. C. Saterlee and others, keenly sensitive to the shock and blinded by the brilliancy of the flash, fled into the hallway, where they were confronted by a fantastic display in the building's court, which seemed to form a center for the electric current in its efforts to reach the ground.

The Teutonic is the first of the "skyscrapers" to be struck by lightning. It is a steel structure from the basement to the roof. A close examination of the point of contact and the immediate surroundings, together with the fact that the electric-light plugs were blown out in the basement, suggests the conclusion that the electric current, after demolishing the terra-cotta covering of the finial, came in contact with the steel rod which supported the demolished finial, and by it was communicated to the steel structure itself, thus making a conductor for the electric current from the roof to the basement.—*Examiner*.

CASTLES IN THE AIR.

THE urban architects of the United States are interchanging views on the tendency towards Tower of Babel architecture in our cities, and we are gratified to note that there is a unanimity of sentiment against the many-storied, steel-framed structures. But there is a diversity of opinion as to the best means of successfully opposing this tendency. While some think that drastic legislation should be properly interposed, says the *Architectural and Building Monthly*, others believe that moral suasion and public sentiment will prove sufficient checks. While we hold that the fewer legal restrictions upon any art or industry the better, yet when cupidity tempts a real estate owner to double or treble the capacity of a hundred-thousand-dollar building lot we have but little confidence in the potency of public sentiment as a deterrent. The "public-be-damned" policy has to be put down by other forces than moral suasion, and there are sufficient grounds on the score of sanitation, public comfort and convenience to warrant the interference of the strong hand of the law. Let there be, then, a limit put to the height to which city buildings may be carried, and let it be done before new cities are superposed upon the old ones. A few years more and the remedy may come too late.

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.

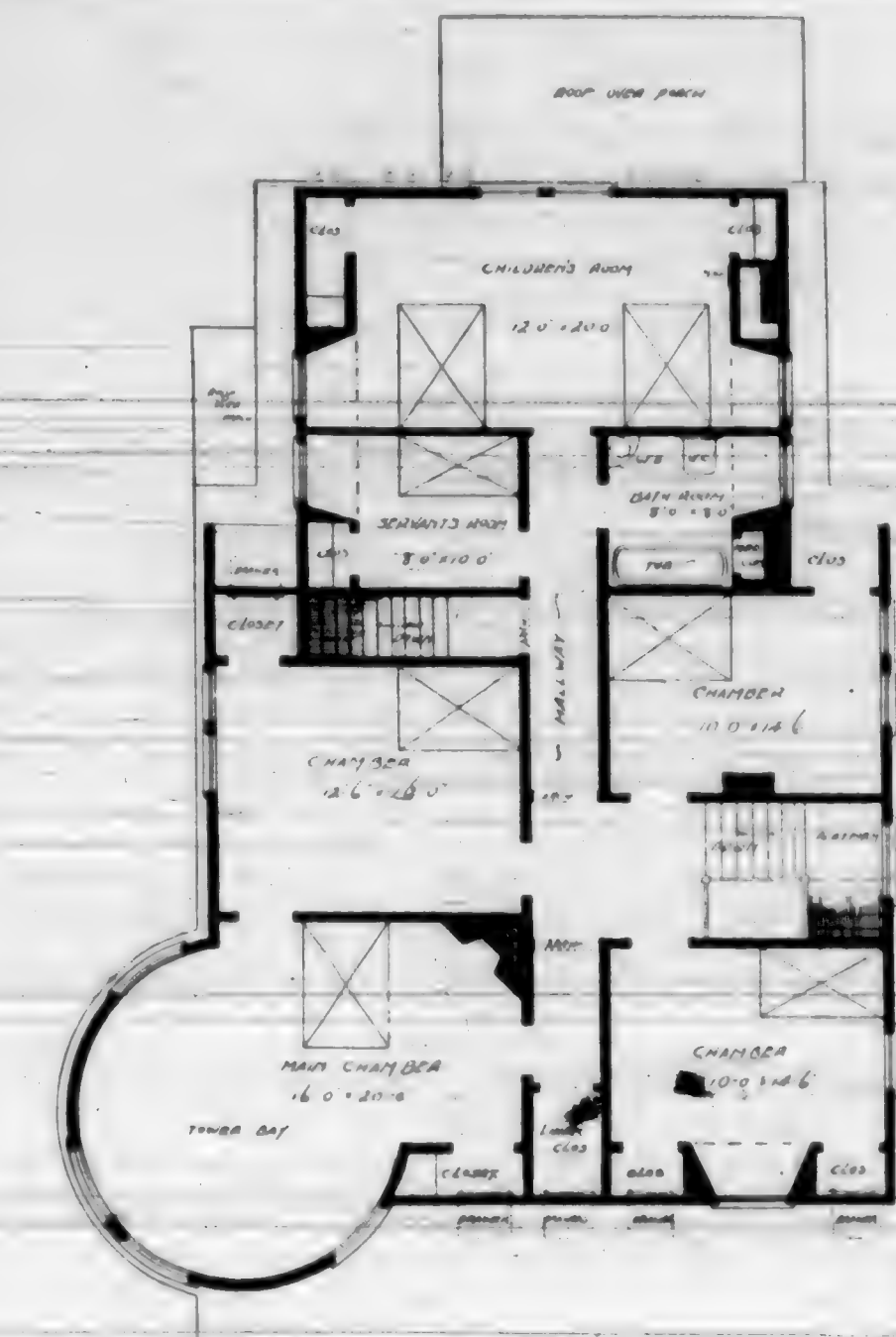
RIGHT OF CONTINUING PARTNER TO LIEN.—Under laws 1886, which requires that the statute relating to mechanics' liens shall be construed literally and in furtherance of the remedy, members of a firm who requires the interest of his partner may have a lien for materials furnished by the firm.

Ogden v. Alexander, Court of Appeals of New York, 35 N. E. Rep. 638. 52.

ACTION BY SUBCONTRACTOR TO FORECLOSE LIEN.—In an action by a subcontractor to enforce a mechanics' lien, it appeared that the contractor abandoned the contract, and forfeited the final payment, unless the owner waived the forfeiture, under the terms of



FIRST FLOOR PLAN.



SECOND FLOOR PLAN.

his contract, and elected to complete the work, at the contractor's expense. The owner, in his lifetime, and his heirs, after his death completed the building, and asserted no claim of forfeiture. The subcontractor could enforce his lien on the surplus of the final payment over and above the cost of the completion. The fact that the owner did not give the contractor three days' notice of his election to complete the building, as provided by the contract, does not exclusively show that he did not so elect, where, when, the contractor abandoned the work, he made a general assignment to the owner, and neither such subcontractor, nor any one claiming under him, is asserting any need of such notice.

Ogden v. Alexander, Court of Appeals of New York, 35 N. E. Rep. 638. 160.

RIGHT TO MECHANICS' LIEN.—One who furnishes material and labor for the erection of structures on the property of a mining corporation, pursuant to a contract made in the company's name, by its authorized agent, is entitled to a mechanics' lien, notwithstanding the existence of an agreement, not known to him, whereby the agent was to have possession of the property, and make the improvements on his own sole credit.

Mammoth Min. Co. v. Sale Lake Foundry & Mach. Co., Supreme Court of the United States, 14 Su. Ct. Rep. 384.

TRUST FOR PREFERENCE OF CREDITORS.—Where a debtor, for the purpose of securing certain debts, conveys in trust property less in value than the amount of such debts, a provision in the trust deed authorizing the trustee to sell at either public or private sale, and to employ clerks and attorneys to assist and advise him, will not affect the validity of the trust deed as to secured creditors, since they could not be injured by it. A provision in the trust deed for the benefit of creditors, directing payment of a stated sum to an attorney for services in drawing the deed and the execution of the trust is valid unless such sum is unreasonable in amount.

Butler v. Sanger, Court of Civil Appeals of Texas, 23 S. W. Rep. 487. 118.

INSURANCE CLAIM AS TO OCCUPANCY OF BUILDING.—Where a policy of insurance provided that it should be void if the premises became vacant or unoccupied without the written consent of the company should be indorsed. The tenant occupying the insured building partially moved out the day before the fire, leaving in the building a portion of his furniture. The premises were not vacant or unoccupied, within the meaning of the policy.

Liverpool & London & Globe Ins. Co. v. Buckstaff, Supreme Court of Nebraska, 56 N. W. Rep. 695. 72.

MECHANIC'S LIEN ON LEASEHOLD INTEREST.—A mechanic's lien for materials furnished and work done upon a leased building under a contract with the lessee extends only to the leasehold interest.

Z. C. Niles & Co. of Seattle v. Gordon, Supreme Court of Wash. 36 Pac. Rep. 266. 30.

BOOKS AND PERIODICALS.

PLUMMER'S REFERENCE MAP of the city and county of San Francisco, is a map up to date and well worthy of the prize that has been bestowed upon it by those who are competent to judge of its value. Not only a correct outline of the water front is given showing the different sections of the sea wall, and other important points of interest to those who empty steamboats, or are otherwise interested in the bay, but the addition of about 250 streets, avenues, alleys and places make it a map for all. To those who wish to keep up with the times and know about the city they live in we should say get this map at once. Mr. Plummer will be happy to receive orders at his office, 408 California street.

LIPPINCOTT'S for July has one of Captain Charles King's charming Army stories as the complete novel; and is as usual full of good things that will well repay perusal.

CLAY WORKER, Indianapolis, Ind. The June number of this excellent magazine has an illustrated article entitled "The Beginning of a National Ceramic Art in America" showing the great advancement that has been made in this country in that art, since the first rude attempts of the manufacturer to compete in that line.

The people of the coast have reason to congratulate themselves that the clay workers of this coast have made great progress in the development in the useful manufacture of architectural appliances from clay, as was shown in the exhibits at the Midwinter Fair.

PAPER AND PRESS. The Arts Printorial, illustrated. Published by W. M. Patton, Philadelphia, Pa. An interesting article "The Government Printing Office," will well repay a careful reading, and probably astonish those outside the trade by the enormous increase of business in this office from its commencement March 4, 1789 until the present time.

THE PHOTOGRAPHIC TIMES. Published at 423 Broome street, New York. The delayed mails from the east are now being promptly delivered, and among the large accumulation of exchanges we notice several numbers of the ever welcome *Photographic Times* the July number contains a charming view of "An English Country Lane." The seven ages of man, illustrated by photograph, is extremely funny.

THE AMERICAN AND BUILDING NEWS, contains an article very severe upon the recent strikes, that have unfortunately prevailed of late all over the country; the editor appears to look upon only one side of the question, and forgets that the constant contempt of the law shown by many of the great companies for years past, have educated their employees to the same way of thinking. This unfortunate strike only required the display of a little common sense on the part of the managers to have been stopped at once. In place of that the men were excited to madness for the very purpose of having the troops called into the field.

A WANING FASHION.

ONE of the strangest vagaries of public taste is that which a few years ago brought yellow pine into prominence as a finish wood says *Hardwood*. A passing fancy was artfully and artificially developed into a craze, the effects of which have not yet entirely disappeared, there being still a few misguided architects and builders who insist, in season and out of it, that yellow pine is both suitable and desirable for all kinds of inside trim, from parlor to kitchen. The producers and handlers of the wood have done what they could to corrupt the public taste in this regard, and their efforts have been supported by the papers which draw a large share of their revenue from the yellow pine interest. They have sought to make people believe—and have met with no little success in the effort—that the red and yellow streaks, varied sometimes with crooks and curls, which are distinctively characteristic of the wood, are really beautiful, and that nothing more pleasing or satisfying to a refined taste is to be had in a low-priced finishing wood. They admit that cherry and mahogany, and possibly quartered oak, are finer woods, but they urge their greater cost, and still maintain that after all yellow pine is as durable and nearly as handsome as any of its rivals. No doubt by continually preaching this artistic heresy they have come to believe in it themselves, but happily the taste of wood users is drawing away from the unsightly yellow pine, and is developing a greater appreciation of the quieter and handsomer native woods, any one of which for beauty and real excellence as a material for trim is so far its superior as to be beyond comparison.

It is not denied that yellow pine is a valuable timber. For nearly all structural purposes it is admirable, rivaling even oak in strength and stiffness. It makes a capital building material, and properly sawed, a fairly good flooring, but its merits are exhausted before we reach those which belong to a desirable finish wood, for which one of the leading requirements is beauty of color and grain. This yellow pine does not possess, the extravagant claims of its friends to the contrary notwithstanding, and for this reason it has no place in the exposed work of any building in which an effort is made to secure an artistic and handsome finish.

THE GOLDEN CHAMBER OF CONSTANTINOPLE.

ACCORDING to Bishop Liutprand, of Cremona, says the *Scottish Review*, the Golden Chamber was the most splendid part of the whole palace. If Justin rebuilt it, Theophilus and Constantine VII. did much for its decoration. Theophilus made a silver table "for the accommodation of the guests and the adornment of the palace," in which so many foreigners and courtiers feasted with the emperor. A great chandelier hung from the centre of the hall over the table.

The famous golden tree, so often mentioned in accounts of the palace, was constructed by Theophilus. "Birds sitting on the branches sung by some mechanism, the air being supplied by concealed passages." The walls were ornamented with mirrors and colored tiles, "affording the more pleasure to the guests owing to the delicious nature of the viands." Besides making the silver doors (into the Tripeton) Constantine VII. ornamented the walls and ceiling of the Chrysotriklinos with flowers and leaves, framed in silver circles.

In the Golden Chamber the most striking object must have been the Pentapyrgion, of which, unluckily, no accurate description has survived. It was "a magnificent structure of wood, covered with gold. Within and without it was hung a great variety of decorations, golden ornaments and the imperial robes." At the feast of Easter it was the custom that a small table should be placed for the emperor in the Pentapyrgion, while the foreign ambassadors whom he invited dined at the golden table below him. Thus it would seem to have been a sort of throne arranged for the purposes of a dining hall.

BUSINESS MOSAICS.

San Francisco Plating Works 653-655 Mission street, E. G. Denniston, proprietor. These well known and long established works, are always prepared to do any kind of gold, silver, nickel and copper plating. Metal goods of every description plated. Particular attention given to copper plating of architectural iron and steel work.

Little DAUGHTER—"This book says that in Norway a girl has to make a whole lot of linen before she can get married." **MOTHER**—"Yes, it's the custom there." **LITTLE DAUGHTER**—"I'm glad I'm an American. Here we only have to learn to typewrite."—*Smith's Good News*.

Joseph Budde Manufacturer of Sanitary Appliances. Medals and diplomas awarded at the State Fair at Sacramento, Cal., in 1888 and 1889 for the popular Golden Gate patent water closet, speak for themselves. The best award of honor is perhaps the unanimous approval of those who have been fortunate enough to have their houses supplied with his appliances. The man that would find fault with what he can select from Mr. Budde's varied stock would indeed be hard to please.

"The landlord has put up the rent on the family that have the second flat." "Is there anything wrong with them?" "He thinks so they have never complained about anything."—*Chicago Inter-Ocean*.

Mr. George Goodman the patentee and manufacturer of artificial stone in all its branches can be found at his office in the Nevada Block, 307 Montgomery street; he makes a specialty of side walks and garden walks—but anything in his line is sure to be well done for the man takes a pride in his work, as well as knowing how to do a good job and is therefore entitled to his name of "Goodman."

Watts—"Do you always agree with your wife when she makes an assertion?" **Porter**—"Of course I don't. Do you suppose I want the poor woman to have no amusement at all?"—*Indianapolis Journal*.

The Western Iron Works.—Notwithstanding the dull times and general stagnation of business the above named firm moves on in the even tenor of a well regulated concern, and continue to furnish iron and steel building work; they are also the sole manufacturers of the Champion Steel Wheelbarrow against this, thank Heaven, there has been no strike, so it will doubtless continue to run.

"Then, when you have finished your lecture," said the professor of elocution and deportment to young Dulle, "bow gracefully and leave the platform on tiptoe." "Why on tiptoe?" queried Dulle. "So as not to wake the audience," replied the professor.—*Pearson's Weekly*.

The J. L. Mott Iron Works continue in the good work of manufacturing, contriving and improving all the various articles for making home a healthy place—all will agree that without good plumbing no home is what it should be. If you want your wife to be able to say "Well after all there is no place like home for solid comfort," you must be careful to see that your house is well provided for in regard to good plumbing. The deserved reputation of the J. L. Mott Co. known all over the United States is a warrant that you get what you pay for when this firm supply the goods. Mr. James their agent has his office in the Flood Building.

San Francisco Slate Co.—We have before now had occasion to call the attention of our readers to the excellent quality of the slate furnished by the above company. At the present time when discord between labor and capital is making such disturbance in our community, and shutting off all communication with the east it is well to make up our minds to encourage home industry and show the world we are in a great measure independent of the outside world, and can furnish supplies of the first quality in building materials, by encouraging home industry to the fullest extent should be the aim of all those who have the welfare of this coast in consideration. Information about their slate and quarries may be had at the rooms of the company, 4 and 5, tenth floor, Mills Building.

Teacher (in mineralogy class)—"Johnnie, give me the name of the largest known diamond?" **JOHNIE**—"The ace."—*Tit-Bits*.

Phoenix Pure Paint—If you want facts about paints you should call upon W. P. Fuller & Co. who manufacture Phoenix Pure Paint, and who will give you all the reasons why their paint is considered the best, made of pure materials and finely ground and thoroughly mixed with heavy machinery are good reasons why their manufactured paint should stand A. No. 1.

"Has that horse a pedigree?" asked the tourist. "Nope," replied the honest farmer; "nothin' but the heaves."—*Washington Star*.

San Francisco Gas Light Co.—People who predicted a few years ago that gas had seen its day, when the electric light began to be talked about, reckoned without their host. The important fact that gas was an excellent substitute for coal in cooking was in a great measure overlooked. Now when we find the body of the house before a neatly constructed gas stove with shining pans and kettles, making a pleasure of cooking instead of the slavery of the coal stove with its heat and ashes, dust and dirt, all that is changed. Those who have been deterred from the use of gas for this purpose by the bugbear that gas costs so much, will find if they make the experiment that gas does not cost so much.

She—"And so they were married! Was it a case of love at first sight?" **He**—"I imagine not. The first time he saw her she was riding a bicycle."—*Life*.

Something new and useful.—Dixon's Waterproof Graphite Grease and Graphite Lubricants, manufactured only by Joseph Dixon Crucible Co., Jersey City, N. J. A table giving the results of experiments made at the Brooklyn Navy Yard by Robert Grimshaw, M. E., in collaboration with John A. Bell of the Equipment Bureau U. S. Navy, clearly shows the advantage in the use of this Lubricant.

Miss PADDINGTON—"Do you believe in love at first sight?" **MR. LINTON**—"Oh, no! It's impossible to be perfectly sure that a girl is rich."—*Boston Life*.

Mann's Patent Chimneys endorsed by the Board of Supervisors and recommended for general use by architects, fire wardens and insurance companies as the most complete and safest in the market. Can be found at 306 Sutter street bet. Grant Ave. and Stockton Sts. Messrs. Schuster Bros. agents, they are also sole agents for the Pacific Coast for the Celebrated Richmond Ranges, hot air furnaces and radiators. See their advertisement on page ii of this journal.

CITY BUILDING NEWS.

Army bet. Guerrero and San Jose. All work except brick and plumbing; owner, F. Kaufmann; architect, Townsend & Wyneken; contractor, F. V. Archer; signed, June 2; filed, June 2; cost \$5700.

Army bet. Guerrero and San Jose. Plumbing; owner, F. Kaufmann; architect, Townsend & Wyneken; contractor, Nanton & Gordon; signed, May 18; filed, June 2; cost \$1350.

Ashbury near Waller. To build; owner, Bedella Boyd; contractors, Jno. Sath and J. B. Cogswell; signed, June 16; filed, June 16; cost \$3175.

Bartlett near 21st. Alterations and additions, except plumbing; owner, A. E. Putridge; architect, Townsend & Wyneken; contractor, M. C. Lynch; signed, May 31; filed, June 2; cost \$5095.

Brauman and Fourth. Grading and concrete work for a church; owner, D. Neugeb; architect, John J. Clark; contractors, Flinn & Tracy; signed, June 1; filed, June 2; cost \$2000.

Broadway near Scott. To build; owner, M. E. Fitzhugh; architect, Reid Bros.; contractor, B. O. Johnson & P. G. Macintzer; signed, June 19; filed, June 23; cost \$3000.

Bryant near Butte. Two-story frame; owner, B. Hardy; contractors, Genscrowsky & Kolbe; signed, June 26; filed, June 26; cost \$2300.

California near Octavia. Alterations and additions; owner, Winslow Brown; architect, W. J. Matthews; contractor, Concannon & Shay; signed, June 9; filed, June 14; cost \$1570.

California near Broderick. To build; owner, Adolph Rapp; architect, Emil John; contractors, Lorenzen & Trevier; signed, June 9; filed, June 11; cost \$900.

Clay near Leavenworth. To build; owner, I. L. Hoffmann; architect, Chas. R. Wilson; contractor, F. V. Steinman; signed, June 15; filed, June 20; cost \$6650.

Clay near Franklin. To build; owner, J. W. Edwards; architect, W. H. Lillie; contractor, F. G. Kronnick; signed, June 23; filed, June 28; cost \$1700.

Clay near Franklin. Plumbing; owner, J. W. Edwards; architect, W. H. Lillie; contractor, H. Williamson; cost \$1700.

Douglas from Ocean House Road. To build; owner, Frank Dummell; contractor, Robert Frost; signed, June 6; filed, June 8; cost \$1513.

Eighth Ave. near California. To build; owner, William Royal; architect, C. S. Corrigan; contractor, C. Lansen; signed, June 12; filed, June 13; cost \$1550.

Florida near Solano. Carpenter, plumbing, etc.; owner, H. Throde; architects, Martens & Coffey; contractor, F. M. Schwabier; signed, May 29; filed, May 31; cost \$7250.

Florida near Solano. Excavation, stone and brick work; owner, H. Throde; architects, Martens & Coffey; contractor, J. O'Sullivan; signed, May 29; filed, May 31; cost \$5843.

Fifth and Clara. To build; owner, W. N. Weeks; architects, Shea & Shea; contractor, James Cochran; signed, June 9; filed, June 27; cost \$3618.

Fulton near Baker. To build; owner, Peter Garrity; architect, Edward Burns; contractor, Edward Mooney; signed, May 28; filed, May 29; cost \$4000.

Grove near Broderick. To build; owners, John Peters and wife; architects, Smith & Freeman; contractors, Henry Whittle & F. Smith; signed, June 1; filed, June 3; cost \$13,754.

H and 12th Ave. To build; owner, Mary V. Foley; architect, D. Foley; contractor, H. Behrens; signed, June 20; filed, June 22; cost \$1550.

Hampshire near 19th. To build; owner, Patrick Dempsey; contractor, H. P. Conrady; signed, June 9; filed, June 11; cost \$2700.

Henry near Castro. To build; owner, G. Carle; architect, H. Hess; contractor, C. Schweizer; signed, June 12; filed, June 13; cost \$1850.

Lake and Lake. To build; owner, L. W. Darbee; architect, Wm. F. Lee; contractors, R. A. William & Co.; signed, June 23; filed, June 25; cost \$2100.

Leavenworth and Post. Mantels; owner, S. F. Verein Assn.; architects, Salfeld & Kohlberg; contractors, Fink & Schindler; signed, June 15; filed, June 29; cost \$1500.

Leavenworth near Clay. Grading; owner, I. S. Hoffmann; architect, C. B. Wilson; contractor, A. E. Buckman; signed, June 13; filed, June 14; cost \$1300.

Linden near Octavia. Alterations, etc.; owner, G. H. Rudolph; contractor, U. G. Heath; signed, May 31; filed, June 3; cost \$182.

Market near 5th. Granite work; owner, A. M. Parrott; architects, Pissis & Moore; contractor, Raymond Granite Co.; signed, June 14; filed, June 14; cost \$21,405.

Market near 8th. Concrete and artificial stone; owner, L. W. Moffatt Ex. of Geo. Moffatt; architect, Chas. R. Wilson; contractor, W. F. Ambrose; signed, May 31; filed, June 15; cost \$4,320.

Market near 15th. To build; owner, Charles E. Hanlon; architect, T. P. Ross; contractor, Geo. Connon; signed, May 28; filed, May 31; cost \$4816.

Market near 5th. Brick and concrete; owner, Mrs. Emma Spreckles; architects, Reid Bros.; contractor, Crawford Ferries; signed, May 14; filed, June 3; cost \$19,012.

Market near Eighth. Underpinning and repairing brick building; owner, Levi Strouse; architect, Chas. R. Wilson; contractors, Richardson & Gale; signed, June 8; filed, June 9; cost \$1500.

Market near 5th. Elevator, etc.; owner, F. Gutzkow; architect, Edmund Kollofrath; contractor, T. Hammond; signed, June 13; filed, June 13; cost \$1950.

Mason near Jackson. To build; owner, St. Johannes Church by Trustees; contractor, Henry T. Griet; signed, June 1; filed, June 5; cost \$1050.

Minerva near Plymouth. To build; owner, Board of Education; architect, Chas. I. Haven; contractor, Morrison Cook; signed, June 7; filed, June 7; cost \$3355.

Morton between Dupont and Stockton. To build; owner, Jules Einden; architect, Emile Depierre; contractor, Jean Salunare; cost \$200.

Nevada near Rhode Island. Carpenter and brick work; owner, Thomas C. Van Bibber; architect, Wm. H. Wharf; contractor, Geo. O. Dean; signed, May 29; filed, May 31; cost \$1550.

Ninth near Howard. Carpenter work on three stores; owner, F. B. Wilde; architects, Smith & Freeman; signed, June 14; filed, June 18; cost \$2400.

Ninth Ave. near California. To build; owner, C. E. Carby; architect, Edward Burns; contractor, Geo. S. Paff; signed, June 26; filed, June 28; cost \$3200.

Oak near Buchanan. To build; owner, H. Beckery; architect, H. S. Munson; contractor, F. H. Wheeler; signed, June 6; filed, June 8; cost \$4,200.

Outside land block 29. Grading and filling; owner, La Societe Francaise de Biensance Mutual; architect, Emile Depierre; contractor, E. F. Demmon; signed, June 13; filed, June 13; cost \$1200.

Pacific near Dupont. To build brick building; owner, Paolo Arata; architect, Emile Depierre; contractor, P. A. Antonelli; signed, June 18; filed, June 19; cost \$3650.

Pacific near Dupont. Brickwork and grading; owner, Paolo Arata; architect, Emile Depierre; contractor, P. A. Antonelli; signed, June 20; filed, June 21; cost \$4800.

Pacific Ave. near Devisadero. Plumbing, sewerage and gas fitting; owner, Annie Meyer; architect, E. A. Hermann; contractor, H. Williamson; signed, May 29; filed, June 1; cost \$2325.

Page near Broderick. Additions; owner, the Board of Education; architect, Chas. I. Haven; contractors, R. Doyle & Son; signed, June 7; filed, June 7; cost \$5979.

Penna Ave. near Sierra. To build; owner, Thomas Hart; architect, Jas. Glackin; contractor, John Kennedy; signed, June 4; filed, June 5; cost \$1065.

Pine near Scott. To add a story; owner, Board of Education; architect, C. I. Haven; contractors, R. Doyle & Son; signed, June 7; filed, June 7; cost \$7498.

Post street No. 100. To build; owner, E. Preston; architect, Wm. Corbett; contractor, C. W. Kinsman; signed, June 6; filed, June 13; cost \$3140.

Post and Powell. Mantel, grates and hearth work; owner, A. M. Parrott; architects, Pissis & Moore; contractors, Ruffino & Bianchi; signed, April 14; filed, April 14; cost \$2857.50.

Sacramento near Pierce. Plumbing; owner, G. E. Bacon; architect, J. J. Manseau; contractor, W. R. Smith & Co.; signed, May 26; filed, June 5; cost \$1400.

Sacramento near Pierce. Plastering; owner, G. E. Bacon; architect, J. J. Manseau; contractors, W. R. Smith & Co.; signed, May 28; filed, June 5; cost \$1400.

Seventeenth near Serpentine. To build; owners, E. Perry & wife; contractor, J. J. Kolbe; signed, June 5; filed, June 6; cost \$1080.

Steiner bet. Fell and Hayes. To build; owner, F. Marx; architect, M. J. Lyon; contractor, E. McWest; signed, May 21; filed, June 8; cost \$3275.

Steiner bet. Fell and Hayes. To build; owner, F. Marx; architect, M. J. Lyon; contractor, E. McWest; signed, May 21; filed, June 9; cost \$3800.

Steiner and Hayes. To build; owner, T. A. McCormick; architect, T. P. Rabin; contractors, E. S. Slack & F. Corbett; signed, June 21; filed, June 22; cost \$3400.

Tenth near Folsom. Freseing a church; owner, Rev. P. Scanlon; contractors, Rasch & Walker; signed, June 8; filed, June 11; cost \$2400.

Tehama near 5th. Carpenter work, etc.; owner, L. Silverstone; architects, Salfeld & Kohlberg; signed, June 14; filed, June 20; cost \$3875.

Union and Laguna. Plumbing, etc.; owner, T. W. Allyne & W. H. White; architect, Charles Geddes; contractor, R. A. Vance; signed, May 26; filed, June 5; cost \$1549.

Union near Laguna. Plastering, etc.; owners, T. W. Allyne & W. H. White; architect, Chas. Geddes; contractor, W. C. Watson; signed, May 24; filed, June 5; cost \$1150.

Vallejo near Stockton. To build; owners, D. and Emma Stang; architect, Julius E. Kraft; contractor, F. W. Kern; signed, June 16; filed, June 18; cost \$1820.

Valencia near Quinn. Alterations and additions; owner, Sarah B. Melone; architect, Clinton Day; contractors, Connon & Thompson; signed, June 27; filed, June 28; cost \$2670.

Washington and Laurel. Plumbing, etc.; owner, John Dempster McKee; architect, W. H. Lillie; contractor, W. H. Tobin; signed, May 31; filed, June 1; cost \$1500.

The California Architect and Building News.

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OFFICE, 408 CALIFORNIA STREET,

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

VOLUME XV.

AUGUST 20th, 1894.

NUMBER 8.

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.

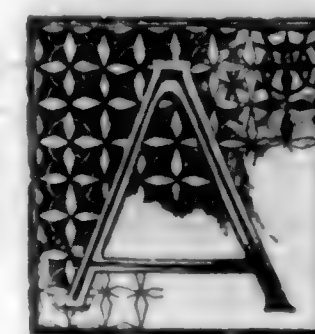
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1/2 Page.....	20.00	57.50	105.00	200.00
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the usual dullness in business still continues, the ways of the drummer are as hard as ever. This dullness has affected also the building trades for the last two years, and will continue to do so for the balance of this year. Next year a revival will take place if we may judge from the prior history of the world and by analogy. The commercial or distributing system under which we are working, and under which the civilized world has been working ever since history commenced requires these depressions and reactions to take place; and they will keep on taking place and with increased virulence for the simple reason that science of distribution has not kept pace with the science of production. With our wonderful scientific discoveries and machinery and mechanical power we can easily produce by using all available human labor working the ordinary number of hours per day enough products to fill the consumption of the civilized world of ten years in three.

Now while these are facts it is a self-evident proposition that humans are working too hard; and until they confine their working hours to four hours per day they will have to

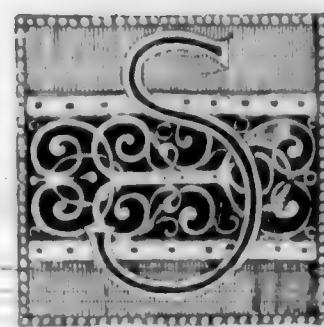
bear the hardships now scattered upon them. By doing this by distributing their labor throughout the ten years and all working instead of concentrating their efforts into five years and then laying off for the other five as they now are practically doing and being hard up and many starving for those five, people will be able to live well right along and not over work themselves at one time and go round with their hands in their pockets at another.

This unscientific way of production is well illustrated by the progress of the northern towns of this coast. Portland, Tacoma, Seattle, all concentrated their buildings in five years what ought to have been distributed over ten years at least so now they lie dormant.

No apology is needed in bringing attention to this in a professional journal as architects and the building trades are as much affected as any by this evil.

Let the law making powers of our boasted civilization, find and apply the remedy or remedies for such a deplorable condition of human affairs and general plenty and contentment will reign; and instead of longing for destruction to take place so as to provide work, we shall all strive to conserve all our wealth as there will be nothing gained by destroying it.

LAVER VS. CITY HALL COMMISSIONERS.



OME fine legal points have been lately raised in regard to the matter of the completion of the New City Hall.

Architect Laver, the designer of the original plans for the building, has lately filed a suit asking the courts to restrain the commissioners from carrying out their designs for crowning the unfinished rotunda with a dome, instead of the square clock tower designed by Mr. Laver.

By the courtesy of Mr. Laver we are enabled to publish the full text of his complaint against the New City Hall Commissioners in this matter.

FIRST—That said Plaintiff now is, and for many years prior hereto, has been a tax payer in said City and County of San Francisco, State of California, having real property during all of said time listed upon the assessment roll of said City and County and duly assessed therein:

SECOND—That said Defendants, L. R. Ellert, William Broderick, and H. T. Creswell are now and for more than one year last past have been the duly and legally constituted, qualified, and acting members of said Board of New City Hall Commissioners, in said City and County of San Francisco.

THIRD—That heretofore, to wit: On or about the first day of April, 1870, the Legislature of the State of California duly past an Act, entitled, "An Act to Provide for the Erection of City Hall in the City and County of San Francisco," and said Act was approved by the then Governor of said State on the fourth day of April, 1870. That under and in accordance with the provisions of said Act, said Governor appointed P. H. Cannavan, J. G. Eastland and Charles McLane as Commissioners of said City Hall provided to be erected by said Act, who immediately thereafter, duly qualified as such Commissioners by taking the required oaths and giving the required bonds, and organizing as required by said act "The Board of City Hall Commissioners" in said City and County of San Francisco.

FOURTH—That on or about the eleventh day of February, 1871, said Board duly adopted complete designs and plans as prepared and presented to said Board by the firm of Fuller, Laver & Co. for said City Hall, which said designs and plans are now on file in the office of the architect of said building. That no other and different plans for said building were ever adopted by said Board. That according to the said designs and plans there was to be built upon the Southern middle portion of said City Hall and as a part thereof a Square Clock Tower of the height of about four hundred and fifth-three (453) feet.

FIFTH—That on the twenty-fourth day of March, 1876, the Legislature of said State of California duly past an Act, entitled, "An act to Provide for the Construction of the Building in the City and County of San Francisco, known as the New City Hall" and by the provisions thereof, the then Mayor, City and County Attorney, and Auditor of said City and County of San Francisco, were authorized and empowered to act as a "Board of New City Hall Commissioners" for the said City and County of San Francisco.

SIXTH—That immediately after said twenty-fourth day of March, 1876, said Mayor, said City and County Attorney, and said Auditor duly qualified as such Commissioners as required by said last mentioned Act, and proceeded to, and did duly organize said Board of New City Hall Commissioners and they and their successors in office ever since have constituted and now do constitute "The Board of New City

Hall Commissioners" of said City and County of San Francisco. That said last mentioned Board, as directed by the provisions of said Act of March 24th, 1876, on or about the first day of April, 1876, took possession and control of all the plans, specifications and designs of every description and kind of said building, which has been adopted as aforesaid, and which were then in the possession of the Board of Supervisors of said City and County of San Francisco, and ever since and now have the same in their possession and under their control.

SEVENTH—That under and by virtue of the provisions contained in last aforesaid Act of the Legislature of said State of California, said Board of New City Hall Commissioners were authorized, empowered, and directed to proceed with the construction and completion of said New City Hall according to the plans theretofore adopted on said eleventh day of February, 1871, for said building, to wit: the said plans of said Fuller, Laver & Co.

EIGHTH—That on or about the fifth day of May, 1894, said Board of New City Hall Commissioners entered into a written contract with the firm of O'Connell & Lewis for the erection and construction of a dome of the height of two hundred and fifty feet, upon said City Hall in the place and stead of said clock tower as indicated and provided for by the designs and plans of said building theretofore adopted as aforesaid. That the plans and designs according to which said Board of New City Hall Commissioners have contracted as aforesaid with the said firm of O'Connell & Lewis to construct said dome are entirely different from the said adopted plans of the said Tower. That said Plaintiff is informed and believes and therefore alleges that said Dome, if constructed in accordance with the terms, conditions, specifications and plans contained in said contract will cost over fifty thousand (50000) dollars more than said Tower would have cost, if built according to the plans adopted as aforesaid, and said Dome will materially detract from the architectural beauty of the said building. That said contract is wholly illegal and unauthorized and will if carried out and completed work irreparable injury to the Plaintiff.

NINTH—That said last mentioned Board of New City Hall Commissioners have, prior to the commencement of this action by resolution passed at a meeting of said Board, resolved to pay to said firm of O'Connell & Lewis the sum of \$5250.62, as part payment for work performed and materials furnished under said contract, and said last mentioned Board threatens and will if not restrained by order of this Court allow the said claim and direct the Auditor of said City and County of San Francisco, to audit the same, and further proceed to have said Dome completed as provided by said contract.

TENTH—That all money agreed to be paid to said firm of O'Connell & Lewis under said contract for the construction of said Dome, will be paid out of the New City Hall fund in the hands of the Treasurer of the said City and County of San Francisco, and said fund is a part of the municipal taxes collected from the tax payers of said City and County.

WHEREFORE, SAID PLAINTIFF PRAYS:

FIRST—That said Defendants by order of said Court be perpetually enjoined and restrained from allowing said claim of O'Connell & Lewis for said sum of \$5250.62.

SECOND—That said Defendants by order of said Court be perpetually restrained from proceeding in the construction and completion of said Dome under said contract, as alleged herein.

THIRD—That said contract and all proceedings of said

Board of New City Hall Commissioners in relation thereto, be decreed illegal and void and for such other and equitable relief as to the Court may seem just.

GALE & PEERY AND J. F. FLEMING,
Attorneys for Plaintiff.

The lawyers representing the City Hall Commissioners demurred to the complaint and Judge Slack has sustained the demurrer.

The question raised by the demurrer was whether the board has power under the act of March 24, 1876, to change the plans adopted so as to construct a tower and dome 150 feet high instead of a tower 250 feet in height.

In his decision Judge Slack says that the act of April 4, 1870, provides that the Commissioners shall adopt plans for the erection of a new city hall, the object being to provide a permanent building which in their judgment would be sufficient and suitable to accommodate the different departments of the city government.

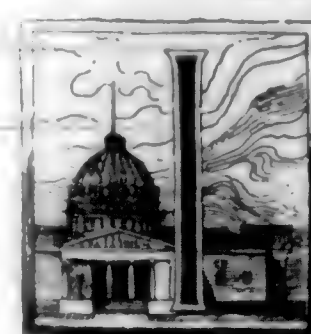
Under this act Judge Slack holds that the adoption of plans for the erection of such a building as specified is confined to the judgment of the Commissioners. It is neither expressly nor impliedly contemplated that plans once adopted cannot be changed, and if during the course of construction the plans adopted were deemed unsuitable to the purpose of the commission they might in the exercise of their judgement change them.

When the act of March 24, 1876, provided for the creation of a Board of New City Hall Commissioners to take charge of the premises and proceed with the construction of the building "according to the plans heretofore accepted" or contemplated there was no change in the intent of the law. In considering the question upon which the complaint is based, "What was contemplated?" the answer is, "A permanent building sufficient and suitable to provide rooms for the departments of the city government."

If the present board, maintains Judge Slack, must proceed as contemplated it must furnish what the statute ordered and if charges are deemed necessary the board has power to make them.

For these reasons the demurrer was sustained and Laver was allowed ten days in which to amend his complaint.

THE NEW GOVERNMENT ARCHITECTURE BILL.



IN the House of Representatives on June 16, 1894, Mr. McKaig introduced the following bill: (H. R. 7470) "To provide for the securing of plans and for the erection of the public buildings of the United States," which was referred to the Committee on Public Buildings and Grounds and ordered to be printed.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That the President, by and with the advice and consent of the Senate, shall appoint a commission on public architecture consisting of three architects of high scientific and artistic attainment and large practical experience, and two officers of the Engineer Corps of the United States Army. If necessary, a separate appointment of any or of all three members of the commission who are architects may be made for each building under consideration, and members of the commission for one building may act upon other buildings. That the commission under the general direction of the Secretary of the Treasury shall discharge all the administrative duties relating to the procuring of designs and the appointing of architects for all buildings hereafter erected by the Government of the United States.

SEC. 2. That the Secretary of the Treasury shall be the

president of the commission ex-officio, and the Supervising Architect of the Treasury Department shall be a member of the commission ex-officio. In the absence of the president of the commission one of the members shall be elected as chairman by ballot, and he shall preside at the meetings and perform such other duties as the rules of the commission may prescribe: and the Supervising Architect of the Treasury shall act as secretary of the commission.

SEC. 3. That the Secretary of the Treasury shall convene the commission whenever in his judgment the exigencies of the service require it.

SEC. 4. That the commission shall adopt rules and regulations governing competition in the procuring of designs, and for the government of its meetings and the general performance of its duties. The members of the commission shall be paid their actual expenses and subsistence and a per diem allowance of ten dollars while actually engaged in the performance of their official duties, but no per diem allowance or salary shall be allowed to any civil or military officer on account of his being employed on the commission, but his actual traveling expenses and subsistence shall be paid while engaged thereon.

SEC. 5. That in case the limit of cost provided by law is one hundred thousand dollars or over, the commission shall select by ballot, for each building, five architects to prepare designs in competition; in case the limit of cost is less than one hundred thousand dollars, the commission may, in its discretion, select by ballot an architect without competition. No architect shall be eligible for entering as a competitor, or for appointment, who has not had at least ten years' experience as an architect-in-chief, and unless he can satisfy the commission, through work already done by him, or otherwise, that he is competent to take charge of the economical construction of the building. The commission shall cause to be made and issued to competing architects surveys, schedules of requirements for the building, limitations of cost, and all facts which might control or influence the character of the required design. The commission shall specify the number and character of the drawings required, and fix a definite time for their completion. The Secretary of the Treasury, upon the recommendation of the commission, shall pay to each unsuccessful competitor, to reimburse him for expenses incurred in preparing the competitive drawings, the following amounts: For designs for buildings to cost not more than one hundred and fifty thousand dollars, the sum of one hundred and fifty dollars, and for each and every one hundred thousand dollars of the limit of cost of the building above that amount, the additional sum of one hundred dollars; but in no case shall more than one thousand dollars be paid to any unsuccessful competitor.

SEC. 6. That the commission shall reject and return to the author any drawings which have failed to exactly comply with the requirements and regulations adopted by the commission for the competition, and no compensation for their preparation shall be paid, and the author thereof shall be debarred from all further participation in the competition. The commission shall carefully examine the drawings of each competitor in competition and shall select one design as the design of the proposed building, and shall recommend its author as the architect for that building and return forthwith all other drawings to their authors. The Secretary of the Treasury shall thereupon appoint the architect so recommended and he shall perform all the customary duties performed by an architect in private practice, namely: The making of all preliminary sketches, the modification of his design to meet possible requirements of the commission, the preparation of a set of general working drawings to procure estimates; the preparation of a set of general details on a larger scale, a set of full-size drawings for moulded, carved or ornamental work, and a set of all other original drawings and specifications required by the commission. He shall

supervise the construction of the building, and no payment shall be made to any contractor until the certificate of the architect has been received by the Secretary of the Treasury that the work has been executed in conformity with the contract. He shall file a complete set of the construction drawings in the Treasury Department, from which all duplicates shall be made, which duplicates shall be paid for out of the appropriation for the building. The architect shall be paid for his services a fee of five per centum upon the total cost of the work and the usual traveling expenses. The expenses of the commission and the fees of the architect shall be paid by the Secretary of the Treasury out of the appropriation for the building in the erection of which they were incurred.

SEC. 7. That the Secretary of the Treasury, upon the recommendation of the commission, shall authorize the architect to employ a competent clerk of the works, at a salary to be established by the commission, and he shall be paid for his services out of the appropriation for the building.

SEC. 8. That the Supervising Architect of the Treasury Department, under the direction of the Secretary of the Treasury, shall be the representative of the Government in all matters connected with the erection and completion of public buildings and the payment therefor. He shall receive proposals for the work and, with the approval of the architect of the building, he shall award the contracts therefor. He shall perform all other duties that now pertain to his office except such duties as are vested by this act in the architect of the building.

SEC. 9. That all acts and parts of acts inconsistent with this act are hereby repealed.—*The Inland Architect and News Record.*

ACOUSTICS IN ARCHITECTURE.

BY ALEX. F. OAKLEY.



HE published contributions to the discussion of Acoustics in Architecture have not been hitherto sufficiently definite to establish even the basis for an exact science.

I would not underrate the labors of Mr. Scott Russell, Mr. T. Rodger Smith, M. Lachez, M. Savart and others; but it must

be admitted that the contributions of these gentlemen are tentative and almost altogether analytic in method: attempts to account for success or failure by application of known acoustic phenomena to the conditions of existing auditoriums. In these attempts much valuable data in measurement and description of auditoriums has been accumulated, but the reasons alleged for success or failure in particular instances have been nullified by inconsistencies, made apparent by conditions in other instances.

Physicians will tell us that the essential step in medical treatment is a correct diagnosis, that it is futile to treat a patient for a paralysis superinduced by inflammatory rheumatism, when the real trouble is a little brain tumor on a nerve center near the fissure of Rolando. Intuitive perception may suggest lines of inquiry, but it is only by the most minute synthetic process that any reliable base can be established. The more we learn the more vague become the dividing lines between the sciences, until we are forced to realize with a sigh, that the thorough understanding of anything involves at least a general understanding of almost everything else.

With this conviction I undertook the study of the human ear, the human voice, the construction of musical instruments and of harmony, in the hope that such knowledge as I had already acquired, as an architect, of the nature of materials, of heating and ventilation, and other familiar

matters, might, so supplemented, enable me to form a practical theory, and I have not been disappointed. Without the application of facts and deductions never sought for our uses, by such men as Professor Von Helmholtz, Professor Haws, Dr. Mackenzie and many more, we would have to admit that the acoustics of halls and theaters are, as stated by a prominent actor and playwright, "notoriously and confessedly a matter of accident." This is the prevailing belief, even among architects, and few of them have made any serious attempt to remove the stigma. In explaining my own efforts to this end I would ask your indulgence for any seeming dogmatism, as we lack time for the arguments and reasoning that warrant my conclusions, but I shall make no assertion that you cannot verify at the cost of following carefully the line of inquiry I shall briefly describe.

It should be noted that an auditorium that is practically all that could be desired for speaking is not always acoustically satisfactory for music, as for instance, the lecture hall of the University of London; while an auditorium that is acoustically satisfactory for music is always satisfactory for speaking, like the little Chamber-Music Hall, in Leipsig. Hence only the musical requirements concern us, and these are not satisfied by mere hearing, in the sense that one may hear what occurs on the opposite side of a street, however exactly one may catch the least word of a conversation. The music lover must be physically in vibratory sympathy with the rendering. The capacity for this varies greatly, but for our purposes we choose a musically supersensitive mortal blessed, of course, with the positive ear. Let us examine this marvelous organ. It will repay our study, for it includes the most perfect music hall imaginable, in which the whole symphony of life is always and forever performing. This symphony, for the modern city denizen, is so horribly dissonant that if he is not rendered partially deaf his ear becomes jaded, like a hack horse, and is no longer capable of the finer sensibility. There is an analogy worth noting here: that a fine violin, constantly excited by the scraping of a mere fiddler, loses tone, and must be nursed and trained by a master to its natural responsiveness; and we shall have occasion to refer to this fact when discussing the properties of materials in their bearing upon our results.

For our present purpose we need not dwell upon the wonders and mysteries of the middle ear and the inner ear, though I would recommend the study if only to convince us that no broadax, happy-go-lucky method of probabilities can possibly serve in ministering to such a delicate constitution. The music hall I referred to is the external auditory canal, whose proportions and parabolic concavities, together with the nature and action of the membranes, present a hall in which any sort of sonorous vibration is sustained, increased or diminished, modified, or totally changed or instantly stopped, without possibility of confusion; and this chamber illustrates the essential principles of a fine violin, which, as you know, is a combination of parabolic reflectors with a common axis, the internal space, being in harmonic proportion, inclosed by different thicknesses and kinds of wood, the shapes and properties of each piece being determined by the nicest acoustic law.

We need not now further discuss the construction of the violin, though its minutest detail is of essential importance to us. I should occupy this convention for a week if I allowed myself anything more than a suggestive outline of various matters involved in the main question. It is important to state, however, that we are now with certainty making violins that lack nothing but age to equal the great Stradivaris, Amatis and Guarneris. I need hardly say that a concert hall exactly like the auditory canal or the violin would not serve. I am talking of principles that are applicable to an infinite variety of conditions. The audience in the auditory canal is a single listener who never changes his seat and presents no absorbing surface, is contented to remain in darkness, and does not vitiate the air by breathing or perspiring. However, all these considerations have been

carefully weighed and reduced by actual, practical experiment to figures and formulæ, that can be handled and controlled with certainty. One vexing question especially has been eliminated by the introduction of the incandescent electric light. We can now avoid the stratification of the atmosphere into different densities, different degrees of heat and moisture, and, in short, so far as the conditions of the air itself is concerned, we can absolutely reproduce the ideal conditions of homogeneity of the auditory canal.

We know now how to supply oxygen with the due proportion of heat and moisture, and draw off from below, if necessary, in the riser of every seat, the carbonic anhydride, ammonia, etc., and to give the whole body of air the desired movement toward the audience and upward to our heat vents. The necessity for proportionate measurements of an auditorium, if other evidence than is supplied by the ear and the violin is necessary, may be appreciated from the phenomena of the voice and those of the action of sound waves. If it is admitted that what we are striving for is to achieve such conditions, that what takes place in the auditory canal, in a violin, or in the mouth cavity of a great singer, shall, on a larger scale, take place in our auditoriums, it must also be admitted that the proportionate resistance of the body of air to be set in tremulous action in every direction must be determined with the same nicety that nature has taught us. An examination of Dr. Mackenzie's collection of casts of the mouth cavities of great singers is as suggestive and useful as the other inquiries I have touched upon. These forms, as might be expected, vary greatly, but the same principles of proportion and parabolic curvature prevail; but in these we are dealing with an instrument for producing sonorous vibrations, not an apparatus for measuring them, and it is instructive to note that the contralto or the soprano mouth cavity is distinct from the tenor or the baritone, and from each other, as much so as the length, size and other properties of the respective vocal cords, as also the quality and action of the respective lining membranes.

We must go back to the violin and to practical experiments based upon its functions to determine how and to what extent absorbent surfaces—especially those presented by an audience—interfere with our results; and how this interference shall be controlled and made an essential factor of success, as certainly as the stopping of a string on a fret-board. This has been settled by determining the amount of absorbent material, such as woollen fabric, that can be put into a violin without appreciably muffling the tone; and by corroborating the results of these delicate trials in actual experiments with audiences, curtains and other appliances in various rooms and halls, under various conditions. The results would seem to establish formulæ: That when the cubic space exceeds 325 feet per head, too great resonance need not be feared; on the contrary, every means of increasing resonance must be employed. As the proportionate cubic space is less than the above maximum figure, extremely resonant surfaces for walls and ceiling should be proportionately replaced by less and less resonant surfaces, until the conditions demand hard, non-resonant surfaces such as plaster throughout, when the minimum figure of 180 cubic feet per head is reached.

As to reverberation or echo, all possibility of such disturbance is obviated by the general form of the auditorium, which may be best described by a half-revolution of an obtuse parabola on its axis, the focus being on the floor line behind the last row of seats. You will ask how in the same auditorium the ideal balance of resonance can be preserved between very full, dense audiences and moderate or thin audiences? These varying conditions can be met by the simplest mechanical devices of pedals controlled by the occupation of the seats automatically, so that as the audience fills up the dampers act proportionately on area after area of surface. I am quite aware that the average manager may shrink at the possible expence involved in this, as in other essential precautions. But why should we not take seriously the announcements we occasionally see that every precaution has been taken to insure acoustic success? These announcements are like the moral clauses in political platforms—admissions that there are enough intelligent people who think something of the kind should be accomplished to make the

verbal concession advisable. As to arrangement of seating there can be no doubt that each row should be at least four inches higher than that in front, but I cannot find evidence to warrant insistence on a greater difference, for in a hall or theatre of approximately good acoustic properties, when the heating and ventilation are properly adjusted, the seats in the galleries are no better than those on the floor.

I will venture the assertion that if we will conscientiously construct a music hall on the principles we have mentioned, and construct our walls and ceiling in panels of wood of varying thickness and quality, the thinner and more easily excited surfaces being furthest from the voice or instrument, we can achieve results that shall insure a refinement of enjoyment hitherto unknown. Referring to the effect of careless, tuneless playing upon a violin, the effect upon a voice of persistently singing out of tune, compared with the effect of the opposite tasteful method, we can easily believe that some acoustic defects in auditoriums may grow worse with time as others may improve. As for remediable measures: Sounding-boards, stretching of wires, etc., we may admit that these and many other more radical prescriptions may be warranted by a correct diagnosis of the disease. I am inclined to think, however, that if the wires have ever done any good it was because accidentally, by their varying tension, they supplied in a bungling way a similar apparatus to the rods of Corti of the inner ear, by which the physiologists are not yet agreed that we distinguish the quality of tones by measuring the over-tones. However this may be, of one thing I am certain, that all subdivisions of space, such as that under galleries, must be treated on the same principles as the main auditorium, and with the same nicety as to detail. That it is necessary to construct our ceiling, walls and floor with sufficient space behind, above or below, to insure the action of our resonant panels and that these spaces must not be mere waste spaces, but properly finished chambers, properly dry and ventilated. There are advantages in this from a practical view: that the main construction of the building is a thing apart, our hall is an apparatus, a sort of large ear with its own laws of being within.

We are possessed of the data for a book on the whole subject, a work that shall be exhaustive and final, to which we could turn for facts and formulæ with the same reliance that we use our engineers' pocket books for tests and strains. Such a work would be copiously illustrated and could not be less voluminous than Professor Helmholtz's "Sensations of Tone as a Physiological Basis for the Theory of Music." But where shall we find the devoted spirit who could, if he would, give three years of his life without hope of pecuniary reward, and where is the publisher who will invest the necessary thousands in so unpromising a venture? In what I have said I have adopted the tone of positive assertion because I most potently believe what I have told you, and am warranted in so believing by the results of practical experiments. I could not in any less compass than a dozen courses of a dozen lectures of an hour or more each, have marshalled and reviewed all the facts, all the details, of investigation and the reasoning based upon these; and I have, therefore, thought best to flatly state my conclusions in the hope that they may excite discussion.—*World's Congress of Architects.*

A SAD ACCIDENT ON MOUNT TAMALPAIS.

WM. Curlett, Jr., son of William Curlett, the architect, whose home is in this city, was killed by the accidental discharge of a rifle in the hands of Ralph Prescott.

Prescott is said to be wild with grief over the unfortunate affair, as young Curlett had been his friend for years. We cannot refrain from offering our most heart felt sympathy to the family and friends of the young man.

A new law in the State of New York requires that all stone for Municipal and State buildings shall be cut, dressed and carved on the premises where used.

supervise the construction of the building, and no payment shall be made to any contractor until the certificate of the architect has been received by the Secretary of the Treasury that the work has been executed in conformity with the contract. He shall file a complete set of the construction drawings in the Treasury Department, from which all duplicates shall be made, which duplicates shall be paid for out of the appropriation for the building. The architect shall be paid for his services a fee of five per centum upon the total cost of the work and the usual traveling expenses. The expenses of the commission and the fees of the architect shall be paid by the Secretary of the Treasury out of the appropriation for the building in the erection of which they were incurred.

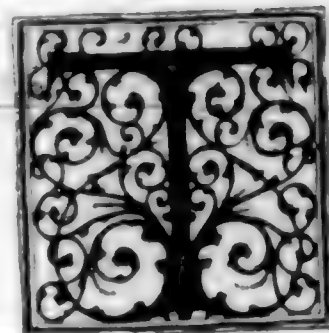
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I will venture the assertion that if we will conscientiously construct a music hall on the principles we have mentioned, and construct our walls and ceiling in panels of wood of varying thickness and quality, the thinner and more easily excited surfaces being furthest from the voice or instrument, we can achieve results that shall insure a refinement of enjoyment hitherto unknown. Referring to the effect of careless, tuneless playing upon a violin, the effect upon a voice of persistently singing out of tune, compared with the effect of the opposite tasteful method, we can easily believe that some acoustic defects in auditoriums may grow worse with time as others may improve. As for remediable measures: Sounding-boards, stretching of wires, etc., we may admit that these and many other more radical prescriptions may be warranted by a correct diagnosis of the disease. I am inclined to think, however, that if the wires have ever done any good it was because accidentally, by their varying tension, they supplied in a bungling way a similar apparatus to the rods of Corti of the inner ear, by which the physiologists are not yet agreed that we distinguish the quality of tones by measuring the over-tones. However this may be, of one thing I am certain, that all subdivisions of space, such as that under galleries, must be treated on the same principles as the main auditorium, and with the same nicety as to detail. That it is necessary to construct our ceiling, walls and floor with sufficient space behind, above or below, to insure the action of our resonant panels and that these spaces must not be mere waste spaces, but properly finished chambers, properly dry and ventilated. There are advantages in this from a practical view: that the main construction of the building is a thing apart, our hall is an apparatus, a sort of large ear with its own laws of being within.

We are possessed of the data for a book on the whole subject, a work that shall be exhaustive and final, to which we could turn for facts and formulæ with the same reliance that we use our engineers' pocket books for tests and strains. Such a work would be copiously illustrated and could not be less voluminous than Professor Helmholtz's "Sensations of Tone as a Physiological Basis for the Theory of Music." But where shall we find the devoted spirit who could, if he would, give three years of his life without hope of pecuniary reward, and where is the publisher who will invest the necessary thousands in so unpromising a venture? In what I have said I have adopted the tone of positive assertion because I most potently believe what I have told you, and am warranted in so believing by the results of practical experiments. I could not in any less compass than a dozen courses of a dozen lectures of an hour or more each, have marshalled and reviewed all the facts, all the details, of investigation and the reasoning based upon these; and I have, therefore, thought best to flatly state my conclusions in the hope that they may excite discussion. *—World's Congress of Architects*

A SAD ACCIDENT ON MOUNT TAMALPAIS.

WM. Curlett, Jr., son of William Curlett, the architect, whose home is in this city, was killed by the accidental discharge of a rifle in the hands of Ralph Prescott.

Prescott is said to be wild with grief over the unfortunate affair, as young Curlett had been his friend for years. We cannot refrain from offering our most heart felt sympathy to the family and friends of the young man.

A new law in the State of New York requires that all stone for Municipal and State buildings shall be cut, dressed and carved on the premises where used.



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.

SCHOOL, House at Redwood, Martens & Coffey Architects.

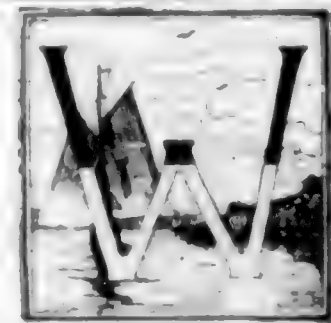
ACEPTED Design for City Hall, Alameda, Percy & Hamilton, Architects.

DESIGN of the City Hall, Alameda Cal., W. O. Banks, Architect.

PRESENTATION OF THE ROYAL GOLD MEDAL TO SIR
FREDERICK LEIGHTON, BART., P. R. A. [H. A.],
MONDAY, JUNE 25, 1894.

ADDRESS BY THE PRESIDENT, FRANCIS C. PENROSE,
M. A., F. R. S., F. R. A. S.,
KNIGHTS OF THE ORDER OF THE SAVIOR IN GREECE.

COLLEAGUES AND GENTLEMEN:—



I have before us this evening a grateful task, and one in which I feel it to be a high privilege to take a share, in presenting, in the name of our Most Gracious Patron, Her Majesty the Queen, the Gold Medal to one who has greatly honored us by accepting it at our recommendation. The distinguished President of the Royal Academy is well known to all of us here by his works and by his renown, to many by his friendship, and his genial courtesy to all who have had any intercourse with him.

As it is possible that some one who has not sufficiently followed the considerations which have guided the Institute in this award might ask, Why should a medal intended for the recognition of architectural merit be awarded to a painter? I propose addressing myself briefly to that point by-and-by; but, in the first place, I will endeavor to trace shortly some of the steps by which our distinguished friend has attained the highest eminence in our British world of Art.

Sir Frederic Leighton was born at Scarborough, and his natural inclination towards the graphic arts early declared itself. His father, a physician, though he had other views for his son—intending, it is said, to give him a University education, with a view to his ultimately being called to the Bar—nevertheless encouraged him to make himself acquainted with anatomy, and gave him every facility for the study of art in order that he might be equipped for the profession should he eventually follow it. We early find him, then studying at Rome; and, if I may be allowed a moment's digression, this leads me to reflect that I must occasionally

have fallen in with him during the winter and spring months at the Artists' excursion called the Cervara, or on the Pincio, or when it was the ambition of the British art students who were there to fall in with John Gibson at his early coffee at the Lepre.

Dr. Leighton became so far a convert to his son's wishes as to consent that the latter's drawings should be submitted to the famous American, Hiram Power—a man not less remarkable for his great skill as a sculptor and his knowledge of art, than for his noble physique, his courteous manners, and his sterling character—and if he decided that there was the true artist's ring about these works, his son should no longer be opposed in following the bent of his inclination. We may, I think, appreciate the pleasure which the good American had in assuring the father that there could be no doubt whatever on the subject. The pithy way in which old Hiram Power gave his verdict is worth recording: "Then you think," said Dr. Leighton, "I ought to let my son be an artist?" to which there came the answer: "You have no choice, sir; Nature has done that already." After this, the youthful painter studied in various European centres, and made himself proficient, not only in the art of the countries in which he sojourned, but also in the languages, as those who have heard his discoursing with foreigners can testify. At Brussels, when eighteen years of age, he produced his first finished picture, "Cimabue finding Giotto in the Fields." He shortly afterwards showed his sympathy with our profession by a painting of which the subject was the death of Brunellesco. After some residence in Paris, working at the Louvre, he studied at Frankfort under the painter Steinle, to whom he submitted the design of his magnificent picture "The Triumph of Cimabue," which he carried out at Rome. I have heard that during this period Thackeray fell in with him, and prophesied that, although as yet altogether unknown in England, he would become President of the Royal Academy.

The great picture above referred to was sent to England for the Exhibition of 1855, then held in the rooms of the present National Gallery. The seniors here present can remember, and many of the juniors who saw the picture when it was exhibited again at Manchester can well understand, the fervour which was created on all sides by the unexpected appearance of such a work by a man hitherto unknown. The picture was immediately bought by the Queen. But, for the present renouncing what might have seemed a lucrative opportunity for accepting work in London, he returned to his studies, and resided for some years on the Continent, chiefly in Paris, in communication with some of the most distinguished painters of that capital.

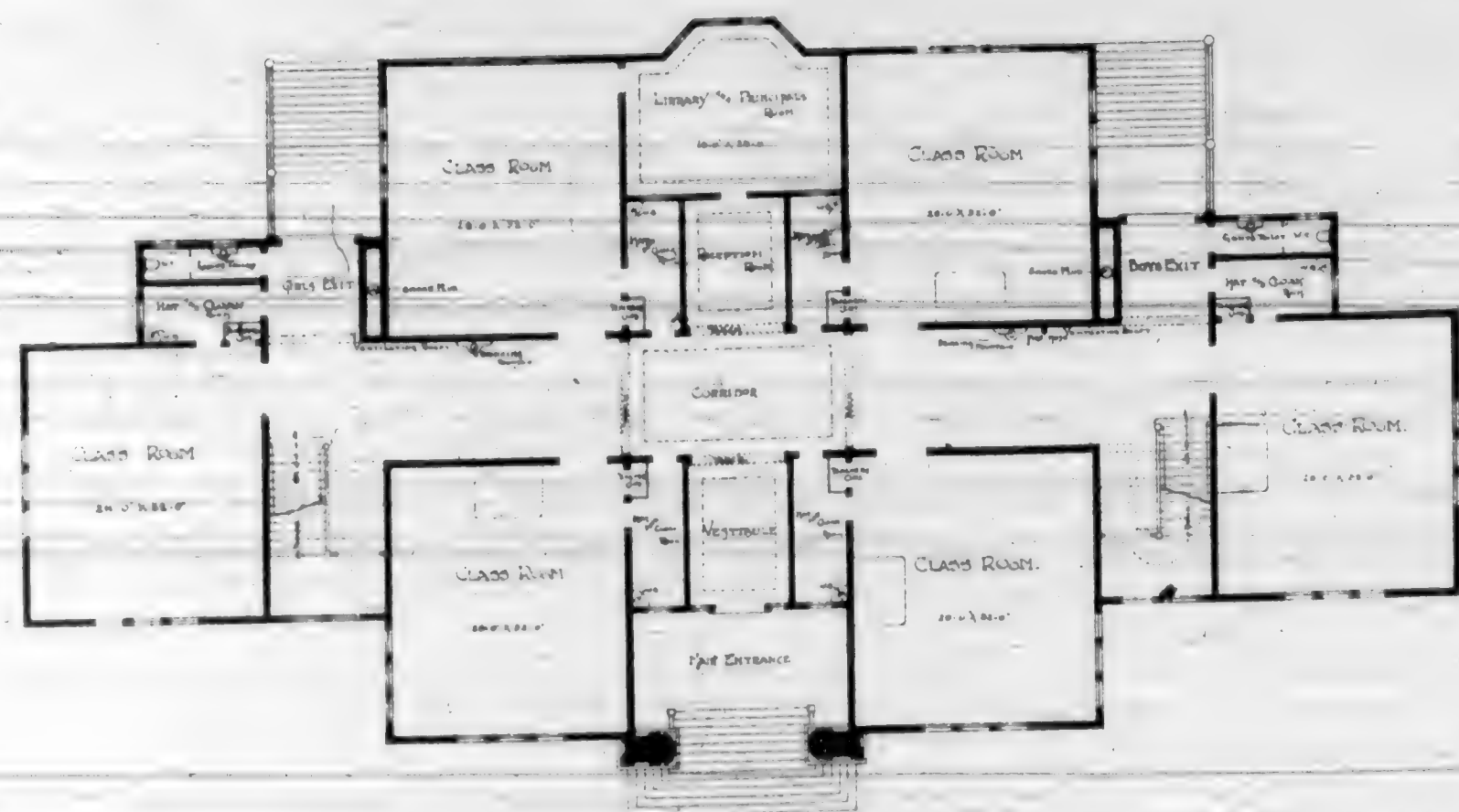
Soon after his return to England, he painted the fine fresco representing "The Five Foolish Virgins," in the church at Lyndhurst, in the New Forest; and in the same material, but more recently, two large fresco paintings at the South Kensington Museum, representing the Industrial Arts applied to Peace and War.

It is, however, impossible, in the space here available, to enumerate anything like a list even of his principal paintings.

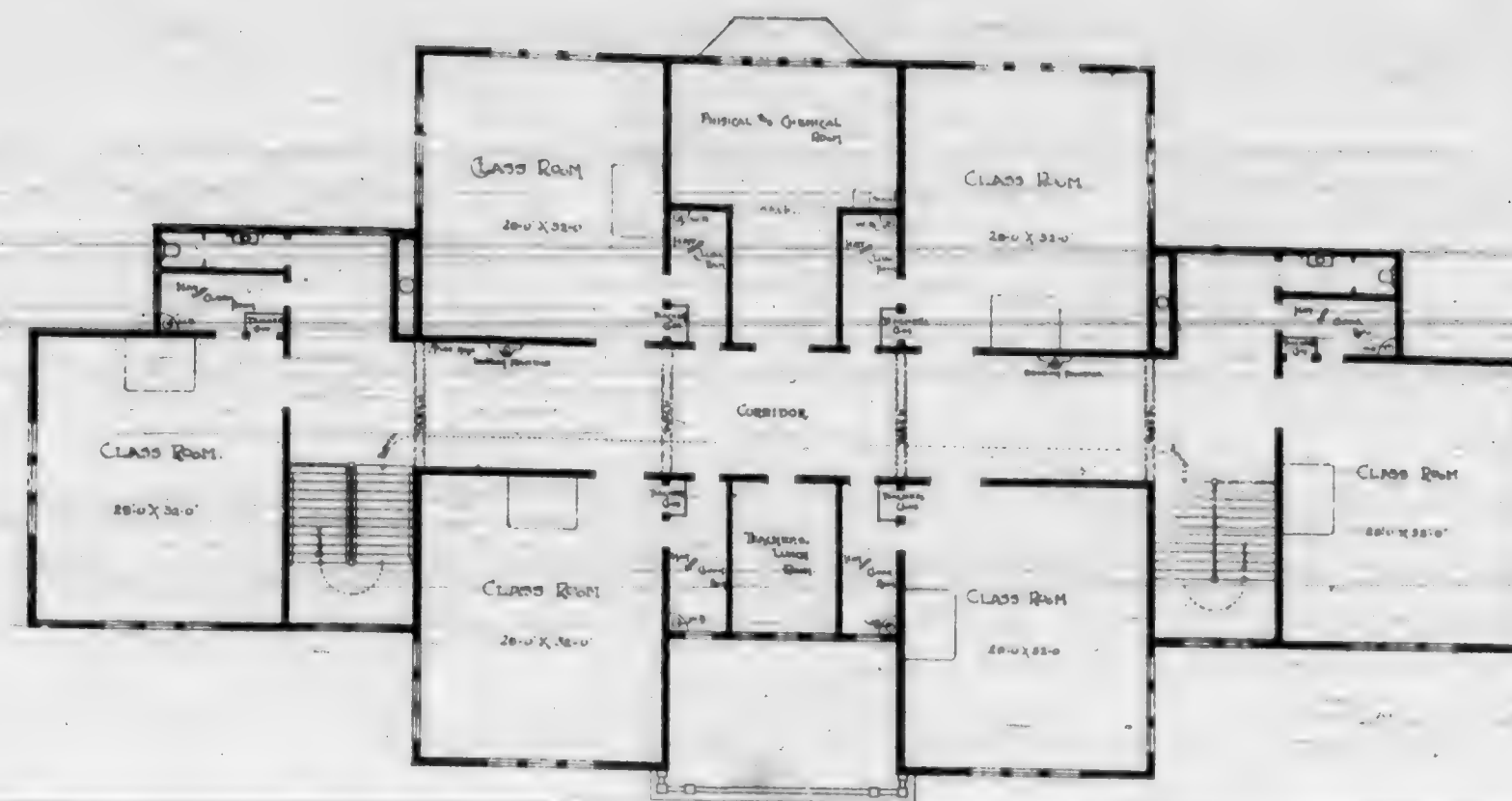
"The Power of Music" was exhibited in 1856. The great classical subject of "Hercules Wrestling with Death for the Body of Alceste" must be specially mentioned, for it called forth the praise of his friend Browning in the poem called "Balaustion's Adventure":

I know, too, a great Kaunian painter, strong
As Herakles, though rosy with a robe
Of grace that softens down the sinewy strength,
And he has made a picture of it all.

More lately we have seen the fine, pathetic picture of Andromache, *dejected conjure tanto*, in her captivity. In 1881 the merited compliment was paid him in the request from Italy that he should contribute his portrait to the gallery of dis-



FIRST STORY PLAN.



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