NOTES AND COMMENTS

A COMMUNICATION was received in June last from the Board of Regents, the Governing Body of the University of California, stating that it had been decided to prepare a programme for "a general competition for a permanent, comprehensive, and grand plan of the grounds and buildings of the University of California at Berkeley," and asking for suggestions with respect to the preparation of such programme. The matter was referred to the Competitions Committee, who have drawn up some suggestions which it is hoped will contribute to the successful issue of the Competition.—*Report of the Council of the R. I. B. A.*

WE DO NOT mean to assert that the business depression has borne more hardly on architects and draughtsmen than upon other classes, but when we consider the list of those who have become involved beyond the hope of prompt recovery, those who have felt forced to take their own lives, and those who have even yielded to the temptation to commit such "irregularities" as have brought them within the reach of the law, we doubt if there be any class of men which has suffered more. Besides this, the mortality amongst architects seems to be abnormal and we cannot help feeling that it indicates that the vital powers of resistance have been unnaturally lowered by the long strain and anxiety to which all professional men whose income is dependent on sporadic commissions have been subjected. During the last week, two more architects were added to the lengthening roll of the departed, Mr. W. H. Dabney, of Boston, and Mr. W. S. Fraser, of Pittsburgh. Mr. Dabney, born in the Azores, April 8, 1855, died April 29, leaving as the buildings with which his name will be most often associated, the Warren Chambers and the Trinity Court buildings, Boston, constructed while in partnership with Mr. H. B. Ball. Mr. Fraser, born in Ohio, July 19, 1852, died at Pittsburgh, April 27, after an active career of eighteen years in that city.—*American Architect and Building News.*

AND I END as I began, by impressing on you that no one can become a good architect who does not earnestly study what men have done before, who has not enthusiasm for his art to make him long and resolve to do nothing but what is good in its practice, and who is not ready to show that he has enthusiasm by the industry which surely attends it, and without which no study, no lectures, and no schools can be of any real service.

HE'S A BRICK.

WHEN a boy does something that is particularly good or noble his comrades say: "He's a brick!" for to call a fellow "a brick" is as high a compliment as one boy can pay to another, says the *National Builder*. If we stop to think about it, though, it seems rather strange that a brick should be chosen as a standard for measuring the worth of a boy. There is surely nothing very wonderful or fine about a brick. But, like a great many other sayings that do not appear to have much sense, we shall find, by looking up the origin of this expression, that it started out with a very sensible meaning. In order to get at its beginning, we have to go back into ancient history for a distance of nine hundred years before Christ—all the way back to the time of Lycurgus, the great Spartan ruler. Plutarch tell us that Lycurgus had a great many wise and curious notions as to how people should live and how the affairs of the country should be managed. One of his ideas was that there was no necessity for building a wall about a town if the soldiers were properly trained to protect the place. On one occasion an ambassador from a neighboring country came to see Lycurgus, and he asked how it was that he had no walls around the town. "But we have walls," replied Lycurgus "and if you will come with me I will show them to you." Thereupon he took his guest out upon the plains where the army was drawn up in battle array, and, pointing to the ranks of the soldiers, he said: "These are the walls of Sparta, and every man is a brick." So you see when the expression was used it had a great deal more sense than it has now.

BOOKS AND PERIODICALS

Circular of information of the NATIONAL ASSOCIATION of MANUFACTURERS, of the United States of America—in the February issue the annual report of the president contains many valuable suggestions upon the Tariff as well as the opportunities of improving our trade with China and other nations. He remarks that "in China, more than in any other country of the world, it is necessary to show actual samples of merchandise and machinery in order to create an intelligent impression upon the minds of the intending purchasers." The same might with truth be said of the South American trade.

LIPPINCOTTS' Magazine for June, 1897. Contains the complete novel, "As Any Gentleman Might," is a rattling tale of adventure by William T. Nichols. The hero is an American, but the action mainly in England, and the time is in the early part of the present century. Other short stories will well repay reading.

PROGRAMME of a COMPETITION for the selection of an architect for a New Capital building to be erected by the commonwealth of Pennsylvania in Harrisburg. This pamphlet is divided into four parts—first part giving the total cost $550,000, and terms of reward for those that compete. The second part gives the duty of the Board of Experts, etc. The third describes the plat of ground for the proposed buildings. Part four detailed requirements of the same.

OPPOSED TO CHEAP LODGING HOUSES.

AT a recent meeting of the Social Reform club of New York, Mrs. Josephine Show Lowell, chairman of the committee on vagrancy of the Associated Charities, took up the question of cheap lodging houses. She regards them as, in the end, a bane and no boon. They foster the spirit of vagrancy and irresponsibility. They bring those who have no desire for a higher standard of living into successful competition with the men who have families to support. They really operate to lower wages. For the care of really homeless men she advised the establishment of municipal lodging houses, where the strictest investigation could be given to each individual applying for help. By such means she would deem it possible that deserving men with homes in other cities could be returned thither, actual vagrants committed to the workhouse and young beginners in the life of vagrancy referred to private charity, with some hope of successfully wooing them from the nomadic life so dangerous to the community.—*Industry.*

THE RIGHTS OF THE LOWEST BIDDER.

AS AN illustration of what it considers the rights of the lowest bidder, the *Bulletin* cites the case of a contract for a bath-house for the City of Boston, which was awarded to a contractor whose bid was considerably above the lowest, by order of the Mayor, who had made the award, as he explained afterwards, in consideration of a private promise from the contractor to employ only union men on the work. We need hardly say that no architect was concerned in the Mayor's action, and the whole profession will support the claim of the Boston Master Builders' Association, as set forth in the *Bulletin*, that if a promise to employ none but union men was to be an element in the award, the lowest bidder should have been allowed to make the same promise, if he wished. It is obvious that a case in which known skill, distinguished honesty, or even personal friendship are allowed to count in determining the award of a private contract is a very different thing from one in which the award of public work is made in accordance with a concealed bargain, to which only one of the bidders is admitted. In the former case, the reputation of the different bidders, and usually, the friendship of the owner for any of them, is known to all the bidders; and every one who estimates does so with an understanding of the possible odds against him; but in the latter case the bidders who estimate in competition with the favored contractor have been deceived, inasmuch as the legal reservation of the right to "reject any or all bids," which is manifestly intended to protect the city against irresponsible or vicious contractors, and the application of which, in selecting a contractor, can be reckoned on with reasonable certainty by the bidders, has beed used to justify the award of the contract in accordance with considerations which the bidders were not informed of, and could not have inferred from any circumstances known to them.—*American Architect and Building News.*

OLD HOUSES mended
Cost little less than new before they're ended.—*Colley Cibber.*

NOTICE OF MEETINGS.

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

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

SOUTHERN CALIFORNIA CHAPTER AMERICAN INSTITUTE OF ARCHITECTS, meets first Wednesday of each month at 114 Spring street, Los Angeles, Cal.

THEO. A. EISEN, Pres. ARTHUR B. BENTON, Vice-Pres.
WILLIAM C. AIKEN, Sec'y. AUGUST WACKERBARTH, Treas.

WASHINGTON CHAPTER AMERICAN INSTITUTE OF ARCHITECTS, regular meetings at 8 o'clock P. M., the first Friday of each month, except July and August.

JOS. C. HORNBLOWER, Pres. JAS. G. HILL, Vice-Pres.
E. W. DUNN, JR., Sec. W. J. MARSH, Treas.

ASSOCIATION OF ARCHITECTS OF ARIZONA, meetings held at Phoenix, Arizona.

D. W. MILLARD, Pres. T. H. MADDOX, Vice-Pres.
W. R. NORTON, Sec. and Treas.

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

E. J. MOLERA, Pres. W. F. C. HASSON, Vice-Pres.
OTTO VON GELDERN, Sec. EDWARD T. SCHILD, Treas.

MASTER PLUMBERS' ASSOCIATION, meets every first and third Friday of each month at the Flood Building.

JAS. E. BRITT, Pres. J. L. E. Firman, Sec.

BUILDERS' EXCHANGE, Directors meet first Friday in each month at Mission and New Montgomery.

OSCAR LEWIS, Pres. JAS. A. WILSON, Sec.

MASONS' AND BUILDERS' ASSOCIATION, meet first Friday evening of each month.

ADAM BECK, Pres. M. V. BRADY, Sec.

AMERICAN STEEL IN EUROPE.

AT the annual meeting in London of the Iron and Steel Institute this week American Competition was one of the chief points of discussion. President Richard Martin spoke of the enormous output of the leading American streel works, and pointed out that the Ameticans were outdistancing the British in the uses of steel. He instanced the steel buildings being erected in nearly all the large cities of the United States, and urging lower freight rates, saying that the present cost of transportation was severely handicapping British industry, as the rates not only in America, but in Belgium and Germany, were greatly below the English rates.—*The Age of Steel.*

TROUBLE AT THE MILLS.

LAST MONTH a large number of the mill men and loggers in the Mendocino county mills refused to work at the prices prevailing and under the ruling system of payment. This move at the present time is a very unfortunate one, for it is well known that no line of business is so depressed as is the lumber trade at this very time, says *Pacific Coast Wood and Iron.* Mills have been run at a loss for a long time and mill owners have kept their men at work to prevent, as far as possible, starvation and entire stagnation. Especially have the redwood interests suffered. The great influx of pine, spruce and fir into this market has literally driven redwood from its stronghold and in order to sell it at all, prices have been reduced so that no mill man receives for the product of his mill, no matter how cheaply it is manufactured, a fair equivalent for his capital invested or his labor. Mill owners and all the employes have but one common interest and the laboring man should bear in mind the fact, that although he is working for low wages his employer has had his income reduced and is really working for nothing, besides seeing his forests stripped of the finest timber which can never be replaced. Politicians, for the sake of glory, may force bills through the legislature that hamper and oppress mill owners but mill owners cannot perform impossibilities, and if worst comes their only relief lies in shutting down their mills and closing the doors of their stores and letting the employe go to other lands already overcrowded with laborers. The prospect in Mendocino is very dark.

If the laborers insist upon carrying out the strict letter of the Stanford Law, trouble will ensue that is apt to crush not only themselves but the mill owners, and with them the whole State must suffer. In these times of hardship all should unite to bear the burden, and the load will be made lighter as it is divided; each man lending his help until the time comes when the clouds will grow brighter and the era of prosperity dawns. Then will be the time to ask for and obtain better prices for labor and for lumber. With a greater demand for redwood we feel assured that every mill owner will gladly divide his gains with his employes and rejoice that he is able to do so. The following article from the Fort Bragg *Advocate* shows the effect on that town of the strike. The stoppage of the mill shuts off the electric light and the town is in the darkness in more ways than one: "The mill and woods are still closed down, and no one seems to know when operations will be resumed again It may be in a few weeks, or not for a year. The company has had a hard time to get along the last few years, and just at present the members of the concern are in such a mood that they don't care whether a wheel turns or not for the next twelve months in the mill here. As Fort Bragg is a saw mill town in the strictest sense of the word, with no ordinary industry to back it, it is sincerely hoped that the little unpleasant difficulty at present existing will be speedily settled."

ROADWAY ALONG THE ROCKY SHORE AT TIBURON

LEGAL DECISIONS.

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

THE SPECIFICATIONS ARE AN ESSENTIAL PART OF THE CONTRACT.—The specifications are an essential part of the contract, and as material as the price of the work or the terms of the payment, where the contract price is not to be paid until the work is completed according to the specifications. It is not indispensable that the specifications be signed by the party to be charged, but it

will be sufficient if they are referred to with certainty. But where the reference is false it cannot be helped out by oral evidence.

Thomas Donnelly, respondent; Frank P. Adams, et al., appellants. Foreclosure. Reversed. S. F., No. 182, Department Two, Filed November 27, 1896.

When Market Value of Materials Cannot be Shown.—In an action against the owner of a building for materials furnished for and used in its construction, the architect cannot testify as to the market value of the materials where the price has been fixed by the contract of purchase.

McCormick v. Sadler, Utah, 47 Pacific Reporter, 667.

Construction of a Warrenty of Bricks.—A sale of "common bricks" to be of "good quality and equal to sample" involves no implied warranty that they shall be fit for the purpose for which they are purchased, although the seller is informed of such purpose.

Wis. Red Pressed Brick Co. v: Hood, Minn., 69 Northwestern Rep. 1091.

Limitation on Building Bond.—A material man cannot sue on a building contract bond which names only as beneficiaries the owner and any person advancing money to the owner to be used in the construction of the building.

Macatee v. Hamilton, Texas, 38 Southwestern Reporter, 530.

Right to Retain Installments.—A building contract provided that the owner might retain from installments as they came due sufficient funds to pay all claims against the contractor due and unpaid, but that such provision should not impair any rights under the contractor's bond. The court held that the right to withhold payments was intended as a protection in addition to the bond, and not as applying only to the final payment.

Dempsey v. Schawacker, Mo., 38 Southwestern Reporter, 954.

BUSINESS MOSAICS.

CITY BUILDING NEWS.

Ashbury near Oak. Two-story frame; owner, Prof. Joseph Wrba; architect, C. M. Rousseau; contractor, R. L. Pavert; signed, May 10; filed, Eay 11; cost $3890.

Broadway near Octavia. Two-story frame; owner, A. S. Johnson; architects, McDougall Bros.; contractor, A. Olsen; signed, May 26; filed, May 27; cost $5065.

Bryant Ave, near 22d. Two-story frame; owner, Mrs. Sussie Woods; architect, D. C. Coleman; contractor, T. F. Doyle; signed, May 26; filed, May 29; cost $2500.

Bryant near 3d. Two-story frame; owner, Margaret McAvoy; architect, J. J. Lr Farme; contractor, J. W. Coburn; signed, June 8; filed, Juen 10; cost $1080.

Butt near Texas. Cottage; owner, A. Jeffries; contractor, John Flaherty; signed, May 21; filed, May 22; cost $800.

Buchanan near Post. Three-story frame; owner, Jonas Schoenfield; architects, Salfield & Kohlberg; signed, May 24; filed, May 27; cost $3985.

Buchanan and Jackson. Three-story frame; owner, John Schoen; architects, Martens & Coffey; contractor, W. Tegeler; signed, May 11; filed, May 12; cost $5100.

California near Webster. Alterations and additions; owner, H. W. Whitely; architect, Albert Sutton; contractors, Knox & Cook; signed, May 10; filed, May 11; cost $2428.

California near Sansome. Telephone room, etc.; owners, Balfour, Guthrie & Co.; architect, W. J. Mathews; contractors, W. T. Veitch & Bro.; signed, May 29; filed, June 2; cost $3960.

California Ave, near Godens. Two-story frame; owner, Niek A. Nielsen; contractor, A. F. Eskilson; signed, June 1; filed, June 3; cost $3350.

Clay or Baker. Grading, brick work, etc.; owner, Mrs. Geo. T. Davis; architect, A. F. Oakley; contractor, W. Dunbar; signed, May 10; filed, May 12; cost $1453. Carpenter work; contractor, Elder & McLaughlin; signed, May 4; filed, May 12; cost $6025.

Clay and Baker. Plumbing, etc.; owner, Mrs. Geo. Davis; architect, A. F. Oakey; contractor, R. Rice; signed, May 4; filed, May 22; cost $1675.

Clement near 8th Ave. Two-story frame; owner, Thorn Kashow; architect, Geo. A. Bordwell; contractor, B. F. Ellis; signed, May 11; filed, May 11; cost $1632.

Clement near 9th Ave. Cottage; owner, A. M. McGregor; architect, T. J. Welsh; contractor, Geo. McLeod; signed, May 28; filed, June 5; cost $2075.

Devisadero near Washington. Two-story frame; owner, L. Friedbander; contractors, Hannan Bros.; signed, May 28; filed, May 28; cost $3775.

Eighth Ave. near D. Cottage; owner, Marquisith Ehlinger; architect, E. Hugh Weste; contractors, Weste & Fenn; signed, June 8; filed, June 11; cost $1150.

Ellis and Gough. Alterations and additions; owner, Mrs. R. L. Horton; architect, T. P. Ross; contractor, T. H. Soule; signed, April 30; filed, May 3; cost $2134.

Ellis near Laguna. Two-story frame; owner, Elizabeth Taylor; architects, Kenitzer & Barth; contractor, D. H. Matheson; signed, May 26; filed, May 26; cost $1262.

Ellis and Anna Lane. Mason work, etc., for six-story brick; owner, W. J. Somers; architects, Percy & Hamilton; contractors, Peacock & Butcher; signed, June 2; filed, June 3; cost $17,800. Iron and steel work; contractors, F. H. Jackson & Co.; cost $4400.

Fairmont Track, Lot 13, Block 17. One-story frame; owner, M. Saloman; architect, H. E. Harris; contractor, John McLaughlin; signed, June 2; filed, June 3; cost $1320.

Fifth Ave. near California. To build; owner, Sophie Swenson; architect, John Miren; contractor, Eric Tillman; signed, May 27; filed, June 1; cost $2837.

Fifth Ave. near Pt. Lobos. Cottage; owner, Mrs. Matilda Nelson; contractor, Edward Ginley; signed, May 15; filed, May 15; cost $1750.

Fremont near Mission. Carpenter work for two-story brick; owner, Thos. Breen; architect, D. C. Coleman; contractor, T. R. Bassett; signed, May 3; filed, May 20; cost $2500.

Fredrick near Chrader. Five two-story frames; owner, John Steerlein; days' work; cost $25,000.

Forty-fifth Ave. and Clement. Cottage; owner, Wm. Miles; architect, C. M. Rousseau; contractor, Geo. C. Nall; signed, May 24; filed, May 26; cost $1075.

Geary near Gough. Three-story frame; owner, Jonas Schoenfeld; architects, Salfield & Kohlberg; contractor, John Furness; signed, May 29; filed, June 3; cost $5800.

Geary near Gough. Plumbing; owner, Jonas Schoenfeld; architects, Salfield & Kohlberg; contractor, W. F. Wilson; signed, June 2; filed, June 11; cost $1027.

Geary near Mason. Additions; owner, G. Metcalfe; contractors, Wiren & Ostland; cost $1000.

Geary near Powell. Plastering for five-story brick; owner, A. Aronson; architect, C. R. Wilson; contractor, J. R. Tobin; signed, March 30; filed, June 3; cost $2573.

Geary and Stockton. Marble work; owner, Spring Valley Water Works; architect, Clinton Day; contractor, Vermont Marble Co.; signed, March 29; filed, May 7; cost $13,970.

Geary and Stockton. Electric work; owner, Spring Valley Water Works; architect, Clinton Day; contractor, California Electrical Works; signed, April 30; filed, May 7; cost $5486.

Geary and Stockton. Concrete and asphalt work, etc.; owner, Spring Valley Water Works; architect, Clinton Day; contractors, Gray Bros.; signed, May 17; filed, May 17; cost $1620.

Geary near Powell. Steam heating for five-story brick; owner, A. Aronson, architect, C. R. Wilson; contractors, Geo. H. Tay Co.; signed, May 16; filed May 14; cost $1540.

Golden Gate Ave. near Devisadero. Two-story frame; owner, Chas. F. Fitzsimmons; architect, C. J. Colley; contractor, W. J. Field; signed, May 11; filed, May 13; cost $3975.

Green near Dupont. Alterations and additions; owner, Mrs. Lene Samuels architect, C. A. Meussdorffer; contractors, Wilhelm & Taylor; signed, June 2; filed, June 11; cost $4530.

Green near Leavenworth. Three two-story frame cottages; owner, A. M. Coyot; architect, M. G. Bugbee; contractor, G. Eber; signed, June 2; filed, June 5; cost $3784.

Green near Larkin. Two-story frame; owner, Mrs. E. M. Leahy; architects, Shea & Shea; contractor, S. T. Greene; signed, June 5; filed, June 9; cost $2300.

Guerrero near 20th. Two-story frame; owner, Elizabeth F. Brown; architects, Havens & Toepke; contractor, J. C. Bassett; signed, May 29; filed, June 5; cost $4625.

Guerrero and Duncan. Two-story frame; owner, F. M. Donohue; architect, M. J. Welsh; contractors, Doyle & Son; signed, May 11; filed, May 12; cost $1089.

Hamdshire near 22d. To build; owner, Christopher Jung; contractor, J. F. Henrick; signed, June 1; filed, June 12; cost $2500.

Harrison Ave. and Shipley. Alterations and additions; owner, Mrs. A. Chatean; architect, E. Depierre; contractors, Guiot & Teper; signed, May 27; filed, May 28; cost $775.

Harrison near Third. Additions; owner, Henry Goldstein; architect, W. W. Armitage; contractor, T. Boyd; signed, May 21; filed, May 24; cost $1500.

Howard near Beale. One-story brick; owner, John F. Merrill; architect, Clinton Day, contractor, Thomas Butler; signed, May 22; filed, May 29; cost $4480.

Jackson near Buchanan. Two-story frame; owner, Isaac Strassburger; architect, W. H. Lillie; signed, May 19; filed, May 20; cost $11,640.

Jessie near 14th. Two-story frame; owner, Eugene R. Wall; contractor, John Keneally; signed, May 27; filed, May 29; cost $2100.

Jones and Union. Concrete work for three stores; owners, Pierre and Francine Chige; architect, J. Godart; contractor, Buzzin; signed, June 11; filed, June 12; cost $1000. Carpentry; contractors, Sarcander & Thompson; signed, June 11; filed, June 12; cost $4055. Plumbing; contractor, G. C. Sweeney; signed, June 10; filed, June 12; cost $630. Painting; contractor, J. F. Sullivan; signed, signed, June 11; filed, June 12; cost $495.

Kearny near Union. Three-story frame; owner, Gernore Faraco; architect, C. R. Wilson; contractor, Giovanni Banchero; signed, May 17; filed, May 18; cost $5000.

Kearny and Post. Carpentry, plastering, etc., for alterations; owner, James Stanton; architect, J. E. Krafft; contractor, O. Rurmeister; signed, May 20; filed, May 27; cost $1125. Iron and steel work; contractors, P. H. Jackson & Co.; signed, May 20; filed, May 27; cost $1268.

Kearny and Sutter. Plumbing and gas fitting for six-story brick; owners, Adams Co.; architect, H. A. Schulze; contractor, E. James Duffy; signed, June 3; filed, June 9; cost $402. Tin work, etc.; contractor, S. F. Cornice Co.; signed, June 8; filed, June 9; cost $1569.

Larkin near Green. Plumbing, etc.; owner, H. G. Otis; architect, C. A. Henderlong; contractor, H. Williamson; signed, May 10; filed, May 10; cost $994.

Leavenworth near Filbert. Two-story frame; owner, F. Pape; architects, Salfield & Kohlberg; signed, May 6; filed, May 7; cost $3100.

Liberty near Castro. Three two-story frames; owner, F. Nelson; days' work; cost $10,000.

Market street, No. 337. Galvanized iron work, etc.; owner, Mr. Spreckels, contractors, Guilfoy Cornice Works; cost $1675.

Market and Third. Gas and electric fixtures; owner, Claus Spreckels; architect, Reid Bros.; contractor, Thomas Day Co.; signed, May 18; filed, June 5; cost 6515.25.

Market and Sanchez. One-story frame; owner, R. T. Broderick; architects, Salfield & Kohlberg; contractor, J. S. W. Saunders; signed, June 8; filed, June 10; cost $2300.

Market near 3d. Alteration and additions; owner, John W. Mackey; superintendent; days' work; cost $2000.

Market and Third. Steam heating plant; owner, Mrs. Phoebe A. Hearst; architect, A. C. Schweinfurth; contractor, J. G. Grannis; signed, May 8; filed, May 12; cost $8035.

Market and Third. Sewerage, etc.; owner, Mrs. Phoebe Hearst; architect, A. C. Schweinforth; contractor, J. E. Britt; signed, May 14; filed, May 18; cost $18,987.

Mason near Vallejo. Excavations, brick and concrete work; owner, Mrs. Marie Garbarrio; architect, E. Depierre; contractor, I. B. Perramont; signed, May 6; filed, May 8; cost $2490.

McAllister near Devisadero. To build; owner, Wm. F. Dunn; architects, Havens & Toepke; contractor, John H. McKay; signed, May 15; filed, May 19; cost $4600.

Mission near 23d. Electrical work; owner, Mission Masonic Hall Association; architects, Herman & Swain; contractor, E. H. Forest; signed, May 1; filed, May 10; cost $790.

Montgomery and Stockton, Brick work, etc., for three-story brick; owner, Lorenzo Scatena; architect, C. R. Wilson; contractor, Luigi Cupano; signed, May 8; filed, May 21; cost $4375. Carpenter and mill work, etc.; contractor, A. Cacua & Perkrich; signed, May 8; filed, May 21; cost $6160.

Montgomery Ave. and Stockton. Three-story frame; owner, L. Scatena; architect, C. R. Wilson; contractor, W. P. Fuller & Co.; cost $1475.

Ninth and Howard. Two-story frame; owner, Mrs. Jas. A. Robinson; architect, F. T. Van Ness; contractors, Anderson & Greig; signed, June 11; filed, June 12; cost $2275.

O'Farrell street. Additions; owner, E. P. Vorbe; contractor, W. B. Kreger; cost $7000.

Pacific Ave. near Scott. Carpenter work; owner, James Stewart; architects Smith & Freeman; contractors, Ingerson & Gore; signed, May 21; filed, May 26; cost $3040. The same contractors; same building; cost $2980, $3300, $9000.

Pacific Ave. near Octavia. Extras; owner, M. J. McCutcheon; architect, E. A. Mathews; contractors, Leiter & Prugh; signed, May 28; filed, May 29; cost $304.

Pacific Ave. and Buchanan. Brick and granite; owner, Albert Meyer; architects, Salfield & Kohlberg; contractors, Miller & Beek; signed, June 1; filed, June 3; cost $9357. Carpenter work, etc.; contractor, John Furness; signed, June 2; filed, June 3; cost $11,375.

Pacific Ave. near Octavia. To build; owner, Edward J. McCutchon; architect, E. A. Mathews; contractors, Leiter & Prugh; signed, May 15; filed, May 18; signed, May 15; filed, May 18; cost $12,080.

Page near Cole. To build; owner, Edward Barnett; architect, J. Stanley; contractor, J. C. Bassett; signed, May 4; filed, May 7; cost $3150.

Park Lane Tract. To build; owner, Adam Straub; architect, Alex Hildebrand; contractors, Klein & Eickholt; signed, May 7; filed, May 7; cost $1458.

Pine near Front. Additions, etc.; owner, Anglo American Crockery Co.; contractor, F. A. Blanchard; cost $600.

Pine near Fillmore. To build; owner, John J. Mehegan; contractor, Richard Cook; signed, May 10; filed, May 10; cost $950.

Post near Stockton. Alterations and additions; owner, I. O. R. M.; contractor, J. Schuler; signed, May 10; filed, May 11; cost $1895.

Precita Valley. To build; owners, Tim P. and Annie M. Kennedy; architect, E. McHugh Weste; contractor, J. T. McInnis; signed, June 8; filed, June 10; cost $2500.

Presidio. Storage building; owner, U. S. Government; contractor, F. A. Williams; cost $9089.

Railroad Ave. and 18th. To build; owner, John Puckhaber; architect, F. B. Wood; contractor, W. J. B. Warner; signed. May 12; filed, May 13; cost $3569.

Rhode Island near 23d. To build; owner, Cyrus Ellenberger; architect, P. H. Bosworth; contractor, John Wyllie; signed, May 19; filed, May 22; cost $1315.

Sacramento near Leavenworth. Three flats; owner, Sarah A. Denis; architect, H. D. Mitchell; contractor, Val Franz; filed, May 29; cost $6000.

Sacramento near Leavenworth. Alterations; owners, Elizabeth M. and J. J. Sullivan; contractor, W. H. Wickersham; signed, May 10; filed, May 12; cost $1269.

Sacramento near De Ray Place. Three-story frame; owner, Ella O. Mann; architects, Havens & Toepke; contractor, Val Franz; signed, May 8; filed, May 14; cost $3819.

Sanchez near Elizabeth. To build; owner, Mary A. McKiernan; contractor, D. T. Francoeur; signed, May 14; filed, May 28; cost $1500.

Second Ave. near Point Lobos. Cottage; owner, Martin O'Connor; contractor, Wm. Plant; signed, May 7; filed, May 12; cost $1500.

Second near Brannan. Four flats; owner, Henry Meyer; architects, Rowell & Collins; contractor, James Geary; signed, May 12; filed, May 21; cost $4150. Plumbing, etc.; contractor, Tibbert Peterson; signed, May 12; filed, May 21; cost $995.

Shipley near 5th. Additions; owner, Mary Donelly; contractor, C. Douglass; signed, May 22; filed, June 11; cost $1046.

Spruce near Washington. Plumbing, etc.; owner, S. Dolliver; architect, T. J. Welsh; contractors, Gulick & Wetherbee; signed, May 11; filed, May 12; cost $450. Electric work; contractor, California Electrical Works; cost $390.

Sutter near Buchanan. Alterations and additions; owner, Mrs. M. Stallman; architects, Townsend & Wyneken; signed, June 9; filed, June 10; cost $1965.

Taylor and Bernard. Addition; owner, Catherine Fahey; architect, H. D. Mitchell; contractor, Peter Hamilton; signed, June 1; filed, June 4; cost $4200. Plumbing, etc.; contractors, Noonan & Gordon; signed, June 2; filed, June 4; cost $1190.

Turk and Taylor. Painting; owner, Alexander W. Wilson; architects, Shea & Shea; contractors, Wm. Willson & Co.; signed, May 7, filed, May 19; cost $1735. Tinning, etc; S. F. Cornice Works; cost $2250. Electric work; contractor, Henry F. Henzel; cost $1200. Plastering, etc.; cost $3825. Patent chimneys; contractors, Conlin & Roberts; cost $2545.

Turk and Taylor. Alterations and additions; owner, A. W. Wilson; architects, Shea & Shea; contractors, Peacock & Butcher; cost $6590.

Twenty-second near Minnesota. To build; owners, Wm. and Annie Burns; contractor, C. J. Antwild; cost $2200.

Twenty-fourth near Diamond. To build; owner, Mrs. Susie Lobin; contractor, E. H. Hyde; cost $3000.

Twenty-eighth near Guerrero. Cottage; owner, M. C. Leisbuttel; architect, B. A. Brown; contractor, E. L. Brookes; signed, May 22; filed, May 22; cost $1100.

Twenty-fifth near Noe. Cottage; owner, David M. Sullivan; contractor, W. W. Redmill; signed, June 10; filed, June 14; cost $1303.

Union near Devisadero. To build; owner, Mrs. T. W. Collins; contractors, Weste & Fern; signed, May 14; filed, May 14; cost $3520.

Van Ness Ave. near Green. To build; owner, John Evans; architect, M. J. Lyon; contractors, Elder & McLaughlin; signed, May 25; filed, May 26; cost $1112.

Vallejo near Larkin. Alteration and additions; owner, Mrs. Mary Neely; contractor, G. G. Gillespie; cost $1435.

Washington near Jones. To build; owner, Wm. Wolff; architect, E. Kollofrath; contractor, C. Schutt; cost $3985.

Washington near Clay. Grading, underpinning, etc; owners, Mrs. Amelia Cohen and others; architect, Edward J. Vogel; contractor, F. Wagner; cost $1230.

Waller near Fillmore. Additions and alterations; owner, M. McIntyre; architect, M. J. Welsh; contractor, R. Fahy; cost $2050.

Webster near Union. To build; owner, Percy J. Greede; architect, W. O. Banks; contractor, Geo. Healing; cost $2644.

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SOME YEARS ago Congress passed a law giving the Secretary of the Treasury the power to secure designs for public buildings by the competitive method. This law was the result of much labor on the part of the Architectural profession exerted both individually, and collectively through the American Institute of Architects, and it was confidently hoped and expected, that a marked and beneficial effect would be the result on the artistic and utilitarian character of future constructions. The profession had every reason to expect such a result from the new departure and were bitterly disappointed to learn that the then Secretary of the Treasury interpreted the law to be optional with him to enforce or ignore, and that he was graciously pleased to ignore the desire of the people to inaugurate improved methods in the conduct of the office of the Supervising Architect, which were designed to secure for the benefit of the nation the talent, abilities and genius of the leading men in the noblest of all arts, the art of building.

The present Secretary of the Treasury has reversed the action of the former incumbent (and incumbrance) of this high office, and put in active operation the provisions of the long neglected law enacted by Congress and approved by the President on the twentieth of February, 1893, and formulated regulations governing the competitions.

Under these regulations at least five architects of good professional standing, and who are citizens of the United States will be requested by the Secretary to submit competitive plans, specifications and drawings for each building to be be erected, the merits of which will be investigated by a committee consisting of the Supervising Architect of the Treasury and two architects or experts in construction, who will report to the Secretary for his approval. The architect whose designs are accepted will receive in compensation for his full professional services, including local supervision of the building, a fee computed at the rates of 5 per centum upon all sums up to $500,000, 3½ per cent on the nex

$500,000, or any part thereof, and 2½ per cent upon any excess beyond one million dollars. The department, however, reserves the right to reject any and all plans.

This departure will certainly cause an increase in the interest of the general public in the beauty of their public structures and lead to a healthy rivalry between the various cities, which should react beneficially on the character of our private architecture as well.

WHAT IS AN ARCHITECT?

E CAN define with reasonable accuracy the physician, the surgeon, the attorney, the artist, the sculptor; but the architect has so many sides to his completeness that it is well nigh impossible for a single mind to work successfully on all the lines which he is now supposed and expected to bring into action. If he could but cut himself away from some things now required; if he could but "press the button" when the inspiration of the sketch is given or when the drawings are perfected and let some other fellow do the rest, we might be able to handle him more readily. But now, through the long tedious and wearying process from the sketch to the final certificate, which is the architect? Is he the plansman, the designer or the specification writer? Is he the man who sees the bricks laid and the nails driven, or the man who cuts down the extra bills? Or is the true architect just the man who gets the job? Is he the artist or the hustler?

Is the soul of his endeavor to be found in the completed work or in the battle for an opportunity? We cannot tell you. Sometimes he is one thing, sometimes another, and each phase of his many sided character has some example stalking in our midst and honored in our motley procession; let us take him as we find him, and help him to what he may be, regardless of his complex nature.

The above is from a report of one of the committees to the last Convention of the American Institute of Architects.

When we find architects themselves not able to define an architect we can condone more readily the lack of the knowledge of what an architect is and what he has to do on the part of the Laity or general public—and their lack of appreciation as to his worth and his labor.

Just a glance at his multitudinous knowledge may open the eyes of the people to the amount of education required to become a worthy member of that, without exception, noblest and most difficult of the professions.

The list of arts and sciences an architect has to have at his fingers' ends, is very formidable. Acoustics he has to be very conversant with otherwise the auditoria he designs will be failures. Arboriculture, Horticulture and landscape gardening he has to be acquainted with, for often he is called upon to oversee the laying out of the grounds around the mansion he is putting up or around some large public building so that all may harmonize. The knowledge of Archeology and History are also some of his necessary accomplishments for little could he design without a vision of old buildings, without a knowledge of the History of Architecture.

Boxing is an art to which he should not be a stranger—to defend himself against some truculent contractor when he insists upon him doing what is right and according to contract, or against an owner who believes that he, said architect, has prepared plans, etc., for him just for the benefit of his health and to keep his hand in, when he asks him, the owner, to pay what he owes.

When he comes to choose the best materials for the several parts of his buildings Chemistry and Mineralogy, Metallurgy and Geology have to be thoroughly digested—and when his materials come from the vegetable kingdom—Botany. Imagination and design he has to be blessed with and the art of drawing, by which he makes these known to others. Educational methods and Pedagogy he has to be grounded in when he puts up colleges and schools and Ecclesiology when he designs churches.

The science of Ethics as it enters into the complicated and delicate relations of architect and client, architect and contractor and architect and craftsman as well as the relations between architect and architect has to be referred to more frequently perhaps than in any other relation in life, for without a scrupulous attention to its codes no true architect can be.

Law, although theoretically out of his province, practically he has to have a smattering of; both in regard to the relations above mentioned, and in getting out the numerous legal documents and filing the same required during the preliminaries to building and at other times during its progress which his client more often entrusts into his hands than into the hands of his lawyer.

He has rlso to be *au fait* with all the latest styles and articles of furniture of the several apartments, with Gastronomy in laying out a dining room to best suit proper digestion; with Cookery in arranging the kitchen—and with what may be called Dormitonomy for the sleeping rooms—not forgeting music when arranging the apartments for the art which is the liquid form of architecture.

Finance must not be a stranger to him, for has he not to make very often $3.00 out of $2.00 or in other words make $2.00 go as far as $3.00. Has he not also to make five per cent commission provide for himself and family after paying draftsmen, stationery, office rent and the thousand and one little outgoings necessary to get a job and keep it.

Hydraulics and Hydrostatics, Pneumatics, Electricity and Physics he must have graduated in to specify and lay out intelligently all the wires, pipes, etc., necessary for a modern building.

Languages must not be neglected by him for there are many technical treatises in foreign languages which he ought to be able to read in the original to keep *en rapport* with advanced ideas.

Mathematics must be to him an open book—for has he not to understand and work out all the formula necessary to find the strains in and strength of his materials and that branch of it, Geometry, has to be as familiar to him as A B C when making his detail drawings.

To be able to specify the materials and labor and to direct construction he is supposed to know even more than the skilled mechanic about the arts and crafts connected with buildings which includes nearly all in some shape or manner.

Machinery in arranging for boilers engines, etc. Mining when making excavations for deep cellars tunnels, etc.—transportation, steamfitting for heating apparatus, locksmithing, carpentery, painting and even the proper way to do the humble trade of Kalsomining, and so on and so on with a list which would take up too much of our pages to complete.

He must know as much about Hygiene as a physician to be able to put up a healthy home or healthy place where humans congregate; and something about practicable Therapeuties and surgery to build hospitals rightly, also know something about Penology to build an appropriate prison.

Turning to the fine arts he ought to be able to paint and to model, and to aid him in the composition of his ornamentation he must use subjects from the animal and vegetable kingdom when an inkling of Zoology and Botany comes in handy. In the adaptation of ancient art, a proper understanding of its motive cannot be obtained without a knowledge of Philology and Mythology; and a practical insight into the Theatrical profession is needed before he builds a theatre.

Then he must build his buildings to be able to withstand cyclones, earthquakes and other like natural phenomena and to suit the climate, so that Meteorology is necessary to teach where these phenomena chiefly occur and the climatic conditions of the place he has to build in.

To write his papers which he occasionally reads before scientific and popular bodies—to make out lucid reports and descriptions, even to write a creditable specification he must be somewhat of a Litterateur.

And finally to have the chance of exhibiting his skill at all he must have studied Hypnotism, Animal Magnetism, Bon Mots, Divinity, Physiognomy, Practical Politics and what not; not forgetting that he must be a bon vivant and a gallant; to make a success he also must be a consistent hypocrite and a time server.

To exhibit what we mean by the ignorance not only of the general public, but of those who come in contact with plans and architects, we cull the following from a San Francisco journal which we have just come across. In describing the half-tone photograph of a cottage the author says:

"The exterior view, which your architect calls the 'plan of elevation,' is a departure from the set and inartistic lines of your cut-off-of-the-same-piece, ready-made dwelling, and as a whole is imposing and extremely attractive.

"The illustration is made direct from a photograph, so that it is a faithful, reproduction of the house itself; and not an ideal creation of a clever draughtsman."

Here we have a terrible jumble of mistatements—what architect (God save the mark!) could the author have come across that calls a perspective view a "plan of elevation"—and then to put the title in quotation marks to show that it is your architect's term! With all due respect for the author, we don't believe he ever heard any architect say such a thing, or if he did, he must have been playing on the credulity of his listeners, vulgarly called joshing him. Then the remark in the last paragraph, although not saying so, leaves an impression that clever draughtsmen's ideal creations are meant to deceive, in comparison to the *faithful* reproduction of the photographs. Here the writer labors under the impression that it only requires *a clever draughtsmen* to make an ideal creation. Of course those initated knows that it requires a *designer* who is called an architect when the result is a building. They also know that the ideal creation of an architect drawn on paper, when carried out in a building is the facsimile of its paper original and looks exactly like it as far as a solid can look like the same drawn on the flat.

We cannot altogether blame the public for these popular fallacies, they are not able to distinguish, with the little enlightenment they have on the subject, between an architect and a quack who hangs out his shingle and advertises himself as an architect.

So it seems the only way to educate them is for the architectural journals and the newspapers to keep digging away and showing up and explaining all these misapprehensions which are constantly showing themselves.

PLUMBING GOODS.

IN LOOKING over the progress of the art of plumbing within the last few years the improvement in that art is more evident than in any other of the building arts. It has bloomed out into what we must call the Art of Sanitation for want of a better name. The actual plumbing in the sense it was used some twelve years ago now is supplemented by several other branches of the building trades or crafts, which connot be considered apart from it, and we find that the whole character and adaptation of plumbing and sanitary fixtures has been almost entirely changed. Instead of the woodwork, sometimes elaborate and expensive, covering up the fixtures and pipes, the bath rooms are now tiled, with all the fixtures open and finished in every part, thereby insuring not only practical usefulness, but cleanliness; nor has this change stopped at the bath room—it has extended to the kitchen, the butler's pantry, the scullery, the laundry and indeed to all parts of a building where sanitary fixtures are used. Both in the kitchen and pantry, and in the scullery, the sink set in woodwork (a harbor for dirt and vermin) has been replaced by the tiled wall with an open porcelain sink and hinged drain boards. In the laundry, with the exception of the portable wringer base, woodwork has been entirely gotten rid of; and so it is, all through, in both public and private buildings. All the large first-class hotels, as well as fine private dwellings, have tiled rooms with porcelain baths and all open fixtures. In the new hospitals and asylums all the baths, water closets, sinks and special fixtures are made of glazed ware and in the large office buildings open fixtures, in lavatories, water closets, urinals and slop sinks, are altogether adopted.

In the sanitation of public institutes progress has been still more marked—school boards now look well that they get the best sanitary fixtures for the schools, and public baths, gymnasiums, asylums, barracks and prison, are now fitted up far more sanitarily than a few years ago.

In private dwellings it is a fact that plumbing fixtures are now recognized as of equal if not of paramount importance to the general furnishing of a well-appointed house and it has become the almost invariable custom for parties building or remodeling to visit show rooms and select their fixtures, fittings, etc. When this can be done, it is in every way the most satisfactory method.

Again in former time the fixtures were selected haphazard and no attempt was made to harmonize them with the surroundings—now the architect has to see to it that the style of plumbing fixtures accords with that of the apartment in which they are placed—or vice versa. For example we find bath rooms fitted up and finished in one style Colonial, Renaissance, Rococo, Empire or whatever may be chosen.

We have been lead somewhat into this line of thought by the perusal of the catalogues of large plumbing goods firms, and more especially the magnificent volume lately issued by the J. L. Mott Iron Works, which is verily an *Edition*

de Luxe, and reflects in better degree than words the strides which has been made in that line. It is a volume of 348 pages every one replete with illustrations of articles of use and benefit to the human and animal races.

It opens with interiors of completely fitted up bath rooms. The carpenter has been now relegated to other parts of the building—the doorways being sometimes the only evidence of his existence; all the interior walls, floors and ceiling being clothed with glazed tiles.

The amount of fittings going to make up the furniture of a bath room are now quite numerous—first of all there's the bath tub itself—until a little over two years ago all Porcelain baths were imported, and indeed were considered a great luxury, only to be enjoyed by the very wealthy; to-day they bid fair to take the place of all others except such as are used in the cheapest class of buildings. The reason for this change are not far to seek for there is nothing to compare with them as regards cleanliness and durability. It is simply the perfect bath, besides which all others, such as metal or iron enameled, are commonplace and in the end really more expensive, as they wear out and have to be replaced from time to time, while the porcelain is always the same; it never changes or discolors; when wiped out with a sponge it is as white and pure a china surface after fifty years' use as when first put in. Indeed, the saving of labor in the simple matter of keeping clean is a most important feature, and one which is particularly appreciated by the large first-class hotels, where hundreds are being put in one building. As a matter of course, in all the new hospitals nothing else is thought of, and in the old institutions the old metal and enameled tubs are gradually being replaced by the porcelain.

Nor is our progression alone in the quality of the ware, but also in design, which now present, instead of the heavy, clumsy, angular vessel as first imported, a graceful and artistic bath tub, the sides and shape of which lend themselves to the most refined artistic and delicate decorations.

Some of the newest designs are made so that the tub sets flat upon the floor instead of being raised upon legs—this style would, we should imagine, in a short time supersede the raised, for it has two very great advantages, one in lowering the tub so that the user can step in and out easier and the other the benefit of doing away with the space under the tub which is liable to be neglected and to get dirty and requires more labor to keep clean. To the tub there are required a number of accessories outside of the supplies and wastes. These are generally made of metal work and finished in nickel-plate as being the most durable.

First among these are the shower and needlespray, which may be fitted onto the tub or onto the wall back of the tub, or it may be entirely separate and have its own receptor to receive the water.

Towel racks and sponge holder are usually screwed to the wall by the side of the tub, while the soap dishes are made portable and so that they may fit onto the roll rim wherever desired.

Second, a seat bath is a most desirable appliance in a bath room serving as it does, the double purpose of seat and foot bath. These are made now with a wave spray from the back as well as the ascending douche.

In hospitals and asylums a light bath tub which is comparatively low and broad, features which facilitate and render convenient the bathing of the patient by the attendants is the most desirable, and one on castors or on a cast iron carriage with swiveled axle and wheels with rubber tire cushions, to allow of the bringing up the same to the bedside.

The most convenient lengths of bath tubs are 5, 5½ or 6 feet, however in some places, e. g.—in yachts and cars these would take up too much space so some are manufactured 2½, 3 and 3½ feet long and symetrical at the ends.

We have not space now to go into the merits of the innumerable supply and waste fittings. As before stated the generally received best material for these is brass, nickel plated, both nickel and silver plate wears off in time, so that some solid untarnishable presentable metal is the ideal. The Mott Company have a metal which they call Crown White Metal which they claim has these advantages, as being solid it will always retain its luster and brightness, no matter how much it may be cleaned.

For a complete bathroom the following are required:—

1st—A place for clean towels, which may be in the form of a shelf of metal grating, a shelf with rack below, a rack only or a towel horse. A rack may be single or triple fixed against the wall or folding like a gas bracket. The advantage of the horse is that it is movable.

2d—A receptacle for soiled towels—this is made in the shape of a metal cylindrical basket about 20 inches high.

3rd—Robe hooks for the hanging up of the bath robes, either single, double or triple.

4th—Sponge holders—these again have a number of varieties, they may be made entirely distinct from the wall being carried on a bracket, and circular, they may be in contact with the wall when an oblong basket, sometimes in shape of a fire grate, is used, or they may be portable so as to hook on to the roll of the tub. These latter are made also with a soap dish below forming a combination sponge holder and soap dish.

5th—Comb and brush racks—the best being those forming a narrower edition of the oblong sponge holder already described. A narrow metal shelf is also handy for combs only.

6th—In hospitals and sanitariums a bath thermometer is required, made with a handle so that they may be immersed in the water.

7th—Although not an absolute necessity a bath seat and head rest are very desirable adjuncts to the bath—it consists of two nickel-plated clamps engaging the rim of the tub, and connected by a flexible band five inches wide. This band can be slipped back and forth through each clamp to attain any desired height of seat or rest, and when adjusted is held firmly in place. It thus makes an admirable seat, being soft and flexible, and the same is true of it as a head rest.

8th—Soap dishes—these again are made in numberless varieties, either to go against the wall or to attach to rim of bath or entirely separate so as to place on slab. They may be made of china ware or of perforated nickel plated brass, the latter may be used for a small sponge also, and appears preferable because allowing the water to drain away and keeping the soap or sponge dry.

9th—Metal holders for shaving mug, tumbler, tooth brush vase are very handy as they serve to keep clear the slab of the wash stand. These are made of ornamental open work, plated brass, on brackets fastened to the wall. The same end may be attained by the provision of a plate glass shelf to receive the articles mentioned above.

The following is a most convenient and sensible arrangement of lavatory appliances. Holders for soap dish, tooth brushes, tumblers, sponge, comb and brush are attached to

the marble back, and each has its particular place, so that the slab is entirely unencumbered.

Finally other necessary fittings are match boxes or holders, and where the water closet is placed in the bath room paper holders of many kinds to which may be added a cigar holder.

The forgoing list indicates the pitch of convenience and luxury attained in the end of the century bath room.

After the bath the lavatory or wash basin claims our attention.

There is no part of our sanitary department that warrants more careful or more special attention than that of lavatories. The evolution from the cabinet wash stand with its concealed pipes and woodwork, often elaborate and expensive, to the highly sanitary and beautifully artistic work now in vogue must appeal to all who may be in any way interested.

Of lavatory slabs a far larger range of choice can now be had than ever before—they are now designed in onyx, in statuary or imported marble such as Numidian, Rose Josper, St. Baum, etc. In regard to the fittings the same may be said, and again in basins which can be had in Cauldon China and earthenware decorated or plain, oval or round. The superior convenience of the oval shape has caused it to supersede the circular form in all but very cheap work.

In the designing of lavatories a greater scope for variety is obtained than in bath tubs and the many beautiful designs in the catalogue already referred to prove the statement.

The designing of the waste and overflow so as not to interfere with the interior of the basin, has always been a hard problem to inventors. The best solution we have seen so far is in the Purita, Utilis and Nassau basins. The salient features of the Purita basin are a deep bowl, large overflow with movable metallic strainer, and a plug or stopper operated by a direct lifting motion. The stopper or plug can be lifted out, giving access to the waste and overflow.

The plug and chain comes in the way and is difficult to keep clean and the same objections obtained in most other devices: these objections are minimizedin the Purita—for the bowl is free from obstructions save the slight circular projection of the overflow at the back of the same. When a combination tap in used and placed over this projection it appears as if the minimum of obstruction has been attained consistent with hygieneity.

In the matter of basin traps, the old lead trap no longer is admissible, and nickel plated brass is the material in vogue. Out of the many traps on the market the most sightly appears to be the Elliptic Cast Brass trap, shaped like a whisky flask with a mouth at both ends.

Another sanitary appliance of even greater importance than those already mentioned is the water closet—the marked changes and improvements made in this department since a time even as late as 1888 would seem to call for some special notice at this time. These changes and improvements have not been altogether confined to the mechanical perfection of water closets as sanitary fixtures but what is artistically beautiful and pleasing to the eye, with a view to unity and conformity of design.

There are several classes of water closets—the Syphon Jet are particularly adapted to the best class of private work. The wash-out form is appropriate particularly for public use, represented by the Inodorso. The wash-down closet is well adapted for both private and public use and one of the simplest and most direct. The pump closet for use on ships, yachts, houseboats, launches, battleships, etc.

In ranges of closets for office buildings, school houses and other public buildings, the same marked improvement has taken place within the last few years. Woodwork is now altogether banished and the partitions of water closets and urinals made of marble or slate fitted into nickel plated brass stall frames, consisting of post and top and bottom carrying pieces from wall to posts. The walls and floors are usually of marble and the partitions stand clear of the floor.

One of the little details considered almost indispensable now in public water closets and railway cars and useful even for private bath rooms, is the Indicator, showing whether the room is occupied or not. Indeed, to our mind, they afford such relief from embarrassing situations likely to occur that it will soon be considered an indispensable attachment where a closet or bath room is in general use, or used by more than one person.

The swinging chain for the pull will soon be superseded by the guide rod which fixes the pull in one place and ensures always a direct vertical pull on the crank of the cistern.

Before we leave this part of the subject, we hope that it won't be long before street and park conveniences come into use in the large cities of this country as they have long ago in Paris and London, and other European cities.

We will now briefly glance over the progress made in plumbing fixtures for culinary and household purposes. It is now recognized that these fixtures have to be as fully hygienically made as those of the bath room, and so we find in use fine white porcelain slop sinks without any woodwork whatever, and fitted with cisterns and flushing pipes. That variety used for hospitals called the clinic sink is made so that the supply is operated by a foot valve obviating the necessity of touching the fittings with soiled or bloody hands.

In no department is the great advance more marked than in kitchen sinks. We have managed not only to get perfect form, but have also succeeded in glazing the outside, front and ends; this, together with the porcelain back and porcelain legs, leaves no part which is not impervious to moisture. Furthermore, strength and durability are assured by the substantial thickness of two inches. Heretofore the backs have always been made of marble, now often of Imperial Porcelain. It is unnecessary to call attention to their great superiority to marble, as it is well known that the latter will stain and absorb grease, while the porcelain back is non-absorbent and simply requires to be wiped off to be perfectly white and clean. The Imperial Porcelain legs constitute a distinct novelty and improvement. They require no care or labor to keep them clean and polished, and being white, the same as the sink, they impart to the combination an element of nearness and brightness unattainable with the metal leg.

A drain board is an important adjunct to a kitchen sink; one has been specially designed for roll rim sinks, which fulfils all practical and sanitary requirements. It is entirely free from the wall, one end being supported by the sink and the other by cast brass brackets or a leg. The corner drain board swings on the hinges fastened to the wall. The end drain board swings on the hinges at back, the supporting leg being telescopic so that the board can be swung up out of the way when it is desired to clean the sink, wall, or when not in use. The board is made of pieces tongued and grooved with rods passing through to insure non-warping. The rim along the three sides of the board prevents dishes falling off, also water from dripping to the floor. At the point where the board rests upon the sink, there is placed a row of rubber fenders to protect the roll rim from damage. Where the board drains into the sink is affixed a downwardly projecting nickel plated nosing, thus insuring all

water draining into sink. Each drain board is furnished with an automatic catch to hold it up against the wall when raised. They are entirely free from the wall.

For pantry sinks the whole is covered with a marble slab the ends forming drainers with countersinking therein, this again does away with all wood around the sink.

A very useful adjunct to porcelain and metal sinks is the mat to be placed at the bottom of sink or upon top of marble slab. They serve the double purpose of lessening the risk of breaking china, and when used, particularly with kitchen sinks, will prevent the scratching and discoloring of the bottom by careless placing of pots, etc , therein. The mat consists of hardwood slats firmly held in place by brass rods. They are more or less flexible.

Another very advisable adjunct is the grease trap.

Directing our attention now to the laundry—porcelain ware, with its substantial thickness, fine glaze and beautiful appearance, is the ideal material for sanitary wash tubs. Iron, cement and soapstone are other materials used, but for the best work porcelain will maintain its ground.

The only objection to them ever raised being the openings between the tubs, which allow water to fall to the floor while clothes are being transferred from one tub to the other; also the difficulty of obtaining a substantial hold for the wringer. These objections are overcome by a wringer base, to which the ringer can be quickly attached by the laundress in a thorough and substantial way, and which drains into the tub on either side. By turning a thum-screw, the ringer base can be removed, while all parts of the tub are accessible for cleaning.

The legs are furnished with adjustable iron frame extending from each leg to wall, thus making a firm and permanett support for the tubs. The porcelain backs are non-absorbent and will not discolor. They project down into the tubs so that nothing can splash and run down behind. With the tubs and the Imperial porcelain legs, they present an all-white surface so desirable in all fixtures of the kind.

Another sanitary problem is the public drinking fountain. The ordinary drinking cup in public schools, parks, bicycle paths and other public places is frequently objected to because it may lead to the spread of contagious diseases. To obviate any danger of this kind, the Purita drinking fountain has been devised. Water enters the drinking cup through the controlling valve, which can be set so as to permit the water to bubble up in a small jet to the desired height. In this way the child or other person can drink of running water, but cannot touch the cup, thus avoiding all danger of contaminaion. It will take some time however for a person habituated to drinking out of cups to get used to this habit of drinking although it is the most natural.

WHAT CO-OPERATION HAS DONE.

MAN has colonized this planet, and century after century, for thousands of years, he has striven to mold to his use the flora and fauna of the globe. He has given some attention also to molding himself and his relationships says the *New Time*. He made a splendid move when he nationalized and democratized defence and the administration of justice. He will make another grand advance when he nationalizes and democratizes industry. In the earliest times, when each one defended himself unaided, it took the whole life of a man for warfare and the training and preparation it required. But after a while men said: "There's a better way than this. We'll form ourselves into a nation, and guarantee safety to every man, and put the whole power of the State behind the promise. Then a few men with guns will be able to keep the peace for all, and a vast amount of vigor and time will be saved." And they did, and the energy thereby released has developed the commerce and science of modern times. The material civilization of the nineteenth century is the result of the nationalization of defence, and the equalization of safety. So it will be with the nationalization of industry and the equalization of security from hunger and cold; the larger part of the time and attention devoted to getting material wealth will be given to higher pursuits, and the twentieth century may see a civilization of the soul, a spiritual development as magnificent as the materjal advancement of the nineteenth.

ILLUSTRATIONS.

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 Hobart Estate Company Post street near Stockton street, San Francisco, Percy &, Hamilton, Architects.

STORES and Flats for W. J. Dutton, San Francisco, Percy & Hamilton, Architects.

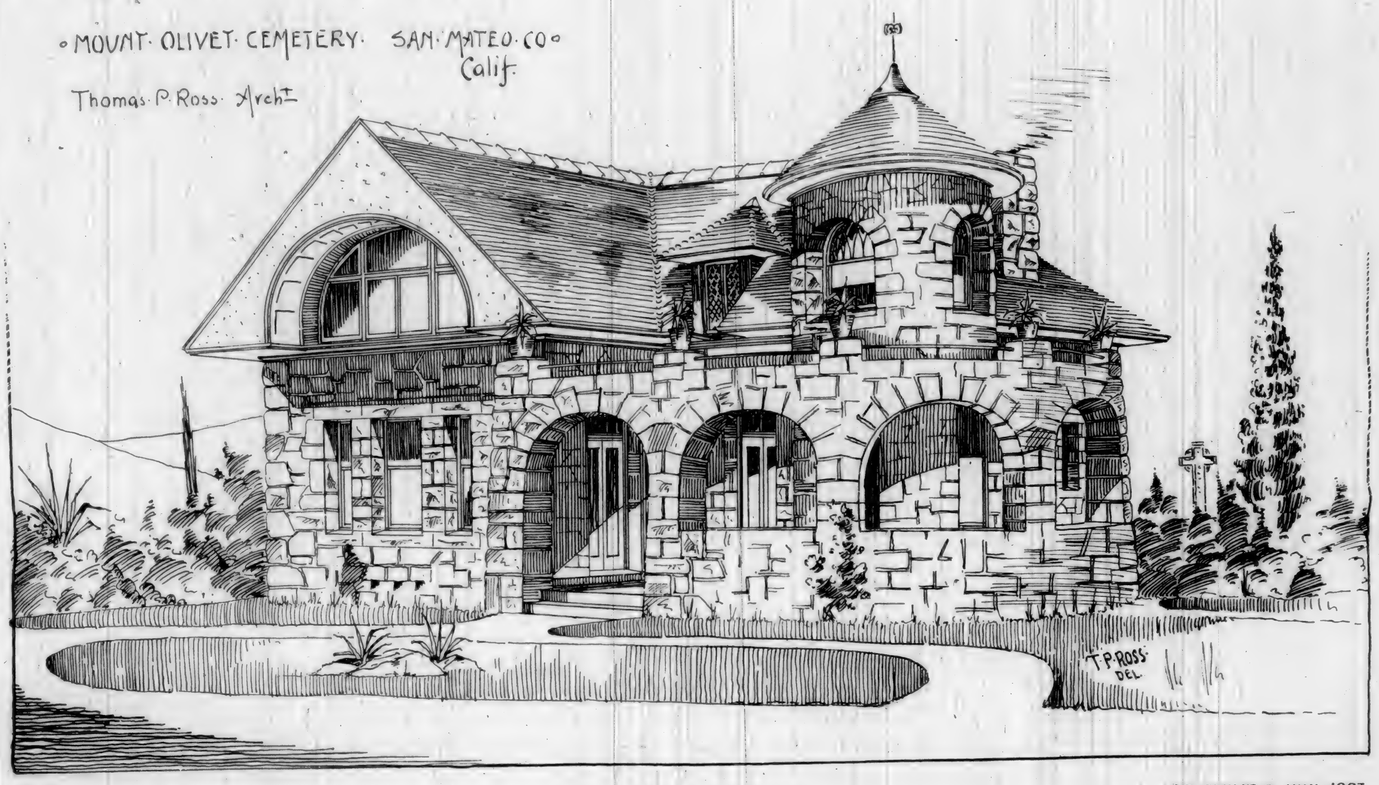
SKETCH of Superintendent's Lodge, Mount Olivet Cemetery, San Mateo Co , Thomas P. Ross, Architect.

FIRST English Evangelical Lutheran Church, Samuel Newsom, Architect.

SKETCH OF SUPERINTENDANT'S LODGE

MOUNT OLIVET CEMETERY. SAN MATEO CO. Calif.

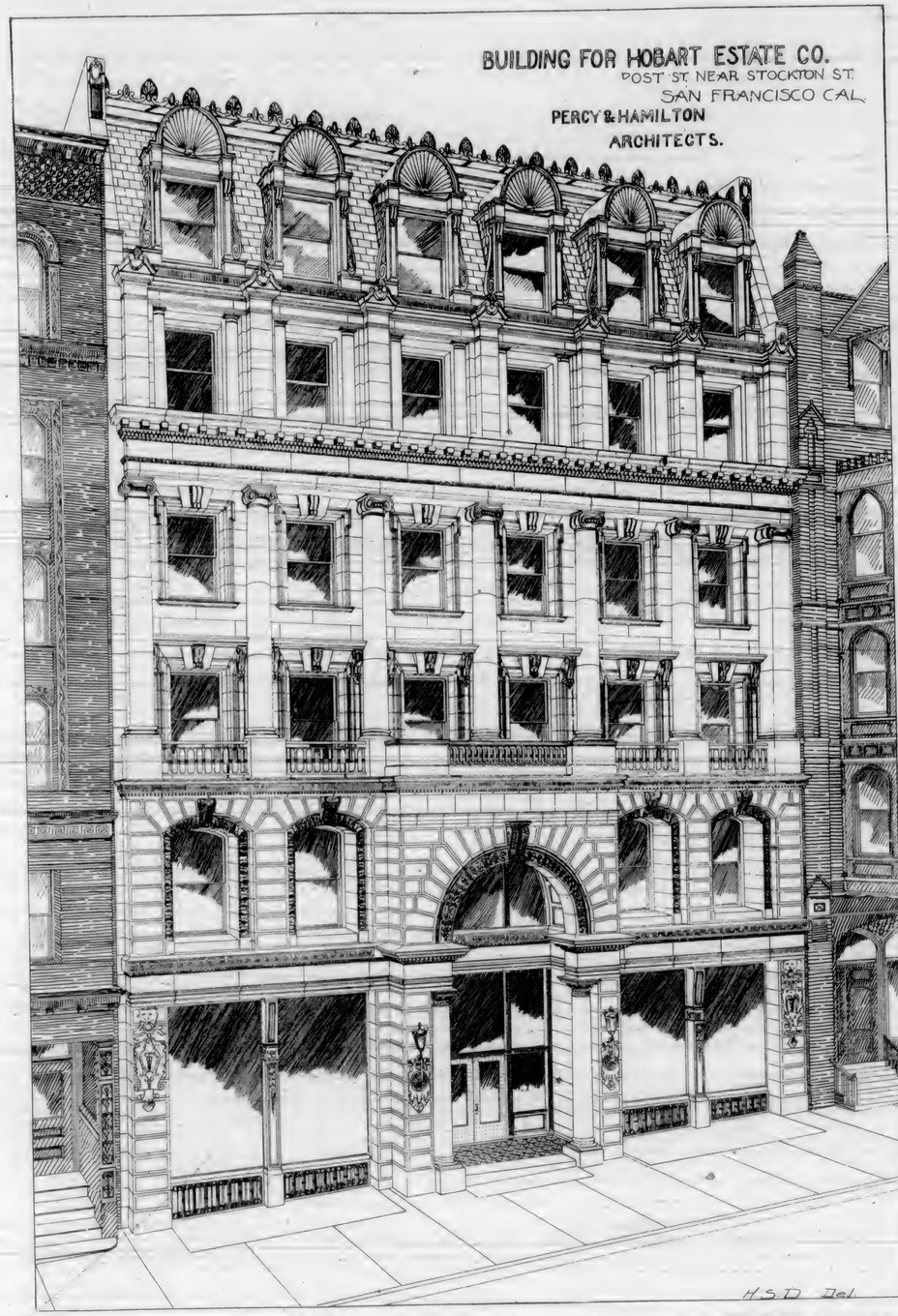
Thomas P. Ross Archt



CALIFORNIA ARCHITECT & BUILDING NEWS
SAN FRANCISCO.

BRITTON & REY. PHOTO LITH.

VOL. XVIII Nº 7 JULY 1897.



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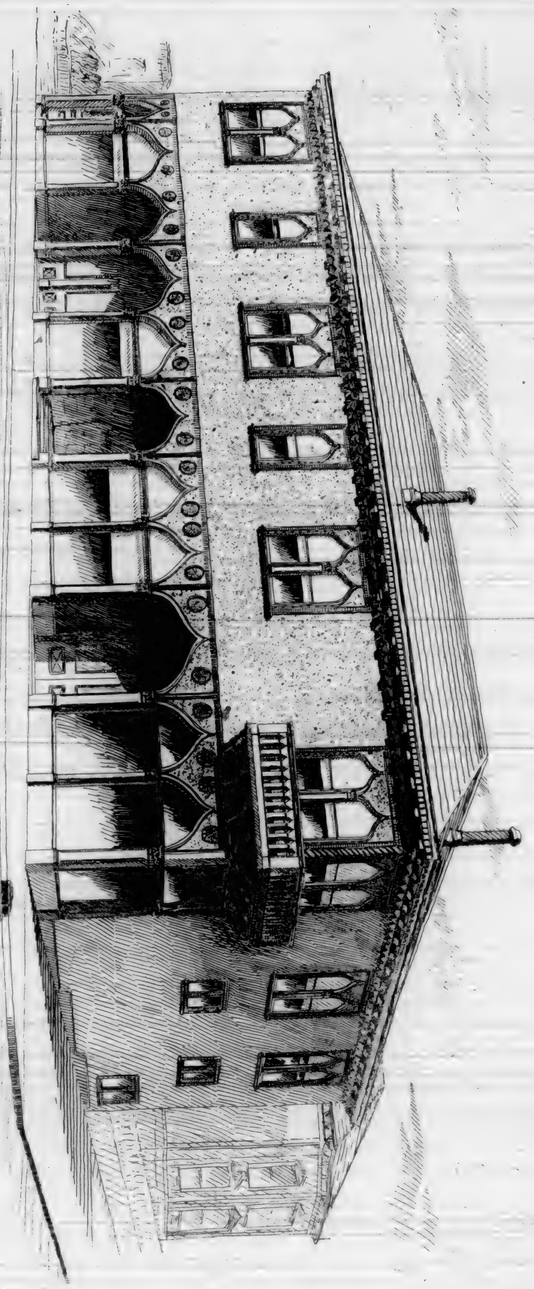

STORES & FLATS
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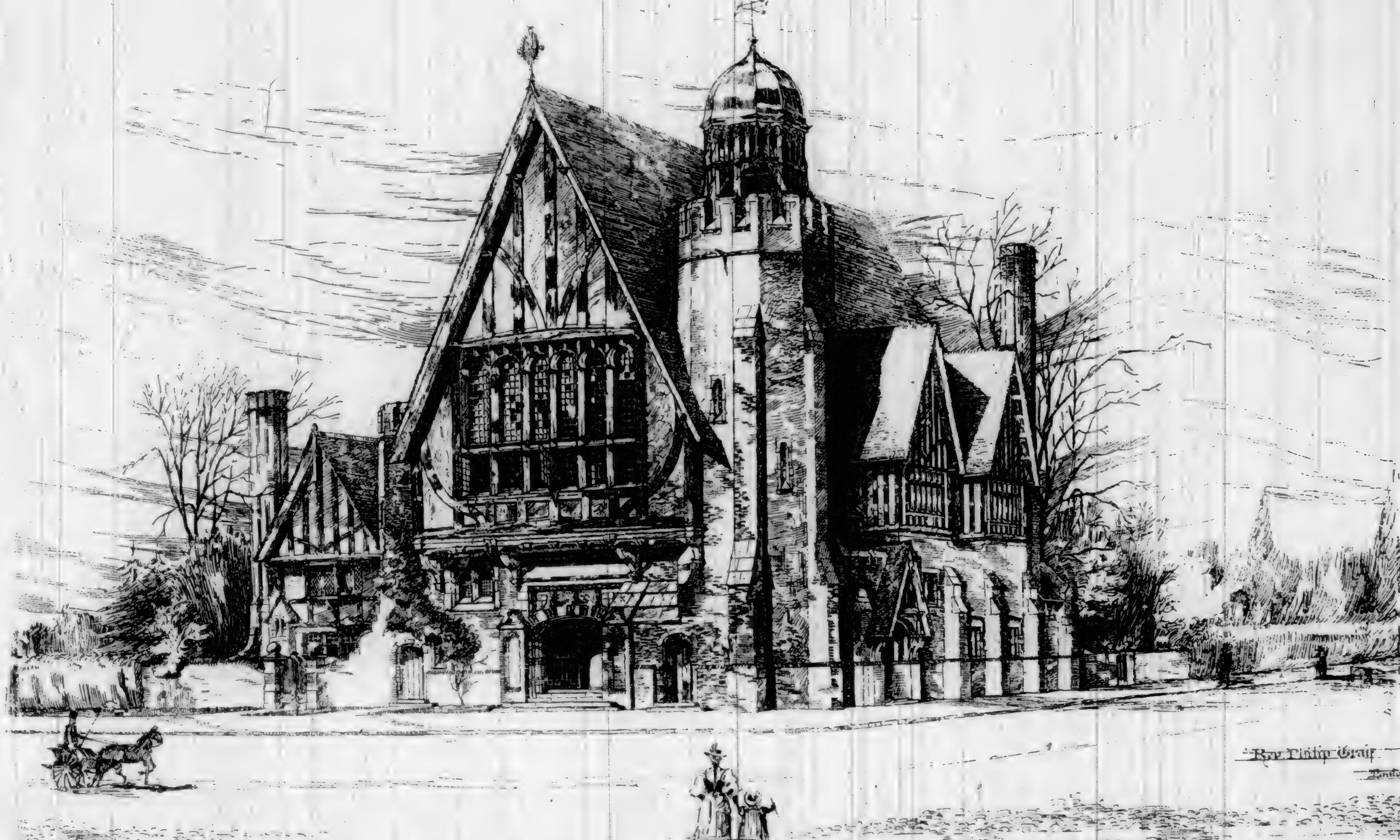
Percy & Hamilton - Architects.

VOL. XVIII Nº 7 JULY 1897.



First English Evangelical Lutheran Church

T. Samuel Newsom

CALIFORNIA ARCHITECT & BUILDING NEWS
SAN FRANCISCO.

VOL. XVIII Nº 7 JULY 1897.

BOOKS AND PERIODICALS.

Year Book of the SCHOOL OF ARCHITECTURE, University of California, published by the Architectural Society, 1897. This handsome pamphlet contains a list of the members of the Architectural Soc ety as well as a list of the officers of the same. The work is fully illustrated with drawings of the students from problems given as directions in regard to the design required, many of these are very meritorous and do credit to the students as well as to the University.

A Mountain Moloch by Duffield Osborne is the complete novel in the July LIPPINCOTT'S Magazine. In addition the list of articles are of unusual interest and well worth the price of twenty-five cents.

Sixth Annual Report of the BUREAU OF LABOR, STATISTICS AND MINES to the Governor and Fiftieth General Assembly of the State of Tennessee, 1896. Nashville: Franc. M. Paul, printer to the State, 1897.

This report is fully illustrated by half-tones, and maps; coming as it does at a time when the strike of the coal miners is attracking the attention of the country. The following extract from a letter of M. Wood of the Commission, will be of interest:—

"The growth of Tennessee as a mining and industrial State, as exhibited herein is very encouraging. The figures show that the total value of her mineral products in 1896 was the largest in the history of the State, and it is gratifying to note the material improvement in the physical condition of the Mining properties in the State. The decrease in the number of accidents over the previous year is very appreciable, notwithstanding the large increase of production."

INEXPENSIVE COUNTRY HOMES, a practical book for architects, builders, and those intending to build. A handsome cloth-bound portfolio, consisting of 88 pages, about 11x14, printed on heavy plate paper, and containing 43 designs with floor plans, of practical, tasteful, and comfortable country homes, ranging in cost from $1,000 to $5,000 complete. The designs have been carefully selected, as embodying the best efforts of various architects throughout the country. Every one of the houses has already been built, and all of the illustrations are half-tone engravings, made direct from photographs of the completed structures, taken specially by the *Scientific American* artists. In many cases, two perspective views of the same house are shown. Several illustrations of inexpensive stables are also included among the designs.

The location of the dwellings, the cost, owners' and architects' names and addresses, are given, together with a description of the dwelling, thus enabling, if desired, a personal inspection of the dwelling or direct correspondence with the architect or owner.

Architects, builders, and those intending to build will find many new and valuable suggestions among the up-to-date designs illustrated in this handsome portfolio. Price, $2.00 by mail, postpaid. Munn & Co., publishers of the *Scientific American*, 361 Broadway, New York.

SEMI-ANNUAL SUMMARY OF BUILDING OPERATIONS.

IN the following table we present the number and value of buildings erected in San Francisco during the first six months, it will be noticed there is a decrease in both the number of buildings and the amount of cost as compared with the first six months of last year.

FOR FIRST SIX MONTHS.—1897.

1897	No. of Building	No. of Contracts	Brick Building Value	No. of Building	No. of Contracts	Frame Building Value.	No. of Buildings	No. of Contract	Alterations & Additions Value.	No. of Buildings	No. of Contracts	Total Value.
Jan'ry....	12	16	$ 128,040	22	24	$ 53,524	3	3	$ 7,917	37	45	$ 190,081
Feb'ry....	6	17	181,128	21	24	71,475	8	8	28,028	35	49	280,631
March....	10	18	253,122	44	47	135,619	10	10	17,234	64	75	405,975
April.....	6	22	154,782	71	75	227,370	25	25	100,780	102	122	472,932
May.....	13	19	116,956	40	43	147,385	11	11	13,086	64	73	277,427
June.....	7	9	48,718	45	48	102,750	19	20	49,994	71	77	201,462
Total	54	101	$ 888,926	243	263	$ 788,123	76	77	$217,039	373	441	$1,888,488

To this amount has been added the further estimated sum of $500,000 where costs have not been given, which would make the total for the first six months, $2,388,488.

FOR FIRST SIX MONTHS.—1896.

1896	No. of Building	No. of Contracts	Brick Building Value	No. of Buildings	No. of Contracts	Frame Building Value.	No. of Buildings	No. of Contract	Alterations & Additions Value.	No. of Buildings	No. of Contracts	Total Value.
Jan'ry....	5	11	$ 40,743	34	40	$ 177,999	13	13	$ 33,153	52	64	$ 251,295
Feb'ry....	2	7	251,923	56	60	130,778	13	13	25,905	71	80	408,606
March....	2	6	38,062	57	63	215,372	6	6	13,000	65	75	266,434
April.....	32	40	694,417	108	120	365,087	28	28	60,796	168	197	1,120,900
May.....	2	14	246,542	30	36	146,752	30	39	24,047	71	89	406,441
June.....	10	19	221,234	93	103	460,234	17	17	70,890	120	139	752,358
Total	53	106	$1,482,911	378	422	$1,496,192	126	116	$157,991	547	644	$3,130,224

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	"	" 2,456,428
1895—517	"	" 2,625,024
1896—644	"	" 3,636,224
1897—433	"	" 2,388,488

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.

When Defects of Construction are not Waived.—A defect in work done on a public building is not waived, where the commissioner of public works takes possession of it from necessity, but expressly states that this is done without prejudice to any rights against the contractor, and refuses to give a certificate that the work is satisfactory.

MacKnight Flintic Stone Co. v. N. Y. City, 43 N. Y. Supp. Rep. 139.

What is Not a Water-Tight Cellar.—A contract to make a cellar "water-tight" is not carried out, where after the work is done water leaks into such cellar; although the contractor puts under the floor an automatic instrument, which while at work keeps the cellar dry.

MacKnight Flintic Stone Co. v. N. Y. City, 45 N. Y. Supp, 139.

Liability of Owner for Delays of Architect.—If the architect employed by the owner to superintend the erection of a building, who is to direct the work, and is by the contract made the arbiter of its proper performance, delays the contractor unreasonably in his work for the benefit of the owner and other contractors, and by allowing such other contractors to obstruct the work, renders it necessary for the contractor to do his part in an unusual manner, which adds largely to the cost, the owner is liable to such contractor for the loss resulting.

Genovese v. Third Ave. R. Co., 43 N. Y. Supp. Rep. 8.

When Injunction will not Lie Against Owner.—That a subcontractor is proceeding with work in a negligent and improper manner, to the injury of adjoining property, affords no ground for a preliminary injunction against the owner, who has no control over the manner in which the work is being done.

Hill v. Schneider, 43 N. Y. Supp. Reporter, 1.

Contract and Plans must be Filed in California.—A contract to erect a house in conformity with plans prepared by and in possession of a designated architect, filed with the recorder without a copy of the plans, does not comply with the law of California (Sec. 1183) which requires building contracts to be in writing, and to be filed before work is commenced.

Pierce v. Birkhold, Cal., 47 Pacific Reporter, 681.

Owner Liable for Delays of Architect.—A provision in a building contract by which the architect is given authority to adjust and make allowance to the contractor for loss of time due to delays caused by other contractors does not preclude a recovery by the contractor against the owner for delays and obstructions caused by the acts of the architect as superintendent for the owner.

Genovese v. Third Ave. R. Co., 34 N. Y. Supp. Rep. 8.

NOTICE OF MEETINGS.

San Francisco Chapter, American Institute of Architects, meets second Friday of each month at 408 California street,

Seth Babson, Pres. W. P. Moore, Vice-Pres.
Oliver Everett, Sec. John M. Curtis, Treas.

Southern California Chapter American Institute of Architects, meets first Wednesday of each month at 114 Spring street, Los Angeles, Cal.

Theo. A. Eisen, Pres. Arthur B. Benton, Vice-Pres.
William C. Aiken, Sec'y. August Wackerbarth, Treas.

Washington Chapter American Institute of Architects, regular meetings at 8 o'clock P. M., the first Friday of each month, except July and August.

Jos. C. Hornblower, Pres. Jas. G. Hill, Vice-Pres.
E. W. Dunn, Jr., Sec. W. J. Marsh, Treas.

Association of Architects of Arizona, meetings held at Phoenix, Arizona.

D. W. Millard, Pres. T. H. Maddox, Vice-Pres.
W. R. Norton, Sec. and Treas.

Technical Society of the Pacific Coast, meets first Friday of each month at Academy of Sciences Building.

E. J. Molera, Pres. W. F. C. Hasson, Vice-Pres.
Otto Von Geldern, Sec. Edward T. Schild, Treas.

Master Plumbers' Association, meets every first and third Friday of each month at the Flood Building.

Jas. E. Britt, Pres. J. L. E. Firman, Sec.

Builders' Exchange, Directors meet first Friday in each month at Mission and New Montgomery.

Oscar Lewis, Pres. Jas. A. Wilson, Sec.

Masons' and Builders' Association, meet first Friday evening of each month.

Adam Beck, Pres. M. V. Brady, Sec.

HOW THE TUNNEL WAS MADE.

IN CONSTRUCTING the Blackwall tunnel the first difficulties the engineers had to face were the dimensions, which, owing to the amount of traffic the tunnel would have to provide for, were of a size unheard of before in the history of subaqueous tunnels. The largest tunnel of the kind ever constructed prior to the Blackwall was the St. Clair River tunnel, in America, having a diameter of about 20 feet, the Blackwall being 27 feet, says *Lloyd's London Weekly*. This diameter was proposed by Mr. Alexander R. Binnie, the chief engineer of the L. C. C., in order to accommodate both

vehicular and passenger traffic, and by the engineering fraternity generally it was looked upon as a size impossible of accomplishment. Mr. Bennie, in his article in *London* on the planning and construction of the tunnel, says:—"It was frankly held to be an impossible proposal by some of the leaders in the engineering profession. One of the older members—a gentleman of great experience—impressed upon me the fact that failure would mean the loss of all professional reputation, and even the late Mr. Greathead, as an old and kind friend, warned me not to be too sanguine of success." But Mr. Binnie was confident of success—a confidence which he has magnificently justified; all opposition was overcome; and his proposal adopted. The contractors, Messrs. S. Pearson and Son, were the next to be warned of the impossibility of the task they were undertaking, and we are told in *London* that "an engineer of the foremost rank, with an experience greater than that of any other engineer in difficult subaqueous tunnelling, deemed it his duty, from the regard he had for Messrs. Pearson, to advise them not to risk their fortune and reputation in undertaking a task that was impossible of fulfillment." They, however, like Mr. Binnie, had confidence in their own judgment, and like him have also been magnificently justified.

The tunnel is 6,200 feet in length, and of this 1,220 feet is under the bed of the Thames, and the commencement of the work early in 1892 was the making of the approaches on both sides of the river. These approaches had naturally to be of considerable length, so that heavy traffic might not be rendered difficult by steepness of incline, and the gradients nowhere exceed that of the Haymarket. The approaches were commenced on what is technically termed the "cut and cover" system—an excavation, somewhat resembling a railway cutting, being worked out and bricked as it proceeded, but long before the actual river was reached tunnelling was begun, and here the principal instrument in the work came into operation. This was the great cutting-shield, the largest of its kind ever seen. It was suggested by Sir Benjamin Baker, as an improved form of the implement designed by Brunel for cutting the Thames tunnel, but the special and distinguishing features were designed especially for boring the Blackwall tunnel by Mr. E. W. Moir, Messrs. Pearsons' engineer and manager. The total length of this shield is 19 feet 6 inches, and the outside shell consists of four five-eights of an inch steel plates. Air tight diaphragms divide it into two parts, so that a great air pressure could be kept at the working face of the shield, which has four rooms and contains twelve working compartments. The cutting portion of this gigantic implement consists simply of the outer shell referred to fixed by circular girders to an inner skin, the two joining to form a cutting outside edge. This was driven forward by twenty-eight hydraulic rams, the pressure as a rule being 2¾ tons to the square inch. Every time the shield was puthed forward it made room for an iron ring composed of fourteen segments, each weighing a ton, the segments being placed in position by hydraulic elevators attached to the rear of the shield. These rings form the outer lining of the tunnel, being connected with each other by seventy bolts, and no fewer than 17,000 segments have been used in the construction of the great work. Cement concrete faced with white glazed tiles lines the iron skin, and gives the tunnel the bright appearance it now presents.

Another prominent feature in the construction of the tunnel was the use of compressed air in the workings. This driven into the tunnel by engines of 1200 horse power by its pressure against the face of the river bed, as the shield cut it, prevented any inrush of water. An ingenious arrangement called an "air lock" shut off the finished portion of the tunnel from that in progress of construction, preventing the escape of the compressed air yet allowing for a passage from the ordinary atmosphere to the condensed one, on much the same principle that a canal lock allows boats access to or from divisions of water at varying levels. The lock resembled nothing so much as a large iron boiler embedded in a concrete block that hermetically sealed one end of the tunnel. At either end of the boiler were doors, each opening inwards towards the compressed air side. In this boiler a person passing from the ordinary atmosphere to the working one would sit down, a pipe would be opened, and the compressed air rushed in with a roar until the pressure in the lock was equal with that in the workings, when the further door could be opened, and the part of the tunnel in progress entered. The sensation of the person in the thicker atmosphere was merely that of an increased weight and somewhat heavier breathing. It was in the lock during the equalization of the atmospheres that any unpleasantness, singing in the head, popping in the ears, pain across the forehead, and such-like was felt. At least this was the experience of our representative when he visited the tunnel at the time it was bored about half way across the river. A description was given in *Lloyd's* in two illustrated articles in May, 1895. The scene in the workings was weird and striking in the highest degree. Down the middle of the tunnel ran a tramway, bearing trucks that carried the clay or gravel cut out from the face by the men in the shield. Gangs of men moved silently under the electric light, which was used throughout, some fixing cement, others riveting, others "grouting," as the process is called, by which an outer coating of concrete is given to each ring as it is fixed. So, day and night, the work went steadily on, only a small line of foam on the river marking the position of the shield to persons above ground. Some days only a few inches could be made, and on others several feet, but bit by bit it advanced until the two great "caissons," as the shafts on either side the river are called, were connected by this latest London roadway. Never was so great a work carried out with so few accidents, thanks to the ever-careful supervision of the resident engineers Messrs. Hay and Fitzmaurice. Once the cutting edge of the shield was turned by an encounter with a great piece of lime-stone rock, and the implement was only repaired after considerable delay and at a cost of between 7,000*l* and 10,000*l*. This however, was the only great mishap encountered, and the work so many practical men pronounced impossible has been brought to a triumphant issue. In the making of the tunnel a million tiles have been used and seven million bricks, which figures convey but a faint idea of the vastness of the undertaking; and its need and utility in uniting two great districts are made plain by the following fact:—The contractors had occasion to move a large crane from one side of the river to the other. Across the Themes it was about half a mile, but in order to get around it had to be drawn by way of Tower-bridge, miles above, so that the journey was a matter of some ten miles.—[Since the tunnel has bee opened a loud echo has come ito being and it is said the uproar is deafening as vehicles proceed through its spaces.—Ed.]

STONE PRINCIPALS AND INTERNAL ARCHES.

AVERY rare mode of constructing roofs is that in which stone principals occur instead of timber. The examples in England are few, and one or two are mentioned in the "Architectural Dictionary." The south transept of Minchin Hampton Church, Gloucestershire, has a pair of stone principals, and at Willingham, Cambridgeshire, a smaller instance may be seen. At Carlow a stone principal is constructed in the shape of a trefoiled arch within an acutely pointed arch, the object of which form is apparently to obviate the necessity of counterforts on the outside, though the writer does not give details. The weight of stone concentrated at the "cusps" of the trefoil arch were no doubt intended to act as counterbalancing forces, their centres of gravity falling within the walls. Stone ribs supporting the purlins of roofs are common in many churches, and their object was doubtless to save trouble. Whatever motive induced the old architects to use them, it is quite certain these principals add to the monumental character of a building. The stone arching connects, in a pleasing manner, the two opposite walls, and the roof becomes a more integral part of the structure than it does when timber is employed. But the construction requires considerable care, and the centring should not be "struck" till the work has had good time to settle. If the walls are thick and low, the springing of the ribs may be made to commence low down, and the side walls do not require any buttresses, and it is a common and very effective manner of roofing porches, small chapels, etc. In lofty structures the employment of stone principals is more doubtful, for unless there is ample masonry provided in the form, either in internal piers or extended buttresses, observed in some of the churches in the South of France, great risk is run, as there are not a few examples to witness in spreading naves and fractured arches. In this connection we may point architects to tower and chancel arches, many of which, both in old and modern churches, bear evidence of the "sleepless" activity of the arch, when improperly tampered with or not duly buttressed. Many an old Norman and obtuse-pointed Transitional arch to be seen in the village churches in the south and west of England, show signs of the weakness and instability of the abutments. In probably more than half the cases to be met with, the fault lies with the tampering spirit of later times in making external vaults for interment, or in injudiciously performed alterations—as for instance, the enlargement of a church by the addition of transepts. During the progress of these alterations, the wall is cut through and weakened, no shores are erected to help the abutments, which have been so recklessly deprived of their bond with the adjacent walling, or the excavations for the foundations of new work are made in dangerous proximity to old buttresses or footings. In new churches we have seen chancel arches cracked, and serious signs of instability in the masonry of the walls; it is not unfrequently the practice in these days of partial building, to afford a temporary support to the chancel arch before the aisles are added by the erection of a rough brick flying buttress on the outside; but, it is needless to say, very much more caution is required than is sometimes taken. In one case we know, where this expedient was adopted, the result has proved so bad that the arch will doubtless require to be rebuilt sooner or later. The chief point, of course, is to make such a buttress the permanent one, so that it will not require to be tampered with when the additions are made; and to secure safety the centring should be very carefully "struck," and not until the work has been quite finished, and the mortar set. Architects might very well take a lesson here from their brother professionals the engineers, although the latter cannot be said to be always infallible in their arch construction. A pleasing proportion of an interior arched opening is one in which the eye naturally takes immediate cognizance of the proportion between it and the solid masonry of the abutments, and discerns nothing to offend it. In very many of our new churches, the mass of masonry above the arch-crown often reserved for mosaic or colour decoration is disproportionately large to the abutments, or the span looks exceedingly wide for the buttresses, and whenever we meet with such an instance, the suggest of a counterfort sufficient and necessary to satisfy visual requirements and set the mind at rest is important. The question is one which concerns good proportion as much as mechanical stability; and, in fact, if the eye were consulted and followed in this and similar matters more loyally than it is, we should have better and more carefully designed buildings—appealing to our sense of just balance of parts and artistic fitness.—*The Building News.*

BUSINESS MOSAICS.

George Goodman, Patentee and Manufacturer of artificial stone, is one of the gentlemen who consumes an immense amount of Portland Cement. The result may be seen in many parts of the city, in the good sidewalks, garden warks, as well as foundations and bulkheads. Mr. Goodman does his work well and therefore gets lots of it to do; he can be found at 307 Montgomery street.

L. E. Clawson & Co., 1340 Market street, San Francisco, furnish everything in the line of Patent Chimneys that comply with the new fire ordinance. An illustrated circular sent on application.

Ives Patent Sash Locks are now finished in cold rolled steel, bronze and brass in all the popular finishes. Hobart B. Ives & Co., New Haven, Conn.

Cabot's Creosote Shingle Stains are manufactured by Samuel Cabot, Boston, Mass., can be obtained of Mr. Charles J. Waterhouse, agent, 35 New Montgomery street, San Francisco. The merits of this stain are well known among architects as a protection to wood; it is unequaled—entirely preventing the blackening of redwood. Samples and prices on application to the above address.

The Norton Door Check and Spring with its simple and durable air cushion check, is exactly what you want to prevent the slamming of your door; as this is not liable to get out of order, and duplicate parts can always be obtained if it does—be wise in time and provide yourself with one, thus stopping the slamming of the door.

To those in favor of home industry we suggest the patronizing of P. & B. building paper, manufactnred by the Paraffine Paint Co.; everything supplied by this reliable firm can be depended upon as represented, and home made at that—116 Battery street, San Francisco.

Facts about paint is what we all want who intend painting—therefore go to the fountain head and get W. P. Fuller & Co., to tell you something in this line. They recommend Phoenix Pure Paint because it is made from pure material only and is finely and thoroughly ground and mixed with heavy machinery.

Joseph Budde can be found at his old stand, 575 Mission street, San Francisco. Mr. Budde makes his mark as a manufacturer of sanitary appliances in the plumbing line, and thus you are able to partonize home industry and get what you want in that line at the same time. Mr. Budde has been in the business so many years, is know so favorably to the trade that it is hardly necessary to call attention to his advertisement on page vii of this journal.

Parties desiring to purchase cement should go to W. R. Grace & Co., 203 California street, and get the celebrated Josson brand.

The Pacific American Decorating Company, manufacturers of stained and art glass—offer you the opportunity of having your house decorated with landscapes, marine views or photographs of persons and animals, 26 O'Farrell street, room 3.

CITY BUILDING NEWS.

o near Hoffman. Cottage; owner, John Galloway; cost $1600.

Baker near Greenwich. Two-story frame; owner, J. A. Voegnison; architect, E. Depierre; contractor, A. Dahlberg; signed, June 19; filed, June 21; cost $2725.

Belvedere near Fredrick. Two-story frame; owner, Mrs. M. J. Goodwin; contractor, E. W. Hyde; signed, June 25; filed, June 28; cost $3100.

Beulah near Stanyan. Two-story frame; owner, Henry W. Copp; contractor, John Steirlien; signed, April 30; filed, July 7; cost $4100.

Boardman Place near Bryant. Frame building; owner, Giovanni Camiera; architect, P. De Martini; contractors, Martini & Pagano; signed, June 15; filed, June 21; cost $2550.

Bryant near 3rd. Three-story frame; owner, Alice Colleton, architect, P. J. Lynch; contractor, P. J. Scott; signed, June 21; filed, June 24; cost $3034.

Broadway near Devisadero. Two-story frame; owner, Thomas Magee, Jr.; architects, Percy & Hamilton; signed, June 28; filed, June 30; cost $3800.

Bush near Montgomery. Alterations to the old Standard Theatre; days work; cost $5000.

California and St. Mary's Place. Alterations and additions; owners, Grasso & Co.; architect, W. H. Lillie; contractor, John Miron; signed, July 6; filed, July 7; cost $1300.

Green near Jones. To build; owner, Fred Marriot; architects, Laver & Mullany; contractor, Jno. Blake; cost $800.

Olay near Larkin. Alterations and additions; owner, A. G. Burgner; architect, G. A. Bordwell; contractor, M. J. Logan; signed, June 25; filed, June 25; cost $2275.

Clay Ave. near Clay. Two-story brick school house; owner, John F. English; architects, Havens & Toepke; contractor, J. G. Adams; signed, June 30; filed, July 7; cost $2170.

Clay near Larkin. Alterations and additions; owner, Harriett L. Van Bibber; architect, W. H. Wharff; contractor, A. L. Whitney; signed, July 13; filed, July 13; cost $2278.

Clara near 4th. Alterations and additions; owner, Wallace A. Wise; architect, R. H. White; contractor, A. J. Anderson; signed, July 28; filed, July 3; cost $1580.

Devisadero near Union. To build; owner, Sarah Anderson; architect, T. D. Newsom; contractor, J. H. Simpson; signed, June 14; filed, June 16; cost $2150.

Douglass and 17th. Two-story frame; owner, C. Ruhland; builder, C. Zwierlein; cost $3600.

Ellis near Mason. Concrete foundation for six-story brick; owner, L. H. Sly; contractors, Gray Bros; signed, June 18; filed, June 19; cost $2790.

Ellis near Steiner. Two-story frame; owner, Hugo Klenin; architect, W. H. Armitage; contractors, Garson & Otter; signed, July 1; filed, July 6; cost $2635.

Ellis street, No. 621-631. Alterations and additions; owner, Dr. P. H. Flood; architect, James E. Wolfe; contractor, F. A. Blanchard; signed, July 7; filed, July 7; cost $1570.

Ellis near Mason. Six-story brick; owner, L. H. Sly; days work; cost $60,000.

Ellis and Anna Lane. Carpenter work etc., for six-story brick; owner, W. J. Somers; architects, Percy & Hamilton; contractor, T. M. McLachlan; signed, June 25; filed, July 12; cost $13,040.

Ellis and Mason. Underpinning Langham hotel; contractor, M. Kelleher; cost $1000.

Eighteenth near Church. Cottage; owner, H. E. Brown; contractor, C. W. Duffie; signed, July 8; filed, July 9; cost $1835.

Fell and Masonic Ave. Three-story frame; owner, Martin A. Aronsohn; architect, R. H. White; contractor, Donald Currie; signed, June 8; filed, June 16; cost $5300.

Fell near Scott. Three-story frame; owner, R. Nichols; architect, C. W. Duffie; contractor, S. A. Brown; signed, June 21; filed, June 25; cost $3894.

Fell near Cole. Carpenter work; owner, Martin Kealing; architects, Cahill & Condon; contractor, Bernard Dryer; signed. June 28; filed, July 7; cost $6350.

Folsom and Alice. Alterations and additions; owner, F. J. Hund; architect, C. A. Meusdorffer; contractor, Issac Penny; signed, June 24; filed, June 25; cost $2575.

Folsom near 4th. Two-story brick; owners, Schroth & Westerfield; superintendent, G. T. Watson; contractor, Wm. Little; signed, June 25; filed, June 28; cost $14,350.

Folsom and Harriett. Three-story frame; owner, Harry Bush; contractor, C. M. Depew; cost $5000.

Fourteenth Ave. near M. street. Cottage; owner, Edward Eggers; contractor, M. J. Scott; signed, June 23; filed, June 23; cost $1240.

Franklin and Hickory Ave. Three-story frame; owner, Frank A. Meyer; contractor, R. O. Chandler; signed, July 8; filed, July 8; cost $5200.

Geary and Powell. Additions and alterations; owner, Mrs. Charlotte F. Clarke; architect, P. Schwerdt; contractor, Val Franz; signed, July 10; filed, July 12; cost $11,700

Geary and Stockton. Cast iron fences; owner, Spring Valley Water Works; architect, Clinton Day; contractor, H. Haustein; signed, June 22; filed, July 9; cost $6657.

Geary and Powell. Plumbing work; owner, Mrs. Charlott F. Clarke; architect, F. Schwerdt; contractor, Val Franz; sub-contractor, H. Williamson; signed, July 12; filed, July 14; cost $1350. Brick and granite work; contractor, D. J. Brannan; signed, July 12; filed, July 14; cost $2575.

Golden Court near Sacramento. Repairs; owners, Ellen and John Golden; superintendent, Lawrance Kelly; contractor, J. M. Harcourt; signed, July July 13; filed, July 13; cost not given.

Gough near Sacramento. To build; owner, Robert C. Foutet; architects, Coxhead & Coxhead; contractor, Chas. M. Depew; signed, July 3; filed, July 7; cost $5340.

Haight near Scott. Two-story frame; owner, J. D. Feldmann; architect, Emil John; contractor, C. Kreeker; signed, June 14; filed, June 15; cost $4000.

Haight and Shrader. Two-story frame; owner, I. Steinhart; architect, W. H. Lillie; contractor, M. J. Savage; signed, June 30; filed, July 6; cost $5594.

Harrison near 4th. Three-story frame; owner, John J. Sweeney; architect, Oliver Everett; contractors, Barrett & Leahy; signed, July 7; filed, July 8; cost $5733.

Henry near Castro. Two-story frame; owner, Miss Ann Hall; contractor, Charles Koenig; signed, June 17; filed, June 19; cost $1448.

Hill near Noe. One-story frame; owner, L. A. Smith; contractor, D. Einstein; signed, June 28; filed, July 10 cost $1150.

Jones near Washington. Two-story frame; owner, Henry L. Wagner; architect, Albert L. Fair; contractor, Wm. Knowles; signed, June 14; filed, June 15; cost $8538.

Joost Ave. Frame building; owner, Mrs. Hicks; cost $1200.

Joost Ave. Frame dwelling; owner, Mr. Stammer; cost $1200.

Iowa near Yolo. One-story frame; owners, Thomas and Ellen Commors; architect, M. G. Bughee; contractors, Brennan & Nichols; signed, June 21; filed, July 8; cost $1400.

Larkin near Sacramento. To build; owner, W. J. Harris; builder, C. Zwierlein; cost $8000.

Lily Ave. near Buchanan. Alterations and additions; owner, Margaret Corbett; architect, A. Hildebrand; contractors, Klein & Eickholt; signed, July 8; filed, July 9; cost $1530.

Lundy's Lane near Esmeralda Ave. Cottage; owner, R. Sample; architect, G. H. Batcheider; contractor, W. W. Elliott; signed, June 22; filed, June 24; cost $1000.

Lundy's Lane near Esmeralda. Cottage; owner, R. Sample; contractor, W. W. Elliott; cost $1000.

Market near 5th. Alteration to Pythian Castle Building; architects, Pissis & Moore; contractor, W. A. Lange; cost $1000.

Market and 3rd. Models and carving in sand stone; owner, Claus Spreckels; architects, Reid Bros; contractor, Rupert Schmid; signed, June 12; filed, July 7; cost $1350.

McAllister near Lyon. To build; owner, Eurico G. Bressi; architects, W. Mooser & Son; contractor, A. Stevens; signed, June 19; filed, June 26; cost $2889.

Minnesota near 22d. Alterations and additions; owners, Thomas Brown & Alice Brown; contractor, Frank Coyer; signed, June 11; filed, June 16; cost $1625.

Mission near 18th. One-story brick; owner, Pacific Telegraph and Telephone Co.; contractor, J. A. Wilson; signed, July 1; filed, July 3; cost $4100.

Montgomery and Sutter. Three-story brick; owner, Anna L. Whittell; architect, Townsend & Wyneken; contractors, Veitch & Bros.; signed, June 17; filed, June 12; cost $21689.

Oak and Ashbury. Two-story frame; owner, Geo. F. Gorden; architect, G. A. Behrend; contractor, H. Brown; signed, July 6; filed, July 6; cost $3478.

O'Farrell near Laguna. Alterations and additions; owner, Moses Samuels; architect, A. F. Oakey; contractor, H. Jacks; signed, June 15; filed, June 17; cost $1552.

O'Farrell near Gough. Two-story frame; owner, James Tierney; architect, T. J. Welsh; signed, June 24; filed, June 28; cost $5545.

O'Farrell near Gough. Plumbing, etc.; owner, Jas. Tierney; architect, T. J. Welsh; contractor, W. F. Wilson; cost $883. Painting; contractor, L. J. Dwyer; cost $599. Tinning, etc.; contractors, Conlin & Roberts; cost $274.

Pacific Ave. near Octavia. Plumbing, etc; owner, E. J. McCutchen; architect, E. A. Mathews; contractors, Ickelheimer & Bros; signed, June 15; filed, June 16; cost $1444.

Pacific Ave and Webster. To build; owner, Mrs. James A. Robinson; architect, F. S. Van Frees; contractors, Anderson & Greig; signed, June 11; filed, June 19; cost $5472.

Post and Taylor. Three-story frame; owner, Estate of H. Molleshaner; architect, T. J. Welsh; contractor, J. E. Mooney; signed, June 14; filed, June 22; cost $7700. Plumbing, etc; contractor, Jas. McAllister; signed, June 21; filed, June 22; cost $1275.

Post near Laguna. To build; owner, Chas. H. Gottschalk; architect, Wm. Curlett; contractor, Wm. Linden; signed, June 29; filed, June 30; cost $3835.

Post near Laguna. Three-story frame; owner, Mrs. Wolf; contractors, Phillips & Hood; cost $6000.

Powell near Geary. Brick, carpentry work, etc; owner, Mrs. Margaret A. Skelly; architect, P. Schwerdt; contractor, D. Powers; signed, July 12; filed, July 14; cost $5557.

Powell near Bush. Four-story frame; owner, Julia Hyde; architects, Shea & Shea; contractor, L. W. Coburn; signed, June 17; filed, June 26; cost $4800.

Pine near Polk. Grading, carpentry, iron, etc; owner, E. F. Guedet; architect, cost $5177. Painting, etc; contractor, C. E. Schwartz; signed, July 10; filed, July 12; cost $460. Plumbing, etc; contractors, Schnaz & Grady; signed, July 10; filed, July 12; cost $662.

Sanchez near Alvarado. Cottage; owner, Mrs. Emma Landgrebe; contractors, Carl Schley & C. A. Doss; signed, June 23; filed, June 25; cost $1180.

San Bruno Road near Gates street. One-story frame; owner, Mrs. Elizabeth Taylor; builder C. Zwierlein; cost $1000.

Seventh Ave. near M. Cottage; owner, Nathaniel Hallinan; architect, M. J. Welsh; contractor, J. B. Quinn; signed, June 15; filed, June 16; cost $1300.

Stanley Place near Bryant. Alterations and additiods; owner, Fannie Gluckmay; contractor, R. C. Stiller; signed, June 24; filed, June 24; cost $1067.

Steiner near Broadway. To build; owner, C. R. Havens; architects, Hermann & Swain; contractor, G. Peterson; signed, June 23; filed, June 23; cost $4240.

Stevenson near 3rd. Excavation for brick building; owner, Claus Spreckels; architects, Reid Bros; contractor, J. Tuttle; signed, June 10; filed, June 26; cost $1290.

Sixteenth street. One-story frame; owner, J. H. Burns; days work; cost $1500.

Stockton and Geary. Elevator; owner Spring Valley Water Works; architect, Clinton Day; contractors, Cahill & Hall Elevator Co; signed, July 2; filed, July 2; cost $14,870.

Taylor and Bernard. Additions and alterations; owner, Catherine Fahey; architect, H. D. Mitchell; contractor, Peter Hamilton; signed, June 16; filed, June 18; cost $1200.

Tehama near 2d. To build; owner, John Driscoll; architects, Rowell & Collins; contractor, David R. Perry; signed, July 9; filed, July 10; cost $2300.

Twelfth near Harrison. Alterations and additions; owner, Mrs; L. M. Schmidt; architect, W. H. Wharff; contractors, Enquest & Wright; signed, June 14; filed, June 15; cost $1125.

Twelfth Ave. near A. street. Cottage; owners, Geo. E. Mitchell and Mary Ann Mitchell; contractors, A. P. Ely & J. W. Smith; signed, June 14; filed, June 16; cost $1102.

Twelfth Ave. near A. Cottage; owner, Francis Miller; contractor, L. G. Bergren; signed, July 6; filed, July 8; cost $1180.

Twenty-third near Hoffman. Cottage; owner, F. W. Westfall; cost $1600.

Twenty-third near Hoffman. Cottage; owner, J. Wilhmson; cost $1600.

Twenty-third near Noe. To build; owner, Sarah Nesbitt; contractor, J. O. Dyar; signed, July 6; filed, July 8; cost $2600.

Twenty-seventh and Church. To build; owners, Thomas and Catherine Fanning; contractor, V. G. Godin; signed, June 21; filed, June 22; cost $2450.

Vallejo near Powell. To build; owner, Issac Fox; architect, A. W. Marquis; contractor, D. A. McIntosh; signed, June 16; filed, June 18; cost $1325.

Vermont near Yolo. To build; owner, Mrs. Kelleher; builder, C. Zwierlein; cost $1200.

Washington near Van Ness. Alterations and additions; owner, Mrs. Margaret J. Jones; architects, Coxhead & Coxhead; contractor, M. C. Lynch; signed, June 16; filed, June 21; cost $4831.50.

Washington and Spruce. To build; owner, Ed. G. Carrero; architect, T. P. Ross; contractor, Fred Miller; cost $3980.

Webster near California. Alterations, etc; owner, Lillian D. Reynolds; architects, Herman & Swain; contractors, Anderson & Stockholm; signed, July 2; filed, July 7; cost $1935.

The California Architect and Building News.

OFFICE, 408 CALIFORNIA STREET, SAN FRANCISCO, CAL., U. S. A.

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OLIVER EVERETT Secretary.

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AS THE MATTER of a New Charter for San Francisco is again on the tapis the time is opportune for remarks as to the position of architects, engineers and builders in it.

In the most important place, this being the age of specialization it seems that the Architectural Department of the Municipal Government should be kept separate from the Engineering Department.

In all American Charters we believe so far no distinction has been made, and all are grouped in the Board of Public Works; who are generally supposed to be engineers.

A little consideration will show that this is very inadvisable. The distinction is very palpable between the two departments; in fact, there is nothing apparently in common between them.

One busies itself with the laying of sewers, building of roads and walks, water supply, gas and electric light supply, bridge building, street cleaning, railroads, telegraphs and telephone, subways, and the charge and care of all these things. It also would naturally include all surveying.

San Francisco being a seaport it would also include all marine engineering such as building of wharves, dockage, etc., and the charge of the same.

All this comes appropriately under the term "Works" so that "Works Department" or "Engineering Department" could be either of them used.

On the other hand the Architectural Department, or what could be called for short the "Building Department" includes all constructions for protection from the weather; and those made for the delight of the eye, such as parks, statues, monuments, gardens, museums and othor art treasures of the City.

One sees at a glance that a different order of men are required to haudle these latter works than those mentioned before—and it is hardly necessary to note that the two geniuses have been very seldom indeed united in one man—and, with the present complexity of public wants, it is im

possible for one man or set of men to do justice to both. The head of the first department should be an engineer, of the second department an architect.

The Architectural Department should have charge of the construction and repair of all public buildings, the lighting and all other installations in connection with said buildings and the furniture within the same.

One bureau of the department should be empowered to make a proper building ordinance including plumbing regulations and see it enforced by Building Inspectors—who would take the place of the present Fire Wardens and Health Inspectors. In regard to the designs of public buildings and monuments, fountains, parks, etc., which more particularly interest the architect—the example of our National Government in the matter is a good one. All constructions of this character costing complete over $50,000, should have designs open to competition.

The City parks would naturally come under the Landscape Architectural Bureau of the Department—being artistic creations—that being made the great distinction between each department; any other classification does not seem to be so satisfactory.

A few thoughts in regard to the carrying out of the work of these two departments may be apropos. The public service has always a large attraction for the citizens, due no doubt to a feeling on his part that he is partly working for himself when working for the city, being a constituent of the body politic—while, when working for a private employer he feels that the profit of none of his work comes back to himself.

So as to allow as many as possible to participate in the fruition of this laudable desire, the hours of the City should never exceed seven hours, and be less whenever the people are educated to the idea. Two ends are gained by this more people are employed and by allowing only seven hours pay, it prevents those who may have private work from rushing into government situations.

Again all the labor required in these departments should be done by the City by day's work and contracts should be tabooed. There is an element of speculation (gambling in English) about a lowest bid contract which is demoralizing; if the work is large, only rich contractors can bid, and the number being small the temptation to pool their issues is great, and the City has to pay more than the work is worth; or, if it be small enough to encourage a large number of bidders, the lowest bidders generally loses; as we find in quite a quantity of national work let out on this system. In the latter case the City gets something for nothing which every honest citizen abhors.

PUBLIC UTILITIES IN SAN FRANCISCO.

CITY GOVERNMENT A NATIONAL QUESTION.

THE problem of municipal government has become one of the highest concern to the entire nation. It is, in truth, a question whose solution affects the interest of all the people. At present one-third of the people of the United States dwell in cities. One-tenth of the entire population of the Republic live in the four great cities of New York, Philadelphia, Boston and Chicago. American cities resemble each other so closely, that the experience of one will generally serve as a lesson for all.

OUR CITY HAS NO PUBLIC DEBT.

In the first place, the early settlers of San Francisco, expecting to return soon to their Eastern homes, were unwilling to discount an uncertain future. They had not in view the requirements of a metropolis of 350,000 people. Therefore, no provision for any public indebtedness was provided; and we have to-day a municipality without bonds. One hundred and sixty miles of paved streets have been constructed, costly public buildings have been erected; a magnificent public park, costing annually a quarter of a million dollars; and yet San Francisco is practically out of debt. No other large city on earth can match this remarkable record.

OUR CITY OWNS NO UTILITIES.

In the second place, San Francisco possesses no public utilities. Other large cities have issued bonds mainly to acquire municipal ownership of the great necessities of the people. San Francisco has done neither. The public property of the city, amounting to $25,000,000, has been either inherited or paid for by current taxation. Nearly all progressive modern cities own and often operate some public utilities. San Francisco has allowed great tax-levying corporations to perform these municipal functions.

VALUABLE FRANCHISES GIVEN AWAY.

Our city has given away for long periods, without compensation or reservation, valuable franchises for street railways, telegraph, telephone, subways, water supply, and gas and electric lighting. Laws governing the sale of franchises have only been enacted within recent years. To recover her lost advantages, San Francisco must now wait until the existing privileges expire by limitation. The present Constitution of California, however, has broken the monopoly of water and light franchises by allowing any person to use the streets for such purposes under reasonable conditions.

MONOPOLY A LOGICAL RESULT.

The natural result of the existence of these gigantic corporations has been powerful monopolies and the imposition of excessive rates for all kinds of service. Morally worse than this has been the resulting suspicion of the curruption of public bodies. Public servants in the Legislature, in the council, and even in the judiciary are exposed to the debasing machinations of these unscrupulous corporations. They have debauched politics and have established an "imperium in imperio," subversive almost of the State government itself.

PUBLIC OWNERSHIP A NECESSITY.

These indisputable facts emphasize more lucidly than any argument the necessity of the public ownership of utilities. With a reform in the civil service, better results could certainly be attained. Moreover, public bodies would not be exposed to the insidious inroads of corruption, carrying with it the ultimate destruction of representative government.

PRIVATE OWNERSHIP INCLUDES TAXATION.

Every rise in the price of water or light is equivalent to an additional tax imposed upon the people. Every divident paid upon watered stock of transportation and other companies using public streets is an unjust and unwarranted imposition upon the people. The public streets belong to the municipality and these corporations cannot exist without their use. The first consideration of lawmakers should be the interest of all the people. Therefore, only reasonable interest should be permitted to be earned upon the actual capital invested. The $2,500,000 contributed annually by the citizens of San Francisco for the universal necessity of water and artificial light is certainly as much taxation as the very taxes levied for the support of the city government. If the people are charged double the value of these necessities, they are unjustly taxed.

ACTUAL COST THE TRUE MEASURE OF VALUE.

Reasonable interest should be estimated upon actual cost and not upon any inflated values. For example, a system of street railway has issued stock for $18,750,000 and has outstanding bonds for $11,000,000. It collects over $3,250,000 annually in fares and thus pays full interest upon all its stock and bonds. Its earning capacity with five-cent fare should, therefore, not be considered the measure of its value. Reasonable dividends could be paid upon its actual value and yet cheaper service rendered, especially during certain hours of the day. A gas company with a plant worth $5,000,000 is paying 6 per cent dividends on $10,000,000; and a water company is paying regular rates of interest on a stock and bond capitalization of $23,000,000. The citizens of San Francisco are paying $7,000,000 annually for water, artificial light and street car transportation, a sum $3,000,000 more than was raised last year by direct taxation for the support of the municipal government.

PUBLIC OWNERSHIP THE BEST SOLUTION.

The ultimate solution of this disturbing problem is municipal ownership and operation of public utilities. Modern American cities, careful to perserve representative institutions in their purity, should be prepared for this public duty. The mere power of regulation has failed to prove an adequate remedy. In practice it is the opportunity of the corrupt and the corruptor. Corporations have their duties as well as their rights.

CAPITALIZATION IS NOT FICTITIOUS.

The apparent inflated capitalization of these gigantic corporations is in reality not fictitious. It actually exists and consists of two distinct parts: first, the indispensable portion contributed by the city, and, second, the part contributed by the corporation. The latter is its actual cost to the corporation and is the basis upon which alone it should be paid.

RISK OF OWNING PUBLIC UTILITIES.

Corporations engaged in handling public utilities incur no unusual risk. They are not, in the first place, obliged to go into that business, nor would the city seriously suffer without their aid. The ownership of all property is attended with risk. Aside from the continual vicissitudes of business, private property is open to competition and may even be condemned for public use. The very magnitude of these corporations excludes ordinary competition. Furthermore, a reasonable interest upon their investments is guaranteed to them by judicial decree.

PUBLIC NECESSITIES NOT A FIELD FOR GAMBLING.

The necessities of the people are not a legitimate field for financial exploitation by private enterprise. Corporate greed should not be permitted to prey upon public bodies. The Government should see that the people are protected, not only against betrayal by their own servants, but also against invasion by corporations of their own creation.—*James D. Phelan in Merchant's Association Review.*

SUPERVISING ARCHITECT, TREASURY DEPARTMENT.

THE United States Civil Service Commission announces a competitive examination to fill the vacancy in the position of Supervising Architect of the Treasury. The salary of this position, which is one of the most important and responsible under the government, is $4500 per annum, and it is hoped that architects of high attainments and reputation may be induced by these considerations to enter the competition. It is the desire of the Department to secure a practical architect of high administrative ability to direct and supervise the work of the office force as well as the contract work done on public buildings throughout the country.

Those who enter the competition will be required to submit:

First—On blanks to be furnished by the Commission, statements relative to their training, education, and technical experience.

2—Drawing or sketch plans, specifications, and photographs or other suitable illustrations of buildings designed by them as architects or constructed under their supervision as superintendents of construction; and other information relating to such buildings of which competitors will be advised upon inquiry of the Commission.

3—(a)—A thesis relative to designing and construction, and (b) a thesis relative to office administration.

4—In addition to the forgoing tests, competitors will be required to appear on September 10, 1897, at points convenient to their place of residence where the Commission has suitable accommodations, to undergo a test in formulating a scheme for competition for a public building and in criticising designs submitted to them for their guidance and inspection.

The information called for under each of the first three heads above mentioned must be forwarded to the Commission by each competitor on or before September 10, 1897. The test under the fourth head will be given September 10, 1897. The examination papers will be rated under the direction of the Commission by a board of distinguished architects.

Those who desire to enter the competition should write at once to the United States Civil Service Commission, Washington, D. C., for application blanks and other information relating to the examination.

DOOR KNOBS.

DOOR KNOBS, in the matter of shape, have gone through quite a series of changes and improvements. The original and simplest was the one of a circular outline; next came the oval outline, which fitted the shape of the palm of the hand better; finally for sake of variety we have the egg shaped. These several shapes have been ornamented in all imaginable styles or left perfectly plain. However, notwithstanding the perfection to which shape and ornamentation has been brought, the connection between the knob and spindle, or more strictly the means of holding the knob on to the spindle, has remained the same, namely, by means of a screw tightening up the two. This primitive method has always been a source of trouble or annoyance to all concerned —to the mechanic, when he screws it up, to the householder, when he wishes to take out the lock, for about that time it is very generally the case the screwdriver cannot be found, and to the tenant when he finds the knob rattling in his hands, giving him a sensation of want of stability which is not pleasant—or finds the worn screw drop out and leave the knob loose. Everything has a good side however, and the noise of the rattling serves as a notice when the baby wants to get into the room to its mother, which no doubt is conducive to the happiness of the baby but not to the peace of the mother.

In these latter days of the century, however, here comes an invention which does away with all these troubles and annoyances. The Weatherwax Door Knob is illustrated below:

FIGURE 1.

Figure one shows the parts separately—A is the door knob and its shank—B is a small metal rod bent into the shape indicated and C is the spindle.

This is pierced with holes large enough to take the smaller leg of B—the small bent piece of metal aforesaid—these holes are ⅛" centres. At A in the shank is a small hole.

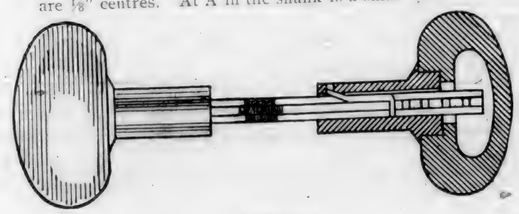

FIGURE 2.

Fig. 2, is a longitudinal section. It shows the knobs in position.

Fig. 3 shows the spindle before it is pushed into place.

The method of fitting these knobs as as follows:

After lock has been placed in position and escutcheon or roses have been screwed onto door, put the knob spindle through the door, then put the spring "B" in one of the holes in spindle; the free end of spring should just clear the escutcheon or rose when swung around. If too short move up one hole, if too long cut off with file or nippers, then put knob on spindle and press into place, when it will securely lock itself.

To remove knob insert a small awl into hole "A" and press spring down, at same time pull gently on knob.

This gives a fixture which is perfectly tight and cannot be shaken or rattled.

It can be sold for the same price as the old style which is an important item these times. It must be more durable, as there is no screw to wear out, and in appearance the lack of the screw head leaves a smooth and more sightly shank;

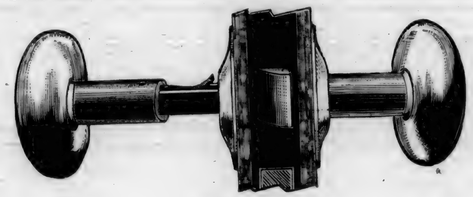

FIGURE 3.

it saves time and patience in applying or removing, and requires no tools except any awl shaped piece of wire which is found almost everywhere where knobs are.

Taking it altogether it does away with all the objections to the present system of door knobing and is in line with the present trend of everything that is labor and time saving.

The spindle and shank of these knobs are made entirely of steel instead of cast iron, the material of which all the knobs now in use are made.

PLANS FOR THE UNIVERSITY OF CALIFORNIA.

REGENT J. B. Reinstein of the University of California has returned from Europe, where he went three months ago, accompanied by H. E. Maybeck, instructor in architectural drawing, to inspect university buildings and consult with prominent architects as to the plans for the new buildings to be erected at Berkeley. The architects generally regard the opportunity presented as one of the greatest ever offered in the history of architecture, for, in addition to the beauty of the site, the large area of the grounds, and their situation on a gently rising hill overlooking the Golden Gate, Mrs. Hearst has not restricted the amount of money necessary to obtain these plans.

Mr. Reinstein stated that there will be an international concurrence of architects, together with artists, sculptors and landscape gardeners, to bring about the best results. Prof. Gaudet of Paris, who has probably had the most extensive experience of any person living in this direction, is preparing the "programme," as it is technically called. This will give in detail the requirements of the University, together with the necessary data, maps and photographs, and will be finished within a month, when copies will probably be sent to the various architects of the world.

Under the arrangements as contemplated at present the architects will be requested to send in sketches of their plans at a given date, and these will be passed upon by a jury consisting of one recognized authority each from France, Germany, England and the United States and a representative of the University, the understanding being that each architect submitting plans will receive some recompense. At least ten of the best sketches will be selected by the jury and the authors will be requested to elaborate their plans. The architects so selected will be permitted to name for additional members of the jury, and these nine jurors will select the ultimate plan. It is probable that there will be about thirty magnificent buildings in all, each of which will be built of marble or other stone. The completion of the work is not expected for many years.—*Mining and Scientific Press.*

THE MAGNETIC DIP OF ANCIENT TERRA-COTTAS.

BY THE CAVALIERE GIACOMO BONI [HON. CORR. M.].

THE DIP of a loadstone or magnetized needle was observed by George Hartmann, of Nuremberg, more than three centuries and a half ago, and was commented upon by him in a letter, dated 4th March 1544, to the Duke Albrecht of Prussia. The prototype of the modern dipping needle was constructed in the year 1676 by Robert Normak, and some measurements were taken with it by Gilbert of Colchester (1540–1603), the "Galileo of magnetism."

It is well known that the loadstone can transmit to iron with which it comes in contact a permanent property like its own, and that the earth itself, as a larger loadstone, produces the same effect; so that, by placing a non-magnetic bar of soft iron in the line of the magnetic meridian, with its axis in the direction of the earth's force (*i. e.* parallel to the line of dip), it will be magnetized inductively, in such a way that its lower end becomes a north pole, and its upper end a south pole. Usually a certain proportion of the magnetism remains after the inducing force is removed.

The phenomenon of magnetization is, however, not confined to iron, but becomes apparent in other materials of which it forms a very small constituent. One of these materials, the ferruginous silicate of alumina, happens to have been—both baked and unbaked—the most extensively used for architectural and domestic purposes, in the shape of bricks and pots.

The ferrous-ferric oxide, which constitutes the magnetic substance of baked clays, possesses a great coercitive force, very little inferior to that of steel, that is to say, the power to store up and preserve the magnetic conditions under which it was baked.

Among these magnetic conditions, the most important, from an historic or even prehistoric point of view, is the magnetic inclination or dip because, as it slowly changes according to what we must assume to be a natural law, we have in terra-cotta a material giving us data to ascertain the age in which some of the objects made with it were baked, and the means to trace or follow the track of this law in prehistoric ages.

Towards the end of the seventeenth century, says the *Journal of the Royal Institute of British Architects*, R. Boyle knew that terra-cottas were permanently loadstones, magnetized according to the direction of the terrestrial magnetism in the place and time they were baked. In the year 1862–63, Gherardi published in our magazine, *Il nuovo Cimento*, some results of his experiences on the polar magnetism of brickwork in Turin, and of Etruscan and Roman terra-cottas, and announced the principle that baked clays retain magnetism in the same direction in which they first conceived it, even for centuries after they were baked.

The subject has lately been resumed, and some interesting experiments were made by Dr. Folgheraiter, the clever assistant of the Physicial Institute of the Roman University, who has extended his researches to many instances of brickwork of ancient buildings, palaces, temples, thermæ, and tombs of Rome and the Campagna, and ascertained that even volcanic rocks employed by Roman architects, such as tufa and lavas, in the primitive walls of Roma quadrata, in the basement stairs of the temple of Vesta in the Royam Forum, in the round temple at the Bocca della Verita, in the walls of Servius Tullius, in the Claudian aqueduct, in the Colosseum, etc., so well retain the primitive magnetic direction that in some cases it points exactly to inverted poles. We may here mention that Melloni, in examining the fragments of leucitophire and of other lavas employed in the amphitheatre of Pompeii, found them magnetized in every possible direction.

In order to familiarize himself with the subject, and to collect data regarding the way in which terrestrial magnetism became fixed in terra-cottas, Dr. Folgheraiter manufactured a series of clay cylinders of different sizes, and vases of different shapes, and had them baked in a vertical position and at different inclinations (see *Rendiconti della R. Accademia dei Lincei*, classe di Scienze, anno 1896). Then he applied the results of these investigations to some vases of the Etruscan epoch, which judging from their shape, had been baked in a vertical position. In four terra-cotta *cistæ* (eight century B. C.), preserved in the museum of the Villa Giulia, the south polarity was found prevalent round the base, and the north polarity at the top of the handle. *Oinochoai* of the same epoch gave the same results, which seem to prove that at the same and place where the vases were baked a magnetic needle would have dipped towards the south pole instead of the north one, as at present. The measurements made gave results which vary from 2°29′ to 25°37′, owing to the difficulty of making the corrections necessitated by the imperfections of the vases, and so could assign within very narrow limits the date of those vases, which from their peculiar shape had undoubtedly been baked in a vertical or otherwise determined position.

On the whole, the results of the investigations carried out at present on the history of magnetization point to the necessity of experimenting on materials which do not leave any uncertainty as to the date, place, and position of their baking. A series of such materials ought to be offered by brick walls which have been subjected to fire, such as the Great Council Hall of the Ducal Palace in Venice, burnt A. D. 1577, and of a great many buildings which suffered from the same cause, including some ancient Roman, and possibly even some Assyrian ones. Volcanic eruptions of historical date may also give us the means of ascertaining the magnetic dip, which they have fixed and embodied in cooling down into hard stone, and that which they have caused the structures to assume with which they came into contact, as is the case at Herculaneum.

Although some of these investigations can be carried out in Italy, their nature requires them to be extended over the largest possible field, and to the utmost limits of historic age. For this aeason I hope that the Royal Institute of

British Architects, recognizing the peculiar interest of the subject, and the possibility that some unhoped-for light may be thrown on the date of some important structures, or of the date at which the enemy destroyed them by fire, will ask its members to contribute a notice of such buildings that exhibit the magnetic dip produced at some period of their existence.

The cipollino columns of the Temple of Serapis at Pozzuoli have preserved for us a record of the geological changes of that territory. Let us hope that scientists may be able to point to some ancient monuments as historical archives of the law of terrestrial magnetism.

Note.—In studying the magnetism of terra-cotta vases, Dr. Folgheraiter has adopted the scheme of dividing into twelve parts the circumference of the base, and that of the mouth or upper rim of each vase (vases, be it understood, of symmetrical shape around a vertical axis at the moment of baking), and measuring the magnetism of each of these divisions of 30 degrees by means of a magnetic needle conveniently suspended and carrying a circular mirror, which serves for the reading of the variation by means of a theodolite.

The force of the positive and negative magnetism, the poles and the magnetic meridian of the vase being known, the magnetic inclination (dip) is reduced by calculating the resultant of the two vertical and horizontal components.

For instance, in subjecting to experiments a Greek amphora of the Museum of Florence, No. 1800 (about 650–500 B. C.), Dr. Folgheraiter read the following deviation:—

Around the base.	Around the upper edge (orlo).
+ 223°0	+ 211°0
178°0	179°0
121°5	130°0
8°0	44°5
— 119°5	— 66°5
215°0	134°5
223°5	147°5
190°5	118°0
147°5	74°0
1°0	+ 69 0
+ 149°5	155°0
+ 191°5	180°0

The maxima and minima of these numbers being considered to belong to the magnetic meridian of the amphora, the following diagram is obtained:—

+ 211°0 — 147°5

+ 223°0 — 223°5

the vertical component

$$= \frac{(223°0 - 211°0) - (-223°5 + 147°5)}{2}$$

$$= \frac{11 + 76}{2} = 43°5;$$

the horizontal component

$$= \frac{223°0 - (-223°5) + 211 + (-147°5)}{2}$$

$$= 402°5;$$

the inclination of the magnetic force (dip)

$$= \text{areotg.} \frac{43°5}{402°5} = 6° 11'$$

ILLUSTRATIONS.

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.

RESIDENCE for Ex-Congressman T. J. Clunie, N. W. corner of Fell and Lyon streets, San Francisco, Wm. Curlett, Architect.

STUDY for Small Church, W. J. Cuthbertson, Architect.

RESIDENCE for Mr. R. Spreckels, Pacific Ave. and Gough streets, Samuel Newsom, Architect.

COTTAGES, Samuel Newsom, Architect.

FIREPROOF BUILDINGS.

BUILDINGS can be erected that are fireproof and absolutely safe against the ravages of fire. The question has been thoroughly considered by architects and the numerous experiments that have been made of late have convinced them that they have good reasons for this belief. The great Pittsburg fire of May 3 affords an interesting field of study for the architects and a writer in the *Engineering News* has improevd it. To realize the force of the conclusions drawn it is necessary to understand the character of the buildings burned. The fire broke out in a great grocery warehouse, which was slow-burning, but not at all fireproof, and filled with inflamable materials of great heat-producing qualities, like oil, molasses and hams. Separated from it by narrow streets were three office buildings of different types of fireproof construction. One had hard tile floor arches and covering for the steel framing, one porous terra cotta arches, and one concrete floor arch construction. The first named was a store, with an open front unprotected by iron

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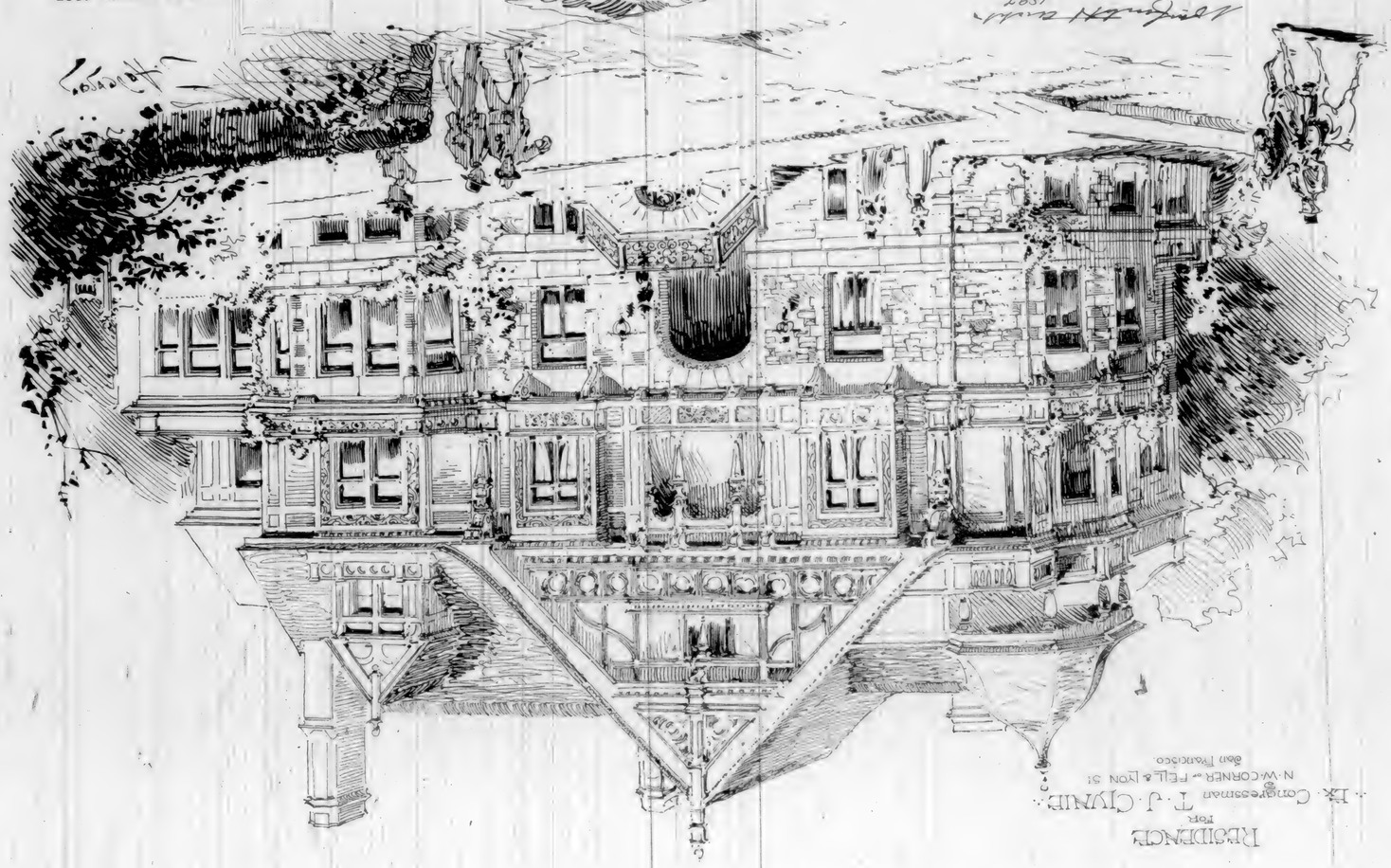
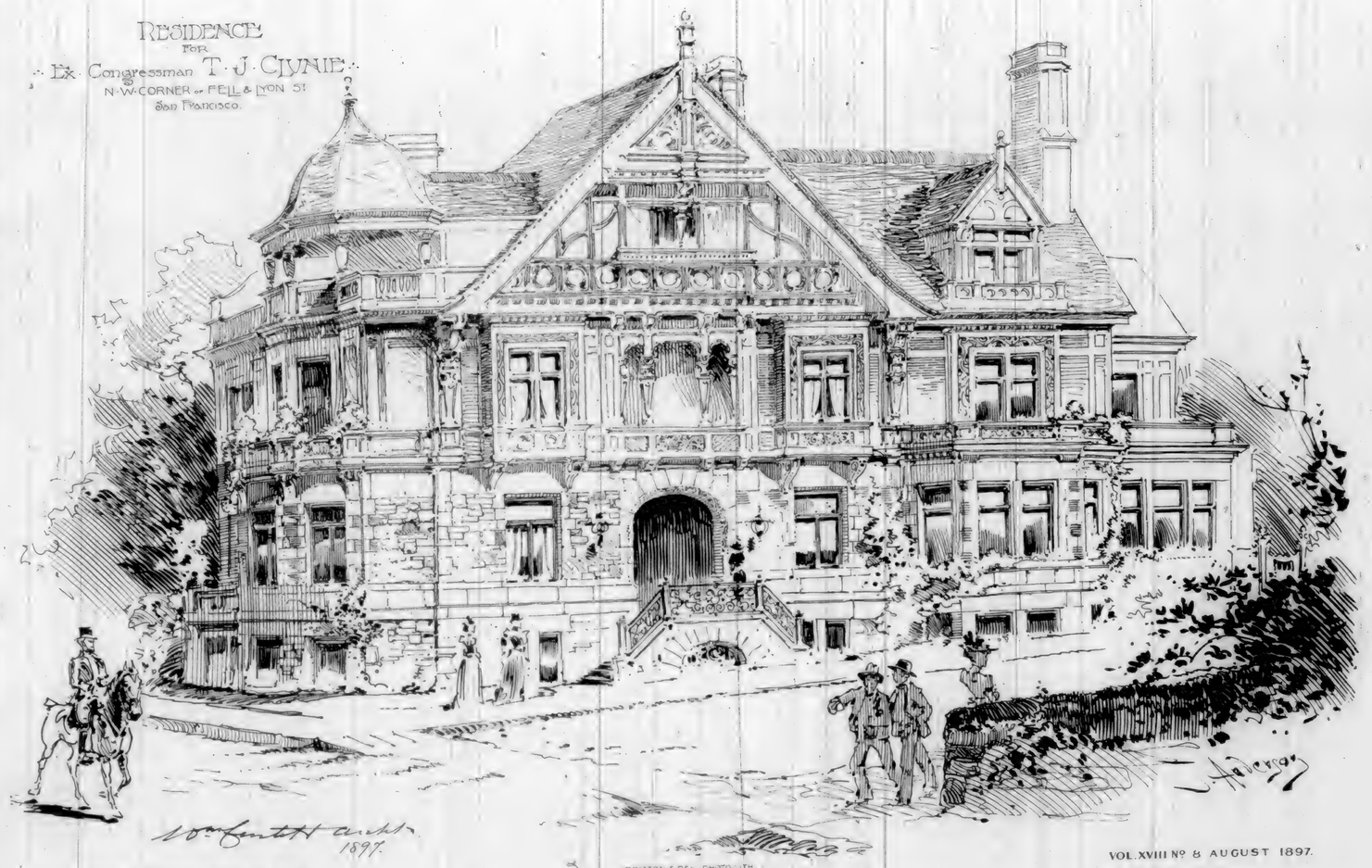
CALIFORNIA ARCHITECT & BUILDING NEWS
SAN FRANCISCO.

1892



RESIDENCE
FOR
Ex-Congressman T. J. GLYNN
&
N.W.CORNER of FELL & LYON St
San Francisco.

RESIDENCE
FOR
Ex-Congressman T. J. CLUNIE
N.W. CORNER of FELL & LYON Sts
San Francisco.



Wm. Curlett Archt.
1897.

BRITTON & REY PHOTO-LITH.