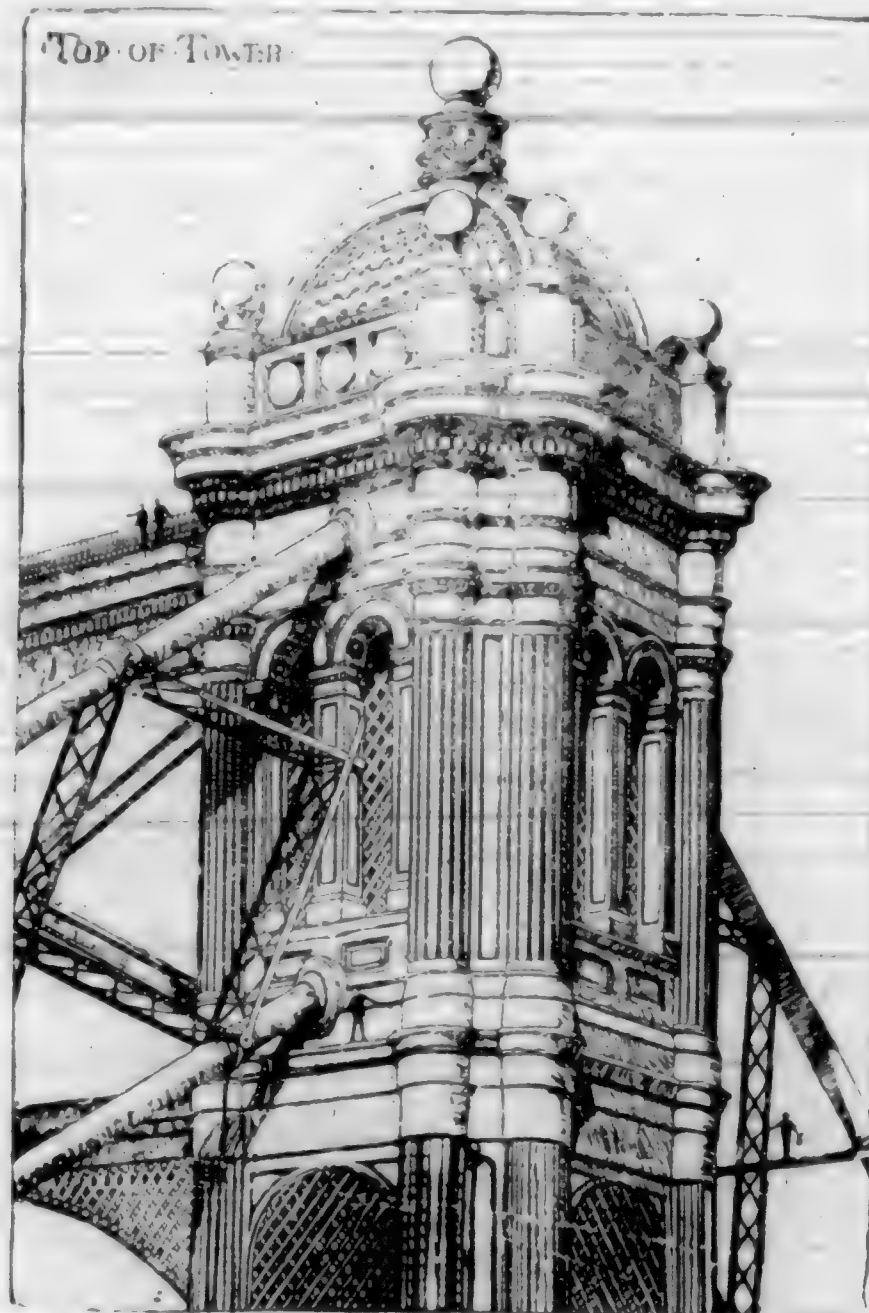


well as material, in other words, that the intrinsic and economical values would fail to agree. Note the admirable way in which every part of the above great building is adapted to every other part! The way in which the columns rise from ground to roof line, representing every one of the direct lines of support throughout. The way in which the connecting girders and filling in pieces, are keyed rather than bolted into their places, and how directly and easily every part does its duty, and how by the proportioning of material to strength and position, such a degree of aerial elegance is attained that it may, perhaps, best be compared to the delicate twigs and branches of a tree divested of its leaves, whose dainty pencilings tax the skill of the artist fitly to represent. When in the full glory of its utility, it overflowed with a profusion of fabrics and materials, and objects of beauty and use from every quarter of the globe, it was like the same tree in full bloom, glowing with verdure, with color and with fruit.

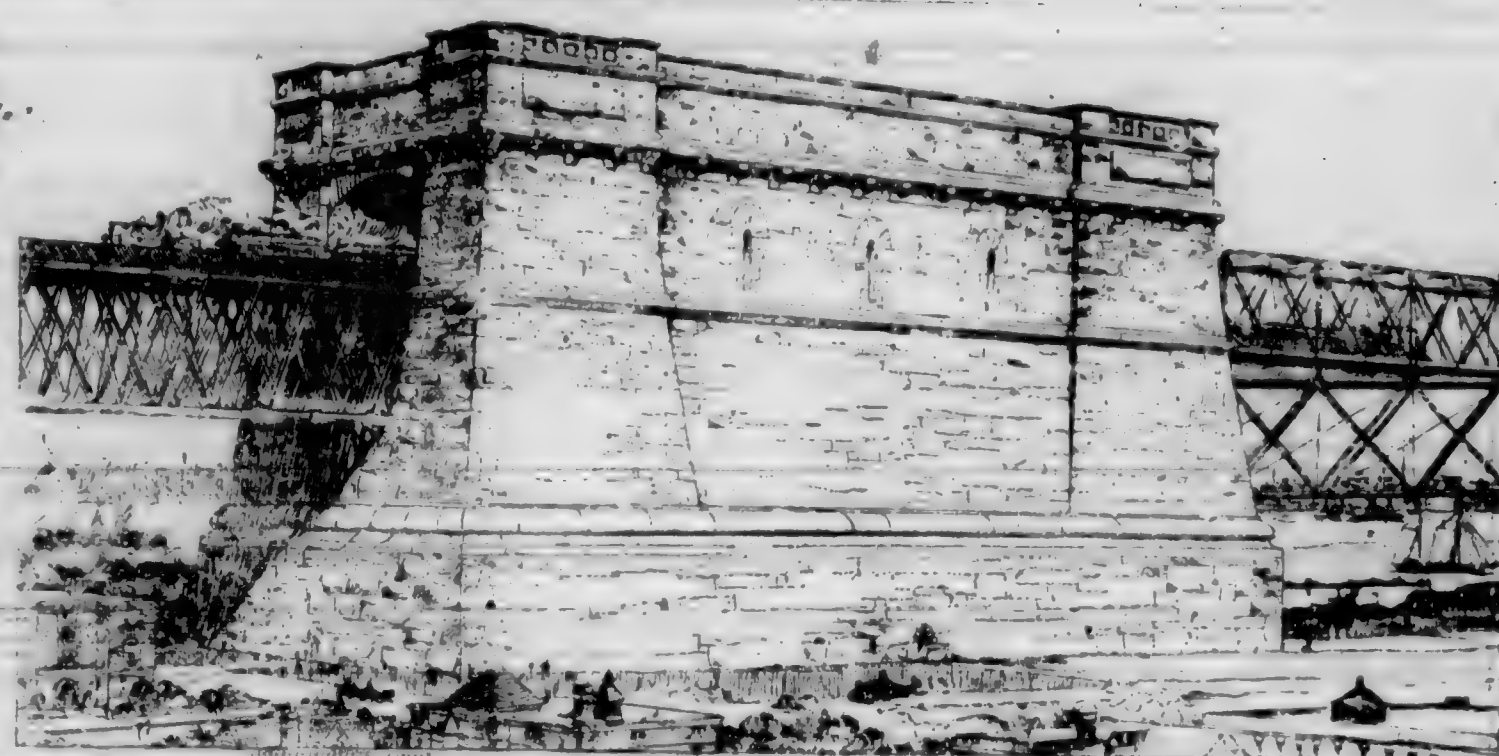
It seems at this point permissible to consider, as a comparative test of the proper treatment of other materials, some of the recognized qualities and properties of Iron. Whether as wrought or cast iron, or in the form of that now abundant material, wrought and cast steel, innumerable tests and experiments have settled to so large an extent the available qualities of all these substances that there is no particular need of dilating upon that subject further than may suffice to note some of the ways in which they may be better used and less abused. In the first place it must not be forgotten that all materials, without exception, are subject to change, that no material, whatever its form or qualities, is free from the liability to alter its shape; and that therefore when a perfectly spherical cast iron ball rests upon its side, it is no longer spherical, it is really oblate. That a piece of cast iron ten inches square in section and a standard foot in length, if placed resting on its extremities, is no longer a standard foot in length, and that when a great weight is placed unsymmetrically on any form of support, that support will be acted on unsymmetrically and will change its form, and the arrangement of all its molecules in the effort to adjust itself to the conditions thereby imposed upon it, which in construction means a great deal, involving as it does under given conditions the theory of re-crystallization, etc.

We are accustomed to suppose that our friends, the engineers, are the men above all others who are used to taking account of the minute changes in the form and direction of the substances and forces with which they have to deal.

But architects are expected to abolish all such changes, and to produce a structure of variable materials abso-



TOP OF TOWER, NORTH RIVER BRIDGE.



APPROACHES TO THE NORTH RIVER BRIDGE.

lutely fixed in form for ever; at least so one would suppose from the sort of criticism to which they are at times subjected. But it is to be feared that they themselves are chiefly responsible for the inappropriate use too often made of materials, and the untoward results which frequently occur. Uniformity of material means uniformity of action in the changes which those materials inevitably undergo under the influence of temperature and strain. Some of the ways in which iron should not be used, we beg now to note.

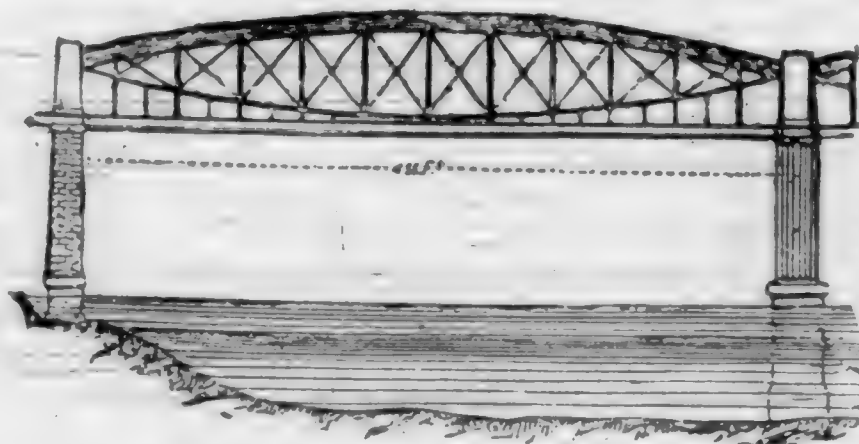
First: No great strain ought at any time to be thrown in an unsymmetrical manner on any unsymmetrical section of cross iron. This means an unequivocal condemnation of brackets. The extent to which that mode of employing cast iron is used, is remarkable



CAST IRON BRIDGE AT CRAIGELLACHIE.

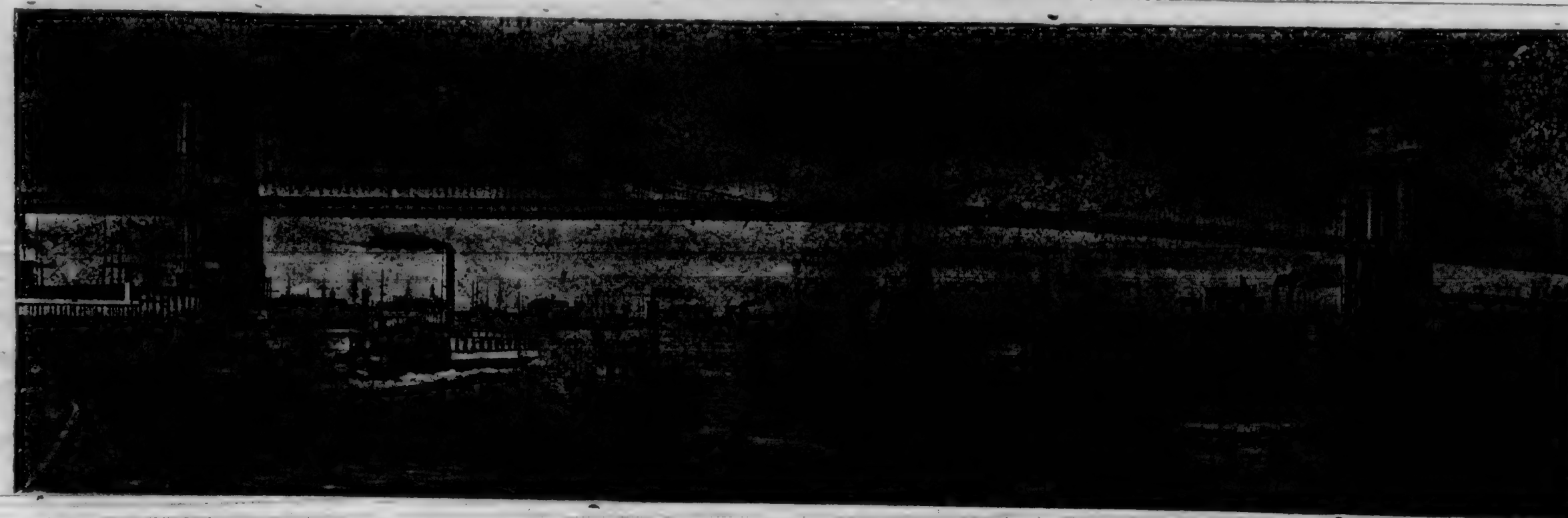
when the treacherous nature of the material so used is so well known.

To founders and machinists who are well and practically acquainted with the behavior of cast iron under strain and temperature, there is nothing more objectionable than a large extent of cross iron, as it is called. They refuse to trust to it under any circumstances and yet we find in all the published examples an almost unlimited use of this objectionable and dangerous feature. Smooth, round columns of cast iron of small diameter, are set upon end and a number of brackets are projected from them at a sharp angle at cap and base plate, bearing heavy loads of beams and arches and this for many stories in height. Such an accident as occurred in the Owens Building, at Chicago, or an unsuspected flaw in one of the brackets or any other adequate reason, causing the snapping of one small section, may possibly occasion in a moment the destruction of a large building, hundreds of lives and much valuable property. Is this either wise or necessary? Can bad construction ever be necessary? Is it scientific? Is it artistic? That few authen-



SPAN OF SALTASH BRIDGE.

tic cases of failure of this kind can be referred to is no argument in favor of the practice. Is it not something which may occur under any sudden shock? The fall of comparatively few degrees of temperature, in view of the great inequality between bracket and shaft, must cause unequal strains in both. A settlement causing undue strain on any one part, or a local rise of temperature, or some stress occasioned by any one of a hundred different causes, may ultimately the conditions which may bring about a failure such as I have



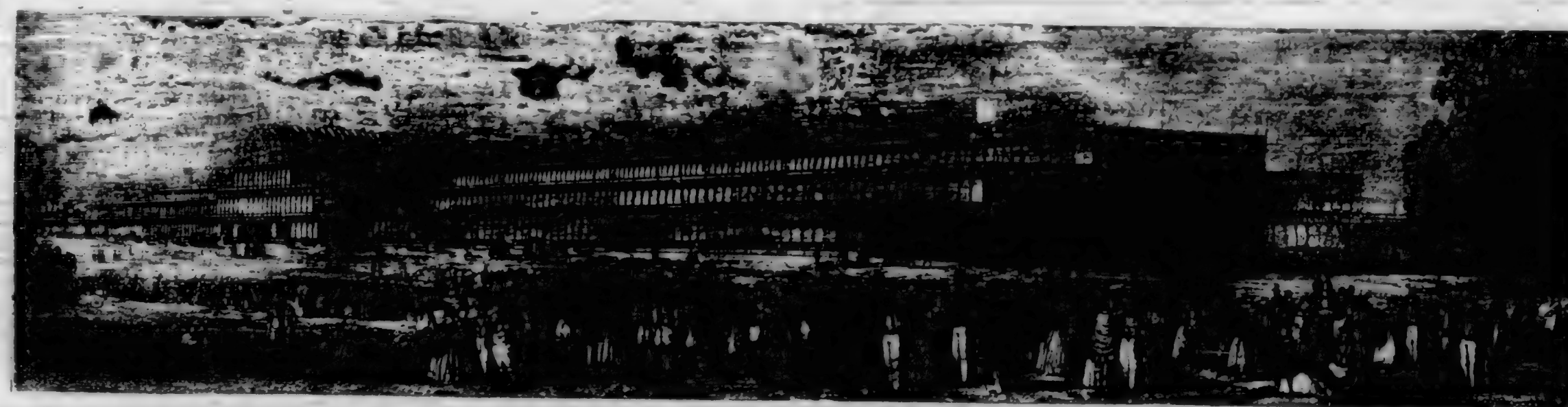
BROOKLYN BRIDGE, NEW YORK.

indicated. Another wrong use of the material is indicated in the ordinary form of cast iron girder in which the upper flange is arched. This is an altogether mistaken idea, and an utterly fallacious, improper, and unscientific use of material. In the girder here shown the lower flange is straight; the shortest distance between the two ends, in the upper flange, the distance is the greatest that can be found between the two ends. In shrinking flange (A) occupying more length, shrinks more and flange (B) being shorter, shrinks less, in proportion; consequently there is an internal strain set up between the top and bottom flanges and brought to bear upon the web, which added to the weight that the girder is supposed to bear, greatly lessens its effective strength, if as in large girders of this form, (a frequent result,) it does not occasion their destruction. This is one of the principal reasons why such cast iron girders frequently snap, even before be-

ing placed in the building. The ordinary form of the rolled girder, indicates also the best general form for a cast iron girder under ordinary circumstances. Parallel flanges, the upper one-half the width and thickness of the lower, with square or inclined skewbacks at the end, indicate generally the best practical form for cast iron girders of short span.

The latticed girders used in the great exhibition building (20), were in every respect admirably adapted to the purpose for which they were intended; and either as stiffeners for the nave columns, in which position, of course, they were much lighter, or as the bearers of the gallery floors, they were found in every respect equal to their work.

Before closing these perhaps too lengthy remarks, I will venture to indicate a few ways in which it may be found advantageous to use cast iron. Describe a circle in a square, and fill

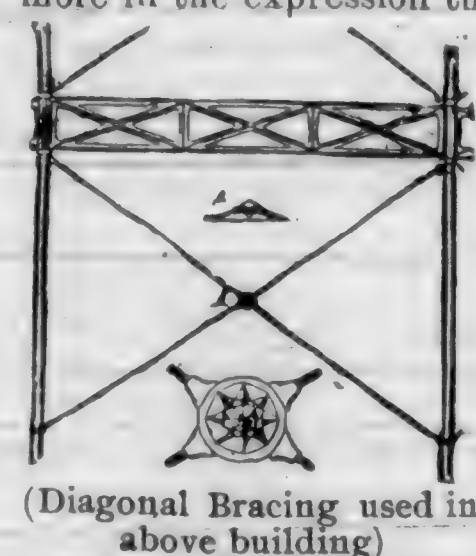


LONDON EXHIBITION BUILDING OF 1851.

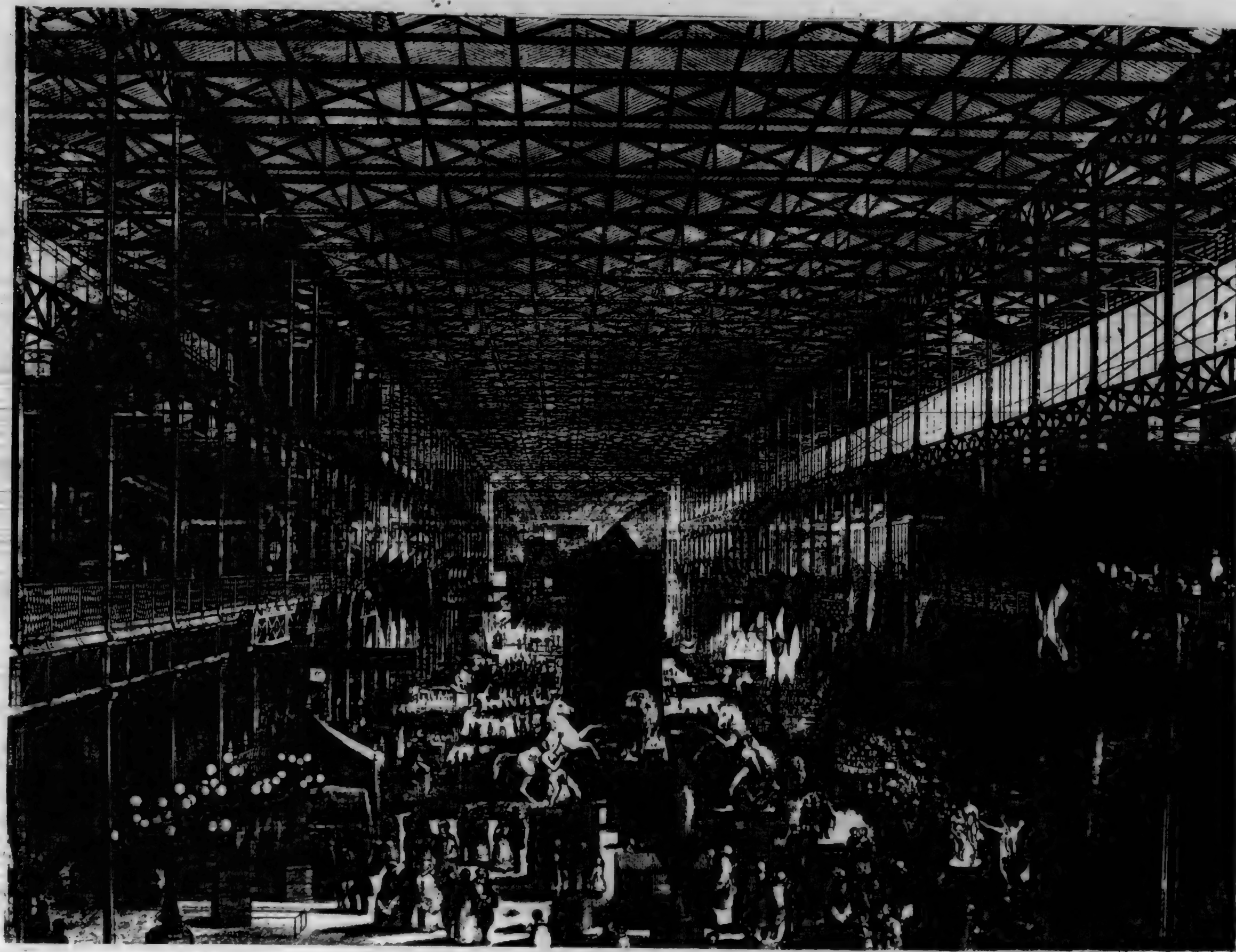
still further to increase the availability of iron as a building material.

And now a few words on the real subject of this paper, the "Iron Age." Does it not occur to thinking people that there is more in the expression than is represented by the use of a single material, however useful it may be, and however varied its employment? That is why the expression was transposed in the former part of this paper as better expressing the uses and capabilities of the material itself. But in deriving a lesson from the foregoing, if lesson there be, it is necessary to revert to the broader term and the idea of the ages, and in this case, not only the scientific idea, the age of iron, or the esthetic idea, the age of brass,

in the angles of the square with other squares; apply the thickness of one of the small squares round the circle internally, and you have the section of a cast iron column of any diameter, and any length within the prescribed limits of 30 diameters. In elevation, place the flanges diagonally (as they are drawn) to the length of the super imposed girders. Grow the flanges out into brackets of moderate projections and cast a plate of equal thickness on top, and the cap is formed. A greater projection and a proportionately larger plate forms the base. If supporting a great weight, such as a basement column, separate the base, and form circular flanges between the angle ribs, on shaft and base section, and bolt the two together. To adjust wrought I beams to this form of columns continued one or more stories in height; cut away the flanges of beams next the columns on each side (using coupled beams) and fit the same to flanges of columns, and bolt diaphragm plates between those on each side of column. In this way a perfectly immovable system of columns and girders is found,



(Diagonal Bracing used in above building)



INTERIOR VIEW GREAT LONDON EXHIBITION BUILDING.

symmetrical in bearing, and adjusted to the required conditions throughout. The brackets are simply extensions of the ribs, and there is no initial point of fracture, and the girders, on account of being firmly held at each end, will bear double the weight of unfixed girders. If it is desired to fire-proof these columns and girders, the shafts and brackets are admirably adapted thereto. One other suggestion and I will conclude this section. The subject of *Tempering* is one which does not seem to have attracted the attention of constructionists to any large extent up to the present time. A gentleman of my acquaintance in Ontario, Canada, some years ago, patented a carriage spring of peculiar merit. Instead of being made of several laminæ of thin steel, secured with rivets or loops, it was made solid, oval in form, and tem-

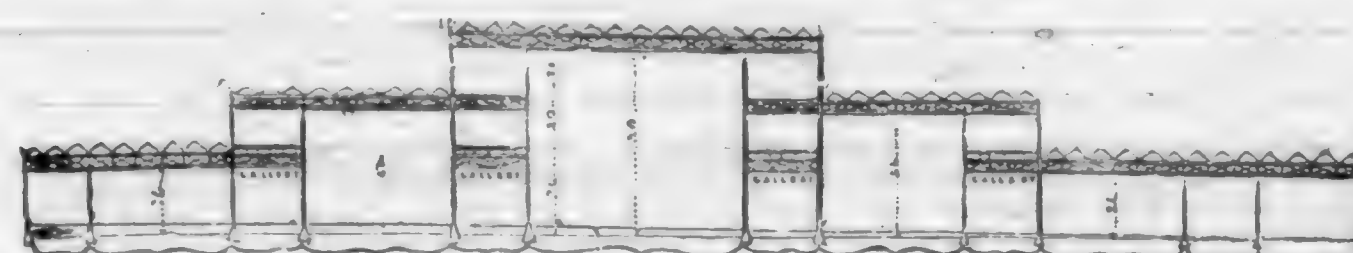
but the far, higher and nobler idea by which for wood we bring iron, and for iron brass, and for brass we bring silver, and for silver gold, so that all the ages are found to be for all times and for all occasions, provided only we choose so to have it. For all materials, all things, all occasions, nay, the world itself, is naught and practically vanishes like the baseless fabric of a dream, but for the *mind of man*, his understanding of *truth*, and his desire for *good*. Without this *silver* and this *gold*, he sinks to a level with the dust from whence he rose. With this he rises into an image of his Maker, the one only and absolute impersonation of that law which is the same for the dew drop as for the world. For the created as for the creator; for the rational, thinking, willing, acting human embodiment as for the divine, and omnipotent, omnipresent and omniscient Love, Wisdom and Life from whence and by which all things live and move and have their being.

The following paragraph was unintentionally omitted in connection with the cut "Types of Stellar Spectra," on page 63:

In the accompanying bands of "Fraunhofer's" lines are seen the distinctive spectra of Sirius (the nearest fixed star) the Sun and other stars in which not only the lines of hydrogen, iron and magnesium are distinguishable, but those of a great variety of mineral salts and other substances. Thus presaging not only the compositions of the planets and our own earth, but our own bodies as well; and by analogy of natural conditions to spiritual causes, therein may also be seen reflected the based elements of our *minds*—which, in turn, are but the organized forms of the *organizing principles* which primarily exist in the great First Cause of all.

Which finds expression in devotion to the ineffably spiritual principle of essential goodness as to *quality*, and resulting truth of corresponding *form* in men and things.

In the matter of the illustrations we are indebted to the courtesy of the *Century Company*, the *Scientific American* and others who have kindly allowed us the privileges of their publications.]



VERTICAL SECTION, EXHIBITION BUILDING.

pered in an oven. The reason why springs had never been made solid before was because it was not easy to give equal temper throughout the thick and thin parts. This was secured by means of an oven of a peculiar kind. The oval form of the spring causes the bearing to be *shortened with the increase of load*. Why is not this a principle which might be taken advantage of in designing cast or wrought steel lattice girders, and why should they not be tempered? The tempering alone, the gentleman informed me, added 300 per cent. to the strength of the springs.

The lately invented method of rendering iron unoxidizable, known as the "Bower-Barf" process, by which a film of carbonate of iron is formed on the surface of the metal, seems calculated or even the intellectual and rational idea, *the age of silver*,

San Francisco Architectural League.

The regular monthly meeting of the San Francisco Architectural League, was held at its rooms, 408 California street, on Wednesday evening, May 1st, with twenty-five members and fifteen visitors present.

An interesting lecture and stereopticon exhibition was given, by Frank T. Shea, Esq., on "Scenes through Italy," which occupied the entire evening.

Special business meeting of the League, was held May 8th, with twelve members present, President Stone in the chair. The minutes of the last meeting were read and approved. Committee on Investigations reported favorably in the cases of Messrs. Larsen, Bugbee and Parr, as senior members and the gentlemen were duly elected.

Communication from G. H. Wolfe was placed on file. Mr. Deane moved to suspend the rules; motion carried. Amendments were made to Article 1, Section 1.—to read as follows: The Board of Directors shall organize immediately after their election by the selection of a President, Vice-President, Recording and Financial Secretary, and Treasurer. Amendment was carried. Article 7, Section 3.—to read as follows: The secretary shall keep the minutes of the League, attend to all correspondence, preserve a register of all members and report semi-annually.

Article 7, Section 4.—The financial secretary shall preserve a register of all members, collect and pay to treasurer all money due to and received by the League.

Article 2, Section 4.—Application for membership, for either senior or junior shall be accompanied by drawing in either pen or pencil, and on the favorable report of the Investigating Committee, the Board of Directors shall decide whether the applicant shall be admitted as a senior or junior member.

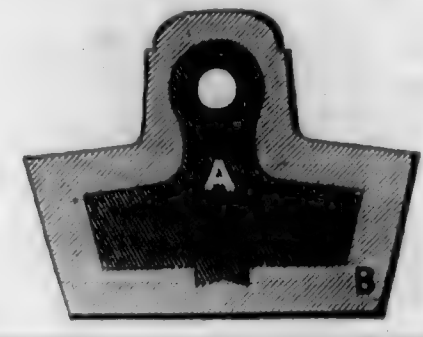
Article 8, Section 1.—That monthly dues for all members of the League be 50 cents.

The reports of the Treasurer and Secretary were read and referred to the Board of Directors.

It was moved and seconded that all the seniors be nominated as Board of Directors; carried.

The exhibition of the drawings for library completion, will be held Wednesday eve, May 29th, 1889.

A class in "Water Colors" will be organized under the auspices of the League, with Lionel D. Deane as instructor, for Saturday afternoon from 3:30 to 5 p. m., at the rooms 408 California street. Application to be sent to the secretary.



In examining late improvements in bath room appliances, our attention has particularly been called to the Star Metal Cored Rubber Stopper, a cut of which appears above.

These stoppers were introduced about twenty years ago, by the Wm. Powell Co. of Cincinnati, Ohio. The first ones manufactured hardly gave satisfaction. Now, however, they present a stopper perfect in all its appearances. The metal core is completely enveloped in a rubber casing, the core extending up into the neck, thereby preventing any strain on the rubber and its weight is sufficient to prevent it floating from its socket.

The sole manufacturers of these stoppers is the Wm. Powell Co., 50 Plum St., Cincinnati, Ohio. A letter addressed to them will receive prompt attention.

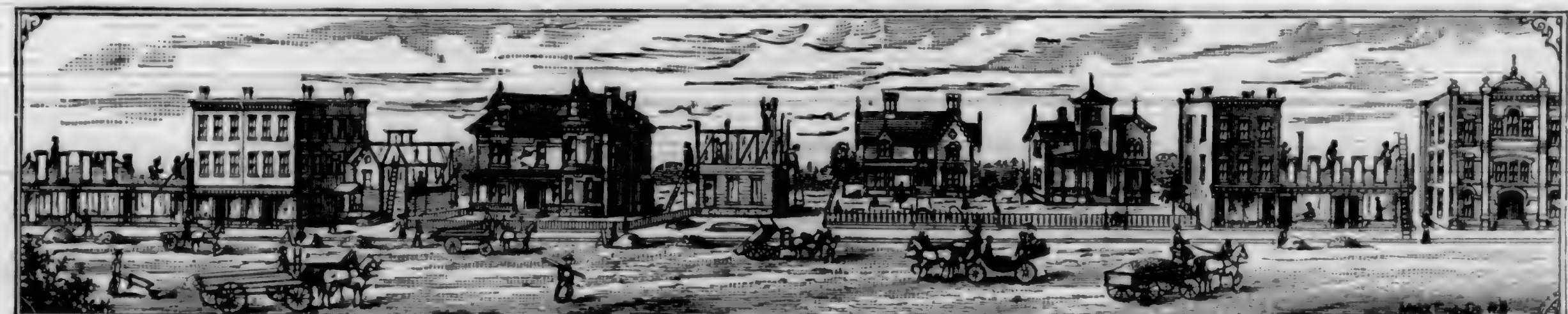
\$500 for a \$3,000,000 Plan.

The "Best Plan" is wanted for a \$3,000,000 Capitol building for Salt Lake City. For the same, the Board of Commissioners through their Secretary, Geo. E. Blair, offer the munificent sum of \$500.

Where "Old Style" May be Found.

The N. & G. Taylor Co., have established agencies in this city, in Portland, Oregon, Los Angeles and in Seattle, W. T. By a reference to their ad on page 2 of cover, the address of each will be found. The "Old Style" of tin plate is being extensively used all over the coast.

It is better to oil floors than to paint them—a monthly rubbing will make them as good as new.



CITY BUILDING NEWS.

Avery, between Geary and Post. Owner, Jane Broudero; architect, G. M. Saulsbury; contractor, G. M. Saulsbury; cost, \$1,950; signed, April 22; filed, April 23; sureties, D. Dodge and A. J. Gendavi; limit, August 1, '89; \$650, windows in; \$650, completed; \$650, 35 days.

Army, corner San Jose Ave., cottage. Owner, F. Kaufmann; architects, Townsend & Wyneken; contractors, Gray & Stover; cost, \$8,360; signed, April 8; filed, April 17; limit, July 15, '89; \$3,135, ready to lath; \$3,135, inside work done; \$2,090, 35 days.

Albion Ave., near Sixteenth, three-story frame. Owner, Marie Schath et al.; architect, A. J. Barnett; contractor, Wm. Linden; cost, \$4,375; signed, April 27; filed, May 1; sureties, W. A. Meeker, \$2,500; limit, 100 days; \$900, roofed; \$800, brown coated; \$800, white coated; \$775, completed; \$1,100, thirty-five days.

Buchanan, near Union, two story frame. Owner, P. Johnson; contractor, McGinnes; cost, \$4,000.

Buchanan, near Turk, three story frame. Owner, Samuel Wilson; architect, Alex. R. Pfarrer; contractor, B. Pfarrer; cost, \$5,850; signed, April 26; filed, April 27; \$1,450, framed; \$1,400, brown coated; \$1,500, completed; \$1,500, 35 days.

Broadway and Buchanan. Owner, Mary G. O'Kane; architect, Sam'l Newsom; contractors, Anderson Bros.; cost, \$8,075; signed, April 27; filed, April 27; surety, J. Kennedy, \$3,000; \$1,211.25, framed; \$1,211.25, roof on; \$1,211.25, white mortared; \$1,211.25, outside primed; \$1,211.25, completed; \$2,018.75, 35 days.

Broderick and Eddy, two two-story and basement frame. Owner, Isabel Durney; architect, R. H. White; contractor, D. H. Matherson; cost, \$4,750; signed, April 29; filed, May 2; sureties, Preston and McKinnon, \$4,000; limit, 90 days; \$890, chimneys built; \$390, brown coated; \$890, outside primed; \$890, completed; \$1,190, 35 days.

Buchanan, corner O'Farrell, plumbing, etc. Owner, Robt. Lorentz; architect, W. Winterhalter; contractors, Thos. Clark & Sons; cost, \$768; signed, April 5; filed, April 8; \$300 Inspector's certificate shown; \$468 completed.

Bush, corner Sansome, Hydraulic elevator. Owner, First National Bank, S. F.; architects, Wright & Saunders; contractors, W. H. Birch & Co.; cost, \$4,525; signed, March 28; filed, April 9; limit, June 28, 1889; 75 per cent. in installments on the first of each month as work progresses; balance, 25 per cent. 35 days.

Broadway and Taylor, move old and build new house. Owner, F. A. Lasell; contractor, Geo. M. Saulsbury; cost, \$2,946; filed, May 3; limit, August 1, '89; \$200, old house removed; \$746, framed; \$700, brown coated; \$1,300, August 3, '89.

Buchanan, between Union and Filbert, one story cottage. Owner, Leopold Bauer; architect, Wm. Schrof; contractor, S. G. Rienacker; cost, \$1,780; signed, May 3; filed, May 3; surety, Jacob Hoeges; limit, July 4, '89; \$440, roof boards on; \$440, brown coated; \$440, first coat paint on; \$160, completed; balance when receipts for labor are shown.

Block bounded by Vienna and Naples streets, and Russia and France avenues, cottage. Owner, Wm. G. Loewe; architect, Emil John; contractor, Adam Miller; cost, \$2,500; signed, May 1; filed, May 1; limit, July 1, 1889; \$875, rough mortared; \$1,000, accepted; \$625, thirty-five days.

MAY 15, 1889.]

Clay corner Buchanan, six two story frames. Owner and builder, Wm. Hinkle; cost, \$30,000.

California Avenue near Powell Avenue, two story frame. Owner and builder, Frichette; cost, \$3,500.

Clementina and Fourth, alterations. Owner, Wm. Gaffney; architect, M. J. Welsh; contractor, J. O'Connell; cost, \$2,150; signed, April 8; filed, April 18; \$500, framed; \$600, first coat mortar on; \$500 completed; \$550, 35 days.

Clementina, between First and Second, brick building. Owner, Dickman, Jones Co.; architects, Pissis & Moore; contractors, Riley & Loane; cost, \$8,300; signed, April 18; filed, April 20; \$2,000, ready for second story joists; \$2,000, ready for roof timbers; \$2,000 completed; \$2,300, 35 days.

Castro and Sixteenth, two story building; Owner, Mrs. F. J. Andrews; contractor and architect, Albert Cooke; cost, \$3,800; signed, April 4; filed, April 9; 75 per cent of work done as work progresses; balance, 25 per cent, 35 days.

1418 California, additions, etc. Owner, Wm. M. Dye; architects, J. J. & T. D. Newson; contractors, Moore Bros.; cost, \$3,150; signed, April 3; filed, April 10; limit, 90 days; \$1,000, roof work up; \$681, mortar on; \$681, completed; \$788, 35 days.

Diamond and Nineteenth, to build. Owner, J. C. Kent; architect, S. Hatfield; contractor, A. A. Willis; cost, \$2,150; signed, April 13; filed, April 25; limit, 60 days; \$412.50, roof boards on; \$400, window frames in; \$400, plastering done; \$400, completed; \$537.50, 35 days.

Devisadero corner Sutter, to build. Owner, J. Murray; architects, Copeland & Banks; contractor, G. Healing; cost, \$4,216; signed, April 13; filed, April 16; sureties, J. Healing and G. Shankland; limit, 100 days; \$400, old building completed; \$900, framed; \$1,000, brown coated; \$867, completed; \$1,054, 35 days.

Dolores, between Twenty-third and Twenty-fourth, three two story flats. Owner, Mrs. M. A. Smith; architects, Percy & Hamilton; contractor, F. W. Kern; cost, \$11,702; signed, April 9; filed, April 18; sureties, O. W. Nordwell and F. Joost, \$5,000; 75 per cent of work done on first Saturday of each month; balance, 35 days.

Dolores and Liberty, two story dwelling. Owner, Edgar W. Briggs; architect, S. Hatfield; contractor, Jos. W. Reid; cost, \$2,230; signed, March 4; filed, April 10; sureties, J. Macowsky and Adolph Schwerin, \$1,500; \$500, roof boards on; \$390, floors laid; \$390, yard done; \$392.50, completed; \$557.50, 35 days.

Eighteenth corner Sanchez, two story frame. Owner, Henry Tietjen; architect, H. Geilfuss; contractor, Schutt & Kreckler; cost, \$3,410; signed, April 27; filed, April 27; \$1,260, framed; \$1,260, partitions set; \$1,260, outside work done; \$1,260 outside finish on; \$1,260, completed; \$2,110, 35 days.

Ellis, between Fillmore and Steiner, carpenter work. Owners, Main & Winchester; architect, Chas. Geddes; contractor, J. T. Grant; cost, \$17,365; signed, April 17; filed, April 20; surety, C. Hanson; limit, 4 months and 10 days; \$3,500, frame up; \$3,024, ready for plastering; \$3,500, all finish on; \$3,500 completed; \$4,341, 35 days.

Ellis, between Fillmore and Steiner, painting. Owners, Main & Winchester; architect, C. Geddes; contractor, Thos. Downing; cost, \$1,380; signed, April 17; filed, April 20; surety, L. Hartter; August 20, '89; \$450 ready for graining; \$485, completed; \$345, 35 days.

Ellis, between Fillmore and Steiner, plumbing. Owners, Main & Winchester; architect, C. Geddes; contractor, R. A. Vance; cost, \$1,500; signed, April 17; filed, April 20; surety, C. R. Lang; limit, August 1, '89; \$500, sewerage; \$400, sewers connected; \$225, completed; \$375, 35 days.

Erle near Mission, three two story frames. Owner, Wm. Ede; architect, A. J. Barnett; contractor, O. E. White; cost, \$6,500.

Fifteenth and Castro, to build. Owner, C. Lynch; architect, M. J. Welsh; contractors, Grant & Hopkins; cost, \$3,375; signed, April 23; filed, April 25; \$843.75, framed; \$843.75, brown coated; \$843.75, completed; \$843.75, 35 days.

Folsom corner Juniper Avenue, plumbing, etc. Owner, Charles Bogan; architect, Jas. P. Chadwick; contractor, H. Williamson; cost, \$1,145; signed, April 3; filed, April 29; limit, July 15, '89; at end of each month 75 per cent of work done, paid; balance when completed.

Folsom corner Juniper Avenue, carpenter work, etc. Owner, Charles Bogan; architect, J. A. Chadwick; contractor, G. H. Walker; cost, \$9,200; signed, April 3; filed, April 29; sureties, Irvine Graham and Casper Dix, \$2,500; limit, July 15, '89; \$1,840, framed; \$1,840, roofed; \$1,840, brown coated; \$1,840, first coat paint on; \$1,840, completed.

Folsom corner Juniper Avenue, brick work. Owner, C. Bogan; architect, J. P. Chadwick; contractor, R. Ringrose; cost, \$1,245; signed, April 3; filed, April 29; limit, July 15, '89; 75 per cent paid at end of each week of work done; balance when completed.

Front corner California, excavations, pile driving, etc. Owner, M. Rosenbaum; architects, Salfeld & Kohlberg; contractors, B. McMahon & Son; cost, \$27.50 per pile; signed, April 25; filed, May 3; sureties, C. S. Holmes and W. J. Adams, \$5,000; limit, 45 days; payment made when completed and accepted.

Fulton, corner Fillmore, two story frame. Owner, Henry Humie; architect, R. Zimmerman; contractor, F. Weinohel; cost, \$3,945; signed, April 8; filed, April 15; \$1,000, framed; \$960, rough plastered; \$1,000, accepted; \$985, 35 days.

Fremont and Folsom, frame. Owner, F. A. Robins; architects, Pissis & Moore; contractor, S. C. Buzzell; cost, \$5,418; signed, April 13; filed, April 17; \$1,000, brick work done; \$1,000, framed; \$1,000, enclosed; \$1,063, completed; \$1,355, 35 days.

Fillmore and Pacific, dwelling. Owner, Isabella Mayers; architect, Samuel Newsom; contractor, W. H. Wickersham; cost, \$5,285; signed, April 16; filed, April 19; surety, C. S. Holmes, \$2,000; 75 per cent of work done on first of each month; balance, 35 days.

Green, near Buchanan, one story frame. Owner, Augusta G. Crosby; architect, W. H. Wharff; contractors, Farrell & Bell; cost, \$4,500.

Geary corner Kearny, ornamental iron work. Owner, M. H. DeYoung; architects, Burnham & Root; contractors, Winslow Bros. Co.; cost, \$13,150; signed, April 2; filed, April 16; 75 per cent of work performed to be paid on 10th of each month.

Guerrero and Twenty-second, to build. Owner, Mary Fogarty; architect, M. J. Welsh; contractor, R. Parker; cost, \$4,400; signed, April 16; filed, April 17; \$700, framed; \$1,200, brown mortared; \$1,250, completed; \$1,250, 35 days.

Guerrero and Twenty-fourth, two story frame. Owner, B. H. Schenckhoff; architect, A. J. Barnett; contractor, Timothy Sullivan; cost, \$5,834; signed, April 16; filed, April 18; surety, B. Joost, \$3,000; limit, 100 days; \$1,213, roofed; \$1,100, brown coated; \$1,100, outside finish on; \$1,471, 35 days.

Guerrero, between Seventeenth and Eighteenth, to build. Owner, Louis Schloh; architect, F. Koldenstrodt; contractors, Tegeler & Muller; cost, \$5,800; signed, April 9, filed, April 9; limit, 3 months; \$1,750, framed; \$1,750, first coat plastering on; \$1,800, completed; \$500, 35 days.

Golden Gate Avenue, near Jones, freight elevator. Owner, Lizzie H. Moffatt; contractors, A. J. McNicolls & Co.; cost, \$1,150; signed, April 9; filed, April 11.

Guerrero and Twenty-third, two story. Owner, H. Minderman; architect, H. Geilfuss; contractors, Tegeler & Muller; cost, \$3,785; signed, April 8; filed, April 13; \$475, framed; \$475, roofed; \$475, partitions set; \$475, outside work done; \$475, inside work done; \$460, completed; \$950, 35 days.

Howard corner Fourteenth, two story building. Owner, Mrs. E. L. Miller; architect and contractor, M. Wm. Kain; cost, \$5,000; signed, April 22; filed, April 25; limit, August 1, '89; \$1,250, framed; \$1,250, brown mortared; \$1,250, white mortared; \$1,250, finished.

Howard corner Fourteenth, two story frame. Owner, D. Sullivan; architects, Schmidt & Shea; contractor, J. F. Logan; cost, \$8,493; signed, April 26; filed, April 27; sureties, B. Joost and W. Thyarks; limit, 90 days; \$1,500, framed; \$1,600, plumbing in; \$1,600, outside primed; \$1,600, completed; \$2,193, 35 days.

Haight, between Steiner and Pierce. Owner, Aug. Kernerleber et al.; architect, R. Zimmerman; contractor, Adam Miller; cost, \$1,050; signed, April 26; filed, April 27; \$300, rough mortared; \$400, accepted; \$260, together with last payment of contract.

Howard, corner Tenth, Hydraulic Ram Elevator. Owner, Omnibus Cable Co.; contractors, Cahill & Hall; cost, \$1,275; signed, April 6; filed, April 8; limit, 60 days; one-half when work is completed; balance, 35 days.

Jackson near Fillmore, additions. Cost, \$600.

Jackson corner Baker, additions. Owner, and builder, W. F. Lewis; cost, \$2,000.

Jackson and Franklin, two story frame. Owner, J. C. Franks; architect, J. E. Kraft; contractor, J. H. McKay; cost, \$8,275; signed, April 19; filed, April 23; sureties, Jno. F. Kennedy and Geo. T. Shaw, \$4,000; limit, four months; \$2,000, rafters on; \$2,000, brown mortar on; \$2,275, completed; \$2,000, 35 days.

Jasper Place and Union street, three story frame. Owners, C. Rondinotto, et al.; architects, Townsend & Wnekene; contractor, O. E. White; cost, \$5,253; signed, April 26; filed, April 27; \$1,200, roof boarded; \$1,300, first mortar on; \$1,438, sashing done; \$1,315, 35 days.

Jackson, between Scott and Devisadero, frame. Owner, Jos. K. Parker; architects, Pissis & Moore; contractor, Jas. Geary; cost, \$5,320; signed, May 1; filed, May 1; sureties, W. A. Meeker, \$2,500; \$1,000, framed; \$1,000, brown coated; \$1,000, interior plastered; \$990, completed; \$1,330, thirty-five days.

Lyon and Geary, dwelling. Owner, Margaret S. Clapp; architect, J. Hatfield; contractors, Plumber & Martin; cost, \$2,350; signed, April 23; filed, April 24; surety, Frederick Kalbfleisch, \$1,500; \$550, roof boards on; \$404, first coat plaster on; \$404, windows in; \$404, completed; \$587.50, 35 days.

Lapidge and Nineteenth, two-story frame. Owner, Thomas Gardner; architect, M. J. Welsh; contractor, J. O'Connell; cost, \$2,000; signed, April 17; filed, April 25; \$400, framed; \$533.33, brown mortared; \$533.33, completed; \$533.33, 35 days.

Leavenworth, near Pacific, building. Owner, John Devery et al.; architect, G. H. Miller; contractor, John Dyer; cost, \$3,720; signed, May 2; filed, May 2; sureties, Joseph Peers and John Willis, \$2,500; limit, ninety days; \$600, rough frame up; \$700, roof on; \$700, white coated; \$790, completed; \$930, thirty-five days.

Mason and Sutter, three-story frame. Owner, Ellen L. Hayward; architects, C. R. & J. M. Wilson; contractor, Jas. Geary; cost, \$6,865; signed, April 22; filed, April 22; \$1,025, second story joists on; \$1,030, roof on; \$1,030, brown coated; \$1,030, white coated; \$1,030, completed; \$1,720, 35 days.

Mariposa corner Florida, building. Owner, G. S. Ashmead; architect, T. J. Welsh; contractor, B. Horn; cost, \$6,800; signed, April 24; filed, April 27; sureties, T. Downing and E. M. Harmon, \$4,000; limit, 90 days; \$600, first story joists on; \$675, framed; \$1,275, brown coated; \$1,275, white coated; \$1,275, accepted; \$1,700, 35 days.

Market, between Fourth and Fifth, concrete work. Owner, California Academy of Sciences; architects, Percy & Hamilton; contractors, Ransome & Cushing; cost, \$14,300; signed, April 15; filed, April 20; sureties, E. G. Stetson and A. A. Wigmore, \$7,000; 75 per cent of work done to be paid on first Monday of each month; balance, 35 days.

Masonic Avenue and Geary, one story cottage. Owners Mr. and Mrs. Shoop; architect, G. G. Gillespie; contractor, G. G. Gillespie; cost, \$1,200; signed, April 2; filed, April 20; \$225, framed; \$225, brown mortared; \$225, white mortared; \$225, completed; \$300, 35 days.

Market between Fourth and Fifth, carpenter work. Owner, California Academy of Sciences; architects, Percy & Hamilton; contractor, W. M. Fletcher; cost, \$49,772; signed, April 9; filed, April 20; sureties, F. Joost and J. F. Kennedy, \$20,000; limit, 90 days; 75 per cent of work done to be paid on first Monday of each month; balance, 35 days.

Minna, corner Seventh, alterations, etc. Owner, M. Foley; architect, J. J. Clark; contractor, C. Quinn; cost, \$3,000; signed, April 9; filed, April 11; surety, John McGuire, \$3,000; limit, 30 days; \$1,000, one-half brick work done; \$1,000, brick work completed; \$1,000, 35 days.

Market, between Fourth and Fifth, brick work. Owner, California Academy of Sciences; architects, Percy & Hamilton; contractor, John McCarthy; cost, \$36,884; signed, April 2; filed, April 11; sureties, Willis E. Davis and Theo. W. Peterson, \$12,000; limit, 200 days; 75 per cent on first Monday in each month as work progresses; balance, 25 per cent after completion.

Market, between Fourth and Fifth, granite work. Owner, California Academy of Sciences; architects, Percy & Hamilton; contractors, M. J. Healy & Co.; cost, \$17,200; signed, April 9; filed, April 20; sureties, Wm. Mathews and Wm. R. Morton, \$10,000; limit, 90 days; 75 per cent of work done to be paid on first Monday of each month; balance, 35 days.

Market, between Fourth and Fifth, wrought iron work. Owner, California Academy of Sciences; architects, Percy & Hamilton; contractors, Rix & Pirth; cost, \$12,375; signed, April 9; filed, April 20; sureties, Howard Havens and Abner Doble, \$5,000; limit, 90 days; 75 per cent of work done to be paid on first Monday of each month; balance, 35 days.

Market, between Fourth and Fifth, plumbing. Owner, California Academy of Sciences; architects, Percy & Hamilton; contractors, Duffy Bros.; cost, \$15,326; signed, April 15; filed, April 20; sureties, J. Mahony and Robt. Mitchell, \$7,000; 75 per cent of work done to be paid on first Monday of each month; balance, 35 days.

Market, between Fourth and Fifth, cast iron work. Owner, California Academy of Sciences; architects, Percy & Hamilton; contractors, O'Connell & Lewis; cost, \$18,900; signed, April 9; filed, April 20; sureties, J. J. Mahony and Abner Doble, \$10,000; limit, 60 days; 75 per cent of work done to be paid on first Monday of each month; balance, 35 days.

Nineteenth and Dolores, three story frame. Owners, Jules Wolf and wife; architects, Huerne & Everett; contractor, F. Buckley; cost, \$4,800; signed, April 11; filed, April 13; \$1,200, roof sheathed; \$1,200, brown coated; \$1,200, completed; \$1,200, 35 days.

PERFECTION ATTAINED AT LAST.
USE ONLY
POWELL'S NEW IMPROVED METAL CORED RUBBER STOPPERS.
SUPERIOR TO ANYTHING IN THE MARKET.
HEAD AS THE ALL BRASS.
FOR SALE BY ALL DEALERS.
NO BRASS STUD TUBE PULLED OUT OF THE RUBBER. WON'T INJURE THE MOST FRAGILE EARTHEN BASIN. CAN'T BE FLOATED OUT OF ITS SOCKET.
MANUFACTURED ONLY BY
THE WM. POWELL CO. CINCINNATI, O.

Noe and Fourteenth, two story. Owner, Kate W. Cook; architects, C. H. & J. M. Wilson; contractor, F. V. Aiken; cost, \$3,360; signed, April 15; filed, April 20; \$915, inclosed; \$915, brown mortared; \$915, completed; \$915, 35 days.

Natoma, near Lafayette, to build. Owner, Margaret McCormack; architect, C. V. Pierce; contractor, C. Peterson; cost, \$3,425; signed, April 29; filed, May 1; sureties, F. P. Latson and A. W. Starbird; limit, ninety days; \$856.25, roof on; \$856.25, outside finish on; \$856.25, completed; \$856.25, thirty-five days.

Ninth corner Stevenson, additions. Owner, R. Flaherty; architects, B. McDougall & Son; contractor, J. H. McKay; cost, \$5,470; signed, April 6; filed, April 8; sureties, J. F. Kennedy and L. B. Doe, \$3,600; limit, June 30, '89; \$750, chimneys to top of walls; \$900, chimneys topped out; \$1,100, brown coated; \$1,320, completed; \$1,400, 36 days.

Oak and Laguna, to build. Owner, Mrs. H. K. Barr; architect, T. J. Welsh; contractor, M. J. Gorman; cost, \$5,098; signed, April 15; filed, April 16; sureties, Duffy Bros. and J. Mahony, \$2,500; \$1,232, studding up; \$1,232, brown coated; \$1,232, completed; \$1,400, 35 days.

Octavia corner Sutter, four story frame. Owner, James G. Fair; architects, Schultze & Meeker; contractor, J. T. Grant; cost, \$39,339; signed, April 16; filed, April 17; sureties, C. Hanson and W. J. Adams, \$13,000; limit, November 1, '89; 75 per cent on first of each month as work progresses; balance, 35 days.

Octavia near Vallejo, three frame dwellings. Owner and builder, W. F. Lewis; cost of each, respectively, is \$4,500, \$6,500, \$4,000; total, \$15,000.

Prospect Avenue, corner Powell Avenue, three one story frames. Owner and builder, F. Nelson; cost, \$5,000.

Pacific, between Jones and Leavenworth, three story frame. Owner, Herman Wrede; architect, Emil John; contractor, S. Wray; cost, \$4,592; signed, April 22; filed, April 23; limit, August 1, '89; \$800, framed; \$800, partition set; \$800, outside finished; \$1,044, accepted; \$1,148, 35 days.

Pennsylvania Ave., between Solano and Butte, two story flat. Owner, Thos. Murphy; architects, Schmidt & Shea; contractor, G. I. Doering; cost, \$2,700; signed, April 9; filed, April 22; surety, J. Ahlback; limit, 65 days from May 13; \$500, enclosed; \$500, brown coated; \$500, hard finished; \$500, completed; \$700, 35 days.

Polk near Sacramento, additions; cost, \$800.

Pine corner Touchard, two story dwelling. Owner, M. P. Jones; architect, Wm. J. Mathews; contractors, Maloney & Shay; cost, \$10,297; signed, April 15; filed, April 19; limit, October 1, '89; 75 per cent to be paid as work progresses; balance, 35 days.

Stewart and Market, artificial stone sidewalks. Owner, Gualala Mill Co.; architect, C. I. Havens; contractors, Gray Bros.; cost, \$1,502; signed, April 22; filed, April 23; \$700, work in basement finished; \$802, completed.

Rhode Island corner Yolo, one story. Owner, J. Barduhn; architect, J. T. Hogan; contractor, J. W. Mader; cost, \$1,360; signed, April 17; filed, April 19; limit, June 5, '89; \$250, framed; \$260, rough plumbing done; \$255, hard finished; \$255, completed; \$340, 35 days.

Seventeenth and Dolores, two story frame. Owner, P. J. Dwyer; architect, M. J. Welsh; contractor, R. Parker; cost, \$3,550; signed, April 8; filed, April 10; \$887.50, framed; \$887.50, brown coated; \$887.50, completed; \$887.50, 35 days.

Sutter, Lots 1526 and 1528, retaining walls. Owner, M. S. Lowenthal; architect, Fred E. Wilcox; contractor, John Kelo; cost, \$4,094; signed, April 11; filed, April 11; limit, 30 days; \$3,070.50, completed; \$1,023.50, 35 days.

Sacramento, corner Scott, two story frame. Owner, Jas. M. Wright; architect, W. F. Lewis; contractor, Wm. F. Lewis; cost, \$6,400; signed, March 9, filed, April 15; limit, July 19, '89; \$5,000 to be paid during progress of building, and \$1,400 when completed.

Sutter, near Scott, build complete. Owner, Joseph Hauxmann; architect, G. H. Miller; contractor, Jas. Geary; cost, \$2,755; signed, May 1; filed, May 4; sureties, C. S. Holmes and Thos. Richardson, \$2,000; limit, ninety days; \$600, framed; \$500, plumbing done; \$500, framed; \$466, completed, \$689, thirty-five days.

Seventeenth Avenue corner N. ten one story frames. Owner, J. Twist; architect and builder, W. F. Lewis; cost, \$8,500.

Sansome and Halleck, alterations. Contractor, Haneke; cost, \$2,500.

Tenth corner Stevenson, two story and basement frame. Owner, P. Brady; day work; cost, \$7,000.

Twenty-Sixth, between Mission and Howard, two frames. Owner, G. F. Dallinger; architect, J. Trowson; contractor, S. C. Kronnick; cost, \$3,700; signed, April 16; filed, April 16; limit, 90 days; \$3,700, to be paid when building is completed.

Twelfth and Howard, to build. Owner, Daniel O'Connor; architect, M. J. Welsh; contractor, M. J. Scott; cost, \$3,350; signed, April 17; filed, April 18; \$837.50, framed; \$837.50, brown coated; \$837.50, completed; \$837.50, 35 days.

Twenty-First, near Guerrero, two-story frame. Owner, Amandus F. Schumacher; architect, C. I. Havens; contractor, C. E. Dunshee; cost, \$5,290; signed, May 2; filed, May 4; \$900 inclosed; \$1,000, pipes in; \$1,000, hard finish on; \$1,000, completed; \$1,390, thirty-five days.

Thirtieth corner Church, alterations, etc. Owner, Geo. H. H. Patterson; architect, E. C. Warden; cost, \$2,500; signed, April 27; filed, May 1; \$600, hall partitioned off; \$600, brown mortar on; \$700, completed; \$600, 35 days.

Third, corner Stevenson, brick work. Owner, C. H. Ackerson; architects, Schmidt & Shea; contractors, Peacock & Butcher; cost, \$7,250; signed, April 8; filed, April 8; \$3,500 ready for roofing; \$1,800, completed; \$1,950, 35 days.

SANDSTONE.

Arizona Red and Pink Sandstone, which for strength and uniformity of color cannot be excelled, can be furnished in quantity and sizes to suit. Prices reasonable.

O. E. BRADY,
Mason and Builder,

Room 11, box 22. 14 MONTGOMERY ST., S. F.
822 VALENCIA ST., S. F.
Fort & Temple, Los Angeles.

N. CLARK & SONS,

MANUFACTURERS OF AND DEALERS IN



Water Pipe, Chimney Pipe,
CAPS AND TOPS,
FIRE BRICK AND FIRE CLAY.
106 MARKET STREET,
San Francisco.

Twenty-fourth, corner Shotwell, two story frame. Cost, \$1,200.

Tilden and Castro, two story flat. Owner, J. V. Delaveaga; architects, Schmidt & Shea; contractors, R. Doyle & Son; cost, \$3,874; signed, April 22; filed, April 24; sureties, R. McCann and J. McCarthy; limit, 90 days; \$725, enclosed; \$725, plumbing in; \$725, outside primed; \$725, completed; \$974, 35 days.

Thirtieth and Folsom, three story frame. Owner, Mrs. D. E. Keeks; architect, M. J. Welsh; contractor, Jas. Finn; cost, \$3,780; signed, April 3; filed, April 10; \$945, framed; \$945, brown coated; \$945 completed; \$945, 35 days.

Van Ness Avenue, corner Geary, additions. Owner, Sam Hart; architects, Schmidt & Shea; contractor, Wm. Plums; cost, \$16,250; signed, April 10; filed, April 12; sureties, F. Joost and D. Woerner; limit, 90 days; \$3,000, enclosed; \$3,000, brown coated; \$3,000, hard finished; \$3,000, completed; \$4,250, 35 days.

Valencia, and Twenty-fifth, to build complete. Owner, John Creamer; architect, M. J. Welsh; contractor, M. C. Lynch; cost, \$4,250; signed, April 26; filed, May 3; \$1,000, framed; \$1,000, brown mortared; \$1,000, completed; \$1,250, thirty-five days.

COUNTRY BUILDING NEWS.

OAKLAND.

The average cost of the new dwelling houses now building in Oakland is much greater than in former years. In 1876 the average cost of some 900 houses erected was \$870. In 1877, 655 houses were built, averaging about \$950 each. This was the period of small, illy constructed, cheap dwellings, without modern conveniences, and built without reference to sanitary regulations, which did not exist officially at that time. Each succeeding year has shown a higher average in cost and more artistic architecture, until at the present time a gratifying showing can be made. The fifty-four new dwellings noticed in this semi-monthly TRIBUNE report are building at a cost of \$146,400, an average of \$2,710 each. In all cases the figures given have been obtained from the owner, contractor, or agent, and represent the contract price, not including extras.

The number of buildings detailed in the report embracing the latter half of March is fifty-four; cost, \$146,400. Previously reported since January 1st, 165, cost, \$524,600. Aggregate to March 31st, 219; cost, \$671,000.

Under the heading of "Oakland Enterprise Abroad" THE TRIBUNE has often had occasion to mention the achievements of our local builders, but until now the pleasure of announcing the fact that an Oakland firm is building an entire town has not been accorded. El Verano is the first town to be built on its pristine development entirely by Oakland enterprise. A handsome business block of brick

costing \$10,000, a store, a restaurant and twenty-five dwellings, all supplied with modern conveniences, are in course of construction for the Sonoma Valley Improvement Co. at El Verano by A. W. Pattiani & Co., who are pushing the work as fast as possible. When it becomes known that Oakland builders are doing the lion's share of work for the interior, our planning mills, hardware stores, and all branches of trade concomitant with building enterprises, will flourish in a manner that cannot fail to gratify our local pride as well as add to the wealth of the city.

L. Dresco is building a six-room cottage on the south side of Eighteenth street, between Castro and Brush, at a cost of \$2,000. H. Adams is the contractor.

E. Hook has commenced a first-class modern residence of eight rooms on the southeast corner of Eleventh and Jackson streets, to cost \$4,000. W. N. Concannon is the contractor.

We particularly note that people seem to be inclined to build better houses and leave behind the cheap style of improvement, recognizing the fact that Oakland must become a great city, and that it must be built up with a view to a grand future and its requirements in regard to stability of structure, combined with beauty and good taste.

Sanitary Inspector Snook says that requirements for inspection of new premises is much greater than ever before, and that the class of work going on is superior to that of former years, beyond comparison.

Among the more prominent buildings shortly to be commenced are the Unitarian Church edifice, which will rank among the best of the many fine church buildings of Oakland. The Young Men's Christian Association building, to cost \$30,000 to \$40,000, and a large and costly business block by J. W. Mackay, the only survivor of the bonanza kings.

BENICIA IMPROVEMENTS.

Our old friend, the *New Era* sends us the following as a summary of improvements in and around Benicia.

Bank of Vacaville, cost	\$ 3,700
Hotel at Elmira	7,000
" " Suisun	17,500
Residence of J. Cohn, Suisun	2,500
" " of A. W. Howe, Benicia	1,800
" " of J. L. Innes	1,650
" " of J. A. Smith	1,800
" " of G. R. Duval	2,000
" " of T. B. Montgomery	4,000

The Benicia Planing mill is doing most of the above. J. B. McKenzie is the owner. S. Brooks is foreman. O. H. Butler attends to the brickwork. L. K. Risley the plastering. Beardslee & Johnson the painting.

SAN JOSE.

FROM OUR SPECIAL CORRESPONDENT.

Two two story frame dwellings, Fifth near San Salvador street. Mrs. Steiger, owner; J. Lenzen & Son, architects; F. Davis, contractor; cost, \$5,200.

Two story frame dwelling, San Carlos near Fourth street. Mrs. Auzeais, owner; Theo. Lenzen, architect; R. Summers, contractor; cost, \$6,000.

Two story frame dwelling, corner Fourth and Empire streets. L. Auzeais, owner; Theo. Lenzen, architect; J. D. Stewart, contractor; cost, \$5,500.

One story cottage, Delmas avenue, B. Campen, owner; Shottenhamer, contractor; cost, \$1,600.

Cottage on San Carlos street. E. L. Ford, owner; Keast, contractor; cost, \$2,000.

Two story dwelling, San Carlos near Delmas avenue. Mr. Oger, owner; Shottenhamer, contractor; cost, \$2,100.

One story cottage, San Fernando near the Guadalupe. Mrs. Penchard, owner; J. Lenzen & Son, architects; A. C. Bates, contractor; cost, \$2,800.

Two story dwelling, Willow street. Mr. Theurkauf, owner; Theo. Lentz, architect; cost, \$7,000.

Two story dwelling near junction of First and Second. Mr. Becker, owner; J. Lenzen & Son, architects; cost, \$4,000.

Two story dwelling, Vine and Park avenues. Otto Ziegler, owner; Theo. Lenzen, architect; cost, \$3,800.

ALAMEDA.

Mr. Capp is having a six-room cottage built by Contractor Hamilton on the property lately purchased by him at the corner of Pacific avenue and Chestnut street. As soon as the plastering is finished he will commence the erection of a similar building next to it. Each of the houses will cost about \$3,500.

SANTA ROSA.

Yandle & Glynn are about to erect a large machine shop.

A. C. Means is building an addition to his school house.

COLFAX.

It is understood that a large hotel will be erected at this place. The owner is Mrs. M. J. Lawrence of Downieville.

SACRAMENTO.

The Capitol Hotel will be reconstructed on first floor. Stores will be fitted up at a cost of \$8,000. E. A. Boyer superintends the alterations.

SAN RAFAEL.

A club house will be erected in connection with Hotel Rafael at a cost of \$7,500. Curlett & Cuthbertson are the architects, and J. Blake the contractor.

LOS ANGELES.

N. W. Stowell has accepted plans for a \$25,000 building to be erected on Spring street.

The * California * Architect * and * Building * News

VOLUME 10.

ENTERED AT POST-OFFICE SAN FRANCISCO, AS SECOND-CLASS MAIL MATTER. ESTABLISHED JANUARY, 1879.

NUMBER 6.

Official Organ of the San Francisco Chapter, American Institute of Architects.

NOW IN ITS TENTH YEAR.

Established Jan. 1879.

Incorporated Jan. 1889.

+WHH+

California Architect & Building News

PUBLISHED BY THE

California Architectural Publishing Co.

Office, 408 California St. * * Next to the Bank of California

PUBLISHED ON THE 15th DAY OF EACH MONTH.

TERMS, PER ANNUM, - - - - \$2.00 IN ADVANCE

ADVERTISING RATES FURNISHED ON APPLICATION.

SAN FRANCISCO, JUNE 15, 1889.

AN architect's suit was recently decided in the Supreme Court of Massachusetts—according to the *American Architect*—which has a certain interest. The architect of a hotel in Boston sued the owner for something over \$25,000 for services in preparing plans and superintendence of the building. The defendants claimed that the architect agreed to render the necessary services for three and one-half per cent. on the cost of the building. This was \$14,000, so that his commission amounted to \$14,000, of which they had paid him \$8,000, and were ready to pay the balance. The architect admitted the agreement to accept three and one-half per cent. commission, but claimed additional compensation for extra services, etc. Evidence was brought as to the skill and reputation of the architect, and the auditor who first heard the case awarded him about \$8,500. The case was again tried before a jury, which brought in a verdict for \$13,000 for the architect. This, added to the \$8,000 previously received on account, is about five per cent. on the total cost of the building, so that the jury seems to have taken the view that five per cent. on the cost is about what the architect ought to have for such work, and that if he was foolish enough not to come to a clear understanding with his clients, in the first place, about what he was to do and what he was to be paid for doing it, he deserved to lose the small compensation which he might have earned by extra work.

IS it not about time for our architects to seriously consider the necessity of appointing a "Clerk of Works," the salary of the same to be paid by the owner. This city is rapidly growing and to properly superintend a house in course of construction way out on Pacific or Sunset Heights, really requires more time than is warranted by the usual fee of 5 per cent.

Subscription price of this Journal is \$2.00 per year. Examine the Contents of this Issue and see if it is not worthy of your support.

RECENT law cases make it very evident, that architects are made the butt of some people who would put them to any amount of trouble and expense, without offering to remunerate them; why the impression should have got about as it has done, that these gentlemen will design buildings for the pleasure of doing the work and that payment of fees is only conditional upon its suiting the convenience of the client to go on with the building, it is hard to say, but some of our most influential public companies and associations have set such an example and the terms of competition are assuming less favorable form.

WE commence with this issue a series of Artotypes of lately completed buildings. For richness of design, the one in the present issue will compare favorably with those printed in any other journal in the country.

THE Legislature of the State of Texas has passed a law requiring all architects to obtain a certificate before being allowed to practice their profession. Architects from other States who have been in the habit of preparing plans for clients in Texas, will do well to heed one of the rules laid down, viz., that persons practicing without a certificate should be denied the assistance of the courts in collecting payment for their services. We know architects in this State who have prepared plans for acceptance in the State named, and in future they must bear the above regulations in mind.

IT is about time that the Chapter of Architects, and all kindred associations, protest vigorously against another abuse that has gradually been growing on this coast. We refer to the fact that the supervision of the building work must not be placed in the hands of any other than the successful competitor.

WHY are the "good old times" of our forefathers being revived in the "new-fangled notions" that are now being used in the furnishing of houses of the present day? Look at pictures of the hallways as designed centuries ago and compare them with those of to-day. We find the same roomy landings where one can rest before finishing the flight; the large open fire-place, with its garniture of brass andirons, etc.; the old corner clock—all these revived in the hallways of to-day. Is the architecture of our forefathers to be revived in the present generation, and are we to come to the conclusion that, after all, the styles of those of the long ago were not only superior in general arrangement, but were also more conducive to health?

THE recent offer of a neighboring territory to pay \$500 for the best plan for a \$3,000,000 Capitol building, is one that should not be regarded by any member of the architectural profession on the Pacific slope.

APROMINENT architect in Los Angeles addressed a communication to the Chapter of Architects in this city in regard to the establishing of a branch of the Western Association of Architects on this Coast. This journal would like to see all the various architectural associations united in one grand organization, with branches of the same in every prominent city.

WE notice that the California style of framing dwellings is being generally adopted through the eastern states. At first, such framing was done as a matter of expediency, but a test of over forty years proves it fully equal in lasting qualities to the old-fashioned mortise and tenon.



F. W. KRELING & SONS,

Manufacturers of Elegant

PARLOR and CHAMBER SETS,

DINING-ROOM, BANK AND OFFICE FURNITURE,

WOOD MANTELS AND INTERIORS,

Rich Upholstery, Draperies, Bedding, Etc.

SOLE OWNERS OF THE
SQUARE & OCTAGON TURNING MACHINES.

For Balusters, Newel Posts, Etc., Etc.

WAREROOMS:

534 and 536 MARKET STREET.

Telephone 3192.

FACTORY:

319-329 GUERRERO STREET.

Telephone 6113.

SAN FRANCISCO, CAL.

Plastering and Stucco Work.

Paper read by James John, Esq., before the National Association of Builders.

MR. PRESIDENT AND GENTLEMEN OF THE CONVENTION—It has been my privilege to be selected to read you a brief paper on the subject of Plastering and Stucco Work. I have seen fit to diverge to a slight extent from the text as laid down by endeavoring to embrace the whole matter in the word "plaster." I will therefore read you what I have, with the idea that plaster will comprehend the whole of it.

It has been the fate of this simple, durable, and inexpensive material to escape the assaults which every good thing in this world must encounter at one time or at another. It has been called unclean, but it is not so of itself. Like many another wholesome and useful medium, it can be so ill-made and be so indifferently applied as to offer to dirt and insects abiding places, due to the perverted ingenuity of man, not to any inherent defects of itself. In spite of all that has been said against it, it remains the universal lining for dwellings throughout the civilized world. Wealth may incase walls and ceilings in decorative woods and metals, but for the mass of mankind plaster must continue to be the simplest, cleanest, least costly, and most enduring finish for homes. The health of the vast majority of mankind is therefore largely dependent upon the materials used in its mixture and the manner of application.

It is undeniable that the custom that obtained some years ago of applying plaster into highly ornate designs was, for domestic purposes, unsanitary. The foliated, convoluted, and otherwise multifarious designs which used to be spread out upon ceilings, in cornices, or special pieces are gradually passing out of use. Their innumerable crevices served only as receptacles of dirt in which the deposits were continuous.

The ornamental uses of plaster having been reduced by good sense and good taste, it remains still the most vigorous, as it is the oldest, vehicle for carrying down to generation after generation the masterpieces of art with which the golden age of sculpture enriched the human race. Humble as its components are, common and cheap as it seems besides marble, and paltry when compared with the metals that have to a considerable degree taken its place for reproductive uses, it still preserves the plastic art, and enables youth to contemplate antiquity in its noblest achievements. To-day plaster is revolutionizing industrial art; for us, and, in all probability, for those who are to come after us, plaster, lowly and cheap, but docile and durable, is the connecting agent with this greatest of men's indorsements in the past.

Plaster thus employed in duplicating great works of marble, iron, and bronze is to-day extending the finest industries, modern and ancient. The erection of the new museums in England, near the great manufacturing centres, would be next to useless were not plaster available for distributing fac-similes of the works, whose grandeur has made the name of Greece imperishable, and whose usefulness in development and the study of form, for all arts, is acknowledged to be unequalled. So potent is this simple medium, therefore, that it serves to-day as effectually as marble itself for the perpetuation of fine art; and by its endless variations of models, copied from every other material known in history, it is the supreme teacher of design. The reproduction of classic works at Kensington, and their dissemination throughout the provinces of the United Kingdom, have had the effect of making France fear for her supremacy in fine industrial productions. The important part that plaster thus plays in the Old World it will continue to play in the New. Wherever art places its altar, plaster will be there as its handmaid; and, though it may be abused by carelessness and calumniated by more pretentious rivals, it must remain the most faithful friend of progress in taste, science, decoration, usefulness, and economy.

Noble and varied as may be the uses to which plaster has and may be applied, I regret to say that the art of applying the same as an avocation for the lining of dwellings is to-day so remunerative to the artisan that it almost ceases to enlist the skill and intelligence that the art should command. This is due mainly to the want of appreciation by the architect and owner, whose only thoughts are for a semblance, for the time being, and are tempted by the questionable economy of saving a few dollars into letting contracts to men of no mechanical standing. It is hoped and expected that through the influence of the National Association of Builders and the intercourse its executive officers may have with the reputable architects of the country, the day is not far distant when it will be required of the artisan in the various

branches pertaining to buildings to arm himself with a proper and authoritative testimonial giving proof that he is skilled in his art, and thus separate the wheat from the chaff, the former be recognized and the latter find its level.

It is a well-known fact that plaster on a ceiling surface in the event of fire will detain it for a long time, providing any means have been taken when applied to secure it under such circumstances, and, were these means more generally employed, millions of dollars would be saved to this country annually.

As the fire-proof construction is the exception, and as wood construction must predominate for years to come, therefore attention should be given to make the latter structure more fire-resisting.

During the last twenty years I have devoted much thought to this subject, and some of the devices I have had in that direction I have sought to secure by letters patent, and strange to say, came in conflict with an English patent in the archives at Washington bearing date 1797. The device then discovered has been slumbering there nearly one hundred years, and to-day I know of nothing more economical or effectual to secure plaster in position in the event of fire than the same device. It is simply a wire netting, as used to-day for a foundation, but, as there described, placed over the bottom surface of the plaster and then securely stapled to the furring or joists, and afterwards the finishing coat of plaster applied over the surface. And as most every mechanic has at some time or other taken out a patent or applied for one, it may be interesting to you to hear the language that Edmund Cartright (as that was the name of the applicant) used in paying due deference to his Sovereign Lord.

After describing his invention in substantially the same language that obtains in patents of the present day, he closes thus:—"In witness whereof, I, the said Edmund Cartright have hereunto set my hand and seal this eight day of November in the thirty-eighth year of the reign of our Sovereign Lord George the Third by the grace of God, of Great Britain, France and Ireland, King, Defender of the Faith, and so forth, and in the year of our Lord One Thousand Seven Hundred and Ninety Seven."

"EDMUND CARRIGHT."

Expansion of Timber due to the Absorption of Water.

BY PROF. DE VOLSON WOOD.

IT is stated by some writers upon the properties of building materials that timber shrinks but little in the direction of its fibers from being thoroughly dried, or expands but little in the same direction from the adsorption of moisture; but the amount of these changes was not given in any work that I examined. Desiring to get some definite knowledge upon this subject, I caused to be prepared some pieces of pine, oak, and chestnut. The pieces selected were from lumber fairly seasoned, and were afterwards kept in a dry room for three weeks before any measurements were made. The pieces were straight-grained, free from knots or other defects.

In order to secure accurate measurements, brass pins were driven near the edges and ends, opposite to each other, and a fine mark made in each. The measurements were made to the nearest half-hundredth of an inch. The pieces were about five-eighths of an inch thick, thirty-six inches long, and five and one-eighth inches wide.

After the first measurements were made, the pieces were put into a vessel of water and allowed to remain there thirty-seven days, at the end of which time they were measured again. The measurements were made on one side only. The following are the mean of the results:

Specimen.	Pine.	Oak.	Chestnut.
Initial length, inches.....	35.505	35.572	35.582
Final length, ".....	35.622	35.602	35.640
Elongation, ".....	0.017	0.030	0.058
Per cent of elongation.....	0.05	0.085	0.16
TRANSVERSE MEASUREMENTS.			
Initial width, inches.....	4.470	4.464	4.481
Final ".....	4.586	4.620	4.645
Expansion, ".....	0.116	0.156	0.164
Per cent of expansion.....	2.6	3.5	3.6
Rate of lateral expansion			
..... = 53	41	22½	

It will be seen that the chestnut expanded laterally and longitudinally more than the oak or pine, that the rate of longitudinal expansion was about three times that of the pine, and the lateral expansion was about one and four-tenths that of the pine. The expansion in the direction of the fibers was larger than I anticipated, especially in the oak and chestnut.—*Scientific American.*

Semi-Annual Summary of Building Operations.

The present season has been a most prosperous one among architects and builders. In order that a full comparison may be made with former years, we present in full the building operations for the first six months of the year:

MONTH.	Back	Value	Frame	Value	Alterations	Value	Total	Value
January.....	4	\$131,000	64	\$420,200	16	\$93,500	84	\$420,200
February.....	9	832,000	49	218,600	13	26,900	71	1,077,500
March.....	4	63,000	69	287,000	10	26,900	83	376,900
April.....	4	128,000	82	357,400	11	51,200	97	536,600
May.....	3	190,000	85	405,300	11	45,450	99	640,750
June.....	2	47,500	87	527,200	23	59,500	112	634,200
Totals.....	26	\$1,391,500	436	\$2,215,700	84	\$303,400	546	\$3,910,600

In comparison with the record of former years for the first six months of the year, the summary is as follows:

1885-754 building engagements.....	value	\$4,267,375
1886-670 ".....	"	2,486,633
1887-516 ".....	"	3,269,914
1888-437 ".....	"	2,719,820
1889-546 ".....	"	3,910,600

Academy of Architecture.

CALIFORNIA is, as yet, too young a state to have an academy where architecture and building can be taught in all the various branches. In order that our young men may possess themselves of information in regard to the above named studies, they must need look to the older and more populous states. The nearest academy which, at present, we can call to mind, is situated in St. Louis, Mo., H. Maack being the Principal.

If anyone is engaged in a building-trade, wants to prepare himself technically to fill a position above his fellow-workmen in the shortest possible time and for the least amount of money, then he should immediately enter this institute.

A skillful master-builder is expected to be master of not only his own trade, but should have sufficient knowledge of all the other building trades to enable him to judge justly of their requirements and to arrange their work to the best advantage.

As this is essential in working out plans and estimates of new buildings, as well as of repairs, and for appraising buildings already erected, it follows that it is necessary for the scholar to participate in the instruction in all the branches taken up in the respective classes, but the trade to which the scholar belongs may receive particular consideration.

A full course in this institute will consist of three terms of twelve weeks each, the regular winter course commences on the first Monday in December and closes at the end of February. But for those that want to complete their study without interruption, a special course will be opened both in September and March.

Address the Principal for further information at his academy, 3066 Ninth street, St. Louis.

Painting Wood.

One coat of paint takes twenty pounds of lead and four gallons of oil per one hundred square yards; the second coat forty pounds of lead and four gallons of oil; the third, the same as the second—say one hundred pounds lead and sixteen gallons of oil per one hundred square yards for three coats.

One gallon of priming color covers 50 square yards.

" white zinc	"	50
" white lead paint	"	44
" lead color	"	50
" black paint	"	50
" stone color	"	44
" yellow paint	"	44
" blue color	"	45
" green paint	"	45
" bright emerald	"	25
" bronze green	"	75

Our "Artotype."

THE building which we illustrate in this number is the new mansion of Mr. and Mrs. W. H. Crocker, on the corner of Jones and California streets, next to Mrs. Chas. Crocker's residence.

It is one of the most important residences that has of late been erected. The design embraces more originality than is usually observed in such dwellings, inasmuch that it combines six different materials in its exterior, without detracting from the unity of the whole design.

The portion of the first story, window sills of the first story, quoins, and large front arched porch guarded by griffins, is composed of blue sandstone from a San Francisco quarry, laid up in Cyclopean style, a style not often seen on this coast.

The remainder of first story and in some places to the second story window sills is built of pressed brick laid in red mortar, with terra cotta bands of string courses.

The superstructure is covered with shingles coated with Rosenberg's "Elastica" Varnish No. 1, and as near as possible left in the natural redwood color, except the gables which are finished in pebbled plaster on iron laths.

The tall stone chimneys and large circular tower form striking features of the outside. Finally the roof is of green slate with terra cotta hip moulds and iron rails.

The architects, Messrs. Curlett & Cuthbertson, have been ably seconded in their efforts to produce a beautiful creation by the several artists and artificers who have materialized it, and who are therefore, worthy of mention here. O. E. Brady performed all the stone and brick work—Mahoney Bros., the carpenter and joiner work—W. Cronin, the slate roofing—Duffey Bros., the plumbing and sewerage—Fraser & Keefe, the polishing—John Mallon, the glazing—J. C. Jung, the ironwork—Henry Fisher, the plastering—Gladding, McBean & Co., the terra cotta—Geo. Goodman, the artificial stone work—Mitchell & Halbach, the interior decorating—The Electric Development Co., the electrical plant—Most of the interior cabinet work and finish was done by Plum & Co., and the Oakland Planing Mills.

The interior is finished in several varieties of hardwood, the main feature being the two-story hall and staircase in the centre of the building finished with Byzantine Dome and Arcade.

Owners' Acceptance of a Building.

THE law is well settled that the owner does not accept a building by taking the keys and living in it, nor does he thereby waive in the slightest degree his right to have the contract fulfilled to the letter before he pays the contractor. His visits to the building while in progress do not alter the contract or put him under any obligations to accept work not in accordance with it; and if he orders changes at those visits, he only makes himself liable to pay a reasonable price for them, if they increase the actual cost of doing the work. Whether, after moving into the house, he can have changes made by other parties, without notifying the original contractor, and charge them to the contractor's account, is a different matter. If the changes are altogether outside the contract, he is, of course, not entitled to make the contractor pay for them. If they were necessary in order to bring the building into conformity with the contract, he ought to have notified the contractor that they were required, and have given him reasonable opportunity for making them himself, before employing other persons to make them; and it has been held abroad that where this notice was not given, the contractor was not liable for any part of the expense. Aside from legal technicalities, however, it would probably be fair to both parties to have the contractor pay what it would have cost him to make the work conform to the contracts as nearly as this can be estimated, and let the owner pay whatever it actually cost beyond this.

An Extra Issue.

In July we will issue an extra edition of 3,000 copies. It will be the best illustrated of any issue yet presented. Sample copies are 20 cents each. Stamps of the smaller denominations will be received.

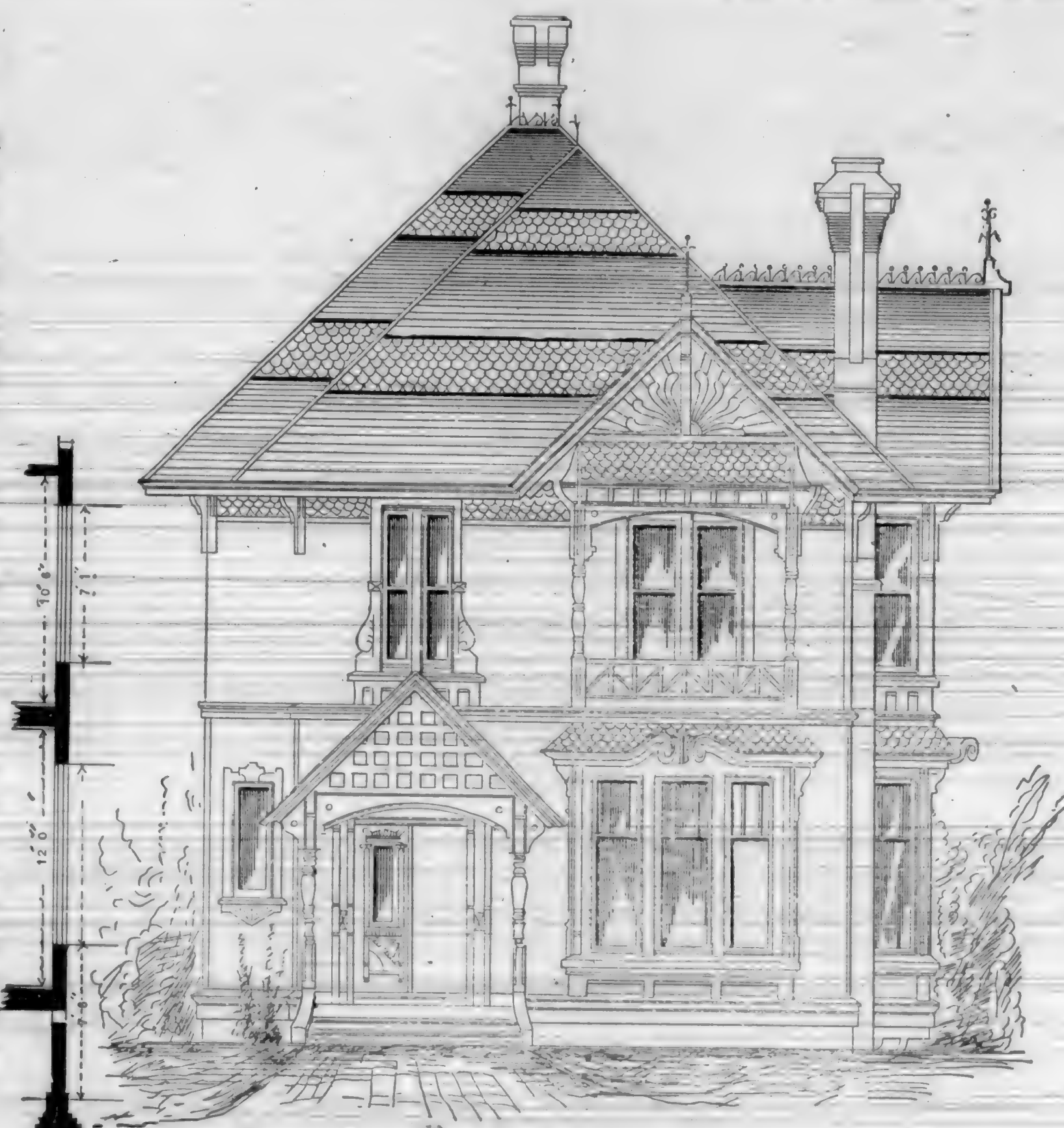
Design for a Country Dwelling.

The plan given was specially designed for a side hill residence. For this purpose all four sides are so finished that, no matter from what point the house may be viewed, it will present a finished appearance, the rear elevation being very picturesque. There is no attempt to elaborate finishes, the intent being to show a well constructed and carefully arranged country home.

In the basement will be found a commodious kitchen, servant's room and store room. The front part is left unfinished, but should the nature of the ground allow it, the space could be nicely utilized for a billiard room, or, if necessary, a children's play room.

On main floor are the parlor, dining-room and library. The bay window in dining-room is nicely arranged for an observation room. A dumb waiter connects with the kitchen, thus doing away with all smell and smoke from that place.

There are four chambers and bath-room on second floor, with ample closet room in each apartment. As shown, the house can be built for \$5,000. The design was prepared by Mr. S. Newsom of this city.



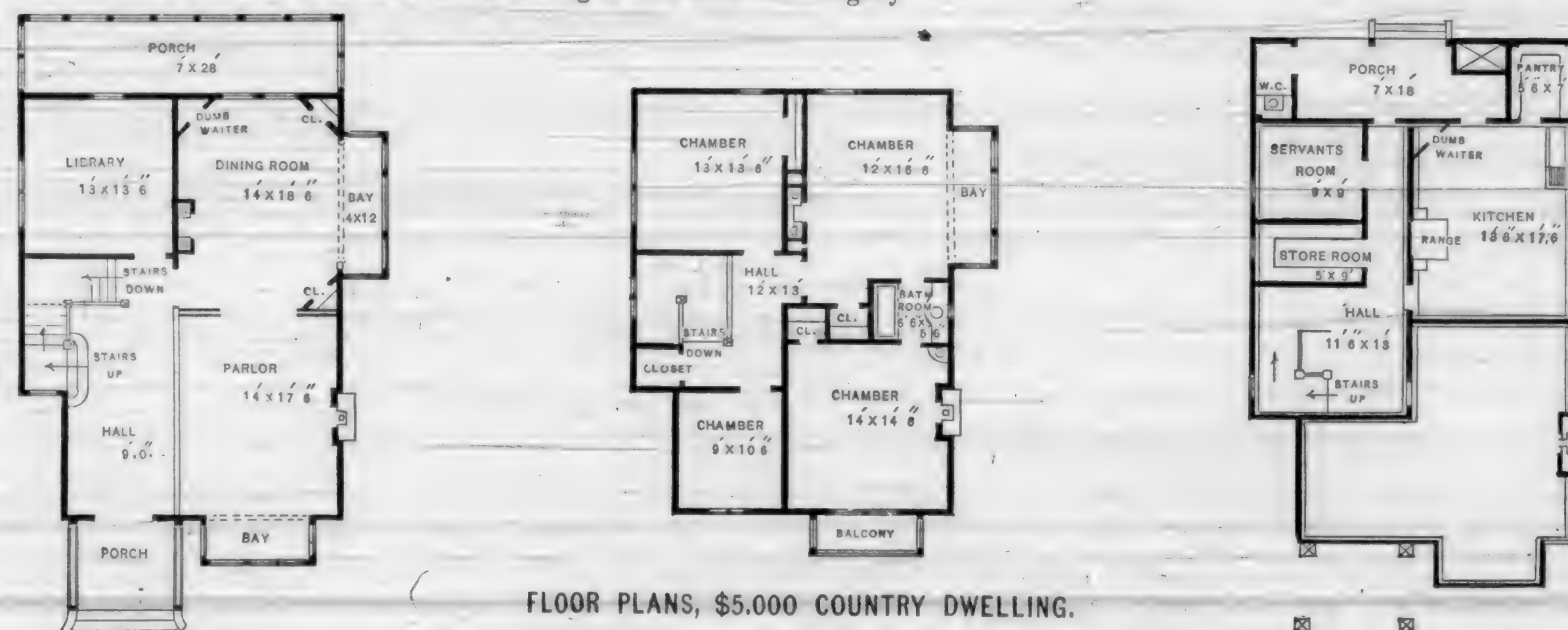
FRONT ELEVATION, \$5,000 COUNTRY DWELLING.

Honest House Finish.

The prevailing fashion or style for the past few years has been to stain interior woodwork almost exclusively, until those engaged in building have become thoroughly surfeited with the cheap imitation of mahogany that one sees on every hand. The uninitiated call it a "cherry" stain. Cherry, in its natural color, it should be understood, is a very light colored wood, of a warm yellowish shade. It is often treated with a red stain, to produce an imitation of antique mahogany, until people have come to believe that this is the natural color of the wood. To attempt to stain a soft wood to imitate cherry is utter nonsense. If there is any imitation about it, it is imitation of mahogany, and an attempt at imitation of that grandest of woods by staining whitewood or pine will deceive nobody. Stain is a sham, every time. There seems to be some excuse for using a dark filler on

oak finish, or a red one on mahogany to give them an antique appearance, but even this is a "sham."

Why not be honest in regard to the finish of your house, as well as in your business affairs? Common white pine, when finished in shellac, in its own inimitable color, is far richer than any imitation that can be produced by stains. Whitewood, poplar, cypress and even hemlock, are handsome woods, when properly treated, in their natural color, and improve with age, yet when stained look decidedly cheap and distasteful. Graining is another common subterfuge, and nothing but a cheat, for it certainly is not in the power of man to imitate nature's great handiwork so finely as to deceive, and if it should so result it would be a barefaced lie. If one doesn't like natural finish on the cheaper woods, and cannot afford hard woods, then why not paint? That certainly is honest. Let pine be pine, and cherry what it is, but don't try to make honest pine masquerade as mahogany.



FLOOR PLANS, \$5,000 COUNTRY DWELLING.



SIDE ELEVATION, \$5,000 COUNTRY DWELLING.

A Model Kitchen.

IT DID NOT COST VERY MUCH, BUT IS A MARVEL OF CONVENIENCE.

HERE is a unique kitchen, worthy of description:—It is not large, having been built to fit a very little woman. The pantry is to the rear of it, the dining room to the right, the hall in the front, and all out doors to the left, though it stands on a narrow city lot. The kitchen projects beyond the hall, giving room for a door in front, and there is a second door in the front, leading to back porch and garden. The range chimney stands against the outer wall, and from door to door in summer the breeze blows perpetually past it. There are windows according to circumstances, some high, some low, some big, some little, some in the upper panels of the doors.

The temple of the household gods is finished entirely in wood, for aesthetic reasons quite as much as utilitarian. Wood finish means that not an inch of plaster appears. Ceiling, walls and floor are all of delightfully polished yellow pine. The casings of doors and windows are flat for ease of washing, and all the joints are as tight as tight can be. The work was done slowly and carefully under the supervision of the presiding genius. While the wood work, perfectly plain, as befits a kitchen, makes a really beautiful apartment, the veinings of the wood, the rich coloring, and the lingering forest odor suggest pleasant thoughts, and typify the home refinement of the lady who joyfully gives bread to her house, rather than the drudgery of menial toil so often put forward in its place.

The laundry tubs and sink are of solid white porcelain. But the wonderful economies of space, and numerous step-saving devices are the features of the place. There are slides from the pantry to the dining room sideboard. There are shelves in the triangular space over the cellar stairs. There is a table which pulls out of nowhere, just opposite the range and vanishes into thin air when the cooking is done. There are flour bins which swing 'out into the room when wanted, and push in flush with the wall again. When the mistress of the establishment wishes to put anything "down cellar," she doesn't go down herself, though the stairs are of gentle slope and easy of access. She touches a mysterious lever with her hand or foot, and up comes a section of the kitchen floor, bringing with it a series of shelves. Disposing the various articles thereon, she reverses the lever, and down goes the whole thing. The floor is as solid as ever, and the shelves are hanging in the dry, cool air of the cellar.

Costly? Not at all. Economy and convenience were the prime considerations. The house was built by an artist, who planned first the kitchen—his wife's workshop—then the studio—his own—and let the rest of the house group itself round these two. The kitchen cost no more in money than the most dingy type of city basement, and its owners call it worth all that it cost of ingenuity.

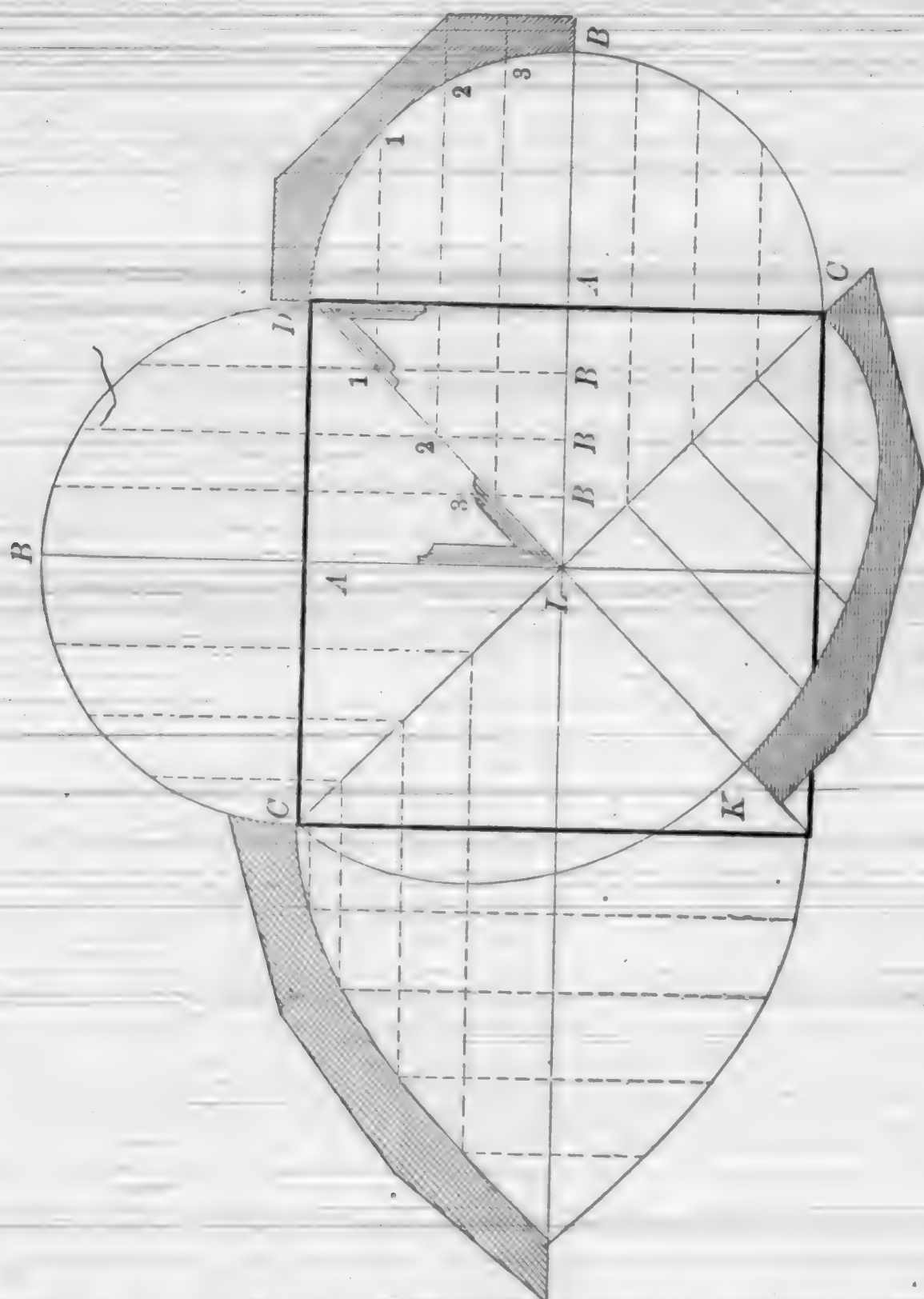
Sawdust is being used by some builders for mortar instead of sand. It is said to answer well, as it is one-half lighter than sand; it has some advantages when used on ceilings. Mortar made of quicklime and sawdust, mixed with cement, does well for brick or stone work.

Groins.

BY OWEN B. MAGINNIS.

The prevailing of inclination of the present age of industrial science tending towards the simplifying of all mechanical rules, with a view to their direct application in practice, is gradually bringing them within the scope of ordinary intelligence. Actuated by this object, the writer has endeavored to modify the existing methods put forward by our more eminent mechanical writers, for the construction of wooden groins or the centering of stone or brick groins.

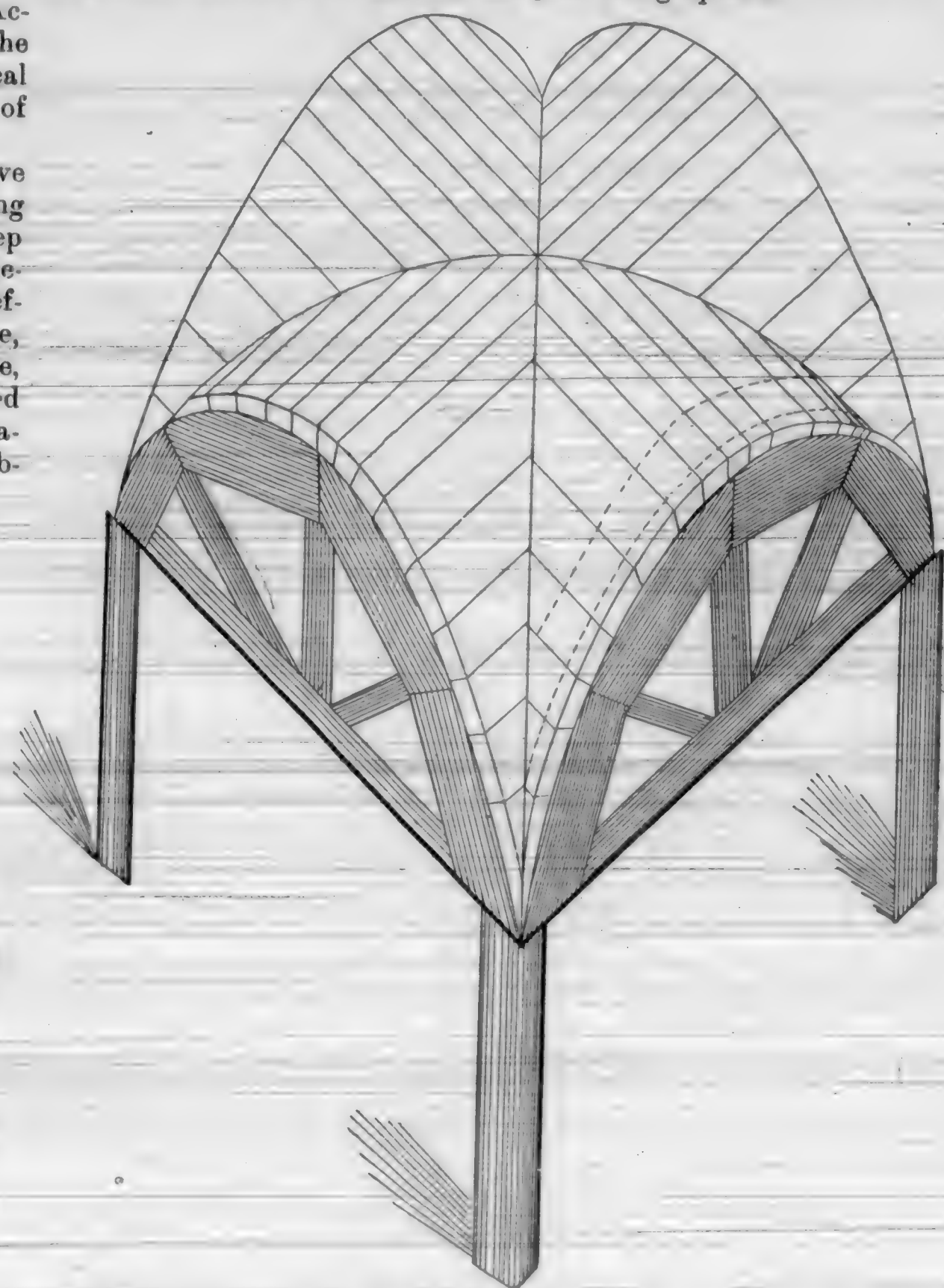
Groin, as defined by architectural authorities, is the curve formed by the intersection of two arches, hence a groined ceiling or vault consists of a number interpenetrating vaults or deep arches, forming a proportionate number of groins as they penetrate each other. There are many different kinds of these effective details, employed in the higher branches of architecture, especially in ecclesiastical, where they are almost indispensable, except in those which admit of timbered roofs or are intended plastered for frescoing. In the hope that the following explanations will benefit those whose line of work may take in this subject, they are submitted for application.



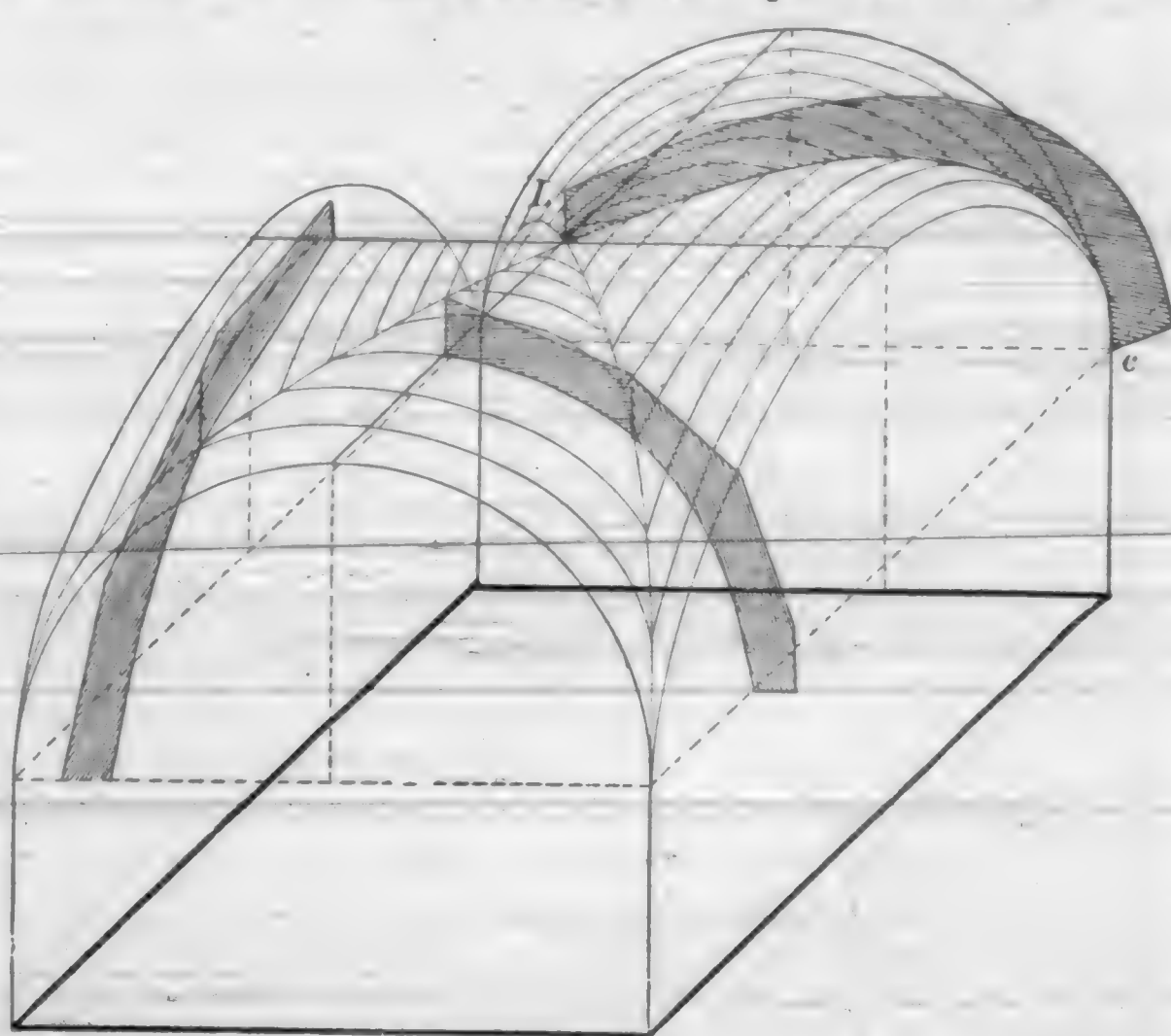
The simplest form of groin in general use in domestic architecture, is known as the barrel cylinder or cylindrical vault and formed by two semi-circular vaults passing through each other at right angles as shown at figure 1 and figure 2.

In figure 1, on the centre lines AB, continued outside the plan which is a square give the radii of the arch. The seat of the groin is the diagonal, over which the intersection of the vaults or groin will stand when found, and in position, or in other words the groin is formed by the revolution of two halves of the square which turn on the axis or centre lines and in their revolution while passing through each other intersect each other in a curve which is termed a groin, this can be easily seen by referring to figure 2, which represents a complete centre for a brick or stone groined ceiling. To construct this groin for lath and plaster, proceed as follows: Describe the semi-circles, CBD. CBD, divide the diameters, or side of the plan into any number of equal parts, in this case eight, and draw lines from these division parallel to centre lines AB, and perpendicular to diameters or sides of the plan, till they cut the semi-circle, continue them down till they meet the diagonals, at the points.

Where they intersect the diagonals, raise up square lines and set off on them the heights which measure from the diameter to the circumference on the semi-circle. The curve traced through these points will be the outline of the curve of the groin, and a semi ellipse, as it is the section found by cutting the cylinder on a mitre or angle of 45 degrees, the plan being square.



This elliptic curve is the form of the groin and the sweeps for the ceiling can be cut to it as shown in figure 1. CK which will sit over CL, its seat. Its exact position is seen at figure 3. CL and those for the vault can be cut as DB, figure 1, two of each kind being necessary to complete the curves.



These are the principle curves to be gained, and the jacks or subordinate sweeps follow. As they are of the same outline curvature, their lengths can be obtained in this way.

If a ridge or centre piece be inserted, necessary when the

The True Test of the Value of Employes' Services.

THE very fact that a man enters a shop and there toils for the allotted number of hours makes it possible to settle his wages by the standard of another man performing a like service; but when the service rendered is the product of earnest thought and study, when the results of mental activity are thrown into the balance, combined with muscular exertion and mere routine work, then the reward can only be measured by the profit therefrom that insures to the employer, and the actual value of the service rendered is increased or diminished by the amount of knowledge, skill or energy with which the work is done. These qualities of mind, skill and diligence united are always necessary to enable any man to succeed in his vocation, and a man's advance above his competitors depends upon the magnitude and force of these qualities.

There must be in the highest order of service this trinity, executive ability, self reliance and originality, the power of planning. These three must co-exist to produce the highest order of merit, and to secure the greatest reward. For men may have skill, execution and ability within the limits of their assigned duties who have neither self-reliance or inventive powers, that enables them to succeed when thrown upon their own resources and outside of their regular work. A man may be a first-class man to carry out details, and work a plan with precision and correctness, and yet he may be an inglorious failure when in the position of chief director of the work of others.

Not only must a man be able to do work himself, but he must be able to plan for others and keep them profitably at work. He must have a quick eye for details, and a broad mind for generalities. He must be practical, and bring all general facts and truths in reference to the business under consideration for the accomplishment of his purpose.

He who realizes these truths, and acts upon them, will, if he has ability, climb to the top of the ladder, and will never have any questions raised as to the amount of his wages, because by his work he fixes the only standard by which his services are measured, and their value is ascertained by their product to his employer.—Wood and Iron.

Awkward Mechanics.

MECHANICS are often addicted to what can only be called awkwardness. In getting at a new or strange piece of work, some men make so much fuss, and appear to such poor advantage, that surprise is expressed that such an incompetent man should be employed. Most of this awkwardness, or "fumbling," could well be avoided by the man if he would only see himself as others see him. His attention is too much taken up by some detail of the matter, and he does not comprehend the whole amount of his work. A thorough mechanic gives a thing a thorough thinking over before he proceeds to execute any work. If the awkward mechanic would learn to think more, he would appear to much greater advantage, and would be worth more money to his employer.—Man and Builder.

New Cottage Homes and Details.

In this new work, the first copies of which have just been received, the authors—Palliser, Palliser & Co.—claim that all designs are new and original, and have never been produced before in any other architectural work. In a careful study of the book, we find that the California method of framing has been selected, it being much preferable to the old principles, which were to use large timbers and cut them all to pieces by mortising and notching down to levels.

We commend the authors for one statement made in the "Prefatory." The cost of the buildings are all given, but the amount stated only holds good when plans are used, prepared by them. Fluctuations in prices of material and labor in various sections are freely acknowledged, and no one can guard against the same. The prices given are those for which the house can be honestly built, with prices of materials as they are generally quoted at time of issue.

Printed by Palliser, Palliser & Co., of New York and for sale at this office. Large work containing 250 designs, with numerous details, price \$4.00.

groined vault is of large area, they will each measure from the groined ribs, to the ridge or center piece and can be easily found on the figure 1, as IB on the semi-circle will stand over BI on the plan, B2 on semi-circle will stand over B2 on plan, and so on to the center, against the diagonal piece cut like CK.

The top cut will be cut square and plumb as at B and the bottom end will be cut plumb vertically and on the angle shown by the level at D. The jack ribs shown here are for the left side of the angle and but similar pieces cut on the reverse angle, must be cut for the opposite side. Bevel at L, figure 1, shows cut of top end of center rib and they are shown in position at figure, where they continued down to the spring line to represent how these sweeps can be cut the full length, afterwards resawn for their different places. If the centerpiece be not inserted, the sweeps reach from diagonal to diagonal and are nailed against them. These plans should be laid on a drawing board or floor and all the cuts made from them.

Time Servers.

HOW many men there are, holding good paying positions as journeymen, who are really of no value unless kept constantly under the eye of the foreman or their employer! They are simply time servers, who take no interest in the business they represent beyond the actual time necessary to count them a day's work. They work when closely watched because they are obliged to, not from any motive of honor or interest in the business.

What can be expected of such workmen but that they will shirk their work and idle their time at every opportunity?

If you cannot give your employer your full time for which he pays, and take some interest in his business, you had better leave him at once. To this he is entitled, and has a right to expect it of you.

If your mind is not upon your work, you cannot expect to accomplish it with any degree of satisfaction to your employer or credit to yourself.

In going about from one shop to another it is a very easy matter to pick out the time servers. Upon the slightest pretext they drop their work to talk or look about, and are always ready to get out of the door the moment the clock strikes six, and their example is very rapidly followed by the apprentice or younger workmen. They have to be constantly watched, and this fact, being known to the firm, is not long in having its results.

Employers are more generally knowing to the habits and qualities of the men they employ than the men often realize, and they invariably know who are the time servers among them, so that when there comes a convenient opportunity or a lull in business, these are the first to be discharged.

It pays to be faithful and do your best at all times, and more especially when your employer is not watching. If you must idle away time, do it when he is about, but don't dishonor yourself or betray his confidence by taking advantage of his absence.

This is one of the worst features of our American system. It is an example which is set by the older men, and which is readily adopted by apprentices, and it is the exception rather than the rule that we find a young man who is sufficiently interested in his own welfare and his employer's as well to give his full time and attention to his work. Those who do this are sure of success, and it is from among such that have risen those men whose names are written upon the pages of history as having made their mark in the world, and left behind not only pleasant recollections, but a shining example that is worthy of a careful imitation. Sel.

THE E. D. Albro Co., Cincinnati, Ohio, manufacturers of veneers and thin lumber, report: We have a steady demand this season for our products. Builders and contractors appreciate well season lumber for inside finish, and the quartered sawed oak and light colored woods are being more called for. We have a full line of all kinds, including white walnut, (called butternut,) cherry, quartered oak, white maple, white ash, and mahogany.

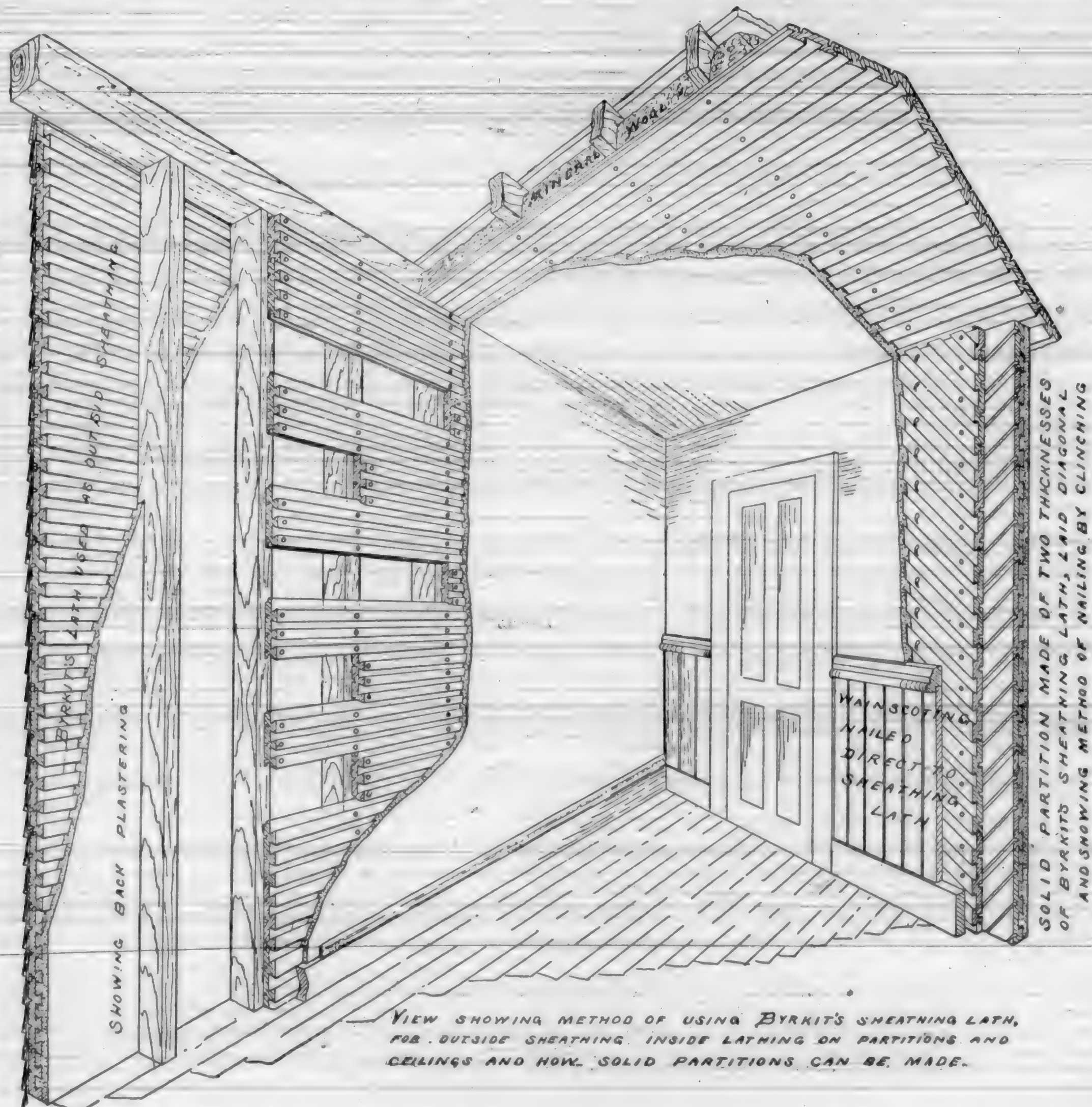
Prima vera, or white mahogany, is rapidly coming into favor. This is a beautiful light gold color, and finished like satin wood, which gives a warmth and tone unexcelled by any other woods. They have a full stock of hard woods of all thicknesses and kinds.

Method of Applying the Byrkit Sheathing Lath.

THE Byrkit Sheathing lath has proved within the last four years, its staple qualities, and the fact that its use has been each year many times increased in quantity by all who have used it before, is a most certain indication of its superior merit. It requires but an examination by an expert in building, to immediately comprehend its practical value. The trials of house-builders have been largely increased by the unstable methods of old-time lathing. Notwithstanding the many devices of breaking joints, doubling studding, vertical lathing on the solid, hoop lathing, etc., still corners and angles of rooms have universally exhibited a weakness in construction, indicated by broken plastering. The Byrkit lath makes it possible to construct a building *practically solid*, substantially, frost-proof and effectively fire-proof, since the system of construction possible by the use of the Byrkit lath, produces a building impossible to quickly destroy by fire, and such a building will rate by insur-

side, which fails to add increased substantial strength to the frame as the Byrkit lath does. That which is so valuable for vertical construction, is equally good for the horizontal lines of floors. Drawing No. 1 illustrates the use of this lath for ceiling purposes, which, when once laid upon the ceiling, it is like the side walls, one homogeneous surface, greatly adding to the strength of the floors, instead as a deadweight suspended from the joists.

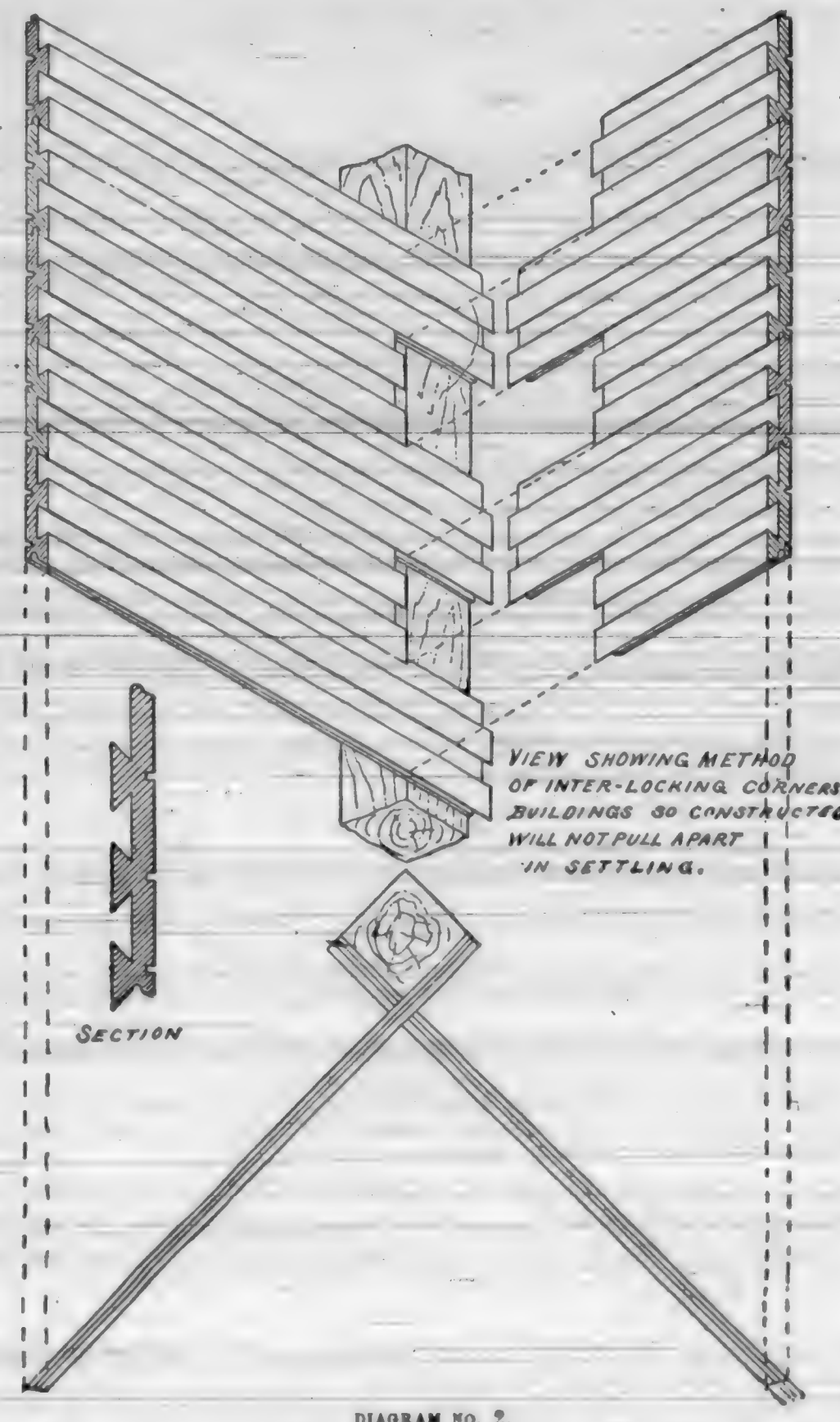
Diagram No. 2 illustrates the method of bracing and interlocking the angles of a room. No. 3 shows the possible use of the Byrkit lath for bracing long suspended partitions. While it is acting as counter braces on the principle of a truss, it is also serviceable for plastering upon. No. 4 indicates the use of Byrkit lath as a roof board, the keyed groove facing inward the same as the sheathing, and permitting at slight expense the finishing of an attic as a habitable room. Many houses have their exterior finished in half timbered and masonry work; for such a purpose the Byrkit lath is invaluable. Illustration No. 5 will give the reader a suggestion of its possibilities in this direction.



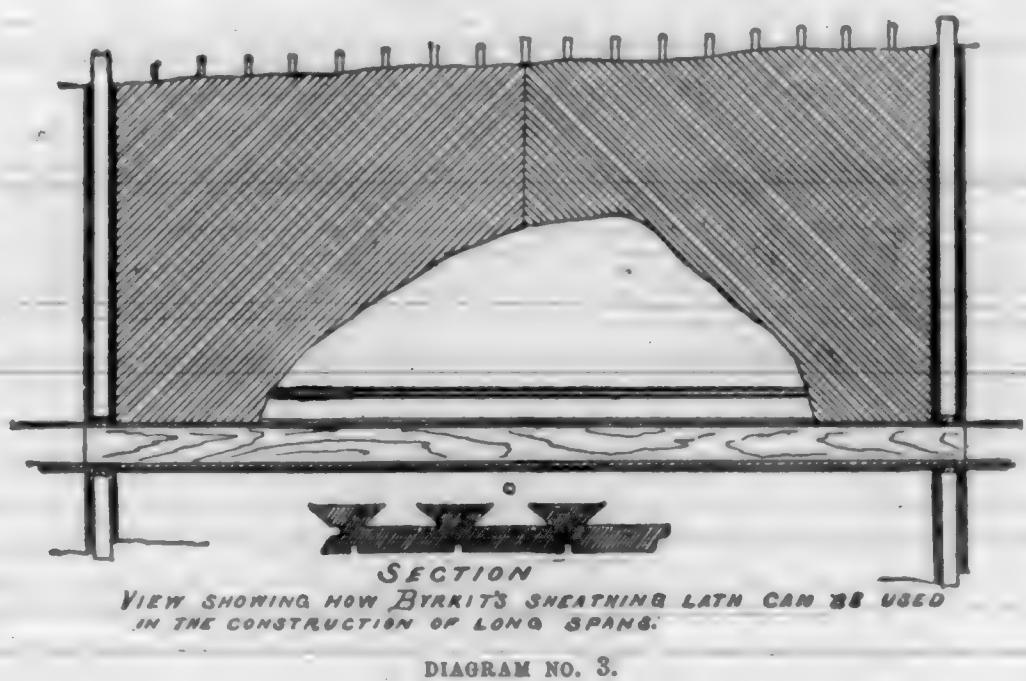
ance companies, with the buildings of mill construction, or the slow burning construction. By referring to illustration No. 1, it will be seen that the exterior walls can be sheathed with this lath, with the keyed groove facing inwards, so while the exterior of a frame building can be finished with siding, shingles or slate, the inward face can receive a rough coat of "back plaster." Again, the interior face of outside studs can be lathed, plastered and finished upon what might be called (for the service it does in this respect), as an *inside sheathing*. The old system of construction involves an outside common sheathing, *extra* furring for back plastering, and finally a coat of lath and plaster, on the in-

An intelligent architect can devise more uses for the material than here described, and he will find the lath is capable of solving more than one tough problem. One such example will be given here. Every architect knows the value of an inch, more or less, in planning within a limited space, studding having been placed the two-inch way, in many instances, to gain room. Now, here is a material that permits of doing away with studding entirely in such particulars. Take the Byrkit lath, double it, placing it back to back, making each piece cross the other at an angle of about 45 degrees, and nail together. When completed, this partition will be a solid two inch partition, plastered on each

face, and stiffer than any stud partition set the two-inch way—since it is one solid wall through and through from face to face of plastering. Owing to the fact that many are not familiar with the material, they have over-estimated its cost, and hence, while well impressed with its merits, they have failed to use it, since they have been misinformed regarding its expense. The actual



cost of plastering with this material is not exceeding 40 cents per yard. Ordinary plastering costs about 28 cents, but with ordinary plastering it must not be forgotten that extra material for sheathing, back plastering, etc., must be furnished, while the Byrkit lath covers all these requirements. The oft-repeated inquiry, "will it crack?" is caused from the long-time sad experi-



ence of old-style plastering. Accordingly, those who are unfamiliar with the principle of construction with this lath, are naturally critical. It has now been used on thousands of buildings in the Eastern States, and has stood the test in many of over five years, and it can be thoroughly demonstrated that *it will not crack the plastering*.

NOTE—The grooves at the back of sheathing shown by sections above are for the purpose of preventing cracking of plaster when the sheathing shrinks in drying.

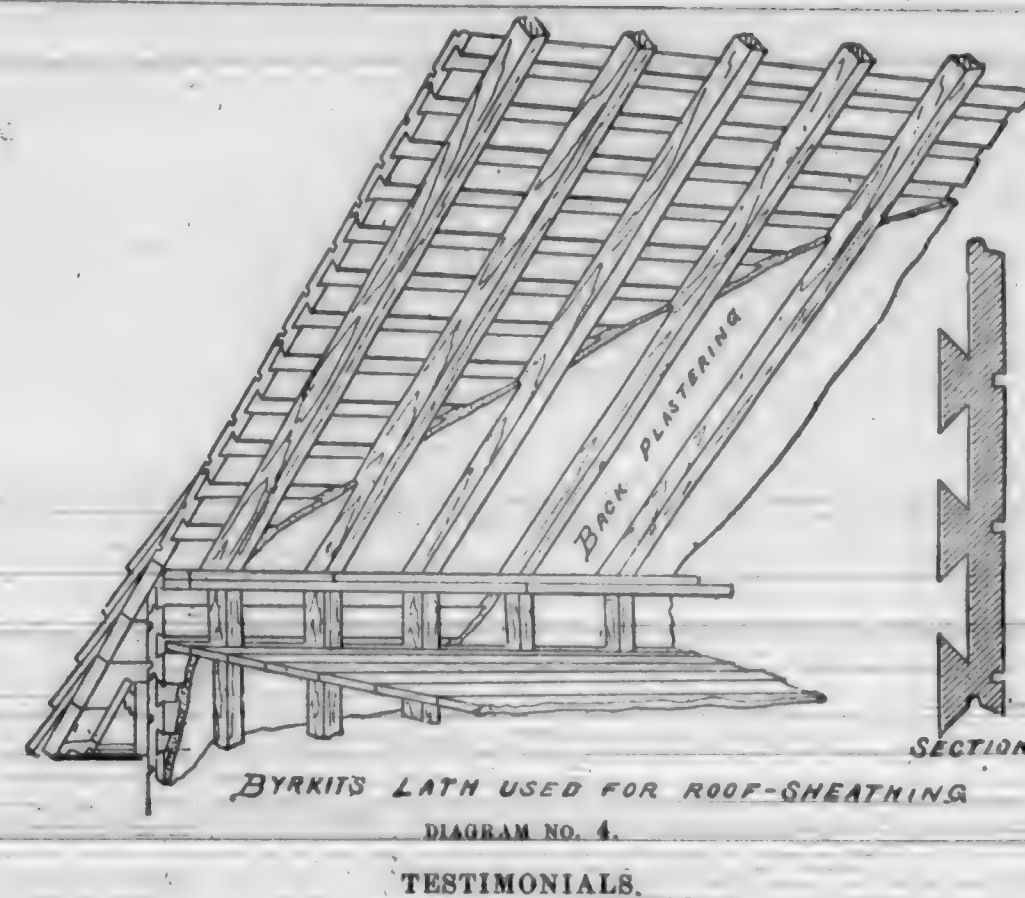


DIAGRAM NO. 4.

TESTIMONIALS.

AKRON, O., Sept. 22, 1888.

GENTLEMEN:—It is with confidence that we bear testimony to the advantages and advisability of using Byrkit's Sheathing Lath for all buildings, the advantages of which are set forth in your claims, all of which we have found by experience to be as represented, and shall not hesitate in the future to use same in the buildings under our charge. We have placed it in the O'Neil & Dyer Block in this city, and also used it extensively in the County Infirmary. Have also specified it for the M. E. Church, East Oakland, Cal., and other churches. Our Mr. Kramer has it in his own residence.

Very respectfully yours,

WEARY & KRAMER, Architects.

CHICAGO, ILL., Oct. 7, 1887.

We have specified and used the Byrkit Sheathing Lath in several buildings which we have erected, and we are well pleased with it and recommend others to try it.

FLANDERS & ZIMMERMAN, Architects,
228 La Salle Street, Chicago.

AND MANY OTHER TESTIMONIALS.

The Byrkit Sheathing Lath has recently been introduced on this coast, and wherever used has given satisfaction. It appears to be a decided improvement on the old style of sheathing and lathing. It is designed to be placed on the inner face of the wall studding, using the ordinary lath on partitions. In some instances, as in the case of Geo. W. Percy, Esq., architect of this city, it has been specified to be used throughout the entire residence, no other lath being used. Among the buildings now erected on this coast, in which the Byrkit lath has been used, the following may be particularly mentioned: Eight avenue M. E. Church, Oakland; J. C. McMullin, Esq., residence, Highland Park, Oakland; Thos. Gardiner, Highland Park, Oakland. A barn has been built by Mr. Byxbee on the corner of 19th avenue and 17th streets, Oakland, using the lath on the outside, placing thereon a coat of cement lined off to represent blocks of stone. It has a very solid, as well as pleasing appearance.

Mr. John F. Byxbee, of 42 Market street, room 2, in this city is the manufacturer and Agent on this coast. By addressing him a note, you will obtain circulars, testimonials, etc., giving full particulars in regard to the Lath.

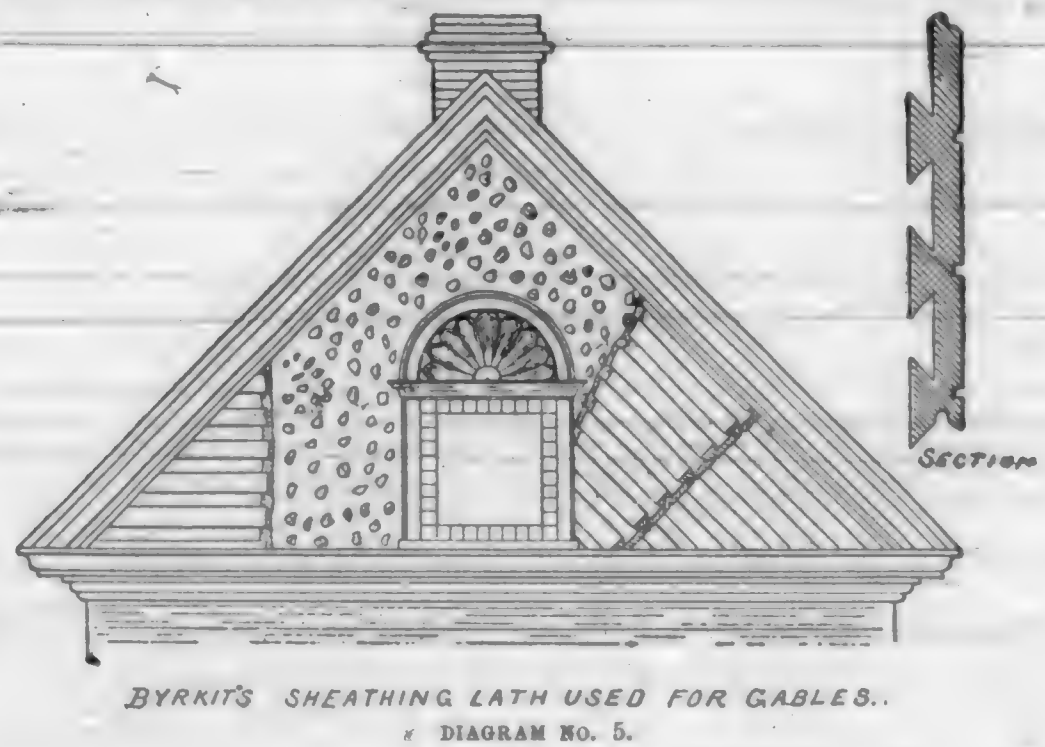


DIAGRAM NO. 5.

The Pacific Land, Loan and Building Company. SAN FRANCISCO, CAL.

The Pacific Land and Loan Company is organized and operated upon the same general principle that lies at the foundation of all building, loan, protective and credit societies, unions and associations. It has all the desirable features of these organizations and possesses some which are not common to them.

GENERAL PLAN.

These Companies are corporations organized and operated under the laws of their locality. They issue stock of a stated par value which any one may purchase, and the holder pays upon the stock a certain monthly sum. The money thus accumulated in a Loan Fund is at once loaned out on real estate security and the profits arising from the investment, and from all other sources, together with the monthly payments (except a small amount which goes into the expense fund), are placed to the credit of the stock. These profits are periodically apportioned and credited by the Board of Directors. With the Pacific Land and Loan Company it is done every three months. Whenever the amounts thus placed to the credit of the stock equal its par value, it is said to "mature," and upon its surrender the holder is paid such amount by the Company. In addition to this the holder of stock may borrow money from the Company if he chooses to do so, re-paying the same in monthly installments.

SPECIAL FEATURES.

Organizations of this character have been universally successful in bringing handsome profits to their stockholders, and at the same time afforded them a safe place of deposit of surplus earnings or of making loans for business requirements. The Pacific Land and Loan Company has sources of security, and profit and special advantages to stockholders, not enjoyed by others. Its large resources, the fact of its doing a national, instead of merely a local business; its system of fines from delinquent stockholders; its lapses of forfeiture to the common benefit; its economy of investing its loan fund, and the small amount allowed to go into the expense fund and consequent economy of management, will cause its stock to mature in about five years, while from seven to ten years are required in the ordinary local Building and Loan Associations to reach the same result.

Moreover, under the loan system of the Pacific Land and Loan Company, the borrower gets his money in advance of his savings, by paying a small monthly interest and premium, has the use of the same before he accumulates it. The immediate and continued use of the money enables the borrower to gain more than he would have to pay for the use of the same. The non-borrower simply contributes his regular installments, and waits until his shares mature and he receives at least one hundred dollars for each.

BONDS.

The Secretary and the Treasurer are each under bonds in the sum of Twenty Thousand Dollars, for the honest and faithful performance of their duties.

COST.

For each One Hundred Dollar share of stock a first payment of two dollars must be paid to the Company, or to its representative or agent when making the application for stock. After that, monthly installments of seventy cents on each one hundred dollar share must be sent to the home office, or paid to a legally authorized collecting agent. The first monthly installment will be due and payable one month after the date of the certificate of stock, and subsequent installments monthly, thereafter, until the stock matures.

PAYMENTS IN ADVANCE.

Any stockholder may deposit with the Company a sum of money for the payment of monthly installments as they fall due. The Company will receipt for the money, apply it in payment of the installments, and notify the stockholder when the sum is exhausted. Interest will be allowed on all such deposits at the rate of five per cent. per annum on the unused portions.

PAID UP STOCK.

Any stockholder may, after making the first payment, pay to the Company the sum of fifty dollars per share in lieu of all monthly

payments. The Company will receipt for the money and will credit the stock thus paid up with the payments of monthly installments up to the time of its maturity.

FINES AND FORFEITURES.

If monthly installments are not paid up when due, fines will be assessed as follows: Ten cents per share for the first month of delinquency; twenty cents for the second, and thirty cents for the third.

If, after the assessment of the last fine, or fine of thirty cents for the third month's delinquency in payment of monthly installments, any stockholder remains delinquent in the payment of such installments or of any fines, for one month, then the stock upon which the monthly installments or fines remain so unpaid, if less than twenty-four monthly installments have been paid thereon, shall lapse and be forfeited to, and become the property of the Company. No notice of such lapse or forfeiture will be given to the stockholder and no sale of the stock will be made, but the stock will re-vest in the Company by virtue of the contract between the Company and the stockholder.

Lapses and forfeitures form an important factor in all institutions that depend upon periodical payments for their support. In most companies a stockholder's failure to make payments when due, works injury to the Company and thus to the other stockholders. With the Pacific Land and Loan Company, the result is directly the reverse. Failure to make payments when due results in fines, and continued failure works forfeiture. The fines, if paid, operate as a profit, and if not paid, the prior payments thereby forfeited become a profit. Either one or the other goes to the credit of the Company, thus hastening the date of maturity of other shares, and diminishing the number of payments required of those who continue to the end. At the same time the Company is relieved of its obligation to pay the forfeited shares.

NON-FORFEITABLE STOCK.

After twenty-four monthly payments have been made on stock it shall no longer be forfeitable for non-payment of monthly installments; but the failure of a stockholder who is not a borrower to make payments on his stock for four months will be construed as an application for withdrawal, and thereupon the Company shall retire said stock, and the stockholder shall be entitled to all the rights of and subject to all the conditions imposed upon a withdrawing stockholder.

WITHDRAWAL.

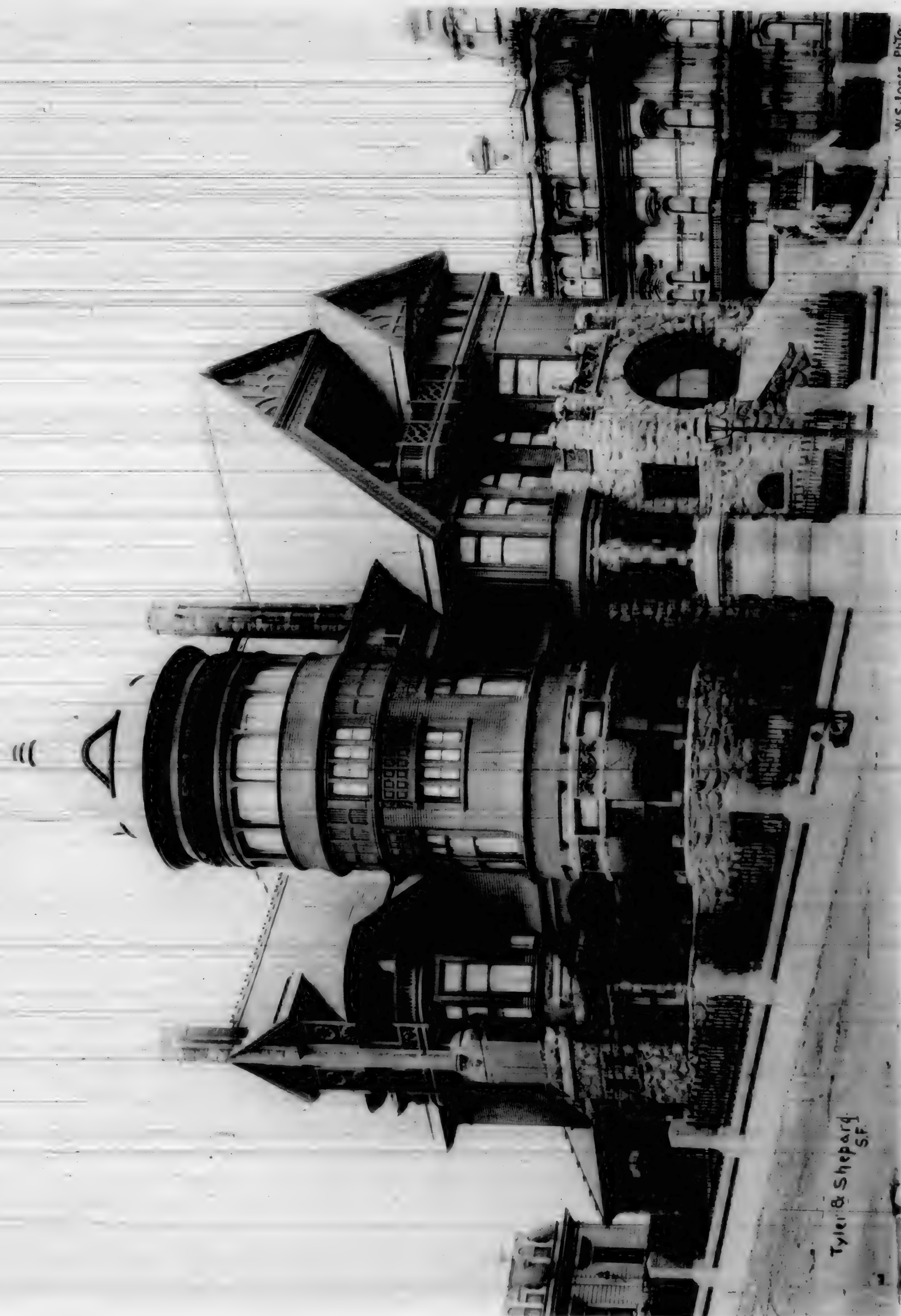
Any stockholder who has made twenty-four monthly payments on his stock and is not a borrower from the Company may withdraw from the Company, and upon such withdrawal shall receive a sum equal to the total sum paid from his monthly installments into the Loan Fund, with six per cent. interest per annum thereon, from the time of payment of such sums into the Loan Fund to the date of application for withdrawal.

TRANSFERS.

Any stockholder may assign his shares, providing said shares are in good standing and no loan has been obtained by the holder, by filling out the assignment on the back of the shares, and having the same witnessed and forwarded to the home office with fifty cents for approval and transfer. No assignment of shares will be valid unless the approval of the Secretary is endorsed thereon. If a loan has been obtained by a stockholder who desires to assign his shares, said shares cannot be assigned unless the mortgage property is also sold to the same party, or the mortgage paid off.

LOANS.

The monthly installment, together with all fines, interest, premiums, and profits from every source whatever, except the first payment, constitute the Loan Fund. The money of this fund is loaned at six per cent. interest per annum, and a premium of seven per cent. Loans can only be made to stockholders, unless there is a surplus on hand unapplied for by stockholders. All loans must be secured by first mortgage on real estate, and no loan shall exceed fifty per cent. of the actual cash value of the security given, except where the money loaned is used for the erection of a building upon the premises mortgaged. No loan of a less sum than two hundred dollars will be made. To entitle a stockholder to a loan he must hold stock the face value of which, at least, equals the loan applied for, and at least four monthly



Residence of W. M. Crocker, Esq.
CURLETT & CUTHBERTSON, Architects.

installments must have been paid thereon, either regularly as they fall due or in advance at his option. Applications for loans must be made directly to the Company and not through any agent thereof, and upon blanks furnished by the Company.

If the loan is desired to enable the borrower to erect a building on the real estate given as security, he may receive more than fifty per cent. of the value of the security, upon giving bond to the Company that the loan will be used for that purpose, and also a bond against mechanics' or other liens.

Interest and premiums are payable monthly at the time of paying monthly installments. Applicants for loans are required to furnish an abstract of title of the property offered as security and to advance ten dollars on attorney's fees for examination of title. No commissions are charged but the borrower pays all expenses. Improved property must be insured and the policy assigned to the Company when the mortgage is made or insurance is effected. Loans may be paid at any time upon giving thirty days' notice and the mortgage will thereupon be cancelled.

Showing the costs and profits to be derived by the non-borrower of ten shares, or \$1,000 worth of stock in five years, the estimated time of maturity of shares.

RECEIPTS.

Cash paid at maturity of stock \$1,000 00

EXPENDITURES.

Admission fee on ten shares, at \$2.00 per share \$ 20 00
Monthly installments on ten shares, at 70 cts.
per share, amounting to \$7.00 per month
for 5 years 420 00
At the time of maturity of shares there will
be deducted for cancellation 3 00
Total amount invested by a non-borrower,
holding ten shares, amounting to \$1,000. \$443 00
Thus at the expiration of five years, the non-
borrower has made a handsome profit,
amounting to 557 00

ILLUSTRATION.

Showing the result to a borrower of one thousand dollars, the borrower having been a stockholder for four months and owning ten shares of stocks.

EXPENDITURES.

First payment at \$2.00 per share \$ 20 00
Four monthly installments at 70 cts. per share
each 28 00

MONTHLY PAYMENTS.

Installment \$ 7 00
Interest on \$1,000 @ 6 per cent. 5 00
Premium on \$1,000 @ 6 per cent 5 83
Total \$17 83

FIFTY-SIX MONTHLY PAYMENTS.

At \$17.83 each \$998 48
Cancellation fee 3 00

Total \$1,049 48

RECEIPTS.

Cash, face value of stock upon maturity 1,000 00
Balance \$ 49 48

In other words, the borrower has paid less than fifty dollars for the use of one thousand dollars for five years, or less than one per cent per annum.

As showing how the system operates with each class, the following illustrations are instructive and suggestive.

ILLUSTRATION.

Showing the result to a borrower who builds him a home, borrower receiving \$1500 and owning fifteen shares of stock.

BENEFITS.

*House is worth money it cost \$1,500 00
Fifty-six months' rent at \$16 896 00
Total \$2,396 00

EXPENDITURES.

First payment, 15 shares, at \$2 00 per
share \$ 30 00
Four monthly installments, before loan is
effected, at \$10 50 42 00
Monthly payment after loan is effected:
Installment \$10 50
Interest 7 50
Premium 8 75

Total for one month, \$26 75

For fifty-six monthly payments 1,498 00
Cancellation fee 3 00 \$1,673 00

Benefits to the builder exceeds the costs \$823 00

The mortgage of \$1500 is now due, but the stock has matured, is worth \$1500 and will cancel the debt.

HOW TO REMIT.

Remittances may be sent to the Secretary at the home office by post office orders, express orders, drafts or registered letters.

SPECIAL NOTICE.

No representative or agent of the Pacific Land and Loan Company has power to waive or alter any of the conditions or terms expressed in the certificate of shares or to make any different or further contracts than set forth in the printed literature issued by the Company, or to give any receipt for money that shall bind the Company, except as herein provided; and further, the Pacific Land and Loan Company will not be responsible for any bills contracted by any person claiming to be a representative of this Company, unless express authority in writing is given him by the Secretary. All negotiations regarding loans must be made with the home office. Agents have no authority respecting them.

Should you desire to become a stockholder, and there is no representative of the Company in your place, send for a blank application, fill it out yourself, sign your name and have it witnessed, then forward it, with first payment, to the Secretary, and you will receive your certificate of shares by return mail.

For further information address:

THE PACIFIC LAND AND LOAN COMPANY,
San Francisco, Cal.

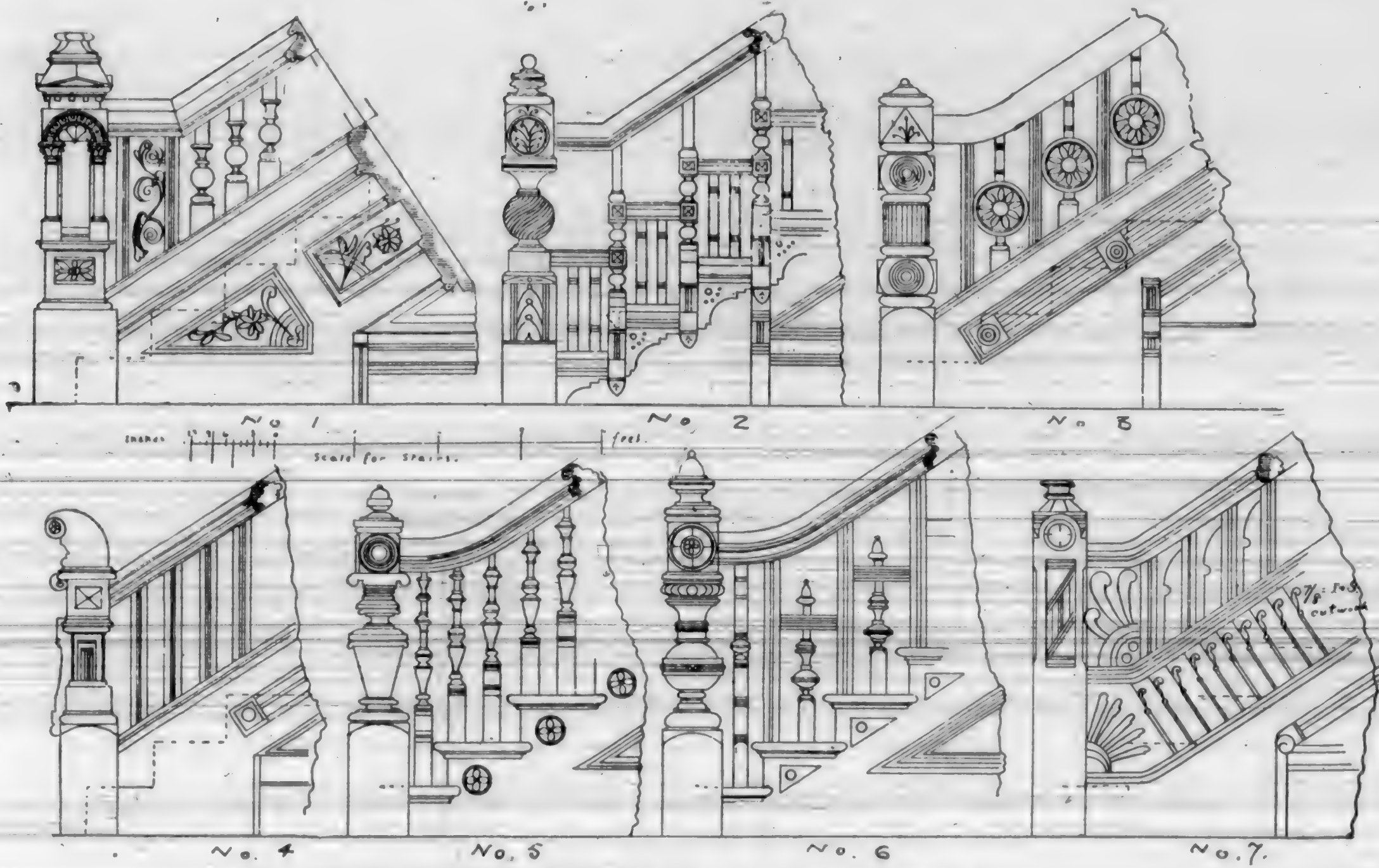
OFFICERS.

WM. J. WILSEY, PRESIDENT.
L. W. HOWE, VICE PRESIDENT.
S. C. HARGREAVES, SECRETARY.
R. H. ORTON, TREASURER.
SAMUEL M. SHORTRIDGE, ATTORNEY.
CHARLES E. GUNN, ASS'T ATTORNEY.

DIRECTORS.

WM. J. WILSEY, San Francisco, Cal.
L. W. HOWE, San Francisco, Cal.
S. C. HARGREAVES, San Francisco, Cal.
SAMUEL M. SHORTRIDGE, San Francisco, Cal.
CHARLES E. GUNN, San Francisco, Cal.

*In almost any locality property will increase in value so as to offset necessary repairs.



DESIGNS FOR NEWELLS AND BALUSTERS.

Just and Proper Methods Which Should be Observed by all Contractors in Their Relations to Each Other in Estimating.

RIGHTS OF SUB-BIDDERS AT THE HANDS OF GENERAL CONTRACTOR.—A principal contractor having been awarded a contract involving subcontracts, his estimate having been based upon sub-estimates, which he has solicited, should award the said subcontracts to the lowest bidders, and should notify the sub-bidders that their estimates have been accepted or rejected as soon as the contract has been awarded to him.

The fact that such sub-bids were received by the principal contractor, previous to the submission of his estimate, should be conclusive evidence that they were used by him.

UNSOLICITED BIDS.—Should a principal contractor receive a sub-estimate unsolicited, he should not be considered under obligation to use the said bid, even if it be the lowest; but he must not reveal the bid, nor use it in any way to influence any other party.

SUB-ESTIMATES IN ARCHITECT'S OFFICE.—Subcontractors should avoid leaving their estimates in architect's offices when they are received there simply as an accommodation to and for the information of principal contractors. By such action there is danger that bids may become known to competing subcontractors before estimates are closed.

Danger Behind the Boards.

In many old country houses there are wide-mouthed, discarded fire-places that have been walled in temporarily or permanently, not with brick and mortar, but with boards. The droppings of soot and ashes from the flues of the chimney throat soon accumulate in a combustible heap on the old hearth, liable, any hour, when there is fire in any stove leading into the flue, to ignite by a falling spark or cinder and set fire to this wooden partition of a perhaps unused room, and the press has another mysterious incendiary to report.

The only safe way is to brick such fire-places, or, if this is impracticable, and the old hearthstone is to be spared for occasional warming, its fire-board should often be removed and its walls and base stones brushed clean of soot and dust filled ashes, that are so readily ignited, else, some night may find your home cremated.

Get Some Tools.

A workman without tools is virtually a cipher. Like a cipher he must depend upon his neighbor for value, for standing alone, he is worthless. Mechanics do not need as many tools now as they did in the days of all hand work. Machinery has changed all that, but machinery will never allow a mechanic to dispense with his monkey-wrench, hammer and box full of small tools.

A mechanic needs no better recommendation than a good chest of tools, well worn and in shape. They tell more plainly than any written "character" what the man is. He may tell you one thing, and yet be another; but a look into his tool chest betrays him. A man who has worked long enough at certain work to be able to call himself skilled therein, should have acquired all the tools necessary, and a man who claims many years' experience, yet can show but few or inferior tools, should be looked at closely before his statements are received.

Many a young man is working at the carpenter's, machinist's or millwright's trade who has not acquired a fair set of tools. The best way for such men is to buy one tool every week, or more if their wages will permit. Another way is to lay aside so much money from each week's wages for books, papers and tools. Divide equally between books and tools, make a list of what is needed, then purchase the first on the list, as soon as the allotted cash amounts to the requisite sum.

But a very few years of this practice will be necessary before the young man has a good kit of tools and a nice little library. Another thing, too, he will have: He will have a habit of saving a little money, and the habit will outlast his tools.—*Manufacturer and Builder.*

ACADEMY

Architecture and Building

3066 South Ninth Street,
ST. LOUIS, MO.

An Institute for Theoretical and Practical Education for Building Tradesmen. Completed within three courses. Terms begin September, December and March. Students may enter in any one of these terms. The Academy will always assist its graduates in obtaining positions as Draughtsmen, Superintendents, Foremen, etc. Send for Prospectus.

H. MAACK, Principal.



CITY BUILDING NEWS.

Burnham near 25th, two-story frame. Owner, Aushek; cost, 1,600.

Dolores corner 24th, two-story frame. Owner and builder, W. W. de Winton; cost, 4,000.

Filbert near Dupont, two-story frame and alterations to three old frames. Owner, G. Musante; architect, W. Mooser; contractor, G. Rocca; cost, 9,000.

Fourth and Minna, three-story and basement brick. Owner, M. A. Hampton; architect, C. J. I. Devlin; carpenters, Moore Bros, 9,376; masons, Richardson & Gale, 8,566; wrought iron, Rich & Firth, 2,820; plastering, P. B. Downing, 1,325; cast iron work, O'Connell & Lewis, 4,200; tinning, etc., Conlin & Roberts, 2,725; plumbing, Fritz & Kean, 1,384, total cost will be about 35,000.

Haight near Lyon, two-story frame. Owner and builder, A. H. Bailey; cost, 18,000.

Jones near Bush, two-story frame. Owner, L. A. Berteling; architect, M. J. Welsh; contractor, R. Parker; cost, 8,500.

Pacific, No. 1338, alterations. Owner, Thos. Kennedy; architect, W. H. Armitage; contractor, J. W. Sims; cost, 2,800.

Stevenson near 20th, additions. Owner, Robinson; contractor, Wilberg; cost, 1,200.

Shotwell near 25th, three two-story frame. Owner and builder, P. Haver; cost, 7,000.

Steiner and Jackson, two-story frame. Owner, A. P. Redding, architect, Chas. Man; contractors, Herbst & McLeod; cost, 10,000.

Stanyon corner Waller, one-story frame; cost, 2,000.

Valencia, between 21st and 22d, three-story frame. Owner and builder, Mr. Partridge; cost, 9,000.

Western Addition, block 198, two-story frame. Owner, John Ryan; architects, Schmidt & Shea; contractor, S. J. Wilkens; cost, 3,200.

The above too late for Classification.

Adair St., flat and stable. Owner, Wm. Gercke; architect, Jos. Kennedy; contractor, Jos. Kennedy; amount, \$2,120; limit, 70 days, signed, May 27; filed May 29; \$550 framed; \$500 roof on; \$600 standing; finished, \$470 completed.

Broderick, near Washington, cottage. Owner, H. Summerhayes; architect, H. J. Summerhayes, contractor, J. B. Gonyean; amount, 2,759; signed, May 28; filed June 1, 689 ready for shingling; 690 brown coated; 690 completed; 690, 35 days.

Buchanan, near Post, additional story. Owner, E. Durbrow; contractor F. A. Williams; cost 2,750.

Clay and Buchanan, painting etc. Owner Mrs. E. B. Hopkins; architects J. C. Mathews & Son, contractor, Geo. Eggers, amount 1,118; signed May 16; filed May 20; 75 per cent. of value of material used, and labor performed, balance 35 days.

Capp corner 24th, three two-story frame. Owner and builder A. Klahn; cost 5,000.

Castro and 16th, two-story flat. Owner Dennis Barry; architects, Townsend & Wyncken, contractor, G. W. Farnum; amount, 4,850; sureties, Harris & Jones, 2,500; signed, May 24; filed May 24; 1,000 framed; 900 ready for plaster; 800 one-half outside work is done; 900 outside doors hung; 1,250, 35 days.

California, between Mason and Taylor, two-story frame. Owner E. B. Pond; architects Mathew & Son; contractor W. F. Judson; cost 16,500.

Cole, between Haight and Page, six two-story frames. Owner and builder, Robert Cranston; cost 54,000.

Church and 30th, additions. Owner Captain Patterson; builder E. C. Worden; cost 2,000.

Dore and Bryant, to build. Owner, L. Cuneo & Co; architect, M. J. Welsh; contractor, C. Daly; amount, \$2,500; \$625 framed; \$625 brown coated; \$625 completed; \$625, 35 days; signed May 6; filed May 6.

Ellis and Franklin, plastering of three houses. Owner, Antonio B. Gonzalez; architect, J. Marquis; contractor, J. O'Brien; amount, \$1,845; signed May 10; filed May 17; \$600 brown mortared; \$400 arches finished; \$345 completed; \$500, 35 days.

Elizabeth, between Noe and Castro, move and alter. Owner, James McLaughlin; contractor, W. G. Jeffrey; amount, 1,550; signed, May 6, filed, May 13; 50 per cent. of material and labor as work progresses; 25 per cent. on completion; balance, 35 days.

Ellis and Franklin, mason work. Owner, Antonio B. Gonzalez; architect, John Marquis; contractor D. Jordan; amount 1,450; signed May 10, filed May 11, 525 area walls built; 525 chimneys and fence walls built; 400, 35 days.

Ellis and Franklin, carpenter work. Three frame buildings. Owner, Antonio B. Gonzalez; architect, John Marquis; contractor Moore Bros; amount 10,987; signed May 10; filed May 11; 1,944 rustic on; 1,944 stairs up; etc., 1,944 glazed etc.; 1,200 ready for painters; 1,155 completed; 2,800, 35 days.

Ellis and Franklin, plumbing. Owner, Antonio B. Gonzalez; architect John Marquis; contractor, Wm. S. Snook & Son; amount 1,046; signed May 10, filed May 11.

Ellis near Gough, preliminary contract. Owner, J. J. Rauer; contractor J. F. Eaton; cost 2,700.

Folsom street and Juniper Avenue, to build. Owner, Chas. Bogan; architect, J. P. Chadwick; contractor, Geo. H. Walker; amount, 9,900; sureties, Irvine Graham and Caspar Dix, 2,500; limit, August 15, '89, signed, May 26; filed, May 31; 1,840 framed; 1,840 floored; 1,840 brown coated; 1,840 one coat of paint on; 2,540, 36 days.

Fillmore, corner Germania, two story frame. Owner, Fred Hueber; architect, W. Schrof; contractor A. Norton; cost 4,800.

Francisco and Kearny, warehouse. Owner Joshua Hendy; architect, John H. Hendy; contractor, Thos. H. Day; amount, 4,035; signed, May 4; filed May 17; 75 per cent. of value work performed on 1st of each month, balance 35 days.

Fair Oaks, between 21st and 22nd, two-story frame. Owner, Thos. P. Stoney, architects, Copeland & Banks; contractor, O. E. White; amount, \$6,200; sureties, Chas. F. Doe and John T. Adcock; limit, 100 days; signed, May 24; filed, May 28, \$1,500 enclosed; \$2,000 outside finish on; \$1,150 completed; \$1,550, 35 days.

Fillmore and Germania, two-story house. Owner, Frederick Huber; architect, Wm. Schrof; contractor Albert Norton; amount 4,325; sureties F. Joost; limit August 17, '89; signed May 18; filed May 21; 850 chimney built; 850 outside finish on; 850 ready to paint, 850 fences and iron railings up; 1,085, 35 days.

Fell corner Devisadero, three-story frame. Owner J. B. Messing; architect W. Winterhalter, contractors Van Borstel & Conrad, cost 10,500.

Guerrero, between 25th and 26th, to build two flats. Owner, Adelia G. Tindermann; architect, Geo. Houston; contractor, Geo. Houston; amount, 3,840; limit, 100 days; signed, April 29; filed, May 17; 960 enclosed, 960 brown mortar is on; 960 white mortar is on, etc.; 960, 35 days.

Golden Gate Avenue and Webster, three-story frame. Owner, A. Lemaire; architect, H. Geilfuss; contractor, L. M. Weissman; amount, \$9,445; signed, May 6; filed May 7; \$1,180 framed; \$1,180 roofed; \$1,180 partitions set; \$1,180 brown coated; \$1,180 inside finish is on; \$1,180 completed; \$2,365, 35 days.

Golden Gate Avenue, near Laguna, three-story frame. Owner J. H. Curley; architect C. I. Havens; contractor P. Crichton; cost 7,500.

Green near Laguna, two-story frame. Owner E. L. Wagner; architect R. P. Waddell; contractor A. G. Vollmar; cost 6,000.

Golden Gate Avenue, between Hyde and Larkin, six, two-story frames. Owner, James Shea, architect, C. J. I. Devlin; contractor, C. P. & G. H. Moore; amount, 9,186; sureties, C. S. Holmes and F. Joost, 5,000; limit, 90 days; signed May 13; filed, May 13; 900 foundation done; 1,200 framed; 1,800 brown mortared; 1,200 plastered; 1,200 ready for painting; 2,300, 35 days.

Golden Gate Avenue, east Devisadero, two-story frame. Owner, David Irwin; architect, Emil John; contractor, Adam Miller; amount, 4,800; limit, Aug. 15, '89; signed, May 10; filed, May 14; 1,000 framed, 1,400 rough mortar is on; 1,200 accepted; 1,200, 35 days.

Golden Gate Avenue and Laguna, three-story frame. Owner, Jno. H. Curley; architect, Chas. I. Havens, contractor P. Crichton; amount, 7,000; signed May 6; filed May 9; 1,300 enclosed; 1,300 brown mortared; 1,300 hard finished; etc, 1,350 completed. 1,750; 35 days.

Howard, Nos. 1703, 1705, 1707, 1709 and 1711 and 207, 209, 211, 213 13th street, brick foundations and repairs. Owner, James Phelan; architect, John Marquis; contractor, Martin Fennel; amount, 4,500; signed, May 15; filed, May 16; 1,650 Howard street houses are finished; 1,650, all accepted; 1,200, 35 days.

Howard and 23d, one three-story and one two-story frame. Owner, John H. Rosenbohm; architect, Chas. I. Havens; contractor, C. Zwielerin; amount, \$9,600; signed, May 2; filed, May 7; \$1,800 enclosed; \$1,800 outside finish; \$1,800 outside mill work on; \$1,800 completed; 2,400, 35 days.

Howard and Seventh, three-story frame. Owner, John Wallace; architect, M. J. Welsh; contractor, Hugh McCracken; amount, 6,531; signed, May 9; filed May 16; 1,632 75 framed; 1,632 75 brown mortared; 1,632 75 completed; 1,632 75, 35 days.

Howard and 10th, plumbing, etc. Owner, estate, James Lick; architects, Wright & Sanders; contractor, Wm. F. Wilson; amount, 12,487; signed, May 6; filed, May 25; 75 per cent. on first day of each month as work progresses, balance, 35 days.

Howard, No. 822, 824, 826, 828, 830, and 832, alterations, etc. Owner, John F. Boyd; contractor, Alexander J. Wheeler; amount, \$26,564 50; limit, September 10, '89; signed, May 24; filed, May 31; \$1,300 ready-to-raise; \$1,500 foundations laid to cellar walls; \$2,500 first tier of joists on; \$2,500 chimney up; \$4,364 brown coated, etc.; \$5,800 completed; \$6,600 50, 36 days.

Howard and Erie, three-story frame. Owner, James Buchanan; architect, S. Hatfield; daywork, cost 7,000.

Jupiter and Bryant, two-story frame. Owner, Maurice Healy; architect, M. J. Welsh; contractor, Thos. F. Mitchell; amount, \$2,340; signed, May 7; filed, May 8; \$585 framed; \$585 brown mortared; \$585 completed; \$585, 35 days.

Laguna, between Pine and Bush, two-story frame and basement. Owner, C. Wright; architect, H. D. Mitchell; contractor, J. B. Gonyeau; amount, 2,480; limit, three months; signed, May 11; filed, May 13; 600 framed; 600 brown coated; 700 accepted; balance, 35 days.

Laguna, near Hayes, build brick foundation. Owner, Mrs. I. A. Mowry; architect, James E. Wolfe; contractor, R. Parker; amount, 1,075; signed, May 28; filed, May 31; 75 per cent. of value of work done, balance, 35 days.

Manitoba, near Vazoo, two-story frame. Owner D. W. Irwin; contractor F. Bohnenberg; cost 3,500.

Mississippi, 150 south Butte, to build. Owner, John T. Cairns; architects, Townsend & Wyneken; contractor, R. O. Davis; amount, 2,944; signed, May 14; filed, May 15; 400 enclosed; 700 brown mortared on; 700 sash hung, etc.; 408 completed; 736, 35 days.

McAllister, west Pierce, two frames. Owner, J. B. Caritey and wife; architect, Wm. Mooser; contractor, Geo. W. Farnum; amount, 11,650; signed, May 21; filed, May 23; 1,747 50 first tier of joists on; 1,747 50 roof on; 1,747 50 brown coated; 1,747 50 glazed, etc.; 1,747 50 completed; 2,912 50, 35 days.

McAllister, west Pierce, plumbing, etc. Owner, J. B. Caritey and wife; architect, Wm. Mooser; contractor, Thos. Clark & Son; amount, 1,050; signed, May 22; filed, May 23; 75 per cent. on first day of each month as work progresses; balance, 35 days.

Minnesota and 6th, to build. Owner, A. Cassini; architect, T. J. Welsh; contractor, Wm. Dorgen; amount, \$1,900; sureties, John Gleeson \$1,000; signed April 29; filed May 7; \$700 brown coated; \$700 completed; \$500, 35 days.

Minnesota, between Solano and Butte, two-story frame. Owner, Margaret Lovett; architects, Schmidt & Shea; contractor, Geo. J. Doering; amount 3,300; sureties, Jacob Ahlback; limit 90 days; signed May 21; filed, May 27; 618 enclosed; 618 brown coated, 618 hard finished; 618 completed, 828, 35 days.

Noe and Ford, two-story frame. Owner, Roger Waters; architect, M. J. Welsh; contractor, E. W. Hyde; amount, 3,600; signed, May 14; filed, May 15; 900 framed; 900 exterior finish is on; 900 completed; 900, 35 days.

Noe corner Ford, two-story frame. Owner, R. Waters; architect, M. J. Welsh; contractor E. W. Hyde; cost 4,000.

Page and Lyon, two-story and basement house. Owner, J. B. Martin; architect, J. J. Clark; contractor, White Bros; amount \$3,730; sureties, T. M. McLachlan and Geo. T. Shaw, \$3,730; signed May 16; filed May 18; \$900 framed; \$900 brown mortared on; \$900 inside finished; \$1,030, 35 days.

Polk and California, alterations. Owner, Mary A. Grant; architects, Pissis & Moore; contractor, T. Hock; amount, \$2,175; signed, May 22; filed May 28, \$1,000, brickwork is completed; \$630, completed; \$545, 35 days.

Pine and Webster, alterations, etc. Owner, John J. Rohrbach; architect, Chas. I. Havens; contractor, R. Doyle & Son; amount, 2,399; signed, May 8; filed, May 9; 599 enclosed; 600 outside finished; 600 completed; 600, 35 days.

Post and Buchanan, frame building. Owner, Regina Mitchell et al; architects Salfield & Kohlberg; contractor, Rohling & Crawford; amount 3,600; sureties, F. Joost and J. J. McKinnon; 3,600, limit 65 days; 900 framed; 900 brown coated; 900 completed; 900, 35 days; signed, May 4; filed May 9.

Pine, between Webster and Buchanan, two-story frame. Owner M. W. Murry; architects Copeland & Banks; contractor J. Geary; cost, 8,000.

Pierce corner Pine, building for Old Ladies' Home. Owner Mary Ann Crocker; architect, A. Page Brown; contractors Mahoney Bros; cost 115,000.

Sanchez and 16th, two-story frame. Owner, L. C. Dibert; architect, C. Zwielerin; contractor, C. Zwielerin; amount, \$3,300; sureties, J. F. Kennedy and L. B. Doe, \$3,000; signed, April 29; filed, May 7; \$1,000 enclosed; \$1,475 completed; \$825, 35 days.

Steiner and Pacific, two-story dwelling. Owner, Mrs. N. G. Kittle; architect, J. C. Mathews & Son; contractor, W. Winnie; amount, \$8,178; limit Oct. 1, '89; signed May 15; filed May 17; 75 per cent. of material used and labor done as work progresses, balance, 35 days.

Seventeenth and Sanchez, two-story frame. Owner, C. H. G. Wiebusch; architect, Bernard Dreyer; contractor Bernard Dreyer; amount, \$4,400; limit, Aug. 10, '89; signed, May 13; filed, May 15; \$1,000 framed; \$1,200 brown mortared; 1,100 white mortared, 1,100, 35 days.

Scott and Bush, two-story frame. Owner, E. Rattigan; architects, Copeland & Banks; contractor, W. E. B. Stiles; amount, \$2055; sureties, G. D. Nagle and E. Phillips, \$1,000, limit, 60 days; signed, May 27; filed, May 28; bills to be paid weekly as work done and materials used; bal., completed.

Seventeenth and Mission, two-story and alter three-story. Owner, Gustave Hueter; architect, H. Geilfuss; contractor, F. W. Kern; amount, 6,800; signed, May 21; filed, May 28; 1,100 framed; 1,000 partitions set; 1,000 outside finish on; 1,000 inside finish on, 1,000 completed; 1,700, 35 days.

Stanton, near Grattan, two-story frame. Owner, D. L. Westover; architect, McDougall & Son; contractor, J. R. McLean; amount, \$5,200; limit, 92 days; signed May 29; filed, June 1; \$500 chimneys up; \$700 ready for shingling; \$750 floors laid; 950 white coated; 900 completed; 1,400, 36 days.

Stockton, near Chestnut, one-story frame. Owner, A. J. Garibaldi; architect, Wm. Mooser, contractor, John Bruce; amount, 3,500; sureties, John S. Morgan and Henry C. Robinson, 2,000; limit, 70 days; signed, May 21; filed, June 1; 75 per cent. of value paid as work is done, balance, 25 per cent., 35 days.

Stevenson, south Herman, to build. Owner, Mrs. H. A. O'Brien; architect, T. J. Welsh; contractor, H. A. Conrad; amount, 2,895; signed, May 21; filed, May 22; 650 framed; 650 brown mortared; 700 completed; 895, 35 days.

Seventh and Howard, to raise, etc. Owner, G. F. W. Fahrenkrug; architects, Huene & Everett; contractor, Jacob Berk; amount, 2,400; signed, May 8; filed, May 9; 600 brick work done; 1,200 completed; 600, 35 days.

Sanchez cor 17th, two-story frame. Owner C. H. J. Wilbusch; contractor B. Dryer; cost 5,000.

Stanton corner Waller, one-story frame. cost, 2000.

Taylor Place, to build. Owner, Mrs. M. Gorman; architect, W. H. Bayless; contractors, Mulford & Rodgers; amount, 1,875; sureties, J. C. Rodgers and W. H. Barton; limit, 85 days; signed, May 7; filed, May 14; 300 framed; 500 first coat of plastering is on; balance at completion.

Tenth and Howard, wrought and cast iron work. Owner, estate, James Lick; architects, Wright & Sanders; contractor, Rix & Firth; amount, 5,500; signed, May 6; filed, May 28; 75 per cent. paid on first of each month, balance, 35 days.

Treat avenue and 26th, alterations, etc. Owner, Wm. F. Klein; architect Chas. I. Havens; contractor R. P. Traxler; amount, 2,475; signed May 23; filed May 27; 550 water pipes in; 550 outside finished; 550 completed; 575, 35 days.

Tennessee and Butte, move and alter. Owner, Herbert Crapo; architects, Townsend & Wyneken, contractor, R. O. Davis; amount 1,275; signed May 10; filed May 11; 200 moved; 450 studded up; 300 completed; 325, 35 days.

Third and Everett, alterations, cost 600.

Van Ness Avenue and O'Farrell, iron lathing for R. C. Cathedral. Owner, P. W. Riordan; architect, T. J. Welsh; contractor, M. J. Donovan; amount, \$3,175; signed, May 4; filed, May 29, 75 per cent. on value of work done, balance, 35 days.

Van Ness Avenue and O'Farrell, plastering. Owner, P. W. Riordan; architect, T. J. Welsh; contractor, Thos. Winters; amount, \$9,300; sureties, Richard Doyle and Richard McCann; signed, May 13; filed May 29; 75 per cent. on value of work done, balance, 35 days.

Van Ness Avenue and O'Farrell, heating with hot water, R. C. Cathedral. Owner, P. W. Riordan; architect, T. J. Welsh; contractor, Duffy Bros; amount, \$3,950; sureties, O. E. Brady and Peter Crichton; signed May 29; filed, May 29, paid on completion and satisfactory test of work.

June 15, 1889.]

THE CALIFORNIA ARCHITECT AND BUILDING NEWS.

91

Van Ness Avenue and O'Farrell, plumbing and gas fitting for R. C. Cathedral. Owner, P. W. Riordan; architect, T. J. Welsh; contractor, Wm. J. Nelson; amount, \$1,798; sureties, \$1,000; signed, May 9; filed May 29; \$899 work is roughed in; \$400 completed, \$499, 35 days.

Valencia and Herman, to build. Owner, M. A. Mercer; architect, T. J. Welsh; contractor, R. Doyle & Son; amount, \$5,969; sureties, P. F. Ward and T. Winters, \$3,000; signed, May 1; filed, May 7; \$1,489 framed; \$1,489 brown mortared; \$1,849 completed; \$1,502, 35 days.

Vallejo, west Gough, two-story frame. Owner, G. T. Bigelow; architects, Percy & Hamilton; contractor, J. B. Gonyean; amount, 5,800; signed, May 17; filed, May 21; 75 per cent. of value work done, first Saturday of each month; balance, 35 days.

Waller and Germania, one building on Waller and one on Germania. Owner, Chas. Maxwell and wife; architect, John Gash; contractor, Jessie Rickard; amount, 6,650; sureties, Michael Casey & J. A. C. Macdonald, 2,000; signed, May 13; filed, May 15; 832 tin roof on; 832 brown coated; 832 brown coated and sash in; 832 two coats paint on; 832 50 complete; 827 complete and accepted, 1,662 50, 35 days.

Waller, near Devisadero, two-story frame. Owner Louis Friedlander; architect P. S. Barber; contractor E. W. Hyde; cost 5,000;

COUNTRY BUILDING NEWS.

LOS ANGELES.

The only way to realize how Los Angeles is growing is to take a ride through the city and its suburbs and note the number of buildings that are in course of construction. Residences of all sorts and descriptions, from the palatial abode of the millionaire to the less pretentious domicile of the breadwinner, are going up by the hundred, and in spite of the vast number of business places already thrown open, there are those who can foresee that the supply is, by no means, equal to the coming demand, and are acting accordingly. Among the additions to the city that are in contemplation is a two-story brick building on the north-east corner of Third and Spring streets, the size to be 140x192 feet. The estimated cost of the project is \$45,000.

NEW BRICK BLOCKS.

It is stated on good authority that the residence of Mr. J. A. Graves, on the corner of Third and Fort streets, will be moved, and that in its place a handsome business block will be built. It will be of brick and four stories in height.

PERFECTION ATTAINED AT LAST.
USE ONLY
POWELL'S NEW IMPROVED
METAL CORED
RUBBER STOPPERS.
SUPERIOR TO ANYTHING
MARKET.
CHEAP
AS THE
ALL BRASS.
FOR SALE BY ALL DEALERS.
NO BRASS STUD TO BE PULLED OUT OF THE RUBBER.
WONT INJURE THE MOST FRAGILE EARTHEN BASIN.
CANT BE FLOATED OUT OF ITS SOCKET.
MANUFACTURED ONLY BY
THE WM. POWELL CO. CINCINNATI, O.

SANDSTONE.

Arizona Red and Pink Sandstone, which for strength and uniformity of color cannot be excelled, can be furnished in quantity and sizes to suit.

Prices reasonable.

O. E. BRADY,
Mason and Builder,

Room 11, box 22. 14 MONTGOMERY ST., S. F.
822 VALENCIA ST.,
Fort & Temple, Los Angeles.

Two new blocks are contemplated near the cable engine house, in East Los Angeles, and they will be commenced very shortly.

A Main street architect reports that he has plans for four business blocks, which will be commenced in about six weeks. Two of these are on Main street, one on Los Angeles street, and the other on Spring street.

BUILDING NOTES.

The excavations for the foundations of the J. M. Griffith building, on Fort street, is about completed. This building is to be five stories in height, and will cover an area of 120 feet on Fort street by 150 in depth.

The foundations for the building to be occupied by the Los Angeles Athletic Club, on Spring street, near Third are being put in.

Mr. O. W. Childs is about to make extensive additions to his residence on Main street. The plans are in the hands of Mr. Hass, the architect, and the additions will cost, when completed, in the neighborhood of \$15,000.

A contract has been completed between W. H. Jay, of Glendale, and J. A. Murphy and H. E. Dillon, of this city, to, on or before the 17th of July, 1889, erect and finish the building to be known as the West Vernon School house. The cost of the structure will be \$2,190.

OAKLAND.

One of the most conspicuous and handsome houses in this city is being put up on the east side of Harrison street, south of Durant, by Toohig & Moore, for D. Edward Collins. The house is after plans prepared by Charles Mau. The house is of two stories, with attic and basement. The cost of the building complete will not be far from \$14,000.

The same builders have under way a two-story flat of twelve rooms on Webster street near Fourteenth for a Mrs. Mour, to cost about \$6,000.

On Ninth street between Harrison and Alice streets L. H. Levy is erecting a double two-story flat of six rooms in each flat or twenty-four in all. The building is of substantial modern construction and cost about \$7,000.

A handsome two-story modern house of two stories with nine rooms, bay windows, and all conveniences is being erected on the west side of Harrison street, near Durant by Mrs. J. W. Roland of which W. H. Weilbye is the architect and contractor. The cost of the improvement is about \$4,500.

At the southwest corner of Seventh and Alice street a two-story house of twelve rooms is being put up for Josephine Nolan by Hugh McCracken, to cost \$2,500. The same contractor has recently completed a cottage on the opposite side of Alice street for Jeremiah Casey, at a cost of \$1,900.

Contractor S. J. Shelper is erecting a handsome two-story tenement house of eighteen rooms for J. C. Adriance on the corner of Sixth and Madison streets for \$5,000.

E. L. G. Steele has had some extensive repairing and improving done to his house on the corner of Sixth and Jackson streets. He is now having a stable erected on the lot immediately adjoining his house. Con Cannon is the contractor.

S. R. Andrews is erecting two cottages of five rooms each on Madison between Fifth and Sixth streets. The cost will be \$1,500 each.

A neat little cottage of five rooms is being erected by J. H. Babcock on Fourth street between Oak and Madison. The cost will be about \$1,000.

On Third street between Jackson and Madison, the house of Mr. Lewis which has been raised is being improved with an additional story beneath. Contractor Louis Macomber is doing the work.

Louis Macomber is erecting a cottage of five rooms on Third and Alice streets for Mrs. Lizzie Honohan. The cost is \$1,750.

J. A. Easton has contracted to erect a building for J. Nelson, to cost \$1,800.

A. S. Barney has contracted with E. J. Farnham to erect a building on Oakland avenue, near Vernon street, to cost \$2,600.

Smith & Lake are building a double flat on Nineteenth and Brush streets for J. Hayes, after plans by W. H. Weilbye.

W. H. Weilbye has prepared plans and is putting up a handsome two-story house for Ex-County Clerk Andy Ryder at Loomis, Placer county, where he will make his home.

Toohig & Moore are building a two-story house for Mr. Murry on the corner of Twenty-eight and Myrtle streets to contain seven rooms and cost about \$5,000.

Mrs. J. W. Roland is putting up a two-story flat on the west side of Chestnut street near Tenth of modern design and containing five and six rooms each. W. H. Weilbye is the architect and builder and the cost will be about \$5,000.

The cottage of Mrs. Hinkling on Campbell street, between Seward and Taylor streets, is being remodeled and an addition built at a cost of about \$900. I. H. Underwood is doing the work.

Mahoney & Shay are the contractors for a seven room basement cottage being erected to the order of Dr. R. E. Cole on Union street, near Tenth, to cost about \$2,500.

On the west side of Union street, between Tenth & Twelfth streets, W. H. Martin is building for himself two modern two-story houses of eight rooms, to cost \$2,800 apiece.

The new residence of W. H. Sigourney on Third avenue and East Fourteenth street is built by W. H. Weilbye, after plans of his own, and will cost when completed about \$10,000.

Jesse Rickard has contracted with Josephine, wife of R. Mastick, to erect a building on lot 77, Encinal Park tract, Alameda, for \$3,050.

W. H. Weilbye is building a barn 30x49 with a 15 foot shed, on Broadway near Durant, for Whittier, Fuller & Co., to cost about \$1,000.

SAN DIEGO.

The subjoined list of buildings is only a partial one, and represents only the more important building enterprises, still it foots up a total of some \$200,000. This does not include the new opera house nor the changes in the Consolidated bank building, besides many other structures, now planned, but not yet in course of construction.

About two months ago the excavation made for a building over a year ago on the corner of Fourth and E streets, began to look as though something was to be done towards erecting a structure there. The plans were made and work was soon commenced. The building is now up to the second story, as far as it will be built at present. Messrs. Pauly & Gassen are owners, and expect to expend \$65,000 in the construction. McDougal & Sons are the architects, and J. C. Sloan has the contract for the work.

The foundation was laid this week on Sixteenth and N streets for a warehouse 50x90 feet, and two stories in height. It is a frame structure, costing, perhaps, \$5,000. It is being built by Captain Sherman, and is to be used in connection with the San Diego, Cuyamaca and Eastern railroad freight depot. It will probably be covered with corrugated iron, and will be finished in about two months.

B. R. Arnold has a two-story brick building in course of construction on his lot on the north-east corner of Fifth and K streets. The building will cost in the neighborhood of \$12,000.

Monday morning work will be commenced on the Backesto block, on Fourth and H streets. It will be two stories and basement, built entirely of brick. W. F. Fitzpatrick has the contract. The building will cost about \$25,000. J. P. Backesto, of San Jose, is the owner.

The two new school buildings are going rapidly forward. On the one on Twenty-fourth and K streets about fifty men are em-

ployed, and it is all inclosed. The roof is partly on, and the plumbers are at work in the basement. The one on Sixth and B streets is only up to the second story, but the work is being pushed, and both will be completed in time for the September term. They are both built on nearly the same plan, Comstock & Trotsche being the architects and J. P. McCormick the contractor. The total cost, furnished, will be in the neighborhood of \$30,000.

Mrs. Parker has laid the foundation for a two-story frame dwelling at the corner of Union and Albatross streets. The estimated cost is \$5,000.

In the early part of next month Judge Pierce will commence work on his residence on Florence Heights. It will be a one story frame structure, to cost \$3,000.

Many private dwellings are receiving alterations and additions amounting to from \$200 to \$1,000, so that builders are kept in a reasonable amount of work.

FULTON.

Calvin Osborne is erecting a commodious dwelling.

SAN LEANDRO.

A contract has been placed on record between F. I. Williams and Rev. John McEvoy for the erection of an addition to the convent in San Leandro to cost \$5,530.

SAN JOSE.

[From our Special Correspondent.]

First, between San Antonio and San Fernando, two-story brick and sandstone business block. Owner C. Doerr, architects J. Lenzen & Son, contractor J. H. Kohlhauer, cost 20,000.

First, between Santa Clara and San Fernando, three-story brick and sandstone business block. Owner Mrs. Knox Goodrich, architect G. W. Page, contractor for carpenter work, R. Summers, 4,860, contractor for brickwork, W. J. Wolcott, 3,777, total cost 8,637.

Brown, corner Delmas Avenue, one and one-half story cottage. Owner S. H. Leach, architect J. O. McKee, contractor A. J. McIlvain, cost 2,000.

Fountain Alley, additions to building, Owner L. Archer, architects, J. Lenzen & Son, contractor F. Davis, cost 2,521.

Crittenden, near St. John, one-story cottage. Owner H. Prindle, architect J. O. McKee, contractor J. E. Clinton, cost 1200.

Second near Santa Clara, additions to M. E. Church. Owner M. E. Church, architects Lenzen & Son, contractors Mabury & Phillips, cost 4,636.

Tenth and San Antonio, one-story cottage. Owner J. R. Patton, architect J. O. McKee, contractor J. J. Hill, cost 3,000.

Seventh near Keys, two-story dwelling. Owner J. B. Wyatt, architects J. Lenzen & Son, contractor A. Kelsey, cost 3,000.

ALAMEDA.

A modern \$3,125 cottage house will soon be erected for Mary C. Lewis on Verdi street, near Santa Clara avenue.

SANTA ROSA.

A brick addition to the building occupied by P. H. Kroncke, of the Santa Rosa Planing Mills, is being put up, 40x61 feet, one-story high.

HAYWARDS.

Daniel Luce, of Haywards, is about to erect a \$12,000 brick block on B street in that town.

Mr. Hackett will commence the erection this week of a \$1,500 barn for Dr. Du Bois on his place on Haywards avenue.

Mr. Hackett has secured the contract for building another \$2,000 cottage on the corner of Hayes and Ward streets for Dr. Du Bois. The work will be pushed, as the cottage has already been spoken for.

REYNOLDS & ADAMS,

547 Brannan Street,

Hardwood Flooring,

Parquetry Floors,

Wood Carpets,

—AND—

ENGLISH TILE FLOORS.

Designs and Estimates furnished on application.

F. W. KRELING & SONS,

Manufacturers of Elegant

PARLOR and CHAMBER SETS,

DINING-ROOM, BANK AND OFFICE FURNITURE,

WOOD MANTELS AND INTERIORS,

Rich Upholstery, Draperies, Bedding, Etc.

SOLE OWNERS OF THE

SQUARE & CTAGON TURNING MACHINES.

For Balusters, Newel Posts, Etc., Etc.,

WAREHOUSES:

534 and 536 MARKET STREET.

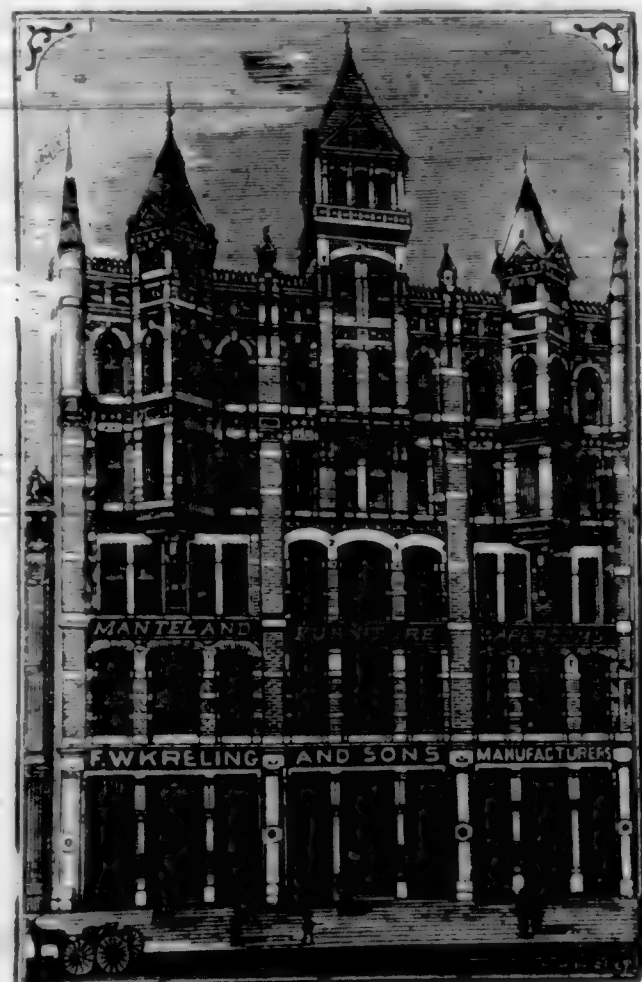
Telephone 3192.

FACTORY:

319-329 GUERRERO STREET.

Telephone 6113.

SAN FRANCISCO, CAL.



The * California * Architect * and * Building * News

VOLUME 10.

ENTERED AT POST OFFICE SAN FRANCISCO, AS SECOND-CLASS MAIL MATTER. ESTABLISHED JANUARY, 1879.

NUMBER 7.

Official Organ of the San Francisco Chapter, American Institute of Architects.

NOW IN ITS TENTH YEAR.

Established Jan. 1879.

Incorporated Jan. 1889.

+THE+

California Architect & Building News

PUBLISHED BY THE

California Architectural Publishing Co.

Office, 408 California St. * * Next to the Bank of California

PUBLISHED ON THE 15th DAY OF EACH MONTH.

TERMS, PER ANNUM, - - - - \$2.00 IN ADVANCE

ADVERTISING RATES FURNISHED ON APPLICATION.

SAN FRANCISCO, JULY 15, 1889.

FOR some time, the question has been agitated in regard to the consolidation of the American Institute of Architects and the Western Association of Architects. To decide the question, a vote was taken simultaneously in New York and Chicago. Even the most sanguine friends of consolidation did not foretell the unanimity with which the project would be received. In the American Institute, but nine negative votes were recorded. In the Western Association a still more positive vote was polled. Out of a total of 265 votes there were but three against the proposition. We do not know by what name the new organization will be known; the *National Association of Architects* has been suggested. The old name of the *American Institute* is dear to scores on this coast and we should like to see it retained. San Francisco has one of the largest Chapters, in point of numbers, in the Union, and one and all of its members wish a long and happy life to the new organization.

WHILE our city savants are considering the subject of durable pavements, they should also consider the hygienic qualities of the materials used. In 1878, over 12,000 people died in New Orleans from yellow fever, and it is stated as a fact, that a large proportion of that number contracted the disease from the germs held by the absorbent pavements in use at that time in the city. Where asphalt is used, there are no crevices to hold dirt. In cobble stone pavements especially, there are innumerable crevices which hold the dust and other organic matter, in summer and pollute the air by its exhalations in damp weather. Another fact should be seriously considered. Stone pavements as ordinarily laid absorb this organic matter, which, festering in the earth, becomes a breeder of disease. There is a serious question for all City Councils to consider besides the one of a few dollars difference in cost, and that is, what pavement is the best, in a hygienic sense, for the welfare of our people!

A RECENT decision in a New York Court of Appeals, would lead to curious results if our own Judges should decide the same way. The Judge declared "that a stable, however well it may be built, is a nuisance in the vicinity of handsome residences, and that an action can be brought to have it removed." In this city, most of the fine dwellings have a stable in close proximity thereto and are regarded as valuable adjuncts. We think, however, that in the decision, reference was only made to livery stables or the immense buildings used by the Car Companies for their stock. It would be difficult to control Californians in the selection of a site for a stable, as some of the finest ones are located in the midst of various districts devoted to artistic dwellings.

DURING the six months ending June 30, 1889, there was received in this city 134,352,727 feet of pine lumber and 94,400,715 feet of red wood lumber. Of shingles, the number is 52,294,325, while the figures 13,232,100, represent the number of laths. In connection with the spruce, laurel, ash, maple and oak sent to this city, the grand total number of feet received is 230,000,000. This is the largest amount ever received for a similar period in the history of the city.

WHILE the above is true in regard to the amount of lumber received, it must be allowed that many previous similar periods have been much more satisfactory as regards business. Prices are reasonably low, yet a very large quantity of lumber is piled up in our lumber yards awaiting purchasers. The late disastrous fires in Seattle and other towns, will, for the purpose of rebuilding, draw from those who supply this city, many millions of feet, that would otherwise be added to our already extensive stock on hand.

EXPORTS of lumber are not as large as usual so far this year being, to the date given, but 6,744,901. The largest amount for a single year was that of 1882, when the total reached 22,094,393 feet. In 1888 the amount was 21,000,915, while the former year exceeded the latter in number of feet, the value of the shipments of the latter year was greater by about \$100,000, showing that a finer grade of lumber was exported.

SUB-CONTRACTORS and contractors should take notice of the following provision in the new lien law of Ohio: "Any contractor or sub-contractor, who shall purchase materials on credit, and represent at time of purchase that the same are to be used in a designated building or other improvement, and shall thereafter use, or cause to be used, the said materials in the construction of any building or improvements other than that designated, without the written consent of the person of whom the materials were purchased, with intent to defraud such person, shall be deemed guilty of a misdemeanor, and on conviction, shall be punished by a fine not exceeding five hundred dollars."

IN another section a good point is represented which declares "that every person for whose immediate use, enjoyment or benefit, any building erection or improvement shall be made, shall under this Act, be included in the words owner or proprietor."

AMERICAN elevators, so far, seem to have the preference in European cities. Per example, two of those in use in the Eiffel tower are of American manufacture, the other two being French. While the speed of the latter is 200 feet a minute, the former is just double or 400 feet a minute. Thus, the products of American genius are gradually being introduced throughout Europe. In connection with above we may add, that in comparison with this country, the elevator is but little used in the continent of Europe.

A PRINCIPAL contractor should have a list of selected subcontractors, on whom he is satisfied he can rely both for good work and for its prompt execution, and such only should he ask for bids. He knows that there are subcontractors whose offers would involve him in loss, no matter how low their estimates might be. When a mason is carrying up the walls of a building, and is compelled to stop work and discharge his men in the midst of their operations for the want of cut stone or of iron or other work, delayed through the want of executive efficiency on the part of the subcontractors for such part of the work, he not only experiences a loss of temper but also a considerable amount of his anticipated profits. The architect is also considerably chagrined to find the progress of the work thus brought to a sudden stop, and comes to the conclusion that he is also materially interested in the proper selection of the subcontractors. He, therefore, evinces a certain amount of reasonable concern, when the principal contract is awarded, as to who are to be the subcontractors, and thus there is established an interested relation also between the subcontractor and the architect. Fortunately for the latter the former knows that it is necessary for his work to pass the inspection of the architect and to meet with his approval before it will be accepted by the principal contractor.

ONE important measure was introduced at the late meeting of the National Association of Builders. Briefly stated it is as follows: On certain work contractors are required, when submitting estimates or closing contracts, to furnish bonds, and, in order to comply, are obliged to ask friends to become responsible for them. This necessity is always an embarrassing one, and while, on the one hand, the contractor feels very delicate about asking the accommodation, on the other hand his friends consent with great reluctance. The suggestion referred to is that a bureau or department of the National Association be established, which may furnish such bonds under proper conditions and for a satisfactory consideration. The committee appointed, reported favorably in regard to the suggestion offered and recommended that steps be taken to establish such a bureau. The matter will be discussed in full at the next Annual Convention.

WHEN the trades unions set up their rules limiting the number of apprentices to be taught their trade in any shop, they did it for the purpose of preventing the market being over-stocked with skilled labor and the consequent reduction of wages from an over supply. Contrary to expectations the rule has not worked as intended. Skilled workmen in every branch of mechanical trades are more numerous than ever. Those who are the most injured by the rule, are the sons of Americans, who are virtually prohibited from learning their father's trade. Our employers are constantly obtaining skilled labor from Europe, who take the places that should be filled by our own children. Is it any wonder that we see so many young men drifting around our streets, when they are actually debarred from entering our workshops and learning a legitimate trade.

THERE appears to be such a thing as a diagnosis of disease in wood and the botanical physicians profess to know that it may be contagious or sporadic. Dry rot is called contagious and it is said that the germ of that disease may be communicated to sound wood by tools which have been at work in diseased. It is thought possible that the theory accounts for many incomprehensible breakages of timber. The suggestion is that sound lumber should not be cut with the same saw, without cleaning, that has passed through stuff affected by dry rot.

FIRE crackers have caused a loss during the past five years of over \$2,000,000. Pennsylvania seems to have suffered the most. It is a noticeable fact, that fires started from fire crackers exploding, have a small average loss. In this city of wooden buildings, too much care cannot be exercised in preventing conflagrations, and it is an open question if some other more appropriate way cannot be devised for our youth of both sexes to celebrate the noisy Fourth than by the heathenish way of exploding fire crackers. Fireworks can be tolerated, but the dangerous Chinese bombs, double heads and fire crackers should be suppressed.

How to Teach Boys to Become Bricklayers.

THE following practical remarks were delivered by President Stevens at the late annual Convention of the National Association of Builders:

I have my ideas on the above subject, and I will express them to you. You want to know how we would teach a boy to be a bricklayer in our school. First, I would have a lecturer to teach him by lecture all that could be taught him in regard to his business, or the materials connected with it; for instance, I would have the lecturer tell the boy what sand is made of and all about sand; I would have him tell the class what lime is made of and how it is made; I would have him tell the class what bricks are made of and how they are made; I would have him tell them all about cement and explain to them its nature and combination. By the time the boy was through with those lectures he would know why you could not make mortar,—I am an iron man, and I do not know much about bricklaying, but I will tell you all I know about it,—the boy would then know why you could not make mortar out of ashes and lime, or out of loam and lime. He would know why you had to use gravel and why you had to use sand.

After the boys have been taught to that extent, I would have them taken to a limekiln and let them have an object lesson,—let them see how it was done. I would have them taken another day to a brickyard, and let them see how bricks are made. I would have them taken to one of our terra-cotta establishments, and let them see how terra cotta is made. I would suppose then, so far as that was concerned, the boys' education was completed theoretically.

Now comes the question, "What shall we do with them?" I would have then a first-class journeyman mechanic, a journeyman bricklayer,—such a man as you would make one of your foremen to take charge of your buildings,—and I would have him take these boys, a class of say six or eight, or ten, and say to them, "Boys, you have been told by your professor how mortar is made; now I am going to show you." Then he would call up his laborer, and say, "Here, Billy, bring so many bushels of lime, and so many bushels of sand," and he would bring them and put them down on the ground. Then the teacher would tell them "Now, when you put water on this lime, it slacks it. Now, we are going to put water on this lime and we will see it slack." Then we would mix that up, and it would make mortar, and he would be talking to them, and all the time they would be seeing. That finished, he would say to the boys, "The first thing you have to learn is how to use a trowel. Here are the trowels. Now, William, you put a shovelful of mortar on each one of those boards, and each one of you boys take a trowel, and I will show you how to spread this cement and mix the mortar," and keep the boys practicing at that, and say, "George, that ain't the way; do it this way." They would soon learn how.

The next day he would come there, and say, "Boys, I am going to build a wall for you, and I want you to see how I do it." He would dig out, and commence to lay it out, and talk to the boys as he went on; "Boys, we spread our mortar this way; we take our bricks this way; this is the way we put a leader; we run up three courses here and three courses there, and we use this plumb-bob to see that it is plumb, and then we strain a line over this way and lay a number of bricks in proportion. That is the way we will do it." Then we would tell the boys how he was going to strike the joints. He would build that wall with those boys looking at him. "Do you understand that, boys?" "Yes." Then he would say, "William, have this wall torn down and everything cleaned up. Now, boys; to-morrow morning we will go to work," and the next morning he would say to the boys, "I want each one of you to lay out a wall as I did yesterday. You saw me do it, and I want you to do it." They would start in, and he would watch them. "John, don't pick up your bricks that way, this is the way. Bill, you are not doing as I showed you, run that corner up and run this up. George, that is not the way to hold the plumb-bob, hold it this way, and strike your joints this way."

Do you think those boys would learn anything? I think in six months' time I would have pretty good bricklayers out of those boys. After I had taught them how to put a wall up, I would take them on pressed brick-work, and I would teach them how to run arches; and I think those boys would learn more under six months' instruction of that kind than they would in six years in your building with nobody to tell them, and left just to pick up what they could.



SKETCH FOR A COUNTRY DWELLING. M. G. BUGBEE, ARCHITECT.

OUR New City Hall has been the subject of much inquiry among many of those who have watched its gradual advancement in regard to the money so far spent in its construction. We are able to give full particulars in regard to the same, which should be kept for reference.

The New City Hall to June 30, 1889, has cost \$3,750,106 59 and there should be added to this and deducted from the balance in the Treasury, for payments to fall due on existing contracts, the sum of \$29,653 73, and the total cost to date will reach \$3,779,760 32. The estimated amount to complete the New City Hall, without considering the cost of a mansard roof, but finish the two McAllister street wings, the basement and unfinished rooms in the main building on the upper floors, lay out the walks and grounds, erect all proposed granite steps and fences, and build a suitable main tower, will amount to \$1,000,000 additional and absorb the balance unexpended June 30, 1889, together with the levy for this and most of that allowed as the limit for the next two fiscal years. This will make the New City Hall cost, when finished complete, without the mansard roof, about \$4,780,000, and take until the latter part of 1892.

On February 2, 1874 over fifteen years ago, architects David Farquharson and John P. Gaynor submitted a report to the Board of Supervisors containing a detailed estimate of the cost to that date and the amount required to finish the building as above, without the mansard roof. They reported: * * * "The total cost of the building would be the sum of \$4,854,060," which is not very far out of the way, as appears at this date.

TO calculate the number of shingles for a roof, ascertain the number of square feet and multiply by 9 if shingles are laid 4 inches to the weather, by 8 if laid 4½ inches, and 7½ if laid 5 inches. The length of rafter of one-third pitch is equal to three-fifths of width of building, adding projection.

IF our architects should adopt the above absurd rule, how long would it be before the profession would be classed among the "Lost arts." When the sewing machine was introduced what a hubbub was raised that it would cause thousands of women to be thrown out on the charities of the cold world. In early days flooring was worked by hand, and a tough job it was was too. When a machine was made through which thousands of feet could be run in a day, a universal howl was made that the bread and butter was to be taken from thousands of men. Same way in regard to molding machines, mortise and tenon machines, by which it is possible to make hundreds of doors in a single day. Shingle machines caused a universal growl among the craft. In fact, every improvement in machinery was received by a howl from those whom the old fashioned ways supported. Reference is only made to these few facts to show how differently the situation is to-day from the "good old times." Give our own boys a chance to learn a trade, and with their natural abilities, they would soon outstrip the imported men, rendering it unnecessary to send abroad for the very skill that lies dormant in our midst.

Business Changes.

E. J. Weston has opened an office at 873½ Market street and will in future devote his whole attention to his profession as an architect.

John & Balcynski have gone into partnership and secured offices on the corner of Grant avenue and Geary street.

M. G. Bugbee is nicely located at 330 Pine street.

Shingles, Hips and Valleys.

HINGLES in valleys and on hips last longer when laid with their grain running in the same direction as that of the hip or valley. When they are cut on the angle, the end wood absorbs water and hastens rot, whereas the straight, close running grain of the wood rejects the moisture more, and leaves the shingles more durable. Few carpenters can now be found, except among the older hands, who are familiar with this mode of shingling, as it is really a very old, yet excellent one, and yet comparatively simple, involving little more time than the later and inferior method. All that is necessary, is to taper the shingles so that they radiate as it were from the angle of the hip or valley to straight joint square to the eave. Combs on ridges are scarcely to be recommended, but if they must be employed for the sake of economy, are best run up on that side on which the angle of the rain in that latitude usually falls. Tongued and grooved ridge boards are an improvement on the comb, that is, if the joint is well bedded with white lead. Wooden ridge rolls are better still, and the best of all is the galvanized iron trestling. Rolls and ridge boards should be well nailed through the shingles and into rafters, and not to the shingles only. Hip shingles should be cut with the saw to make a straight job and not hewn with the hatchet, and properly overlapped.

Another Question of Law.

THE *American Architect* has another question of law propounded by a subscriber as follows:

A builds a block of tenement houses and employs B, an architect, to prepare plans, let and superintend the works, C is contractor and D a sub-contractor. The specification has this clause in it: "The contractor or his sub-contractors, and his and their workmen, must agree (and this writing is the agreement) that they shall remove from the building any work or material not in accordance with the plans, details, elevations and specifications. And they must agree that the opinion and decision of the architect is binding to them, as well as it is to the proprietor." The sub-contractor D signs a contract with the main contractor C to the same effect, that is, that the opinion and decision of the architect is binding to all, etc.

The specification further reads, that it must not be understood that the sub-contractors will receive certificates direct from the superintendent. The main or principal contractor only will receive these, assigned for the special benefit of the sub-contractor.

Now, D, the sub-contractor, quarrels with C, the main contractor, as to certain works to be done and which he (D) tries to avoid; finally he is compelled to do them, and gives final receipt for all his work, including all disputed matters. A day after D, the sub-contractor, calls on the architect with a bill of extras, one-fourth of which the architect acknowledges as correct, and three-fourths as incorrect, and then, because the architect refuses to agree upon the whole, D sues the principal, A, for a number of items and damages in which all the disputed matters settled with the main contractor, C, figure again.

The question before the architect, B, is this:

Question.—1. Shall the specifications and contract stand good before the law where it says that the main contractor shall only get certificates to be assigned to the sub-contractor?

2. Shall the agreement of A with the main contractor and his sub-contractor, "that the opinion and decision of the architect is binding to them, as well as to the proprietor," remain valid in law?

As you have a legal gentleman attached to your editorial staff, we will be pleased to see the *American Architect's* answer to these questions, as it is a matter in which every citizen making a contract for a building is interested.

Respectfully yours, V. & S.

Answer.—We do not find anything in the contracts and other facts referred to in the above communication to prevent D, the sub-contractor, from collecting his claim from A, the owner, providing he can satisfy a jury that the work which he claims as an extra was ordered by the owner or by the architect, and, in the latter case, that the architect has authority to give the order. The terms of the contract and the fact that there was any contract at all between the plaintiff in the action and the principal contractor, would have nothing to do with the case except as evidence tending to rebut the plaintiff's claim that the work in question was done under contract between him and the owner. The decision, however, in such cases is always with the jury; a

written contract between the plaintiff and some third party is evidence merely and not conclusive; and if the jury believes that the owner and plaintiff entered into a separate and distinct arrangement for the work in question they will find for the plaintiff.

The clause in the sub-contract subjecting all matters of dispute to the decision of the architect would have no binding force in any action between one of the parties to this contract and a third party. The owner not being a party to the contract could take no advantage of the clause.

Whether the receipt given by the sub-contractor to the main contractor covered the work in question would also be a question for the jury; if the work was outside the sub-contract and undertaken under a direct arrangement with the owner, of course a receipt given to the main contractor would not bar the sub-contractor from recovering the price agreed upon with the owner.

We are therefore compelled to answer both of the questions which our correspondent puts at the end of his communication in the negative; that is to say, the specifications and contract would not "stand good before the law," nor would the decision of the architect be binding, at least in the sense which our correspondent means. This whole question, like most of the disputes that are continually arising in the building trade, is one of fact simply; and the best way to avoid them is for the architect not to get a general authority from the owner to order extras, but whenever anything is needed, that is not in the contract, to make a new formal contract in writing, either with the main contractor or some other person. — *American Builder*

A Painter and the Architect.

A GOOD deal of attention has been directed of late to the relationship which exists between the painter and the painter and the architect. The subject has been discussed at length in our columns, and was debated at several of the painters' conventions lately held.

A careful study of all the opinions advanced shows that, while the trouble may be attributed to a variety of causes, the peculiar position which the painter occupies as sub-contractor is largely responsible for it. There are drawbacks attendant on the position of all sub-contractors, as they are dependent more or less upon the completeness of the work of those who have gone before them. The painter's lot, however, is hardest of any for it is the painter who has to make good the work of all the others.

As a business man a contractor carefully estimates the work he is to perform, and gives in his price accordingly. But how is a painter to allow for the work he may or may not have to do in filling open joints and making good the resinous and shaly timber?

Of course the architect should not pass such defects; but if he does, the painter has no remedy. As a fact, the architect or superintendent does not scrutinize the work in progress with such minuteness as he does at its completion, and thus is the poor painter made the scapegoat.

One way out of the difficulty would be for the painter to insist upon the insertion of a clause in his contract that all work delivered to him should be in proper condition. A remedy is certainly worth trying for. — *House Painting*.

Architectural Picture-Making with Pen and Ink.

BY B. LINFOOT. PUBLISHED BY THE OLD ELOR COMPANY.

This work is intended to convey to the architect and student, the manner in which a building may be portrayed on paper so as to convey to the mind of him who is about to build, that the bright jaunty free hand sketch shown, will when finished in the reality, be just what is wanted. Some men will spend months looking for a desirable location for building; when found, an architect is selected to prepare the plan. May be he gets a sketch of a very good house, but in such hard straight-lines, that it produces on the client a feeling of disappointment, and frequently of abandonment. In this work, the architect is shown how to keep the enthusiasm of his client alive and active, by submitting sketches of his contemplated work and surroundings. To the student, the illustrations termed "Sky Suggestions," are worth careful study. They will show what few lines are absolutely necessary to form a picture.

The book is handsomely illustrated with 32 large plates in size 12x18 inches. We will have copies of this work on sale, which will be furnished at publishers price, \$4.

The Children's Home at the Park

The accompanying engraving fitly represents the new play house for children, which has lately been finished, and is now one of the features of Golden Gate Park. Messrs. Percy and Hamilton were the architects. The view presented is a very good one, and gives an adequate idea of the structure without an extended description.

An Apology—Academy of Science Building.

For the past two months, our engraver has been at work on a fine cut of the Academy of Science Building. The engraving was finished and was in the hands of the party who runs the ruling machine, to put on the border, etc. By one of those unaccountable accidents which sometimes happens, the block broke into a dozen pieces, and of course was rendered utterly useless. Immediate measures were taken to reproduce the engraving, but they were unavailing to have the same ready for this issue. It was a grievous disappointment to the manager as well as to hundreds who had engaged copies as a souvenir, for the ceremonies of laying the corner stone on the 12th of July.

A Tin Roof.

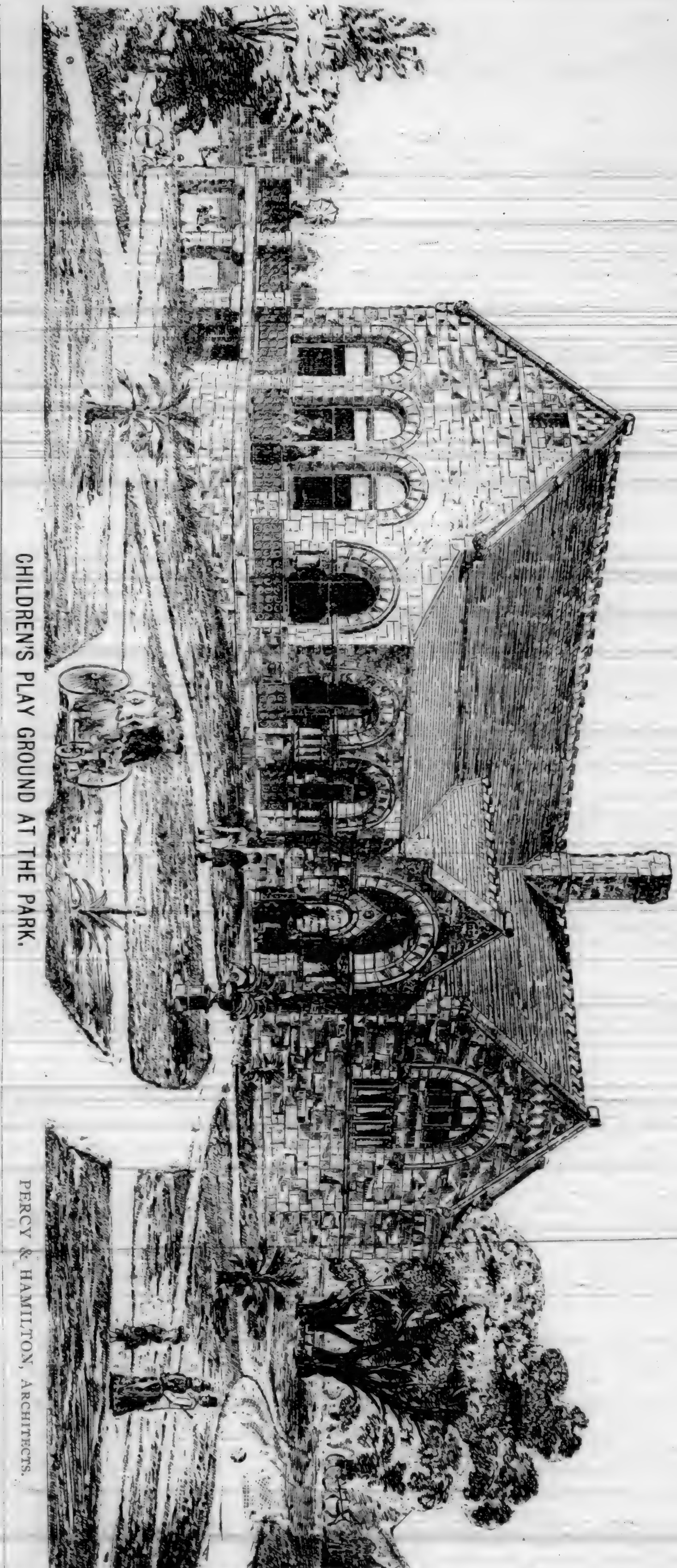
Messrs. Merchant & Co., have just issued a book entitled "A Tin Roof." It is a neat, handsomely bound volume and will be sent free to all applying for the same to Merchant and Co., Philadelphia. It is very instructive in regard to the best methods of laying tin plates, and although it is not egotistically written, still it does convince its readers that the plates manufactured by Merchant & Co., are among the best in the market. Architects especially should see that the above mentioned book is in their reference list.

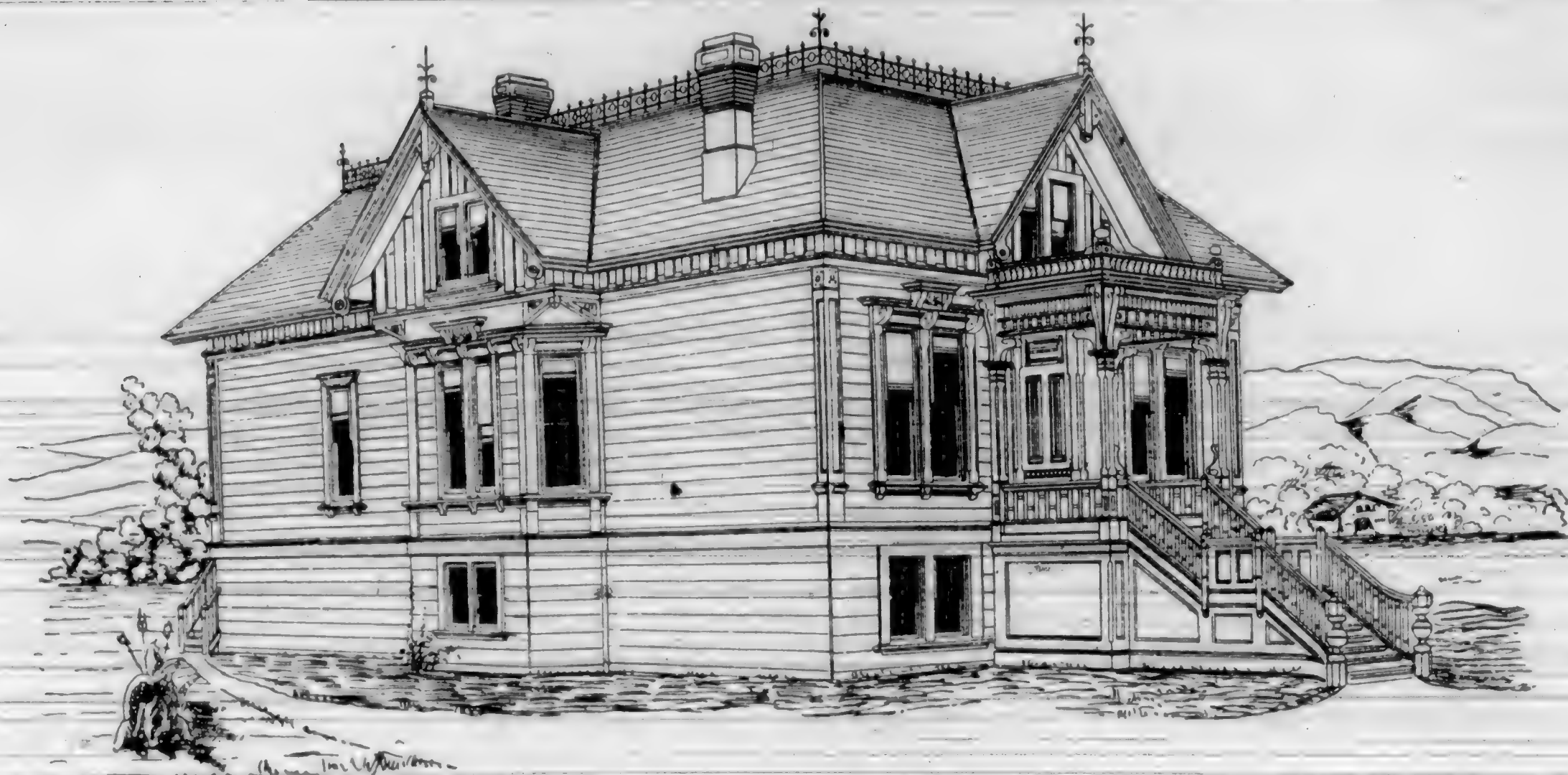
Palliser's American Architect.

Messrs. Palliser have taken a new departure in their publication department and now issue a quarterly number, giving 100 pages of designs and plans for every description of a country dwelling. These quarterly parts begin with April 1889, and are sold at \$1 00 each. The subscription price is \$4 00 per year. They are in paper covers, but may also be had in cloth covers at \$2.00 each.

Mechanics' Institute Fair.

Several times we have called the attention of our mechanics to the necessity of having an exhibit of mechanical skill at the next fair of the Mechanics' Institute. We have been spoken to in regard to the matter more than once. A committee has been appointed by the Chapter of Architects in regard to a similar matter, and information can be obtained through either G. W. Percy or H. T. Bestor.





ELEVATION OF A COSY COUNTRY COTTAGE.

Brick Piers.

THE only way to build a good and substantial pier of brick is to lay each course the full size of the pier, and not to, as is often done in this city, build up the outer four inches of the pier seven or eight courses high and afterward fill in the interior, as it is impossible to get proper bed or bond; brick of the hardest possible quality only should be used where heavy weights have to be borne. Avoid bats and use as little mortar as is necessary to get solid work. Make the size of piers so that whole brick can be used to obtain proper bond; tamp each brick after it is laid in position with a hammer or brick.

In small piers lay the brick on a bed of mortar and flush up solidly every course; in larger piers make a joint or rub on the bed and lay headers every fourth course. If bond stones are to be inserted the joints should not be too tight, say from three-fourths to an inch in thickness, the larger the pier the larger the joint, and bedded high in the middle, and in no case on the outer edges of the pier only. Use cement in all mortar in connection with lime, and wet the brick in all cases where there is not any danger from frost; where iron plates or coils set on bond stones, the plate should cover the bond stone as nearly as possible. The present custom of laying brick in dead walls gives one the impression that the quantity of work done is of far more importance than quality. The only way to obtain good solid brick walling is to either flush the joints solid with mortar every course, or make a shove joint; the former method takes too much time, and the latter is rarely done except in very heavy work.

The custom generally adopted is to spread the mortar on the brick (a portion only of which gets in the joints) and lay the brick on top, each succeeding course being bedded in mortar, but the longitudinal and cross joints are only partially filled. Grouting with cement mortar every two courses in height might be adopted for basements and first stories of buildings where unusual strength is required. Full headers for face brick are better than clipping and should be specified for all heavy buildings. The face brick are often built up fifteen or twenty courses high before the backing up is done, and thus the wall is never well bonded and sufficiently tied together.—*Building Budget.*

Sad as well as pleasing duties have to be met in the publication of a Journal, and to us, a notice of the death of Mr. Andrew Carrigan, of the Dunham, Carrigan & Hayden Co., who lately passed away is a truly sad one. During many years of business intercourse, his kindness of heart and nature, combined with strict business qualities, manifested themselves in numerous ways, and his loss cannot be other than a severe one—not only to those dear to him by the sacred ties of love, but to the firm of which he was an honored member, and the host of attaches and business and personal friends, who will miss him from their circle.

What Becomes of Our Saws.

IT is estimated that there are about 400,000 carpenters and joiners in the United States, and when we know the Disstons, of Philadelphia, employ 2,100 hands and turn out four hundred dozen saws a day, we are in a quandary to know what becomes of all the saws. True, there are about 150,000 people employed in the furniture trades, and perhaps 75,000 more as wheelwrights and millwrights, but, all who would be likely to use saws will not figure up more than one million; and suppose that each one of these workers should make use of five saws—say one rip-saw, one crosscut, one panel saw, one tenon and one compass—this would need about 5,000,000 saws to suit the wants of the workmen in the United States; but this does not cover the whole ground, for every house should contain at least two or three saws—a cut-off saw, a butcher's saw and a hack saw—thus swelling the needs to at least another million. Then there are the blacksmiths, the machinists, the plumbers, and a host of others who work in metals who require hack-saws and wood-saws of various kinds, which will probably foot up another million. There are also the gardeners, the saw mill men, the surgeons, the ship-builders and many other people who must have saws, and who probably require one million, so that it will not be stretching the matter at all if we say in round numbers it requires about ten million saws, of all sorts, to satisfy the needs of the 65,000,000 of people in these United States. So that after all, the 4,800 saws turned out daily by the Disstons do not do much more than make up for wear, breakages, losses and the new conditions that crop up with each new day.—*The Builder and Wood-Worker.*

New Work on Hand-Railing.

Nonpareil System of Hand-Railing. By John V. H. Secor, 5 1/2 x 8 1/2 inches. 78 pages. 157 line engravings. Bound in cloth. Price, post paid, \$2.

Mr. Secor is a practical stair-builder of many years' experience, and has put into the little book on hand-railing, which he has just issued an exposition of those principles which he has long employed in his own work. The learner is led step by step from the simplest problem encountered in stair-building to those of the most complex character. The work is preceded by a glossary and is supplemented by a very complete index. A leading feature of the book is the method of ascertaining the length of the mold. The system of bevels presented is also simple and of universal application. The book is adapted to the needs of any one in the line of joinery who desires molds for any kind of stairs that may have been constructed. The cuts and text are placed side by side, and in all respects the book is arranged in a way to be attractive to the reader and useful to the student.

Nashville's Estimating Rules.

THE rules under which estimates in the building trades will hereafter be submitted in Nashville, Tenn., are given below as an example of the effect of concerted action in the direction of uniformity:

1. General drawings, when offered for final or competitive estimates, should be presented on a scale not less than one-eighth of an inch to the foot, and details not less than three-fourths of an inch to the foot. These should be done in ink or by some process that will not fade or obliterate, and be complete in all parts. Specifications should also be presented in ink.

2. The specifications, figured drawings, and details should be taken as the guide for estimating, and all demands made by the specifications or said drawings should be covered in the estimates offered, unless objection be made thereto in writing when the estimate is submitted.

3. Specifications should be plain and definite, and everything required in the various branches of work should be mentioned, described and grouped under appropriate headings—each trade to itself.

4. When the specifications require goods of a certain manufacturer, or material of a certain quality, the name and catalogue number of such manufacturer's goods, and the trade mark of such material, should be mentioned in the section to which such goods or materials belong.

5. Bills of quantities should be left to the intelligence of the contractor, and shall not be required of the architect.

6. Contractors should be responsible to each other for work damaged during the erection of the building.

7. When the contractor for the whole is to be restricted as to whom he shall employ as sub-contractors, that fact should be named in the specifications.

8. Contracts should be closed at some stated time, and no estimate should be considered if received after that time has expired.

9. Contracts should be awarded within ten days from the time of closing estimates.

10. Architects should invite to bid on the work only those from whom they desire an estimate on that particular job.

11. All bids received from those not invited should be excluded.

12. No contractor should make an estimate in an architect's office unless invited to do so.

13. When a contract involves the taking down or using the material of an old building, it should be fully set forth in the specifications.

14. No bids should be exhibited or made known by either architect, owner, or principal contractor before the time for closing estimates on the job.

15. No contractor should be allowed to alter or amend his bid after the time of closing estimates.

16. Contractors should decline to give estimates in the aggregate when bids are being received under the separate heads. Sub-contractors should also decline to give the architect or owner an estimate for his branch of the work when bids are being received for the work as a whole.

17. When the contract is to be completed within a certain time, that fact should be mentioned in the specifications, giving the date; and if a penalty for non-completion by the specified time is to be exacted it should be so stated.

18. The bidder to whom a contract is awarded should be required to sign a contract and furnish bond or withdraw his estimate.

19. The principal contractor should pay the sub-contractor in the same manner that the sub-contractor receives his estimates from the architect, when the work is let separately, to wit: 75 per cent. as his work progresses, and a final payment when his branch of the work is completed satisfactorily.—*Sanitary News.*



PLAN FOR A COSY COUNTRY COTTAGE.

A Cosy Country Home.

The above plan, with the elevation on opposite page, will, in furnished in the reality as shown by the engravings, be a more than ordinary cosy home. There is no attempt at elaboration in the elevation. Neatness has been the essential requirement. The plan meets all the requirements of a moderate sized family. If desirable a fine billiard room can be made in front part of basement. S. C. Newsom is the architect who has kindly furnished us the design.

Subscription price of this Journal is \$2.00 per year. Examine the Contents of this Issue and see if it is not worthy of your support.

On Cutting Rebate.

BY DAVID DENNING.

IF the question, what kind of plane should be used to form rebates or rabbets with? were asked of two men, both workers in wood, but one of them a carpenter and the other a cabinet maker, the answers would probably differ. The carpenter would probably say a fillister, the cabinet maker a rabbet plane; perhaps going a step further, each would say the other was making a mistake. The inference which might naturally occur to the mind of the non-technical from such different opinions would be that either tool might be used, or that neither of the men knew what he is talking about. Paradoxical as it may seem, both these inferences are correct, for either the rabbet plane or the fillister may be used in making any ordinary rebate, and the man stating that one or other tool should be used exclusively, could certainly know very little of the work to be done by the other.

How then does it happen, it may be fairly and properly asked, that two men, both presumably skilful in their own departments of joinery, one the cabinet making and the other the building, use different tools to effect the same result? The answer is simply because each finds the tool he advocates is the best for his own purposes. Ask a cabinet maker why he prefers a rabbet plane, and he will at once say that it is better for the comparatively small work he is generally employed in making. It is to the fillister what the smoothing is to the jack plane. Even the toiner will at once acknowledge that if a finely-finished rebate is wanted, the rabbet plane may be used with advantage, but only after the fillister has done its share of the work. The cabinet maker, on the other hand, will object to using the fillister at all, unless, indeed, on exceptional pieces of work or from personal idiosyncrasy. He will state that any advantages which may exist in the fillister are rendered useless from the account of labor required to force the cutter in front of the iron through hard wood—a piece of Spanish mahogany, for example. He is not far wrong, for though it would be incorrect to say that a rabbet could not be cut with a fillister—the side fillister in ordinary cases preferably—in hard wood no sensible man would voluntarily choose the tool which induces the greatest amount of fatigue when another would answer his purpose as well or better. In soft wood, such as the builder mostly uses, the fillister cuts well enough.

But, says this individual, only just look at the convenience of being able to "set" the fillister to any gauge, and the fence to serve as a guide; the rabbet plane is destitute of these, and with it the work cannot be so well done. What is there to keep the plane straight?

Well, skill assuredly counts for a good deal. If a man has been in the habit of working without a fence, he does not feel the need of it so much as another who has been trained to depend on it. Of course, a line to work must be marked in some way, with an ordinary gauge, for instance, or, where extreme accuracy is not required, by drawing with a pencil. Careful manipulation does the rest. As for the actual details, such as the mode of holding the plane and the use of accessory tools, they vary. One man will use the plough to form a groove to the required depth, another will be content with cutting gauge and chisel to remove a little of the waste wood before taking up the rabbet plane, while a third will simply rely on his fingers. Each, if he be intolerant of other ideas than his own, will claim his own method as the best, and doubtless it will be for him; but if he be a man of liberal mind he will at once say that there is no absolute best, and that it altogether depends on the custom of the worker.

It is rarely indeed that a good practical artisan, who has arrived at the years of discretion, has not found out which is the most convenient way for himself personally to use the ordinary tools of his craft. He may go to the length of telling youngsters who ask him which way he finds best, or even in friendly chat will discuss with others equally as competent as himself the pros and cons of various methods, but as for saying that every other but his own must be wrong—well, to do so would not reflect credit on his intelligence, but it might, and very likely would, be very strong presumptive evidence that his work would be that of a "duffer." Not that even such workers are not useful sometimes, so if any of them read these lines, and feel inclined to take umbrage, perhaps they will kindly remember that the word is used in a Pickwickian sense, and that they are frequently to be relied on for doing whatever they have been accustomed to do—

turning the grindstone, for instance, to the entire satisfaction of all concerned.

But, it may be inquired, do no workers fall into bad habits in their methods? do they invariably choose the best for their particular purpose? To answer this fully it would be necessary to consider many points in detail; but without by any means suggesting that absolute perfection exists in any workshop, professional or amateur, it may safely be conceded that most mechanics have a very fair idea of what suits them best. The cabinet maker and the carpenter can therefore very well agree to differ on cutting rabbets and the proper tools to use, remembering that to find fault with each other simply shows imperfect knowledge of the requirements of both trades, however competent one may be to express an opinion about his own. "Eh, mon, it's a great peety that we canna a' think alike; but ah'll no change ma ain opeenion for that o'ny ither body." "Ma ain opeenion" is that it is at any rate rash to condemn other methods of tools if we do not know the reasons for them being used; and that occasionally, very occasionally, the least little bit of toleration of other people's mode of working might be better than done at all, or whole-sale condemnation.—*American Workman.*



Builder's Association.

The Builder's Association have elected the following named to serve as officers for the ensuing term: President, S. H. Kent; Vice-President, M. C. Lynch; Recording Secretary, A. Jackson; Treasurer, W. B. Kroger; Executive Committee, J. Mahoney, C. C. Terrill, J. R. Wilcox, J. J. Dunn, R. K. Anderson, A. Norton, C. E. Dunshee, Financial Secretary, Louis Albert Larsen.



New Sheathing Lath.

Since the publication in our last issue of the method of placing the Byrkit Lath in position, we have received several inquiries in regard to the same. Architect Percy is using it in his fine \$12,000 house which he is now having erected on Contra Costa's fair shores. Full particulars may be had by addressing John F. Byxbee, No. 42 Market street.

Metrical Measures.

This term means a system by tenths, the same as we employ in computing common numbers, carrying one for every ten, or transferring from one division to another whenever ten, or a unit of the next higher division is reached. The metrical system means simply the application to lengths, volumes, weights, areas, and so on; the same rules we use in abstract numbers, and is only common sense applied to practical use; no matter if it is opposed by some people who rank high as those of judgment and learning.

This division of measures and weights into metrical or decimal units was first done in France, to the great credit of that nation, who are the "classifiers" of the world. An old European adage says: "The German people deduce, or draw conclusions, the French 'classify' and the English 'apply.'" This does not however, apply to the metrical system, the inception of which, as well as classification and application came from France.

Nearly all the countries of Europe, except England, have adopted decimal divisions, or the French metrical system. In the United States metrical divisions are legalized, but owing to English influence, some commercial reasons, and the opposition of people who do not "think," the system has made but little progress. In some cases we have been compelled to adopt it. The coinage of the country is decimally divided, so also are inches, because the absurd binary division into halves, quarters, eighths, sixteenths, and so on, while convenient enough for working purposes, does not answer at all for computation. The multiples for our lineal measure are independent of fractional quantities, 12, 3, 5, 40 and 8, representing inches, feet, rods, furlongs and miles. In adding up lengths there has to be a distinct column for each of these divisions, and we first carry 1 in 12, then 1 in 3, next 1 in 5, then 1 in 40. Could anything be more absurd? This is the "compound" addition and multiplication of our school books.

English money has to be written in three columns, each with a sign over it to indicate its place as pounds, shillings, and pence. The multiples are 4, 12, and 20, not counting farthings, four of which make a penny, but people's patience breaks down at farthings, and three columns only are used. Comparing this with dollars, cents and mills, or as we should say, dollars, dimes, cents and mills, the advantage will be seen. We set down a row of figures thus: \$12345, it means "money;" the dollar sign qualifies all. If one figure is pointed off it becomes dimes, if two are pointed off they become cents, or dimes and cents. To divide by 10 we point off one figure; to divide by 100, two figures, and the sum, let it be what it will, is treated just the same as common numbers and decimals.

In the French metrical system there are employed short terms indicating the division as follows: *Milli*, 1000th part; *Centi*, 100th part; *Deci*, 10th part; *Deka*, 10 times; *Hekto*, 100 times; *Kilo*, 1000 times. The first three are below unity. Adding *Meter* to the term above, we have *Millimeter*, *Centimeter*, *Decimeter*, *Dekameter*, *Hektometer*, and *Kilometer*. These are the terms for measures of length, and take the following form:

Kilo-meter.	Hecto-meter.	Deka-meter.	One-meter.	Deci-meter.	Centi-meter.	Milli-meter.
1000	100	10	1	.1	.01	.001
To compare with this we will arrange a foot, the common British and American unit, in the same manner.						
Mile.	Rod.	Yard.	Foot.	Yard.	Rod.	Mile.
5280	164	3	1	.333	.0666	.00018

The utter absurdity of such a notion is apparent on its face, and no one attempts to defend it on other grounds than present expediency.

The London *Engineer* says such notation is "like a language," turns English measures into metrical to show it does not produce even fractions, with other "balderdash" not worth while to repeat. Mr. Coleman Sellers, of Philadelphia, is a champion of the English system, and among other commercial arguments against the metrical system, says machine patterns would be lost. Granting this to be true, which it is not, it would be much the same to say canal boats and stage coaches will be lost by building railways, hence railways should not be built. There are no scientific arguments worth repeating.

Our remarks and illustrations thus far relate to linear measures alone. The same thing, only in an aggravated degree, applies to other measures. Weight, volume and area are the same, a jumble throughout. The bushel is an illustration. There are nearly as many "bushels" as there are states in the Union.

California has happily got rid of this nuisance, and computes in most cases by quantities decimally divided.

We are not arguing for the immediate adoption of a decimal or metrical system, but to urge the readers of *INDUSTRY*, especially the younger ones, to learn the method and prepare for its adoption which is sure to come in future. There is a vast difference between admitting and understanding the results of a new thing, and adopting it.

National jealousy, we suspect, lies at the bottom of British opposition to metrical measures, and may have something to do with the matter here, but common sense should teach that science and learning have nothing to do with national lines, and opposition on such grounds is mere bigotry. At least one-half the scientific literature of our time is written in metrical quantities, and not to be familiar with the method is a great impediment to understanding, practice and progress in those countries where metrical divisions are employed.—*Industry.*



Wastes of Society.

Fresh air is something which God has set great value upon, but which most men think little of. In this is the heritage of health.

Architects seldom find an Owner of a Dwelling, who is willing to live, as God meant he should, by breathing *Fresh Air*, all for the sake of saving a few dollars, which ought to be expended in providing for Ventilation. Men of wealth pay more attention to the architecture and adornment of their homes, than to proper ventilation.

There is nothing more poisonous than the effluvia and exhalations that proceed from man.

In a close room where a family is assembled, they will, in twenty minutes, breathe the air over once—in another twenty minutes they will have breathed it twice—in another twenty minutes three times, and by that time every person in that room will have inhaled the effluvia from every other person in the room.

What wonder then that our streets are filled with wan-visaged men, women and children.

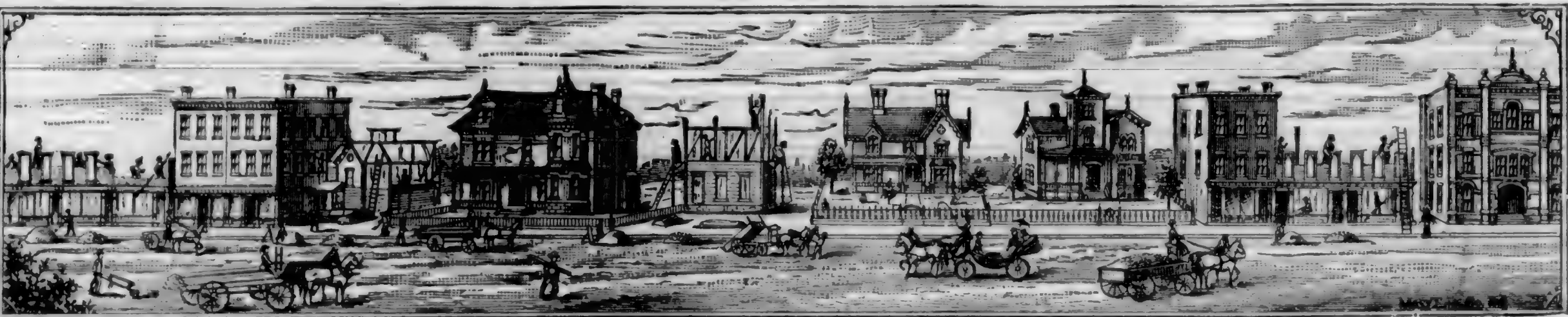
It is really lamentable to see people slowly and surely undermining their health, by persisting in building houses, without providing for ventilation without draughts (which can be had by the expenditure of a few dollars,) and thus sacrificing the greatest blessing heaven bestows upon man—by persisting in no ventilation or ventilation from Open Windows.

The Homes of the Rich and Poor alike should be ventilated by ABRAHAMSON'S PATENT VENTILATOR WITHOUT DRAUGHTS.

NATURAL GAS seems to partake, at least, of one of the qualities of the manufactured article. A plumber in the city of Indianapolis went hunting for a natural-gas leak with a lighted lantern. He found the place. Result—he had a large funeral, and some contractor will soon have the job of rebuilding the house in which the leak was located.

Modern Rural Homes.

A handsomely printed book, 7x11 inches, containing fifty-four plates of original designs in the latest modern architectural styles. The elevations are very picturesque. The book has been carefully prepared and is well worth the price set upon it, viz., \$2.



CITY BUILDING NEWS.

Alabama and Twentieth, one-story frame. Owner, P. Burns; architect, T. J. Welsh; contractor, G. Knopf; amount, \$1,800; sureties, Charles Williams & F. Kinkaid, \$1,000; limit, September 1, 1889; \$500, brown mortared; \$500, completed; \$500, 35 days; signed, June 18; filed, June 19.

Broadway and Clay, brick and carpenter work. Owner, W. S. Haney; architect, T. J. Welsh; contractor, Blake & Powers; amount, \$21,252; sureties, F. P. Rindan & J. J. McKinnon, \$10,000; signed, June 17; filed, June 24; limit, 4 months; \$3,000, foundation in; \$4,000 exterior studding up; \$5,000, brown mortared; \$4,000, white mortared; \$5,000, completed; \$5,340, 35 days.

Hush-street, No. 1715, additions. Owner, S. Wangerheim; architect, J. E. Wolfe; contractor, E. S. Libby; cost, \$1,500.

Hurban near Twenty-Fifth, two-story frame. Owner, Mr. Anshel; cost, \$1,000.

Buchanan near Halght, Additions to Protestant Orphan Asylum. Contractor, G. H. Walker; cost, \$2,500.

Broadway near Larkin. Additions; cost, \$600.

Battery near California. Repairs to burned building; cost, \$2,500.

Drumman, between Second and Third, move, etc. Owner, James N. Kilgus; architect, M. C. H. contractor, Wm. McDonald; amount, \$8,045; limit, 70 days; signed, June 11; filed, June 15; 75 per cent, as work progresses; balance, 35 days.

Broadway near Franklin, three-story frame. Owner, Gustav L. Spear; architects, Huernie & Everett; contractor, James Campbell; cost, \$5,000.

Broadway, No. 327, two-story building. Owner, Mr. Schuchel; architect, A. C. Rogers; amount, \$1,900; signed, June 26; filed, June 30; payments made as needed, balance when completed.

Broadway and Franklin, three-story frame. Owner, Gustav L. Spear; architects, Huernie & Everett; contractor, James Campbell; cost, \$4,505; signed, June 24; filed, July 1, \$1,148.75; sheathed; \$1,148.75, brown coated; \$1,148.75, completed; \$1,148.75, 35 days.

Capp and Twenty-Third, two-story frame. Owner, Isabella McCormick; architect, John J. Clark; contractor, Richard Doyle & Son; amount, \$2,398; sureties, P. F. Ward and Thos. Winters, \$2,000; signed, June 24; filed, June 25; \$700 brick work completed; \$500 brown mortared; \$700 inside finish done; balance, 35 days.

Clay, near Scott, building. Owner, Victor R. Ullman; architects, Salfeld & Kohlberg; contractor, Fritz & Kean; amount, \$500; limit, 90 days; \$1,100, framed; \$500, brown coated; \$500, white coated; \$1,100, 35 days; signed, June 4; filed, June 4.

Clay, near Scott, painting, etc. Owner, Victor R. Ullman; architects, Salfeld & Kohlberg; contractor, George Besthorn; amount, \$200; \$100, ready for grainer; \$100, completed; \$95, 35 days; signed, June 6; filed, June 6.

Connecticut and Napa, one-story cottage. Owner, John Culhane; architect, T. F. Mitchell; contractor, Timothy Sullivan; amount, \$1,150; sureties, F. Joost and W. Thyack; limit 60 days; signed June 12; filed June 13. \$287.50 framed; \$287.50 brown mortared; \$287.50 accepted; \$287.50, 35 days.

California and Kearny, brick and iron building. Owner, F. G. Merchand; architect, G. H. Walker; contractor, Geo. Houston; amount, \$5,470; signed, June 27; filed, June 27; \$5,000 walls up to second story; \$4,000 walls up to third story; \$4,500 brown mortared; \$2,000 white mortared; \$2,000 completed; balance, 35 days.

Clinton Park and Guerrero, two houses. Owner, Henry Hoffman; architect, Geo. Houston; contractor, Geo. Houston; amount, \$5,370; limit, 100 days; signed, June 25; filed, June 26; \$1,465 enclosed; \$1,465 brown coated; \$1,465 white coated; \$1,475, 35 days.

California and Baker, carpenter work. Owner, Francis Crofte; architect, A. J. Barnett; contractor, C. N. Smith; amount, \$4,340; surety, Frank P. Latson, \$2,000; limit, 20 days; signed, June 14; filed, June 15; \$1,100, roof boards on; \$500 brown coated; \$500, white coated; \$750 completed; \$1,080, 35 days.

Clay, between Cherry and First, two-story dwelling. Owner, Thomas Langford; architect, John Gashi; contractor, Jesse Rickard; amount, \$3,220; signed, April 25, filed, June 29; \$400 shingled; \$400 brown mortared; \$400 white mortared; \$400 white coat of paint on; \$400 completed; \$437 accepted; \$313, 35 days.

California near Gough, two-story frame. Owner, B. A. Becker; architect, W. Mosser; contractors, Norton & Perry; cost, \$14,000.

California and Gough, to build. Owner, B. A. Becker; architect, Wm. Mosser; contractors, Norton & Perry; amount, \$9,500; sureties, A. W. Starbird and R. Goldstone, \$5,500; signed, June 10; filed, June 11; 75 per cent of work done, balance 35 days.

Clay near Scott, plumbing, etc. Owner, Victor R. Ullman; architects, Salfeld & Kohlberg; contractor, Fritz & Kean; amount, \$368; signed, June 4; filed, June 6; \$150 rough work in, \$218 completed.

Devisadero and Geary, three-story frame. Owner, John Friesenhausen; architect, Emil John; contractor, Fritz & Kean; amount, \$4,400; signed, June 13; filed, June 14; \$600 framed; \$800 partitions set in; \$800 white coated; \$900 accepted; \$1,100, 35 days.

Douglas and Eighteenth, one-story frame. Owner, Jos. Oswald; contractor, August Disher; amount, \$2,050; signed, June 18; filed, June 18; \$500, framed; \$500, first coat of plaster on; \$500, completed; \$550, 35 days.

Devisadero and Clay, alterations. Owner, Max Ordensstein; architect, J. Gashi; contractor, H. Griffin; cost, \$1,550; signed, June 13; filed, July 3; \$500, ready to plaster; \$500, plumbing done; \$250, completed; \$400, 35 days.

Dolores and Sixteenth, brick and carpenter work. Owner, P. W. Rindan; architect, T. J. Welsh; contractors, Blake & Powers; cost, \$8,083; sureties, J. F. Lynch and T. J. Ford, \$4,000; limit, 90 days; signed, June 17; filed, July 2; \$2,000, framed; \$2,000, brown mortared; \$2,000, white mortared; \$2,083, 35 days.

Ellis and Franklin, two three-story flats. Owner, A. F. Knopf; architect, Emil John; contractor, Daniel Chisholm; amount, \$12,900; signed, June 8; filed, June 12; \$2,000 framed; \$2,000 partitions set; \$3,000 outside finish on; \$2,675 accepted; \$3,225, 35 days.

Ellis near Franklin, two three-story frames. Owner, A. F. Knopf; architect, E. John; contractor, D. Chisholm; cost, \$17,000.

Ellis near Mason; brick, stone and iron work for a five-story brick and frame. Owner, C. M. Mason; architect, H. T. Beaton; contractor, John Wagner; amount, \$6,947; signed, June 22; filed, June 26; 75 per cent of value of work done as work progresses, balance of 26 per cent, 35 days.

Ellis and Franklin, plumbing and gasfitting. Owner, A. F. Knopf; architect, Emil John; contractors, Thos. Clark & Son; amount, \$1,468; signed, June 8; filed, June 12; \$500, rough work delivered; \$600, accepted; \$368, 35 days.

Ellis and Franklin, plastering. Owner, A. F. Knopf; architect, Emil John; contractors, Huntzmann & Harper; amount, \$1,790; signed, June 8; filed, June 12; \$375 rough mortar on; \$975 white mortar on; \$475 white mortar on; \$419, 35 days.

Ellis and Willow avenue, three-story frame. Owner, A. F. Knopf; architect, Emil John; contractors, John Quadi; amount, \$1,075; signed, June 8; filed, June 14; \$400, ready for graining; \$400, accepted; \$275, 35 days.

Ellis near Mason, three-story frame building and basement. Owner, H. Matthews; architect, H. T. Beaton; contractor, C. E. Mason; amount, \$23,330; signed, June 24; filed, June 25; \$2,500 brick walls up; \$2,500 framed; \$2,500 floor-laid; \$3,500 brown mortared; \$3,500, white mortared; \$3,500 completed; \$3,340, 35 days.

Folsom and Second, elevator work. Owner, Boyd & Davis; architect, J. M. Curtis; contractor, Calhoun & Hall; amount, \$4,405; limit, 90 days; signed, May 21; filed, June 12; \$500 elevators are sunk full depths; \$550 casings and elevator heads are in and guide posts up; \$550 ready to deliver, balance, 35 days.

Fillmore and Broadway, addition. Owner, C. R. Sanders; architect, H. D. Mitchell; days work; cost, \$4,000.

Fell and Devisadero, plumbing, etc. Owner, J. B. Mering; architect, W. A. Winterhalter; contractor, John Boh; amount, \$325; \$400, rough pipes in; \$425, completed; signed, June 4, filed, June 4.

Fifth near Harrison, additional story. cost, \$850.

Fourth corner Minna, three-story and basement, brick. Owner, M. A. Hampton; architect, C. J. I. Devlin; carpenters, Moore Bros; masons, Richardson & Gale; cost, \$35,000.

Green, between Buchanan and Webster, to build complete. Owner, Harry W. Tuckey; architect, S. W. Hegenway; contractor, John Dyar; amount, \$3,260; sureties, Jon Peers and J. Mulver, \$800; limit, 161 days; signed, May 23; filed, June 26; 75 per cent on first day of each month, balance, 35 days.

Geary and Laguna, four frames. Owner, I. R. Hall; architect, Geo. E. Voelkel; contractor, F. Klatt; amount, \$25,000; sureties, F. Joost and George T. Shaw, \$25,000; signed, June 6; filed, June 27; \$2,000 first story joists on; \$2,000 on; \$2,000 second coat of plaster on; \$3,000 ready to paint; \$2,000 accepted; \$10,000, 35 days.

Gough and Clay, to build. Owner, C. A. Belden; architects, T. E. Mathews & Son; contractor, R. P. Hurlbut; amount, \$70,500; signed, June 6; filed, June 12; \$1,575, one-fifth done; \$1,575, two-fifths done; \$1,575, three-fifths done; \$1,575, four-fifths done; \$1,575 completed; \$2,325, 35 days.

Gough near Clay, two-story frame. Owner, C. A. Belden; architect, W. J. Mathews; contractor, R. P. Hurlbut; cost, \$12,000.

Golden Gate avenue and Webster street, three-story frame. Owner, Geo. Schaefer; architect, H. Geilfuss; contractor, L. M. Weissmann; cost, \$11,625; signed, July 2; filed, July 3; \$14,000, framed; \$1,450, roofed; \$1,450, partitions set; \$1,450, brown coated, etc.; \$1,450, inside finish on; \$1,450, completed; \$2,925, 35 days.

Golden Gate avenue and Lott street, two-story frame. Owner, Wm. Stafford; architect, John J. Clark; contractor, R. R. Thornton; cost, \$4,454; limit, 60 days; sureties, Harris & Jones, \$2,576; signed, June 28; filed, July 2; \$600, framed; \$600, brown coated; \$600, inside finish done; \$654, 35 days.

Green and Fillmore, carpenter work, etc. Owner, Emma V. Foster; architect, Samuel Newsum; contractor, R. M. Murray; cost, \$7,550; signed, June 28; filed, July 3; \$1,132.50, framed; \$1,132.50, roof-d; \$1,132.50, brown coated; \$1,132.50, outside primed; \$1,132.50, two-story frame; \$1,387.50, 35 days.

Howard near Fourteenth, two-story frame. Owner, M. J. Kahn; cost, \$5,000.

Hayes street, No. 714, additions. Owner, C. Klopstok; architect, Curlett & Cuthbertson; contractor, Ingerson & Gre; amount, \$2,550; signed, June 14; filed, June 18; 75 per cent to be paid according as work is done, balance, 35 days.

Howard and Tenth, two tanks in Engine house. Owner, Omnibus Cable Company; contractor, J. C. Lamson; amount, \$325; limit, August 1, 1889; signed, June 15; filed, June 18; 75 per cent on completion, balance 35 days.

Hickory avenue, between Laguna and Octavia, frame building. Owner, J. W. Sims; architect, W. R. Sims; contractor, Henry Eldebutle; amount, \$1,615; limit, July 1; signed, April 24; filed, June 29; \$200 outside on; \$100 brown coat d; \$175 windows hung, etc., balance completed, also weekly payments \$3.00 per day for each man on the work, until completed.

ACADEMY

Architecture and Building

3066 South Ninth Street,
ST. LOUIS, MO.

An Institute for Theoretical and Practical Education for Building Tradesmen. Completed within three courses. Terms begin September, December and March. Students may enter in any one of these terms. The Academy will always assist its graduates in obtaining positions as Draughtsmen, Superintendents, Foremen, etc. Send for Prospectus.

H. MAACK, Principal.

Hermann and Webster, two-story frame. Owner, Jacob Dohlscher; architect, A. J. Barnett; contractor, John Farnes; amount, \$3,785; surety, Frank P. Latson, \$2,000; limit, 5 months; \$741, roof boards on; \$700, brown coated; \$700, white coated; \$700, completed; \$947, 35 days; signed, June 1, filed, June 3.

Howard and Tenth, raising and glazing. Owner, Estate James Lick; architects, Wright and Sanders, contractors, Fraser & Keefe; amount, \$2,406.75; 75 per cent, to be paid on first day of each month as work progresses; balance, 35 days; signed, May 6; filed, June 8.

Howard, between Fourth and Fifth, plumbing, etc. Owner, J. F. Boyd; contractor, C. K. Calman; amount, \$2,375; \$363.75, pipes in; \$592.15 rough plumbing in; \$508.75, finished; \$592.15, 35 days; signed, May 25; filed, June 4.

Howard and Seventeenth, three-story frame. Owner, Wm. Dyar; architect, M. J. Welsh; contractor, John Robertson; cost, \$4,300; signed, July 29; filed, July 3; \$1,000, fr.-m-d; \$1,100, brown mortared; \$1,100, completed; \$1,100, 35 days.

Howard near Shotwell, two-story frame. Owner, F. W. Runge; architect, H. Geilfuss; contractor, H. J. Weiss; amount, \$8,165; signed, June 28; filed, June 28; \$716 framed; \$775 roofed; \$775 partitions set; \$1,275 outside completed; \$1,275 inside finish on; \$1,275 comp eted; \$2,050, 35 days.

Larkin and Filbert, two two-story frames. Owner, Peter Scully; architect, Schmitt & Shaw; contractor, John O'Brien; amount, \$7,175; sureties, J. Peaca & Geo. O. C. nad; limit, 100 days; signed, June 21; filed, June 22; \$1,345, framed; \$1,345, rough plumbing in; \$1,345, primed; \$1,345, completed; \$1,705, 35 days.

Lavenworth near Jackson, brick and carpenter work. Owner, James P. Dunne; architect, A. J. Barnett; contractor, Richard McMan; amount, \$8,400; sureties, Behrend Joost, \$4,000; limit, 150 days; signed, June 22; filed, June 23; \$2,000 rough boards on; \$1,000 brown coated; \$1,500 white coated; \$1,000 outside finish up; \$345 completed; \$2,115, 35 days.

Lavenworth near Jackson, plumbing, etc. Owner, James P. Dunne; architect, A. J. Barnett; contractor, Fritz & Kean; amount, \$1,027; limit, 110 days; signed, June 22; filed, June 23; \$500 rough work done; \$260 completed; \$260, 35 days.

Lyon street, near Golden Gate avenue, one-story frame. Owner, Chas. C. Morris; architect, R. O. Chandler; contractor, R. O. Chandler; amount, \$2,200; signed, July 6; filed, June 14; \$300 framed; \$600 partitions set; \$500 white coat d; \$600, 35 days.

L. Luna, between Fell and Hayes, two, two-story frames. Owner, Mr. Winkelmann; contract r, M. Goran; cost, \$5,500.

Laguna and Linden avenue, three-story frame. Owners, H. Winkelman and wife; contractor, M. J. G. rman; amount, \$2,323; signed, June 14; filed, June 15; \$1,000, framed; \$1,000, brown coated; \$1,000 outside finish up; \$973, white coated; \$1,000 completed; \$1,320, 35 days.

Lavenworth and Turk, to build. Owner, Mrs. A. A. Smith; architect, Wm. Mosser; contractor, J. J. Du n; amount, \$2,900; surety, F. Joost; \$1,900; signed, June 1; filed, June 14; 75 per cent, work done; balance, 25 per cent, 35 days.

Lott and Golden Gate avenue, etc. Owner, H. Clancy; contractor, A. McDonald; cost, \$1,850; limit, 90 days; signed, July 1; filed, July 3; \$500, framed; \$500, ready to lay; \$500, brown coated; \$500, white coated; \$500, completed.

Market between Fourth and Fifth, galvanne d iron work. Owner, California Academy of Science & Architect, Percy & Hamilton; contractor, Wm. Cronon; amount, \$5,170; sureties, Calvi Nutting and George Mahony; \$2,500; signed, June 7; filed, June 27; \$2,000 first story joists on; \$2,000 on; \$2,000 second coat of plaster on; \$3,000 ready to paint; \$2,000 accepted; \$10,000, 35 days.

Market between Fourth and Fifth, painting, etc. Owner, California Academy of Science; architect, Percy & Hamilton; contractor, Paul Agn & amount, \$8,750; sureties, G. Am rip, i nter Bros & Company, \$2,000; signed, June 7; filed, June 21; 75 per cent of work done on first Monday in each month, balance 35 days.

Market between Fourth and Fifth, concrete work. Owner, Davis Examiner Publishing Company; architect, J. Marquis; contractor, Geo. Goodman; amount, \$1,615; signed, June 17; filed, June 18; \$1,000, when finished, \$615 35 days.

M. Allister and Laguna, two, when finished. Owner, John Ewing; architect, E. John; contractor, Tegeler & Muller; amount, \$8,950; signed, June 3; filed, June 12; \$2,000 framed; \$3,000 rough mortared; \$3,950, 35 days.

McAllister near Laguna, three, two-story frames. Owner, J. Ewing; architect, E. John; contractors, T. gel r & Muller; cost, \$10,000.

McAllister and Polk, excavation and stone work. Owner, J. E. Loney; architect, Wm. Mosser; contractor, Chas. in & Clift; amount, \$7,000; signed, June 14; filed, June 24; 75 per cent of value of work done subject to main contract.

Mission corner Ninth, one two-story frame on Mission near Ninth and one on Ninth near Mission. Owner, Milbrae Dairy Co; cost, \$5,000.

McAllister near Lyon, additions. Owner, F. P. Adams; architect, E. E. Henriksen; contractor, L. Helbing; cost, \$2,000.

Minnesota, between Solano and Butte, two-story frame. Owner, P. Trick Dixon; architect, Schmidt & Shea; contractor, Geo. J. Doering; amount, \$5,400; limit, 90 days; signed, June 24; filed, June 29; \$315 enclosed; \$515 brown coated; \$515 hard finished; \$815 completed; \$928, 35 days.

McAllister and Lyon, repairs, etc. Owner, Frank P. Adams; architect, E. E. Henriksen; contractor, Louis Helbing; amount, \$1,612; signed, June 15; filed, June 17; \$770 roofing and siding on; \$770, outside finished; \$72, sashes glazed and hung.

McAllister and Polk, carpenter work. Owner, A. P. Hotaling; architect, Wm. Mosser; contractor, J. B. Gonyean; amount, \$30,985; sureties, C. A. & G. W. Hooper, \$20,000; signed, June 18; filed, June 17; \$6,000, first story joists on; \$6,000, enclosed; \$6,000, rear platforms up; \$6,000, sashes hung etc; \$6,000, completed; \$9,985, 35 days.

McAllister and Polk, plumbing, etc. Owner, A. P. Hotaling; architect, Wm. Mosser; contractor, John H. Lane; amount, \$3,800; sureties, J. Meyers & Mrs. L. B. McKeever, \$1,500; signed, June 13; filed, June 17; \$1,000 water and drains in; \$900, comp eted; \$900, 35 days.

McAllister and Polk, painting, etc. Owner, A. P. Hotaling; architect, Wm. Mosser; contractor, Henry Wagner; amount, \$1,900; surety, Jacob Weiss, \$1000; signed, June 13; filed, June 17; 75 per cent as work progresses, balance when completed.

Main, near Howard, excavating, brick work and sewer. Owner, S. Mathews; contract r, J. McCarthy; amount, \$2,300; limit, 40 days; signed, June 24; filed, June 25; 75 per cent, as work progresses; balance, 35 days.

Mission between Eighteenth and Nineteenth, one-story building. Owner, C. Gerdes; architect, W. H. Armitage; contractor, F. V. Steinman; amount, \$1,500; surety, Frank P. Latson, \$1,000; limit, 60 days; signed, June 18; filed, June 25; \$400, framed; \$400 brown coated; \$400 completed; \$400, 35 days.

Natoma, between Lafayette and Eleventh, one-story frame. Owner, Dennis Sweeney; architect, C. Peterson; contractor, C. Peterson; amount, \$1,175; limit, 60 days; signed, June 25; filed, June 29; \$241.25 chimney up; \$241.25, brown mortared on; \$241.25 completed; \$241.25, bills paid.

O. k a d Octavia, two-story frame. Owner, Peter Craven; architect, M. J. Welsh; contractor, Rufus Parker; amount, \$3,570; signed, June 10; filed, June 12; \$302.50 framed; \$302.50 outside finish on; \$302.50 completed; \$302.50, 35 days.

Oak near Octavia, two-story frame. Owner, Peter Craven; architect, M. J. Welsh; contractor, R. Parker; cost, \$1,200.

Octavia and Sutter, plumbing. Owner, James G. Fai; architect, Schulze & Meeker; contractors, Fritz & Kean; amount, \$2,200; surety, John J. Mahoney, \$2,500; limit, Nov. 1, 1889; signed, June 10; filed, June 18; first day of each month 75 per cent, as work progresses; balance, 35 days.

Pacific, between Leavenworth and Hyde, alterations. Owner, Thomas Kennedy; architect, W. H. Armitage; contractor, J. W. Sims; cost, \$2,800.

Pacific, between Montgomery and Sansome, reconstruction of engine house. Owner, City of San Francisco; contractors, McCann and Riddell; cost, \$8,550.

Parker Avenue near Fulton street, two-story frame. Owner, J. D. Wils n; architect, H. T. Beaton; contractor, R. P. Tracer; amount, \$5,450; limit, Oct. 1, 189; signed, June 12; filed, June 27; \$550 r-tic on to first story; \$730 brown coated; \$550 white coated; \$550 completed; \$870, 35 days.

Pierce near Page, mill work. Owner, R. H. White; sub-contractors, F. V. Steinman and Michael McCloskey; amount, \$1,600; signed, June 24; filed, June 27; 75 per cent of value of work as is delivered, balance, 25 per cent, 35 days.

Pacific and Gough streets, two-story frame. Owner, Louise S. Beyer; architect, M. G. Buehler; contractor, O. E. White; amount, \$3,500; sureties, Chas. F. & Frank P. Doe; limit, 100 days; signed, June 17; filed, June 18; \$1,625, enclosed; \$1,625, brown mortar is on; \$1,625, completed; \$1,625, 35 days.

Pierce and Page, two two-story frames. Owner, Michael McCloskey; architect, R. H. White; contractor, F. V. Steinman; amount, \$2,500; sureties, Frank P. Latson & John Diemer, \$2,000; limit, 90 days; signed, June 17; filed, June 19; \$1,100, framed; \$800 framed; \$1,347 50; brown coated; \$1,087 50 standing finish is on; \$1,700, completed; \$2,390, 35 days.

Polk and Washington, three-tenements and two stores. Owner, Alexander Ferran; architect, Wm. H. Wharf; contractor, Hiram G. Hatch; amount, \$6,500; sureties, A. A. Moore, \$2000; limit, September 1, 1889; signed, June 3; filed, June 17; \$975, brick work completed; \$975, framed; \$975, enclosed; \$975 white mortared; \$975, completed; \$975, 35 days.

Pacific street, No. 1338, alterations, etc. Owner, Thos. Kennedy; architect, W. H. Armitage; contractor, J. W. Sims; amount, \$2,550; sureties, Dennis Jordan; limit, 30 days; signed, June 6; filed, June 8; 75 per cent, as work progresses, balance 35 days.

Pacific and Pierce, two-story frame. Owner, Simon Anspacher; architect, Samuel Newsum; contractor, George R. Lang; amount, \$7,550; surety, Frank P. Latson; limit, 120 days; signed, June 14; filed, June 19; \$1,132 50 frame up; \$1,132 50, roof or; \$1,132 50, brown mortared; \$1,132 50, outside primed; \$1,132 50, completed; \$1,887 50, 35 days.