

ASKED, ANSWERED, AND COMMUNICATED.

WE intend to make a specialty of this department of our journal, and, in order to make it thoroughly interesting, we desire the co-operation of all architects, mechanics, etc., whether subscribers or not. In this column there is a great opportunity for comparison of ideas and we hope to receive from those in-ers, questions arising in their daily the solutions given to the various too pleased to receive replies from better solutions for them. If a gen-brought about, great advantages will without bringing up for discussion mechanical, or scientific pursuits, opinions, for or against, of every munication will receive deliberate and careful consideration.



About Miters.

PRACTICALLY it is quite as easy to make a good miter as it is to allow an imperfect one to suffice, and although a little more time may be absorbed in doing so, yet its effect upon the cost of manufacture is not sufficiently great to merit serious consideration.

One point to which we would particularly draw attention is that of making a miter a perfect joint, each piece fitting close to the other at all points, and not simply at the upper edge, or at the edge which meets the eye. Such a miter as this has no strength in itself, and never can be depended upon. It holds itself together because the mouldings or whatever the part mitered may be is firmly fixed, and not because of any strength in the miter itself. The larger the miter, in the case of mouldings especially, the more careful ought the man to be in making the joint quite true in all points, so that when fixed together the miter may be glued and so better enabled to stand and remain intact.

The most important axiom of the cabinet trade—that all the material used in the construction of work must be thoroughly dried and seasoned—holds good in this as in all other branches. If the wood be not quite dry, then the miters will never be as perfect as they should be, for no matter how well they may be made in the first instance, the shrinking and possible warping of the wood, after the first job has stood for some time, overturns all calculations and destroys at once all possibilities of good and perfect workmanship being maintained.

As we have had occasion to mention before, mouldings mitered around pillars, or which are so narrow that their safety, when in prominent positions, is a matter of conjecture, should be strengthened by being grooved to a slight depth, say one-eighth inch, into the rail or pillar upon which they are placed. It entails no further trouble in mitering, and is not very difficult to accomplish if done before the job is put together.

All mouldings that have many internal miters—such as is the case in frames for over-mantels and side-boards etc.—being filled with numerous small panels, should be polished before being fixed into the rabbet. A much cleaner job is thereby insured, and, if carefully fitted afterward, no trouble will be experienced in leveling off the polished surface of the wood.

The latter is the objection usually urged against this mode of procedure, but if properly done, all the leveling might very readily be effected from the under side, thus leaving the polished surface untouched. By this means the miters will be quite free from the collection of polish and filling-in which usually gathers in the corners if the mouldings are polished after the job is completed by the cabinet-maker. Therefore, the plan we recommend should be adopted in every case where possible.

With regard to the proper intersection of all the members of the mouldings that may happen to be under manipulation, we should like to say that unless the miter be a perfectly true one, it is impossible for the intersection to be satisfactory, and will have to be in a manner forced by "cooking" the miter, easing off and paring away until the different members meet each other in a proper manner. We need hardly add that a miter which has been finished off by this carving process will be far from being what it should be, and will never present the neat and clean appearance which is so desirable. We would also like it to be clearly understood that although a perfect miter includes and consists of a perfect joint, yet a perfect joint, however close it may be, is not necessarily a perfect miter. Unless the man works each piece which he may happen to be mitering in the miter-trap, or shoot-

ing board, as the case may be, and gauges and corrects it by means of a bevel set to a true miter—an angle of 45 degrees—he is very apt to make one piece a little longer or a little shorter than its fellow, and although the result may be a perfect fitting joint, yet the probability is that it is not a miter, and will therefore not intersect as well or as neatly as it should do.

The question, as argued by many men, as to whether scribes or miters are the better for cabinet work is not one that can be settled off-hand. Both are very good, equally so we might say, in their way, and if thoughtfully introduced the scribe will prove itself a very valuable substitute for the miter. In making a scribe we should advise the workman to make its shoulder cut inwards from the point of contact, so that it becomes rather thin on the edge. By this means, when the joint is not as close as might be wished, the application of a clamp would very easily draw it up.—*Builder and Woodworker.*

THE GARLAND TRAP.

IT is a sure seal or safeguard against sewer gas. All danger from evaporation or syphonage overcome. It prevents back water. Should all the water evaporate out, it is still a shut-off against sewer gas. It has an opening at the bottom and top to remove any obstruction.



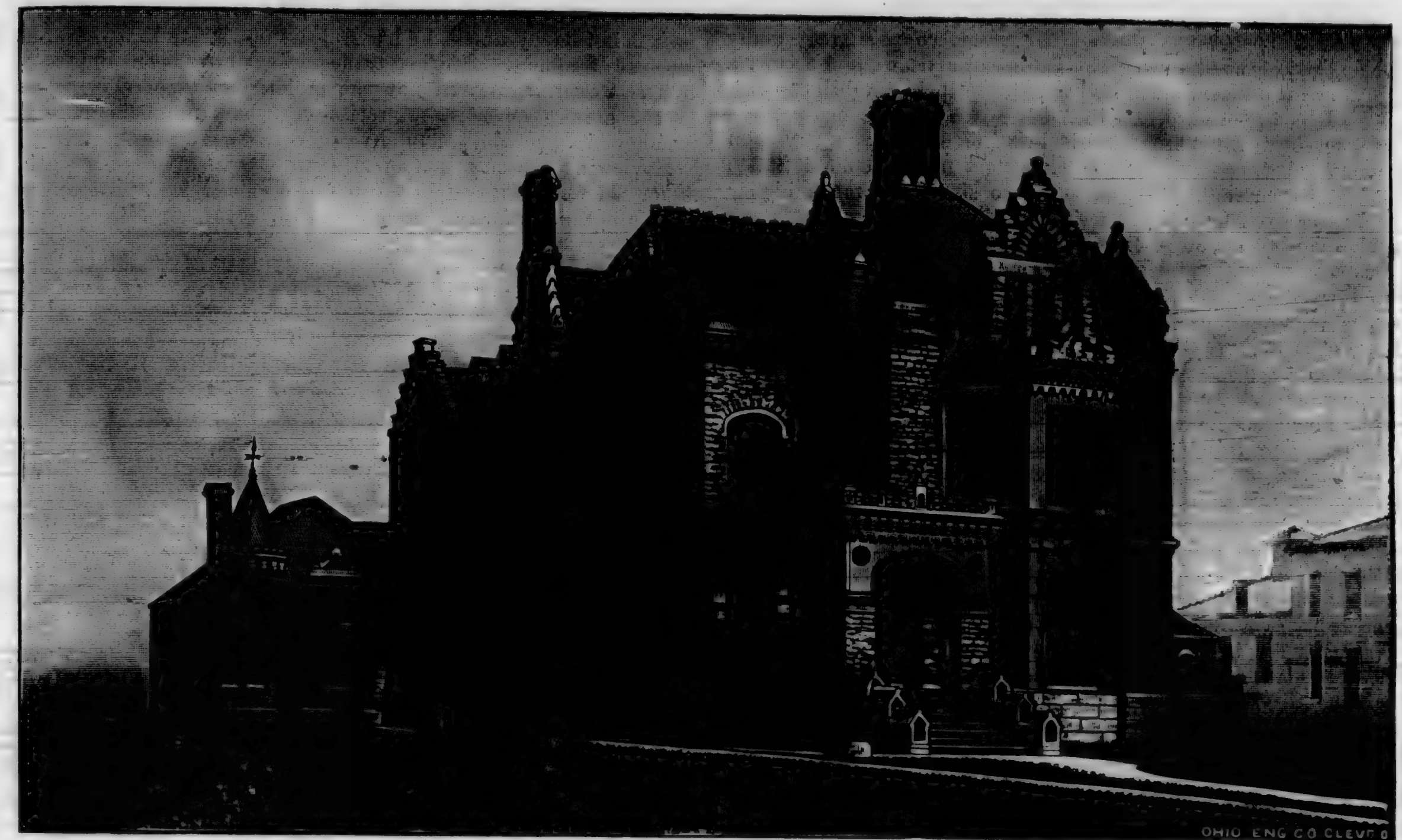
The loaded ball valve F, is slightly heavier than water; it floats up and around the chamber while the water is flowing out, afterwards falling gently into its seat, thereby forming a shut off against the induction of sewer gas or back water.

TO ALL WHOM IT MAY CONCERN:—About four years ago I had one of the "Garland Traps" put in my office, where it has been in constant use and has given entire satisfaction. I was greatly annoyed by both sewer gas and back water until I had this trap put in, since which time there has been no trouble whatever. I consider my place a particularly severe test-case of the superiority of this trap, and after using it four years, heartily endorse it as the only good and reliable trap in the market.

DR. C. O. DEAN,
126 Kearny St., S. F.

Value of Pictures in Rooms.

A ROOM without pictures is as barren as a room without windows; each shed light and cheerfulness on surrounding objects. Nothing, we think, is more melancholy, particularly to a person who has to pass much time in his room, than blank walls; for pictures are loop-holes of escape to his soul, leading it to other scenes and other spheres. It is such an inexpressible relief to a person engaged in writing, or even reading, on looking up, to find his soul escaping, as it were, through the frame of an exquisite picture, to other beautiful and perhaps idyllic scenes, where the fancy for a moment may revel, refreshed and delighted.—*Sel.*



DESIGN FOR A BUILDING TO BE BUILT OF CLEVELAND STONE.

Tin Roofing Plates.

IF the foundation of a building is paramount in construction, as doubtless it is, the roof which is to protect the whole edifice is only second in importance. The qualities of tin as a roofing material rank high, as may be amply proved by the great popularity it has attained during the past few years. Convenient in application, durable, and very economical, it has gained in favor and is now employed to a far greater extent than any other material throughout the country.

Of late, tin roofing has been severely attacked on all sides. With the competition of these days and the consequent reduction in the price of roofing in this description, much of the material has been of far inferior quality to that produced in former years. With the lowering of price, we get a corresponding reduction in the quality of the material, so that at the present time the market is stocked with tin plates, many of them of so inferior a quality as to be wholly unfit for their purpose.

Under these circumstances, it is a pleasure to refer to the plates of Messrs. Merchant & Co., of No. 525 Arch Street, Philadelphia, who have also offices at New York and Chicago. This well-known house issued the first quality of plates in the market, under the name of "The Gilbertson Old Method." They are of far greater weight than usual, averaging 120 pounds for each box of 14x20, and have an extra thick coat of uniformly good quality. To prevent fraud, and guarantee that the purchaser shall get what he is paying for, each sheet is stamped with the name and thickness of the metal, and thus the owner and architect have insured the proper performance of the contract by the builder, in this important respect at least.

We have not space here to show the material gain from a pecuniary point of view, effected by the use of a good quality of roofing, but that it is the truest economy in the end there can be no doubt.

The house of Merchant & Co. has long been identified with the best quality of tin plates, and no better proof could be had of the justice of this than the fact that their goods were chosen, after undergoing the most thorough and severe tests, for the White House at Washington, and this at a price higher than that of their competitors.

We have had enough of bad roofs and more than sufficient of the grumbling of builders, owners, and architects at the poor quality of tin plates. Let them use the goods of Messrs. Merchant & Co., and see that they are properly laid, and there will be no further cause for either the one or the other.

Tay & Co. are the authorized agents in San Francisco for the brand of tin mentioned.

A New Work—"Architectural Studies."

WE have before us Parts VI and VII of "Architectural Studies," just issued by William T. Comstock, of New York.

The first of these is devoted to small and low-priced country houses, giving among them a number of designs that can be executed for \$1,000 or less. One is impressed, in looking over these designs, at seeing how much a little good taste can do for the improvement of houses where only a small sum of money is to be expended. The second of the two, Part VII, is devoted to the interiors of moderate-cost houses, giving a large number of examples of window finish, wainscoting, window-seats, staircases, hall and library finish, book-shelves, china closets, mantels, bath-room fittings, with full working details drawn to large scale, carrying out the idea of good, tasteful, but moderate-cost interior fittings, as Part VI does that of good planning and well proportioned exteriors, the whole scheme being to furnish suggestions for building a good, comfortable home, after a well-thought-out plan and within the limits of a moderate purse. They are published in paper, portfolio, at the cost of \$1.00 each.

PLASTERING and lathing are usually estimated by the square yard. Local customs govern the allowance to be made for opening closets, etc. In some localities it is the custom to deduct all openings, such as windows and doors. In other places half of the openings are deducted, while the custom in still other sections of the country, is to measure on all openings and figure them in. Closets, presses, etc., in one place, would be figured at their actual surface contents, while in other sections of the country the contents of the surface would be doubled. Suppose you desire the number of lath to lay a square yard. The calculation of this is very simple. A standard lath is 1 1/2 inches by 4 feet long, and consequently contains one-half of a square foot. It would, therefore, take 18 lath to lay a square yard of surface if the lath were laid close together. As a rule, however, the lath fall sufficiently short in width to allow for the openings which are left between them. Each bundle should contain 100 lath. As some bundles fall short of this, and as there is more or less waste in cutting, it is necessary to make an allowance, and each lather has a rule for this, resulting from his experience, which varies from 20 to 22 lath to a square yard.

An inch of well-haired mortar between floors will be found to effectually deafen them against sound.

CARPENTERS' STEEL SQUARE AND ITS USES, PRICE \$1.00.

Carpenters Here and Abroad.

THE carpenters of the United States enjoy a great many privileges unknown to the European artisans, and occupy a social position much higher than do their English cousins. It is a poor carpenter in America who cannot make three dollars a day, while abroad finished workmen hardly get that sum a week. A comparison of the carpenters of the United States and the carpenters of London, serves to show how much higher in the social scale are the American workmen.

There are about 20,000 men in London who make their living as carpenters and joiners. Of these, nearly 5,000 are inexperienced workmen, and are not allowed to belong to the various trades organizations, toward which the spirit is very strong. There are two large trade societies in London. The Amalgamated Society of Carpenters and Joiners is the larger, and at present is composed of 3,000 members in London, and 26,000 in other places in the kingdom. Next is the General Union of Carpenters and Joiners. This Union has 1,000 members in London, and about 6,000 throughout the kingdom. Thus, it will be seen, that only about one-third of the workmen are trade-unionists, partly because the Unions are for insurance as well as for trade purposes, so that age and other restrictions keep out many who are in sympathy with the Union. Expert carpenters in London do not get half the wages of American carpenters. There are few carpenters here who will work for less than 30 cents an hour; there are equally few in London who get more than 18 cents an hour.

The regulation hours and pay—that is, 52½ hours a week at 9d. an hour—are quite generally enforced all through London, although some few firms get more and give less. Uniform pay has brought out another class of carpenters who are not benefited by the uniformity. These are the unskilled workmen, who are paid all the way from 3½d. to 7½d. an hour. There are very few apprentices in London, as neither masters nor men like to be bothered by having them around. This system has not yet forced the importation of German skilled mechanics, which importation must in time necessarily follow, as it has in other trades in which apprentices have been done away with.

The social condition of most London carpenters is deplorable. Few have any means at all of comfort or enjoyment, and, more than that, there is a lamentable lack of the necessities of life. They live, ordinarily, in a few rooms, for which the rent averages from \$2 to \$4. Taxes are paid by the landlord. To help out, the children are put to work as soon as old enough, and sometimes as much as \$10 a week is added to the family purse by this means. These families ordinarily breakfast on bread and butter and tea. Dinner depends largely upon the state of the family purse.

In hard times, all money must go for food to keep the man strong and well, so that the wife and children are frequently obliged to make all their meals of the same monotonous diet. The carpenters, when working right along, make about ten dollars a week, but out of this sum must come reductions for the sixteen compulsory holidays that occur during the year; they, however, average about six months of work. Of course, some carpenters save money, and eventually become foremen. Some keep a small store in connection with their trade, and thus accumulate money. On the other hand, some sink into utter wretchedness, thus making the average condition lamentable.

The Parisian carpenters are much more intelligent, and their social condition is much higher than that of the London carpenters. Their number is daily decreasing, owing to the introduction of bronze and metal cornices and other constructions that were made of wood. The tendency is very strong for secret societies. The most important is the fraternity of *Compagnons du Devoir*, or *Compagnons Passant*. The different degrees of the order are designated by the names of animals, such as the wolf or dog.

There are no engagements between the workmen and the bosses. The *patron* can dismiss his workmen at any time he pleases without any notice whatever, and the workman can put his tools on his back and knock off work also at any time without giving notice. However, when the *patron* dismisses the workmen he must pay the latter the entire day's wages for the day of dismissal.

Wood is so dear in France now that a builder can import his doors and sashes from Germany cheaper than they could be made at home. The carpenters live decently, however, and while much below the plane of the American mechanic, he is much above the London workmen.

Probably the best situated workmen as regards work and wages, and the most discontented and distrustful of all, are the German carpenters. Most of them are Socialists, and on elections they vote solidly for the red candidates. As there is considerable building going on in Berlin now, there is plenty of work, and

wages are fair. They live comfortably as a rule, although some of them are in poor circumstances. The average German workman is not happy unless he has at least one strike in a year, and more are frequent. Political trades-unions have been suppressed by the Government, and now the majority of carpenters belong to the great Carpenters' Association, which numbers more in membership, probably, than any other existing trades-union.

Reviewing the situation of all four classes of mechanics, the American workmen are in far better circumstances than any of the European.—*Manufacturer and Builder.*

BUILDING PROPOSALS.

Plans and specifications for the building of the University of Arizona will be received at the office of the Board of Regents, at Tucson, A. T., until Monday, May 2, at 10 A. M.

The design for the buildings must comprise within its scope, plans and specifications to include (under the law) accommodations for the following departments:

1. The department of science, literature and the arts.
2. The department of theory and practice and elementary instruction.
3. The department of agriculture.
4. The normal department.
5. The department of mineralogy and school of mines.

The Regents desire plans and specifications, which will provide for all these departments, and which will constitute a complete university, modeled upon the most approved methods, comprising in architectural design all the latest improvements in mechanical skill that will add to the comfort and convenience of pupils and the advantage for proper training.

It is the intention of the Board of Regents to inaugurate this enterprise by the erection of a single building or portion of a building at present, as the funds now on hand are only sufficient for that purpose. They desire that this first building shall serve as a model for all the others to be erected.

It is the intention to devote the funds now on hand for the establishment of a school of mines and when the plans and specifications have all been received and a selection made, it will then be determined which of the buildings included in said plans and specifications will be the most suitable for the department of mineralogy and school of mines, and the work of constructing this building will then begin.

All the buildings are to be of stone or brick, and to be built upon a plan most suitable for this climate, and with a view to their substantial and permanent character. The Regents desire to call special attention of architects to the necessity of providing means for the greatest shade around the buildings to protect the occupants from the great heat and light consequent upon the hot, dry summers of Arizona. They should be erected upon a plan which will admit of their future enlargement without destroying their architectural beauty and design.

The amount to be used for the building now under consideration cannot exceed the sum of twenty thousand dollars (\$20,000).

The amount of \$500 will be paid for the design accepted by the Board, reserving to itself the right to reject any or all plans and specifications submitted.

CHARLES M. STRAUSS,

Secretary.

A CLOTHES chute or small dumb waiter from the second story to the laundry are a great convenience.

By wrapping plumbing pipes with heavy felt paper they will be protected from frost.

CONTRACTORS, ATTENTION!

For \$5.00 we will insert your business card for one year, and send you this Journal free.



COUNTRY

BUILDING INTELLIGENCE

In this and succeeding issues we intend to devote considerable space to information in connection with buildings, from every portion of the coast.

Only reliable news will be found in this column. Our custom has been for the past eight years, to furnish only data which could be relied upon. We will not publish rumors of "THIS AND THAT IS GOING ON" unless we are reasonably assured that such is truly the case. We have been busy the past two months in perfecting arrangements by which we can secure information from every portion of the Pacific slope. In all cases we will file our authority for any statements made in this column. No doubt mistakes will sometimes occur, but these we intend to be a rare exception to our rule of reliable news.

For eight years there has appeared in this journal, building news from every portion of the country. But in its condensed form it did not attract the attention it deserved. We begin the New Year by making a specialty of the item mentioned.

We desire the co-operation of country editors and mechanics to this department of this journal. By spreading the news of building engagement in your part of the country, you enhance the value of your section by proclaiming it a go-ahead community.

Architects should also notify us of "plans to figure on;" we do not charge anything for the insertion of such notices. Remember this journal is in the EIGHTH YEAR of its existence, and is the only journal published this side of the Rocky Mountains in the interest of Architects, Contractors, and Material Men.

Alameda.

A cottage is being built on the corner of Park Street and Blanding Avenue.

Artisan, for \$5.00.
Builders' Guide, for \$2.00.

J. H. Young will shortly commence the erection of three cottages on Clinton Avenue, corner Oak Street.

Plaster, How to Make it, for \$1.00.
Shavings and Sawdust, for \$1.50.

Fred Brammam is about to build a cottage on Buena Vista Avenue.

People's Cyclopaedia (three large volumes), for \$20.00.

A. H. Peterson will erect a large residence on corner of Santa Clara Avenue and Mozart Street.

Builders' Construction (three volumes, very fine), for \$14.00.

R. E. Combs will also erect a building.

Album of Mantels, for \$8.00.

History of Architecture, for \$15.00.

The First Presbyterian Church is to be moved to another part of the town and extensive improvements added. Proposals are invited for the same.

Practical Perspective, for \$5.00.

Woodward's Country Homes, for \$1.50.

Paul Bunker is to build a \$4,000 residence on San Antonio Avenue.

Hand Railing and Stair Casing, for \$1.50.

Drawing for Carpenters, for \$1.75.

The brick has been purchased for the new Thompson Block, to be erected at the corner of Park Street and Central Avenue. The structure is expected to cost at least \$60,000, and will be the finest building in the city. Wm. Patton is the architect.

Shavings and Sawdust, for \$1.50.

American Cottage Building, for \$3.50.

Two-story frame. Owner, E. M. Battles; contractor, J. Bernard; architect, Smith. Cost, \$1,800.

Artistic Homes, for \$3.50.

Modern House Painting, for \$5.00.

Central Avenue. Two-story frame. Owner, J. E. Youngberg; architect, G. A. Bordwell; contractor, S. J. Shelper. Cost, \$3,000.

American House Carpenter, for \$5.00.

Cutting Tools, for \$2.00.

Baumont.

A \$25,000 hotel is to be built at this place. Formerly this town was known as San Geronio.

Building Superintendence, for \$3.00.

American Cottage Homes, for \$3.00.

Berkeley.

Two-story frame. Owner, S. Perkins; architect, C. Day; contractor, J. Spencer. Cost, \$4,000.

Album of Mantels, for \$8.00.

Architects' Companion, for \$2.50.

East Riverside.

It is the intention to erect a \$10,000 hotel at this place.

Woodward's Farm Homes, for \$1.00.

Woodward's Graperies, for \$1.00.

Fresno.

Joseph Spinney will erect a dwelling.

Grimshaw on Saws, for \$4.00.

Mechanics' Geometry, for \$4.00.

We understand Hon. J. M. Shannon will shortly commence the erection of an elegant residence.

Science of Carpentry, for \$4.00.

Universal Assistant, for \$2.50.

D. E. Nichols will erect a two-story brick building.

Lumberman's Hand-Book, for \$2.00.

Practical Geometry, for \$1.00.

Goldstream, B. C.

James Phair will erect an \$8,000 hotel building.

Builders' Companion, for \$1.50.

Builders' Work, for \$5.00.

Gridley.

Active measures are being taken towards the erection of a \$20,000 hotel.

Lumberman's Hand-Book, for \$2.00.

Practical Geometry, for \$1.00.

Helena, Mont.

A \$60,000 club building is proposed.

Grimshaw on Saws, for \$4.00.

Mechanics' Geometry, for \$4.00.

Healdsburg.

John A. Paxton, it is said, will erect a winery.

American House Carpenter, \$5.00.

Cutting Tools, for \$2.00.

Kingsburg.

The following parties have signified their intention to build as soon as spring has fairly begun. J. R. Allison, A. A. Smith, E. Winslow, Landrum Smith, O. Warner, Wm. Peakes, J. H. Busikist, Wm. Weymeier and J. P. Clark.

Artistic Homes, for \$3.50.

Modern House Painting, for \$5.00.

Los Angeles.

Whittier, Fuller & Co., of San Francisco, propose to erect a large brick building.

Cutting Tools, for \$1.50.

Cummings' Details, for \$5.00.

Monterey.

Material is being handled to replace the fine hotel building lately destroyed. It is calculated that it will take \$500,000 to erect the new building.

Cutting Tools, for \$1.50.

Home Hand-Book, for \$10.00.

Napa.

A syndicate is being formed to erect an \$80,000 hotel building.

Wonders of Art, for \$1.25.

Limes, Cements, and Mortars, for \$4.00.

Oakland.

The State has stopped its manufacture of doors, sash and blinds. The principal firms in that business in the city of San Francisco, have combined, and will erect in Oakland, a large manufactory for above named materials.

Artisan, for \$5.00.
Builders' Guide, for \$2.00.

Eleventh Street near Market. Two-story frame. Owner, Mary L. Ginn; architects, Matthews & Son; contractor, Geo. L. Voice. Cost, \$4,000.

Science of Carpentry, for \$4.00.
Universal Assistant, for \$2.50.

Peralta, near Sixteenth. Two-story frame. Owner, H. B. Fritzchen; architect, M. P. Schetzel; contractor, M. W. Rain. Cost, \$2,500.

Building Superintendence, for \$3.00.
American Cottage Homes, for \$3.00.

West Street, corner Thirteenth. Two-story frame. Owner, M. P. Brown; contractor, Puttiani & Co. Cost, \$3,000.

Builders' Companion, for \$1.50.
Builders' Work, for \$5.00.

San Pablo Avenue. Two-story frame. Owner, L. Friedman; architect, Chas. Man; contractor, H. McCracken. Cost, \$4,000.

Steel Square Problems, for \$1.00.
Workshop Companion, for 35c.

Fifth Street near Grove. Frame building. Owner, Mrs. A. Downey; architect, Chas. Man; contractor, P. F. Nelson. Cost, \$1,600.

Ontario.

The railroad company intend erecting a fine depot building.

American House Carpenter, for \$5.00.
Cutting Tools, for \$2.00.

Oregon Items.

Among the new buildings of importance now under way in Portland, or to be built this summer, are a three-story brick building on the southeast corner of Front and Morrison for W. S. Ladd, a three-story brick addition to the building on the northeast corner of Front and Morrison by S. G. Reed, a three-story brick building on the southeast corner of Third and Washington by Henry Fatling, a \$11,000 residence on Seventh between Morrison and Alder, six handsome cottages on B between Ninth and Tenth, to cost \$12,000, for Dr. Glisan, and a number of other handsome buildings in various portions of the city.

Builders' Companion, for \$1.50.
Builders' Work, for \$5.00.

A new flouring mill will soon be erected at Elberton, Washington, near Colfax.

Every Man His Own Mechanic, for \$3.50.
Tredgold's Carpentry, for \$7.50.

Spokane Falls has 5,000 inhabitants, and about 50 buildings are now under way.

American House Carpenter, for \$5.00.
Cutting Tools, for \$2.00.

A force of men is engaged in getting out stone at the quarry near Coos Bay for the jetty works. Work on the harbor improvement will commence about May 1.

Building Superintendence, for \$3.00.
American Cottage Homes, for \$3.00.

A force of men is engaged surveying the route of the Seattle & Bellingham Bay Railroad.

Science of Carpentry, for \$4.00.
Universal Assistant, for \$2.50.

Contract has been awarded for the delivery of 25,000 piles for the jetty at the mouth of the Coquille River.

Plaster, How to Make It, for \$1.00.
Shavings and Sawdust, for \$1.50.

Ira F. Powers will build a furniture factory in South Portland.

American House Carpenter, for \$5.00.
Cutting Tools, for \$2.00.

Hoffman & Bates have secured the contract for building the N Street elevated railroad.

Builders' Companion, for \$1.50.
Builders' Work, for \$5.00.

Sellwood is to have a \$4,000 school-house.

Science of Carpentry, for \$4.00.
Universal Assistant, for \$2.50.

Mrs. Hewett is erecting a residence.

Lumberman's Hand-Book, for \$2.00.
Practical Geometry, for \$1.00.

Pomona.

Near this town, a large hotel is to be built, at a probable cost of \$40,000. Messrs. Park and Oldham, of Pomona, can be written to for particulars.

Artistic Homes, for \$3.50.
Modern House Painting, for \$5.00.

Portland.

A \$35,000 pavilion, in which to hold fairs, etc., is on the tapis.

Practical Perspective, for \$5.00.
Woodward's Country Homes, for \$1.50.

Reno, Nev.

A two-story brick building to be used as a post-office will be commenced shortly. Wm. Thompson is the manager.

Science of Carpentry, for \$4.00.
Universal Assistant, for \$2.50.

Riverside.

A saw and planing mill is about to be erected by Messrs. Walker and Banta.

Hand Railing and Stair Casing, for \$1.50.
Drawing for Carpenters, for \$1.75.

A new Episcopal church on Tenth Street, will be commenced in a few weeks.

Steel Square Problems, for \$1.00.
Workshop Companion, for 35c.

Important building operations will soon be going on extensively in the center of the city. A fine block is to go up adjoining the St. George Hotel on the north; an additional story is to be put on Frankenheimer & Lightner's store; a new block is talked of adjoining Wilbur & Reynold's dry goods store; Clarence Stewart will remove the Cochrane second-hand store and extend his building over that, two stories high, adding at the same time another story to his present place of business, and G. D. Cunningham proposes to connect his corner block with the building next to the city hall, making the building occupied by Drs. Woodill & Ainsworth two stories high and arching the alley between the two buildings, giving a uniform

appearance from the corner up to the vacant Perrine Block. When C. O. Perrine puts in his four-story block from there to the corner of Orange it will give that side of Eighth a fine, imposing look.

Cutting Tools, for \$2.00.
Cumming's Details, for \$5.00.

Saucelito.

One and one-half story frame. Owner, Mrs. Small; architect, Behnd. \$2,000.

One and one-half story frame. Owner, Mr. Hamlin; architect, Behnd. \$3,000.

San Luis Obispo.

It is understood that arrangements are being perfected for a \$100,000 hotel building.

Grimshaw on Saws, for \$4.00.
Mechanics' Geometry, for \$4.00.

Santa Ana.

Plans preparing for S. H. Fichenal's new building.

Album of Mantels, for \$8.00.
History of Architecture, for \$15.00.

Seattle, W. T.

Mrs. Howard H. Lewis will improve her property on Mill Street by the addition of a two-story brick building.

Ruskin's Works (four volumes), for \$6.00.
Industrial Drawing for Carpenters, for \$2.00.

Stockton.

A. Wolf will erect a two-story building on the principal business street.

Practical Perspective, for \$5.00.
Drawing for Carpenters, for \$1.75.

Spokane, W. T.

I. T. Benham & Son have secured the contract for a \$12,000 hotel. J. N. Squier is the owner.

Drawing for Stone Masons, for \$1.50.
Building Construction, for \$1.25.

Selma.

A. Barieu is erecting a brick building 90x120 feet, two stories high.

Builders' Companion, for \$1.50.
Builders' Work, for \$5.00.

H. A. Lemon is putting up a brick building 35x70 feet.

Drawing for Bricklayers, for \$1.50.
Drawing for Cabinet Makers, for \$1.50.

Geo. B. Otis is having materials hauled for a brick building.

Practical Perspective, for \$5.00.
Woodward's Country Homes, for \$1.50.

Kutner, Goldstein & Co. are making preparations to build a brick building.

Science of Carpentry, for \$4.00.
Universal Assistant, for \$2.50.

Materials are being hauled for the construction of gas and water works.

San Bernardino.

Large swimming baths will be erected.

The railroad company are erecting a round-house with a capacity of twenty-five stalls.

Manual for Furniture Men, for \$1.00.
Common-Sense Church Architecture, for \$1.00.

A machine shop 90x160 will shortly be built.

Artisan, for \$5.00.
Builders' Guide, for \$2.00.

Also a car shop of the same size as above.

Woodward's Farm Homes, for \$1.00.
Woodward's Graperies, for \$1.00.

Sonoma Co.

It is an assured fact that a railroad to connect with the main line, via Petaluma and Napa, will be started very soon. Also a branch line from Santa Rosa to Sebastopol. Lots of supplies of all kinds will be needed for their construction.

South Riverside.

A prominent Minnesota capitalist intends to erect a two-story brick building to contain five stores.

San Jose.

Architect Page has let a contract to Mr. Piggotts for J. L. Reidy. Cost, \$2,500.

At the fair grounds large additions are to be made for the use of racing horses. About \$2,000 will be required.

Building Superintendence, for \$3.00.
American Cottage Homes, for \$3.00.

E. O. Smith is arranging for the erection of a handsome \$6,000 residence on First Street, near the railroad depot.

Lumberman's Hand-Book, for \$2.00.
Practical Geometry, for \$1.00.

Capt. J. C. Morrell is having plans prepared for an eight-room dwelling on Fourteenth Street.

Builders' Companion, for \$1.50.
Builders' Work, for \$5.00.

A site for a fire-proof Hall of Records for Santa Clara County has been selected in San Jose.

San Diego.

A \$15,000 brick building is under advisement for the use of the Grand Army Post, G. A. R.

Seattle, W. T.

J. Morris Haller has commenced excavating, preparatory to the erection of a block of buildings.

SAN FRANCISCO BUILDING NEWS.

A
Ash Avenue, cor. Buchanan. Alterations.
O.—L. Junker.
A.—Salfeld & Kohlberg.
C.—F. Weinehl.
\$1,300.

B
Bush, near Broderick. One-story frame.
O.—C. and M. Kerstein.
A.—Townsend & Co.
C.—J. J. Dunn.
\$1,500.

Bryant, nr. Main. One-story frame.
\$600.
Broadway cor. Montgomery Ave. Repairs.
\$500.

C
Castro cor. Twenty-fourth. Two-story frame.
O.—J. B. Mahoney.
A.—T. J. Welsh.
C.—J. McNery.
\$7,000.

California, cor. Jones. Two-story, basement and attic, frame.
O.—Chas. Crocker.
A.—Curtlett & Cuthbertson.
Mason—O. E. Brady.
\$40,000.

California, bet. Octavia and Laguna. Two-story frame.
O.—S. Foorman.
A.—Chas. Geddes.
C.—A. Jackson.
\$2,700.

Chesley, nr. Harrison. Alterations.
O.—B. O. Malley.
A.—Townsend & Co.
C.—J. O'Connor.
\$900.

Clementina, nr. Ninth. Two-story frame.
A.—J. J. Clark.
C.—C. E. Dunshee.
\$3,500.

Cliff House. Four-story frame.
O.—A. Sutro.
A.—Behnd (Phelan Block).
Day work.
\$30,000.

Cortland Avenue, corner Wool. One-story frame; two-story barn.
O.—J. G. Fair.
C.—Treadwell & Thompson.
\$6,000.

D
Dolores, nr. Twenty-ninth. Two-story frame.
O.—Weissenduck.
C.—R. Bergfeld.
\$3,000.

Dolores, near Eighteenth. Two-story frame.
O.—McKenna.
\$3,000.

E
Eddy, nr. Taylor. Four-story brick.
O.—M. Rosenbaum.
A.—Salfeld & Kohlberg.
C.—T. Day.
\$75,000.

Eureka, nr. Eighteenth. One-story frame.
O.—F. H. Weiniger.
A.—M. P. Schetzel.
C.—W. Kain.
\$1,200.

Fifth, near Mission. Additions.
O.—Mrs. M. Meyer.
C.—W. Zehfuss.
\$750.

Fifth, near Brannan. Two-story frame.
O.—J. Baumberger.
C.—Frighthouse.
\$2,200.

Fifth, near Brannan. Two-story frame.
O.—Teustemacher.
\$1,500.

Folsom, bet. Fourth and Fifth. Additions.
O.—Mrs. A. Brand.
A.—H. Geiffuss.
C.—E. Klatt.
\$7,000.

Folsom, bet. Fourth and Fifth. Concrete foundations for three-story brick.
O.—A. Field.
A.—J. E. Wolfe.
C.—Granolithic Paving Co.
\$3,000.

C
Green, nr. Stockton. Repairs.
O.—Zeigler.
\$1,000.

Guerrero and Seventeenth. Two-story frame.
O.—J. McCarthy.
A.—W. Schrof.
C.—Cormack & Elam.
\$7,000.

Geary, nr. Leavenworth. Additions.
O.—T. Ross.
\$2,000.

H
Haight, bet. Webster and Buchanan. Thirteen two-story frames.
O.—J. Nightingale.
A.—A. J. Barnett.
C.—McCann & Riddell.
\$75,000.

Hayes, cor. Baker. Two-story frame.
O.—F. Heywood.
A.—C. I. Havens.
C.—Mahoney Bros.
\$20,000.

Brick foundation previously reported.

Howard and Seventeenth. Two-story frame.
O.—G. C. F. Schwarz.
A.—C. I. Havens.
C.—J. G. Adams.
\$5,000.

Haight, bet. Steiner and Pierce. Two-story frame.
O.—J. E. Kunkler.
A.—Copeland & Banks.
C.—W. Pluns.
\$5,500.

J
Jones, bet. California and Sacramento. Two-story frame.
O.—W. E. Shepman.
A.—J. P. Chadwick.
C.—W. B. Ritchie.
\$3,500.

Jessie, bet. Seventeenth and Eighteenth. Two-story frame.
O.—J. Graham.
A.—T. J. Welsh.
C.—Doyle & Son.
\$2,700.

Jackson, nr. Montgomery Avenue. Alterations.
O.—E. G. Lyons.
A.—W. Mooser.
C.—J. H. McKay.
\$2,700.

Jackson, near Devisadero. Two-story frame.
O.—C. W. Randall.
A.—J. M. Curtis.
C.—Wilson & Son.
\$3,500.

K
Kearny, nr. Vallejo. Four-story frame.
O.—H. Kohler.
C.—G. Rocca.
\$8,000.

Kearny, cor. Post. Alterations.
O.—J. Stanton.
A.—H. Geiffuss.
C.—P. H. Jackson.
\$2,200.

L
Leavenworth, bet. Broadway and Vallejo. Additions.
O.—Margaret White.
A.—Townsend & Wyneken.
C.—Dyer & Arnold.
\$1,700.

Leavenworth, near Clay. Two-story and basement frame.
O.—J. Wolf.
A.—H. Geiffuss.
C.—W. Pluns.
\$8,000.

Leavenworth, No. 808. Additions.
O.—Mrs. Allen.
A.—J. E. Wolfe.
C.—Moore Bros.
\$1,100.

Ventura.

On the tapis a \$50,000 hotel, a large brick block, and a \$15,000 dwelling for L. J. Rose.

Practical Perspective, for \$5.00.
Woodward's Country Homes, for \$1.50.

Watsonville.

A new saw-mill will be erected near this place.

Mural Painting (new), for \$3.00.
Home Hand-Book, for \$10.00.

Yaquina, Or.

A brick railroad depot will be erected at this place.

Architecture and Building, for \$3.50.
American Cottage Building, for \$3.50.

Yamhill, Or.

A two-story building for the use of the I. O. O. F., is contemplated.

Plaster, How to Make It, for \$1.00.
Shavings and Sawdust, for \$1.50.

M	
Market , nr. Sixth. Preparatory work.	Pacific , bet. Gough and Octavia. Two two-story frames.
O.—E. J. Baldwin.	O.—Mrs. R. Greenbaum.
A.—A. A. Bennett.	A.—Keintzer.
C.—R. Ringrose.	C.—C. Chisholm.
\$4,500.	\$7,500.
Mission , near Nineteenth. Two-story frame.	Park Avenue , nr. Harrison. Three one-story frames.
\$2,500.	O.—Goldstine.
Minna , bet. Tenth and Eleventh. Two-story frame.	A.—P. R. Schmidt.
O.—P. Brady.	C.—H. Keenan.
A.—T. J. Welsh.	\$5,000.
C.—A. McDonald.	Park Avenue . Same as above.
\$2,800.	Additions.
McAllister , cor. First Avenue. Two-story frame.	\$2,000.
O.—M. O'Brien.	Page , bet. Webster and Fillmore. Two-story frame.
C.—J. Sullivan.	O.—F. D. Black.
\$3,200.	A.—A. J. Barnett.
McAllister , nr. Lyon. Two-story frame.	C.—W. T. Commary.
O.—A. Philpot.	\$7,000.
A.—Townsend & Wyneken.	Pacific , cor. Buchanan. Two-story frame.
C.—J. Irwin.	O.—O. H. Baldwin.
\$3,800.	A.—S. and J. C. Newsom.
Mission , nr. Twenty-eighth. Two-story frame.	Day work.
O.—W. Byranes.	\$18,000.
A.—M. J. Welsh.	Polk , cor. Pine. Additions.
C.—L. Frichette.	O.—S. Foorman.
\$2,250.	A.—C. Geddes.
Mission , bet. Third and Fourth. Four-story brick.	C.—A. Jackson.
O.—D. Kiel.	\$3,000.
A.—Behnd (Phelan Block).	S
Mason—J. Wagner.	Seventeenth , cor. Mission Avenue. Two-story frame.
Carpenter—Houston.	A.—T. J. Welsh.
\$20,000.	C.—J. Blake.
Main , bet. Market and Mission. Three-story and basement, brick.	\$7,000.
O.—R. Thompson.	Steiner , bet. Eddy and Turk. Two-story frame.
A.—W. Patton.	O.—P. McSherry.
C.—R. Smilie.	A.—Schoenstein.
\$43,000.	C.—C. H. Taft.
Mission , nr. Seventh. Additions.	\$2,500.
\$1,500.	Stevenson , bet. Hermann and Ridley. Four two-story frames.
Madison , nr. Harrison. Two-story frame.	O.—L. F. Caldwell.
\$2,200.	C.—M. Brennan.
Morton , near Dupont. Improvements.	\$5,000.
\$500.	T
Montgomery Avenue , cor. Green Street. Repairs.	Tenth , bet. Folsom and Howard. Two-story frame.
O.—Larrimore.	O.—P. McEnroe.
\$3,000.	A.—T. J. Welsh.
N	C.—J. Blake.
Nineteenth , nr. Castro. One-story frame.	\$4,000.
O. and B.—Wilson.	Twenty-fifth , nr. Bartlett. Additions.
\$1,200.	C.—Dunshee.
Ninth , near Howard. Two-story frame.	\$600.
O.—M. McGrath.	V
A.—H. Geiffuss.	Van Ness , cor. Vallejo. Five two-story frames.
C.—J. W. Nelson.	O. and B.—J. Hinkle.
\$5,500.	\$40,000.
O	Vallejo , cor. Laguna. Two-story frame.
Oak , nr. Ashbury. Two-story frame.	O.—W. S. Johnson.
O.—J. W. Reilly.	A.—W. F. Smith.
A.—M. J. Welsh.	C.—F. W. Kern.
C.—A. Klahn.	\$4,500.
\$2,800.	Vallejo , nr. Polk. Five two-story frames.
P	O. and B.—J. Hinkle.
Pine , corner Fillmore. Two-story frame.	\$25,000.
O.—Mrs. W. H. Armstrong.	Valencia , cor. Willow Avenue. Two-story frame.
A.—B. E. Henriksen.	O.—Jos. Moore.
C.—G. G. Gillespie.	A.—C. I. Havens.
\$5,700.	C.—R. Doyle & Son.
Post , corner William. Three-story frame.	\$7,000.
O.—J. Rosenthal.	W
A.—Salfield & Kohlberg.	Washington , cor. Mason. Three-story brick.
C.—J. H. McKay.	O.—Powell Street Railroad.
\$10,500.	Masons—Butlers & McGowan.
	\$28,000.

Bound Volumes of the year 1886 will be forwarded to any address upon receipt of \$2.50.

For \$5.00 we will insert your business card for one year, and send you this Journal, free.

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Howard Building, S. W. Cor. Stockton & O'Farrell Sts., S. F., Cal.

BUSH & MALLETT.	34 Geary Street
BUSH, D.	316 Sutter Street
BUTTERWORTH, J. B.	1809 Polk Street
CONNOR, J. H.	528 Third Street
DANIEL, WM. L.	234 Post Street
DOHERTY, JOHN.	349 Kearny Street
DOWNES, CHAS.	41 Second Street
DUFFY BROS.	120 Sutter Street
ENRIGHT, WM. & Co.	39 Sutter Street
FIRMIN, JNO. L. E.	Cor. Thirtieth and Bartlett Streets
FRITZ & KEAN.	130 Geary Street
GRAY, JNO. T.	230 Sutter Street
HUFFSCHMIDT BROS.	637 Clay Street
HOBBS, W. D.	728 Washington Street
REILLEY, C. J.	214 Montgomery Avenue
SHEPARD BROS.	526 California Street
SWEENEY & KEARNS.	623 California Street
VANCE, R. A.	623 Geary Street
WELCH, J. D.	Cor. Tyler and Fillmore Streets
WILSON, WM. F.	25 Stockton Street
WILLIAMSON, H.	329 Sutter Street

RETAIL PRICE LIST

OF

LUMBER.

PINE, FIR, AND SPRUCE

	Per M ft.
Rough Pine, merchantable to 40 ft. inclusive.	\$20 00
" " " 41 to 50 "	21 00
" " " 51 to 60 "	22 00
" " " 61 to 70 "	23 00
" " " 1x3 and 1x4, Fencing.	21 00
" " " 1x3, 1x4, and 1x6, Fencing, odd lengths.	19 00
" " " second quality.	16 00
" " " selected.	24 00
" " " clear except for flooring.	29 00
" " " Flooring less than Dressed Flooring.	1 00
Fire Wood.	9 00
Dressed Pine, Flooring, 1x6, No. 1.	32 00
" " " other sizes, No. 1.	34 00
" " " all " No. 2.	27 00
" " " Stepping, No. 1.	40 00
" " " No. 2.	30 00
Ship Timber and Plank, rough, selected.	25 00
" " " selected, planed, 1 side.	27 00
" " " " 2 "	29 50
" " " " 3 "	32 00
" " " " 4 "	34 00
Deck Plank, rough.	29 50
" " " dressed (average 35 ft.)	34 00
Pickets, rough, B. M.	19 00
Furring, 1x2, per lineal ft.	03
Lath, 1 1/4 ft., per M.	3 50
" 1 1/2 ft., "	4 00
Rough dunnage, delivered, per M.	20 00
Spruce dressed shelving, to 14 inches, per M.	35 00
" " 1 inch	35 00
" " wider, per M.	40 00

REDWOOD.

	Per M ft.
Rough Redwood, merchantable.	\$20 00
" " " second quality.	16 00
" " " selected.	24 00
" " " clear.	33 00
" " " common surface.	22 00
" " " 1-inch surface.	28 50
" " " No. 1.	33 00
" " " No. 2.	26 00
" " " T. & G., 1x6, 12 ft. and over, No. 1.	30 00
" " " " other sizes, No. 1.	30 00
" " " 7 to 11, No. 1.	26 00
" " " under 7, No. 1.	23 00
" " " Rustic, No. 1.	33 00
" " " No. 2.	28 00
" " " T. & G. beaded, 12 ft. and over, No. 1.	33 00
" " " " other sizes, No. 1.	33 00
" " " 7 to 11, No. 1.	26 00
" " " under 7, No. 1.	23 00
" " " Siding, 1 inch.	23 50
Pickets (fancy), 4 feet, B. M.	25 00
" (rough pointed) "	17 00
" (square) "	15 00
Battens, 1x3, per lineal ft.	03
Shingles, per M.	2 00
" fancy, per M.	3 75
Posts, split.	13
Shakes, split, per M.	9 00
" sawed "	11 00

THE CALIFORNIA ARCHITECT AND BUILDING NEWS.

VOLUME VIII.

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

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Full Page Inside	One Insertion 40.00
Each Subsequent Insertion according to Agreement.	

A Square is One Inch In Depth By Width of Single Column.

Advertisements alone inserted that refer to materials used in the construction and furnishing of houses, and to matters and trades belonging to the building interest.

No Others Received.

SAN FRANCISCO, CAL., MAY 15, 1887.

The Sewerage of San Francisco.

THE presence of Mr. Waring, a gentleman of national, if not world-wide, reputation as a thorough scientist upon all sewer questions, is a welcome guest in our city, and it is hoped that his extensive experience and knowledge in and of the subject matter, will enable him to suggest remedies for the foul and health-destroying condition of the sewers of San Francisco. That they are such, no one conversant with facts will question. That the lives of thousands, nay, tens of thousands, of human beings in this city, both old and young, have been jeopardized or sacrificed by sewer agencies, is beyond reasonable doubt, and enormous sums of money have been consumed in building those conduits intended to protect life and health, but which only in part perform the purposes for which they were and are so intended.

Mr. Waring will find in the course of his investigations, that nature had provided a site for a city, as far as drainage is concerned, surpassed but by few on earth, with hills and high grounds at its back and center, and abundant surplus material to fill all low places to make perfect the inclines to the bay. He will also find that a grave mistake was made by those who established the grades in the early days of the city, even if the eastern boundaries had been extended no farther than Front Street, which at one time was supposed would be the water front. Had this remained as the limit of extent eastward, then the grade should have been uniform from Kearny Street, which would have added some fifteen feet to the fall from that point. Another mistake was made in fixing base at the low altitude of 6 1/2 feet, as that figure necessarily forces the sewer outlets below the tides, so that at times the waters of the bay form a liquid embankment against the outgo of solid matters, and change of tide had and has to be relied upon to clear the sewers. Had the water front remained a permanent fixture at Front Street, the sewer difficul-

ties would have been less. But when eastward the city front sped its way, several blocks beyond the first intended point, no remedy for level sewers existed, except to raise all the streets and buildings west of Front Street. This not being resorted to, the only thing remaining to be done was to extend the sewer at base level to the outlet.

Mr. Waring will also find this material fact to overcome, viz., a thousand feet of dead-level sewerage at the east front of the city, and much more at the south front to overcome. Again, the present 3x5 feet sewers are at times insufficient to free themselves from the great rush of water passing through them—so much so, that south of Market Street, in places, the water forces its way up through the man-holes and floods the streets. If all this can be met and successfully overcome by Mr. Waring, he will have done a most excellent thing for the city of San Francisco. Until he shall have more fully developed and made public his recommendations, nothing can be said favoring or disapproving his propositions. But we may with confidence expect some very practical and feasible suggestions from him.

Will Present Prosperities Continue.

QUESTIONS as to the permanency of the great and wide-spread prosperities which have developed throughout the length and breadth of California, and the Pacific States and Territories generally, during the past few, and especially the last three years, lead some to feel that it is too good a condition of things to endure for any great length of time, and timidity and fear begets doubts and misgivings, and these corrode what little of progressive vitality they may possess, rendering inert and dormant energies which, if properly exercised, would bring personal compensation, and at the same time assist in stimulating others to safe ventures and undertakings, which, otherwise, might continue undeveloped for long periods of time.

Nothing so demoralizes the common interest of communities, as the lack of enterprise among the people composing the commonwealth. One sterling, active, wide-awake citizen, with scarce a dollar to his name, is worth more to any city or State than a thousand grasping, hoarding, centralizing, purse-bound, avaricious men, whose idol—god—is accumulated possession and personal wealth. The one as compared with the other, is as the showers and zephyrs of spring to the parching heat of mid-summer, or the chilling blasts of winter's storms. California has been too abundantly cursed with the latter class, and as a consequence the general interests of the State have been held in check, and thousands of possibilities which are at the present time so apparent, have remained unapplied and practically worthless during more than a generation of human life.

Perhaps the time lost was necessary to ripen and mature the present and recent past state of things, and make clear and plain how great and goodly a strip of land lies along the Pacific Coast, as part of the domain of free America. And now that people from all sections of the Union and from foreign countries, as well as ourselves, are made to realize the inherent values and greatness of the Pacific States, why should it be feared that we, as a people, cannot continue advancing and prospering, with never more than the occasional, periodical, temporary death in commercial, producing, manufacturing, and mechanical life, which at times comes to the most favored and prosperous people.

If present prosperities were the result of some uncertain thing, worked up and stimulated by various unreal, spasmodic, speculative games, controlled by combinations with a mere stock and chance prospect, then fears might be justified. But the fact that the present beautiful outlook is the result of permanent investments in lands and business pursuits and productions, and things necessary to human life and happiness, there can be but one conclusion reasonably drawn—that permanent, present, and still greater future prosperities are fully assured, and that those who doubt the stability of present things, do so more from personal, mental, and business deficiencies, than from any indications sustained by good judgment or apparent probabilities.

CARPENTERS' STEEL SQUARE AND ITS USES. PRICE \$1.00.



The report often shows that a small fire started on the lower floor, but on reaching the elevator it was in a twinkling spread to the upper floors. The space acts as a most unmerciful blower for the flames, and the frequent loss of life caused by it leads many to dread its presence and to wish for the old style. 'In

Self-Evident Facts.

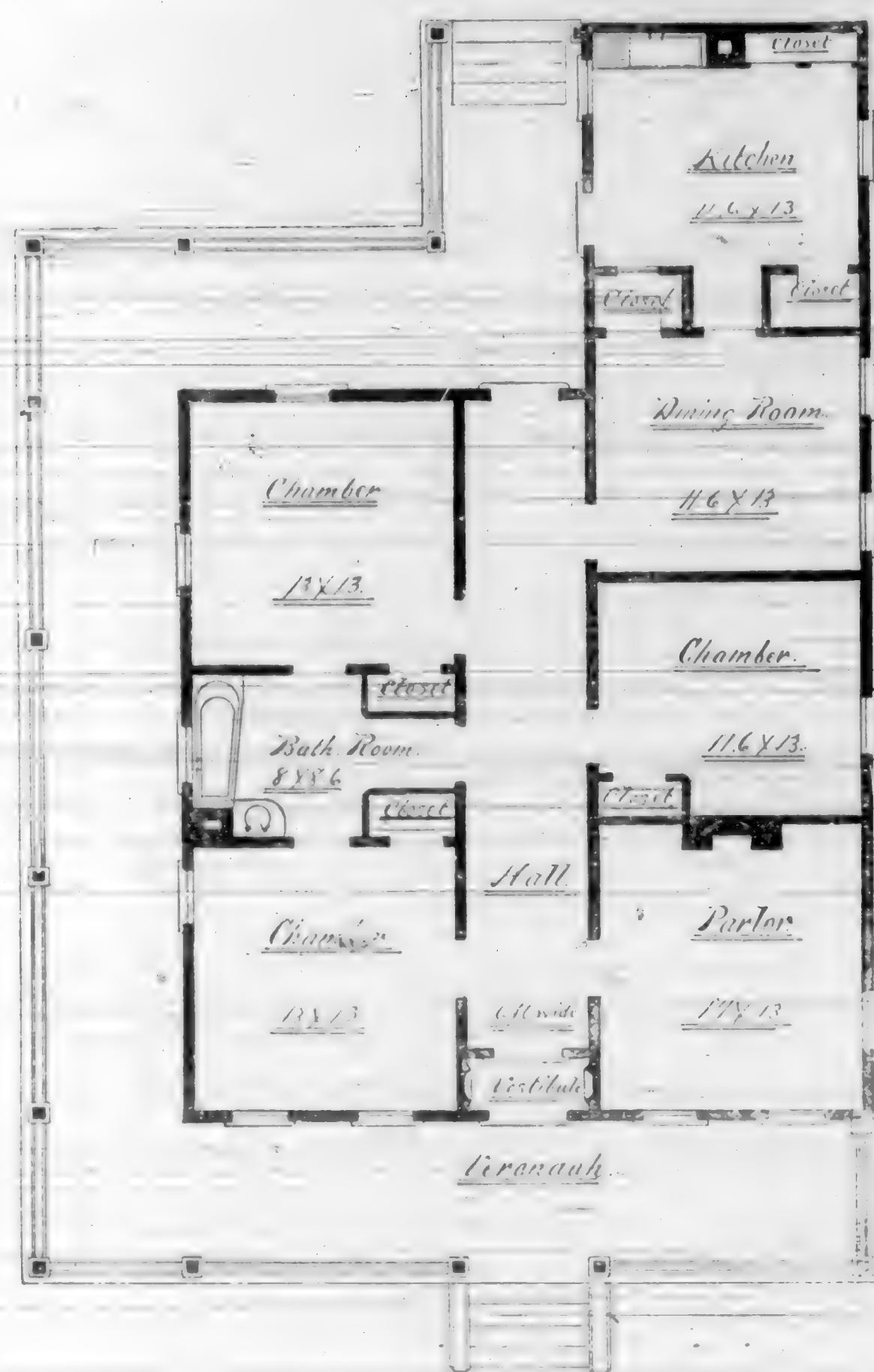
THAT this Journal is at present prospering equal to any period since its first issue; that—its advertising columns in evidence—business men find it the best medium for advertising, and for that reason we are crowded for space to accommodate new patrons. *It is the medium through which those dealing in manufacturing, or producing anything used in the construction, equipment, or furnishing of buildings, can most successfully reach owners and those requiring things in the building line.*

For \$5.00 we will insert your business card for one year, and send you this Journal, free.

1. Pompey's Pillar, near Alexandria, Egypt, 94 feet.	8. Cathedral at Antwerp, Belgium, 403 feet.	16. Cathedral at Freiberg, Germany, 385 feet.
2. Niagara Falls, New York and Canada, 164 feet.	9. Great Pyramid at Gheezeh, in Egypt, 460 feet.	17. Board of Trade Edifice, Chicago, Ill., 320 feet.
3. Cathedral (Minster) at York, England, 198 feet.	10. Notre Dame Cathedral at Rouen, France, 470 feet.	18. Big Trees, Calaveras Co., California, 300 to 330 feet.
4. Bunker Hill Monument, near Boston, Mass., 221 feet.	11. Cathedral at Cologne, Germany, 510 feet.	19. Central Spire of Cathedral, Lichfield, England, 250 feet.
5. Capitol at Washington, D. C., 287½ feet.	12. Washington Monument, Washington, D. C., 555 feet.	20. The Monument, London, England, 202 feet.
6. Bartholdi's Statue of Liberty Enlightening the World, 341.	13. Old St. Paul's Church, London, England 508 feet.	21. The Albert Memorial Monument, London, England, 180 feet.
7. St. Paul's Cathedral, London, England, 360 feet.	14. Cathedral at Strasburg, Germany, 468 feet.	22. Temple of the Sun, Cuzco, Peru, S. A., 120 feet.
	15. St. Peter's Church at Rome, Italy, 445 feet.	

—Hills' National Builder.





Plan for a Country Dwelling.

THE above plan possesses many qualifications necessary for a convenient country home. The arrangement especially recommends itself to the consideration of those living in our warm valleys. There is a direct ventilation through the house, by means of the hall; the kitchen is conveniently placed so that, if found necessary, the table can be set on the veranda. As shown, there are no extra finishes, the design being to represent a convenient arrangement, at a low cost. If necessary, the veranda can be continued all around the house.

Practical Ideas for Builders.

IN building a house there are many things which the builder might suggest to the owner as a convenience that he might not otherwise think of. I find in my business that I am often called upon for advice, and have therefore carefully posted myself on such points as will be of the most service to my patrons. Quite often I have had parties come to me to secure my services in building a house, and not being able to employ an architect, relied upon me for advice in many of the details, and were I not posted in these things I should be at a loss how to answer. If you think your readers will not look upon me as egotistical, I will give a few hints, which no doubt every carpenter knows but does not think of putting to use.

First, then, I never advise my customers to have winding stairs. They are regular men-traps, and nothing large can be carried up or down without knocking off plastering or hurting someone. Straight, continuous stairways cause draughts and loss of heat, and if a child starts to fall at the top it never stops until it falls the whole length. My idea is to have flat landings and right-angled turns. These give a fine effect and are artistic and fashionable. I generally put in a light wall strip of beaded work to protect the plaster while trunks or furniture are being carried up or down. If I can so arrange it in the plans I advise a back stairway, as this is one of the most convenient and useful adjuncts to a dwelling. Stairs should not have over seven-inch raisers, and six-inch would be better. I never plan to have a fire-place come between windows if it is possible to have it in

the blank wall. Open fire-places should be as wide as possible. Great depth is no advantage; in fact, it prevents the warming of those parts of the room on each side of the fire-place. If there is any tendency to chimneys not drawing, or drawing the wrong way, there should be a whirling cowl, or else a triangular hood of brick or flat stone.

The flues should have large man-holes in them, in the attic, so that large openings can be made in them to draw off hot air in summer. These holes may be covered with sheet iron in winter. I made my attic cool and comfortable by this means, after a servant had given me warning that the upper room was too hot to live in.

A bay-window is not a very expensive thing, all considered, and it sometimes makes a room just commodious and pretty which otherwise would have been cramped and ugly. It gives a good chance to decorate; you can put a lambrequin or curtain across it, and seats in it, and busts at the side, and plants at the back, and a bird cage in the arch, and a fancy stand in the middle; or you can put sash across it and make a little conservatory of it. It is a good place to work or loaf in. While I do not believe in making a house look as though it had been vaccinated for bay-windows, and had taken splendidly, one or two often redeem an otherwise thoroughly ugly, unhomelike and inconvenient house.

I have a few more little hints that I will try to give in a future article if your readers find this acceptable.—J. C. G., in *American Builder*.

White Efflorescence on Walls.

MANY untenable theories have been propounded relative to the efflorescence frequently breaking out on walls, and causing much annoyance to the painter where there have been given coats of color by the defacement that ensues. Should the various saline particles in a dequiescent state which lead to its formation have found lodgment in the walls of a building, they will assert themselves exteriorly unless the pores of the wall be hermetically sealed. The efflorescence is caused by the fixed alkalis, potash and soda, crystallizing on the surface of the wall. This unsightly efflorescence will totally or partially appear and disappear from time to time. The conditions under which this occurs are worthy of note. The changes are found to correspond closely with changes of temperature and of dryness and humidity of the atmosphere. The ordinary mode for reducing the efflorescence when it makes its appearance, is roughly to brush off the crystals, but what is wanted is their absolute prevention. The potash in the bricks, the true germinating cause, owes its existence to the putrefaction of animal and vegetable substances in the clay out of which the bricks are made. The potash on making its way to the surface absorbs nitrogen from the atmosphere, and thus nitrate of potash, or saltpetre, is produced. Some dampness, however, in the bricks, such even as may be occasioned by rain, is necessary to bring out the potash, evaporation from internal or external heat following on, the existing dampness being the means of exudation. The efflorescence is gradually formed, and after it has become sufficiently thick it is crystallized by the nitrogen of the atmosphere, and is at once rendered visible. The molecules come out under the influence, as we have stated, of successive weak solutions of potash and dampness, and when the successive depositions of this watery solution are sufficiently strong, crystallization follows. Evaporation is thus essential to the production of the efflorescence, and could evaporation be prevented it would cease. The eminent French chemists, MM. Thenard and D'Arlet, have shown that the best way of preventing the access of any damp from the bricks, or preventing any damp that may have found lodgment exuding, is to lay on the surface a preparation of wax and lithargirized oil. This is so effective in closing the minutest pores that even when applied to stucco that has afterwards been painted in oil colors, the composition is found to have penetrated so deeply and had such a hardening influence that no infiltration of water from wall or roof could have any effect. The preparation is equally applicable to wood, which, when saturated with it, will not permit of the exudation of damp.—*Painter's Magazine*.

Modern Cottages.

BY J. H. Kirby. This new work contains 125 illustrations of cottages, dwellings, and miscellaneous work. The cuts illustrating the work are of more than ordinary merit. The author devotes considerable space to "Hints on the Practical Construction of Dwelling Houses." This work will recommend itself to the consideration of those desiring a well-planned house. Copies may be obtained at this office.



DESIGN FOR A HIGH SCHOOL BUILDING TO BE BUILT OF STONE.

Worth Thinking About.

DO you think, because you are a mechanic, blacksmith, or moulder, that it is necessary to carry the marks of your trade on your clothes when your day's work is done? Is there anything particularly edifying to the friends you meet in the streets, male and female, in the sight of dirt-begrimed clothes and skin? We do not believe that there is, and we do not believe that any persons ever yet advanced their interests by neglecting to keep the selves tidy. Let the mechanic who has been in the habit of carrying his "trade-mark" about with him wherever he goes—taking a general pride in his general untidiness—just stop and think, and run over in his mind the list of his fellow-workmen who have been, as he thinks, especially fortunate in securing promotons and better positions; and if his memory serve him rightly, he will remember that those were the chaps who were always neat about their persons, and who used to be so particular in taking care of their tools never caring to lend them. These were the men who used to be dubbed "old women," "fads," etc.; they are now the men who have won positions for themselves and know how to maintain them. It does not make a man any the worse mechanic for being neat in his person; and, argue as you will, the world as it goes has a greater respect for a clean mechanic than it has for a dirty one.

How to Mark Tools.

MUCH trouble can often be saved by marking tools with their owner's name, which can easily be done in the following manner: Coat over the tools a thin layer of wax or hard tallow, by first warming the steel and rubbing on the wax warm, until it flows, and let it cool. When hard, mark your name through the wax with a graver, and apply aqua-fortis (nitric acid); after a few moments, wash off the acid thoroughly with water, warm the metal enough to melt the wax, and wipe it off with a soft rag. The letters will be found etched into the steel.

The measuring of a candle power of a light is accomplished by comparing the shadow cast by a rod in the light of a standard candle with the shadow cast by the light to be tested. By moving the latter toward or away from the rod, a point will be reached at which the shadow cast by both lights will be of the same intensity. The intensity of the two lights is directly proportional to the squares of their distances from the shadow, i. e., suppose the light to be tested is three times the distance of the candle, its illuminating power is nine times as great.

Large Trees.

THE following extract is going the rounds of the press and will serve to show the ideas of some people as to the size of our trees:—

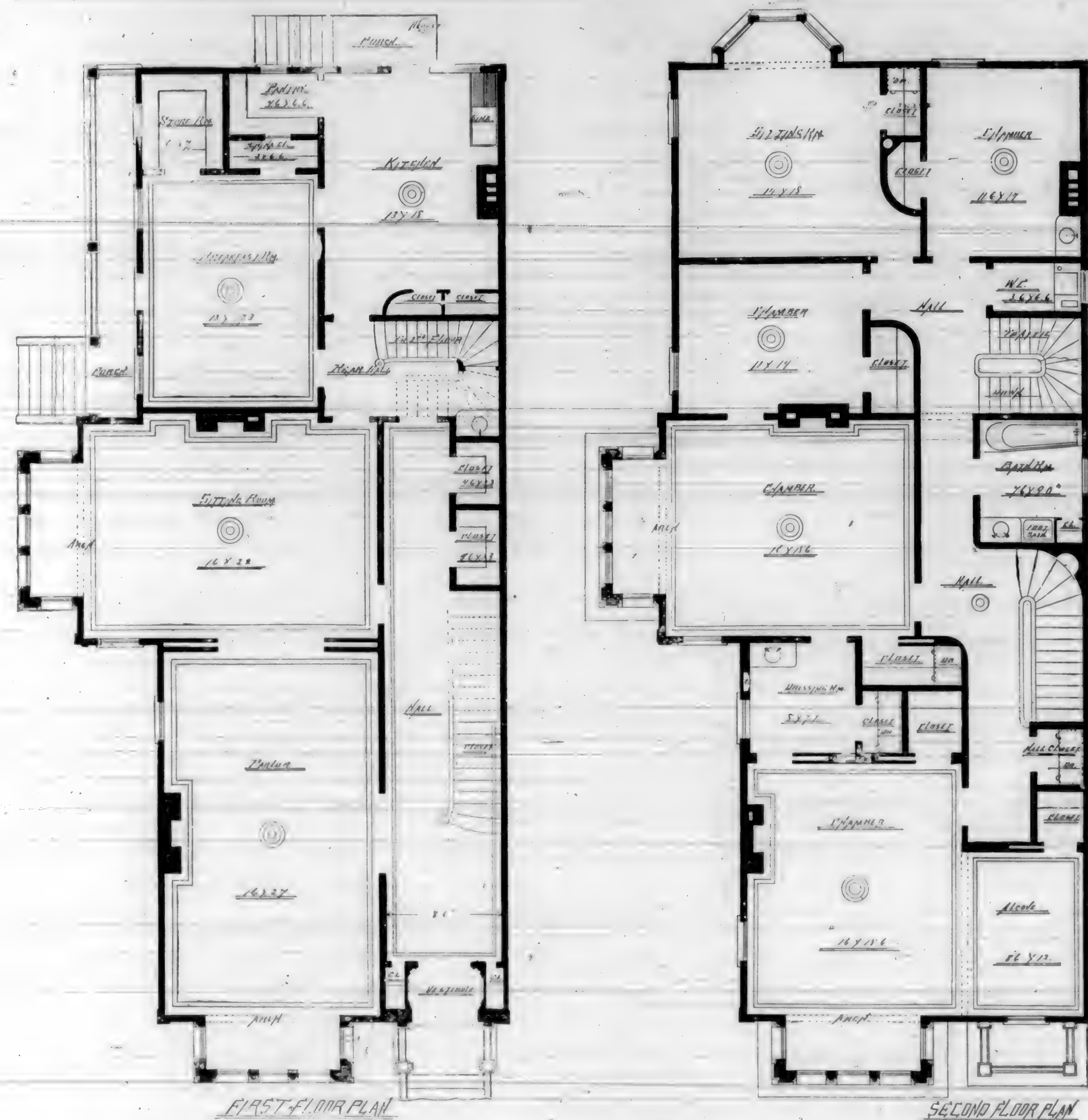
"So you have been out in California?" I inquired of old Dan Whiting, the other day. "See anything of those big trees that we read so much about?"

"Wall, I ruther guess, yes," said Dan. "Saw a holler tree there you could drive a team of horses through. One afternoon me and Sam Washburn, we started to chop down the biggest durn tree you ever see. We are pretty slick wood-choppers, us two, but we worked like beavers at that there tree for nigh onto two weeks. All day long fur fourteen days we kept a-choppin', and Sam he kinder felt like givin' th' thing up as a bad job, but I coaxed him, and told him it wudn't take more'n another week to get through the tree, but I lied like thunder. Anyway, we went to work on th' fifteenth day as usual. 'Long 'bout ten o'clock I got pretty tired, and stopped a bit to rest. While I stood there leanin' on my axe handle, a big chip came a-flyin' from around the tree and took me straight in th' face. It was sort of funny proceedin', so I jest took a walk and looked onto th' other side o' th' tree, and there b'gosh what 'spose I found! There were two big fellers, both old wood-choppers, a-workin' away with their axes on th' other side of our tree. I said, 'Howdy,' and they stopped work. Them two duffers had been choppin' away thar on our tree fur nigh two months, and were only half through!"

"They do have good-sized trees out thar, stranger, that's a fact."

DEATH UNDER THE HOUSE. Death lurks under the house in early spring, in the shape of decaying and moldy vegetables in the cellar, and the decomposing remains of weeds and fungi which developed the preceding season in the damp, dark, unventilated space beneath that portion of the house not included in the cellar. Killed by the winter's frost, this decomposable matter is ready to send forth the pestiferous gases and disease-producing germs which cause some of the common maladies incident to spring. Clear away the filth from these oft-neglected places, and save suffering and doctors' bills.

A MANUFACTURER out West informs us, and wishes to inform the American public, that his patent buzz saw has just captured the finger of scorn, and that it will never again be pointed at anyone.—Puck.



PLANS FOR A COMMODIOUS CITY DWELLING.

Plans for a Commodious City Dwelling.

THE plans shown are well worthy the attention of those seeking a comfortable city residence. Sizes of rooms are distinctly marked. Any information in regard to the plan will be furnished inquirers by addressing this office.

Folding Gates and Guards.

A PERFECT SECURITY AGAINST THIEVES AND TRAMPS.

THE perfect and beautiful device, as fully illustrated on page vii of this issue, recommends itself at once to the careful consideration of those who would have their stores and homes perfectly secure against tramps and thieves. These gates and guards are manufactured to order in San Francisco, to fit and fill any desired opening. They are ornamental in design, and apply equally as well to store windows, vestibules, stables, elevator wells, etc.

As a sanitary device they are superb, permitting the opening of doors and windows, and the free circulation of air through buildings.

Full information in regard to the above can be obtained by applying either personally or by letter to E. J. Robinson, Manager, 109 California St., San Francisco, or to the Secretary of the Company, J. P. Le Count.

It seems that a lawyer is something of a carpenter. He can file a bill, split a hair, chop logic, dovetail an argument, make an entry, get up a case, frame an indictment, empanel a jury, put them in a box, nail a witness, hammer a judge, bore a court and chisel a client.—*Exchange*. Furthermore, he can saw the air, jamb the books down, cut up a witness, screw money out of the victim, floor an opponent, spout nonsense, shelve an enemy, lumber up his speech with Latin, set men at loggerheads, veneer a falsehood with plausibility, rip up the code, ex-plain knotty points, varnish a story, plank down solid law, board his bill out, table an object, pigeon-hole a case, mould the opinion of a juror, paint the other side blacker than it is, polish off another lawyer, post an ignorant witness, prop up a bad argument, and plaster a judge all over with taffy.

WE note an unusual number of patents for stove-pipe dampers. Dampers don't amount to much. What is wanted is a device that will make every end of every length smaller than any other end of any other length.—*Machinist*.

CONTRACTORS, ATTENTION!

For \$5.00 we will insert your business card for one year, and send you this Journal, free.

Dwelling Houses.

THE increasing interest in the subject of architecture shown by the daily press is the most promising sign that we as a nation are progressing in art development. In a word to our exchanges, we urged in our last issue that editors of newspapers give more attention to architecture, and to sanitary and



safe construction, not, however, overlooking the aesthetical side of the subject, which, of necessity, is of slower growth than the more practical features to which special attention was called. We are pleased to republish an editorial which appeared recently in the Des Moines Leader. The subject, "Dwelling Houses," is one in which the people are interested, and the writer handles his subject well. He says:—

"Few people realize how great is the public importance of the study of style in buildings. With it a community or country may be made permanently beautiful, or for the want of it eternally disfigured. We do not wish to ride any hobby and follow out the train of thought to the question of the good and evil effects of to-day's architecture on the minds and morals of to-morrow's 'rising generation.' Running everything into morals and religion is as bad as running it into politics. Beauty and business will suffice for present considerations. We all know that a town or county characterized by pretty houses is all the prettier for it, and especially in the case of the town, will profit by it in a business way and in its own upbuilding.

"Hence we can hardly say too much, if what we say is right and true, about style in building houses. Not that we ought to look out and always be 'stylish.' As a rule stylish people are those who know the least about style. The highest art is to conceal all art." And this leads us to the particular subject of our homily.

"Last fall we called attention to the fact that the light and flimsy in architecture was passing away, and the heavy and substantial was taking its place. This movement has developed into real and rapid revolution. It almost takes one's breath. We expected that something about as heavy as the old Greek styles would be reached before long. But already they have been left away behind.

"Nothing will ever be prettier than the Greek. But one forgotten consideration must be recalled and kept constantly in mind. The Greek styles which we admire were all public building styles. In fact, they were temple styles. We cannot adopt them in our temples, because our temples are fixedly Gothic. We may and do adopt them in our other public buildings, and there they look pretty. But even in Athens it was against the law to finish private dwellings in the high styles of architecture.

"You cannot make a Greek porch fit nicely on a modern residence. You may get a certain very pretty effect, but still it is not the effect you want. Ink looks pretty on paper but not on the baby's face, no matter how artistically it is applied.

"It is not because the Greek is too heavy. It is as light as wicker beside the dwelling styles we have. The column has developed into a great pillar of stone or brick, arched perhaps to its neighboring pillar. The balustrade is a brick or stone wall. The roof of the porch is a continuation of the roof of the house, from which the gable cornice is gone. Great heavy shutters swing from the outside of square, old-fashioned windows. The chimney is an immense pile, and looms up in grim prominence.

"Everything is as modest as it is heavy. There is no strutting, no boasting, no lowering. The house bows and invites, though it does not smile. It is not severe. It is substantial and hearty.

We are afraid it is almost ugly. Its countenance is shaggy and solid as some kind-hearted old Scotchman's, or his whole-souled dog's.

"And yet, after all, there is a beauty in it. Of course we have described the extreme, and it is an extreme from which there is likely to be a recession. Fortunately we are likely to have mingled together the extremes in both directions, and a great variety of means between them. After all, variety is the spice of life. Even the extremes may be so proportioned and toned that the art in them will be concealed.

"We speak of these things because the building season is on, and our architects, builders, and home seekers need to be looking out for these things. Our advice to all is the same as it has been,—not to be caught with a style which is so much in the fashion to-day that it will be antiquated to-morrow. Build a house that will always look pretty, no matter how much fashions may change. But it is profitable and possible in a house, which lasts long and is always for sale.

"Of course the very heavy is most appropriate to stone and least to wood, brick coming in between. But porch, and modesty, and cordiality, and substantiality are proper and will be durable in all. And as to the weight it depends on where it appears. Let it be remembered that we are building for a generation which will have more sense and better taste, and be able to detect at a glance these things which we can't appreciate until we have studied them. And the more money you put into a house, and the more lasting you build it, the more careful you must be to make it please that coming generation. Let us see if we can do as well in our dwellings as the Greeks did in their temples—challenge the admiration of 2,000 years to come.

"But then we don't need to do that. Our climate would long since have destroyed the Greek masterpieces, as it is crumbling the Obelisk. Still times and tastes, as well as weather, change more rapidly here than in the Orient."

PRELIMINARY ANNOUNCEMENT.

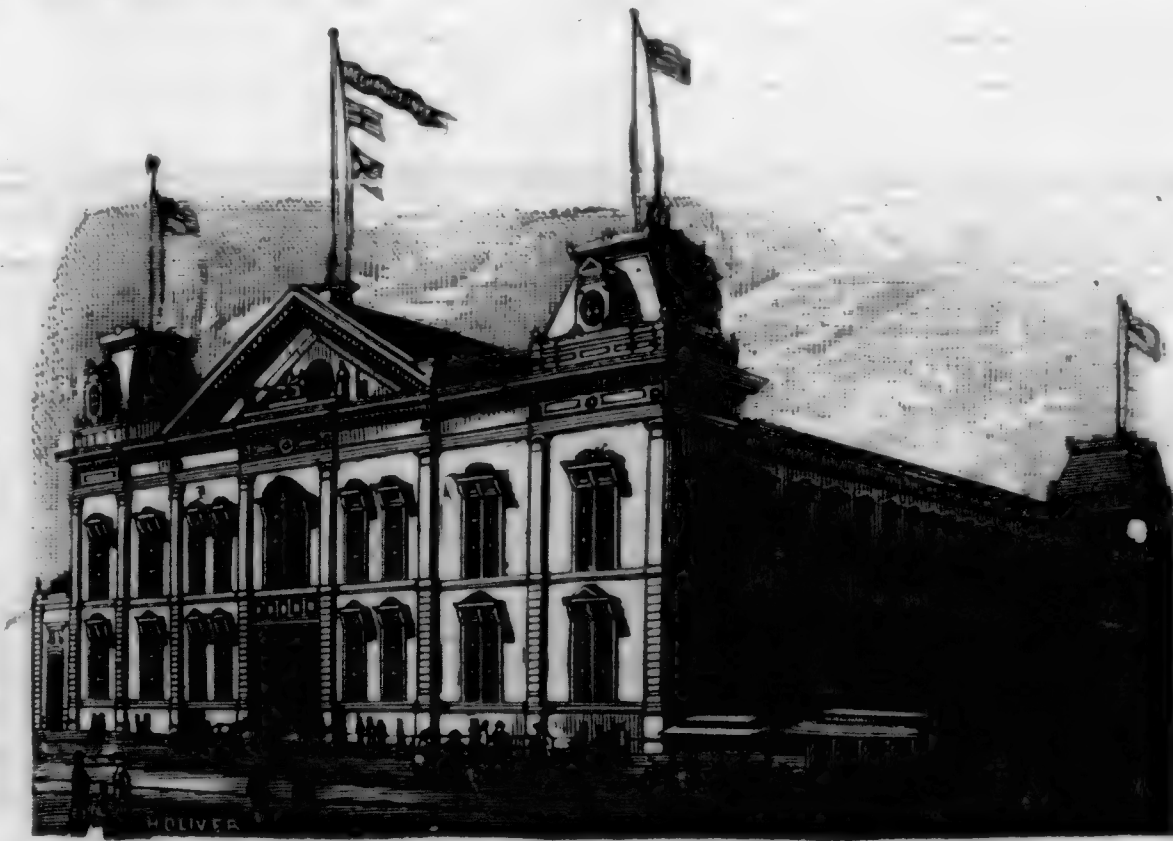
Twenty-Second Industrial Exhibition

Mechanics' Institute of San Francisco.

THE Board of Trustees of the MECHANICS' INSTITUTE take pleasure in announcing that the TWENTY-SECOND INDUSTRIAL EXPOSITION of the Society will open in its spacious Exhibition Building, bounded by Larkin, Hayes, Polk and Grove Streets, on Thursday, September 1st, 1887, and will close on Saturday Evening, October 8th, 1887, thus keeping open continuously to the public for the period of one month and eight days.

The great popularity of these exhibitions in the past is the best guarantee of their merit, and of their usefulness in the future, and it may be truly said, that their profit to the exhibitor is in equal measure to their instruction to the visitor.

No better means of advertising useful articles can be conceived than a daily opportunity, under pleasant circumstances, and in the midst of a vast and orderly crowd of inquiring people, of personally displaying and explaining the merits of one's inventions and productions.



The Exhibition Building is complete in all its appointments. No Charge is made to exhibitors for space. Steam power and water furnished free. In addition to gas, powerful electric lights will be used at night.

Arrangements are being made to secure art exhibits, pictures, statuary, etc., of unusual merit.

Engagements have already been entered into with leading manufacturers, which ensure an unusual exhibition of notable inventions, mining and other industrial machinery in actual operation, and a complete display of the finished products of our California workshops.

A Grand Orchestra of skilled musicians, including many specialists and solo performers from the East and Europe, giving Grand Concerts each afternoon and evening under the direction of the celebrated Frederick N. Innes, has been contracted for at great expense, and will make the coming Fair memorable in the musical annals of the State.

For space or any further information, apply at the office of the Institute, No. 31 Post Street, S. F.

FACTS

About the Manufacture and Relative Value of Roofing Plates, and about the Laying of a Good Roof.

MANUFACTURE.—Roofing Plates, which are made of either steel or iron, are coated with a mixture of lead and tin, by two methods. The original method was by dipping the crude iron or steel plates into a mixture of tin and lead and allowing the sheets to absorb all the metal coating that was possible, and it is by the same process that the "Gilbertson's Old Method" is made to-day. The other process, by which the majority of Roofing Plates are made, is known as the "Patent Roller Process," by which the plates are put into a bath of tin and lead, and are passed through rolls, the pressure of which leaves on the iron or steel a thickness of coating that determines the value of the Roofing Plate. These rolls can be so adjusted as to leave a good amount of coating on the plate, such as the "Camaret" has, or an ordinary coating, or a very scant one. Hence the only actual difference between the "Camaret" and the "Gilbertson's Old Method" is that the latter plate has the heavier coating of metal.

Misleading Terms.—There are at the present time certain brands of Roofing Plates in the market, styled "Double-Coated," "Re-Dipped," "Double-Dipped," etc., etc., all of which terms are, however, incorrect and misleading, as it is impossible for any plate to take more metal than adheres to it by the first dipping, if left in the bath of tin and lead a requisite length of time, and no plate can have its coating increased in thickness by being re-dipped.

Assorting.—The value of a plate does not entirely depend upon the material and coating, but upon the care used in assorting, or picking out the defective sheets from the good ones. There arise in the manufacture of all Roofing Plates, imperfect sheets, such as sheets with blisters, or with broken corners, etc., which are called "Wasters." These are packed by themselves, the IC plates being marked "ICW" and the IX plates "IXW." The perfect plates are designated by the manufacturers as "Primes," while the imperfect sheets are called "Wasters," and the latter are sold at considerably less than the Prime Plates.

Sizes.—There are two sizes of Roofing Plates made, 28"x20" and 14"x20". The larger size is mostly used, from the fact that it requires less seams on the roof, and consequently cheapens the cost of putting on. There is a size 10"x20", now used for gutters and leader pipe.

Thicknesses.—There are only two thicknesses of Roofing Plates made, IC or No. 29 gauge, which represents in weight 8 ounces to the square foot, and IX or No. 27 gauge, which equals in weight 10 ounces to the square foot.

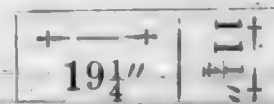
The IC plates are used to a far greater extent than the IX, from the fact that they are less expensive. For the very best roofs, however, IX Plates are preferable, the extra thickness being worth more than the extra cost.

Weights.—The old standard net weight per box IC 14x20 Roofing Plates was 112 lbs.—1 lb. per sheet—but this became reduced by competition and the desire for cheapness to 108 lbs., which is to-day the standard net weight. Indeed some tin plates are being brought out weighing very little more than 95 lbs. per box.

The standard weight of IX 14x20 Roofing Plates is 28 lbs. over that of IC 14x20, and 20x28 plates of course weigh just twice as much as 14x20.

Stamping.—Every sheet of the "Gilbertson's Old Method" and "Camaret" is now being stamped, not only with the name of the brand, but also the thickness—IC or IX; and as a further protection for these plates, every box of both brands contains a slip bearing our guarantee and the name of the assorter.

Laying the Roof.—14"x20" plates. Many claim that a better roof can be made of 14x20 tin than 20x28. The cost of laying a roof of the smaller size will amount to 25 to 30 per cent. more than the cost of 20x28 size, owing to the greater number of seams, and hence more tin, solder, cleats, and work are necessary in laying. Locality has much to do with use of the two different sizes. The 14x20 tin can be laid in two ways. The most desirable way (and that which makes the best roof) is by laying the sheets the 14-inch way, thus:



In order to lay the tin this way more cleats are of course necessary than by laying the sheets of 14x20 the 20-inch way, as well as more solder, nails and labor.

The above represents the net surface when laid the 14-inch way.

Laying the Roof.—20"x28" plates.



The above represents the net surface when laid the 20-inch way.

If two roofers figure to lay a roof of 20x28, and one lays it the 20-inch way, he cannot lay it as cheaply as the one who would lay it the 28 inch way, but at the same time he can make the better roof.

Advantages of Standing Seams.—Standing seams allow a greater amount of expansion and contraction than the flat seams, as the flat seams being soldered, make the entire roof practically a solid sheet.

For a steep roof the tin should be put on with a standing groove and with the cross seams put together with a double lock. A cheaper way is to double lock the seams and put white lead into the joints instead of soldering; but we would recommend that the cross seams be locked and well soldered.

Soldering.—We recommend the use of resin only as a flux in soldering, although some roofers use diluted chloride of zinc. "Half and Half" Solder (a mixture of half tin and half lead) is the mixture most suitable for roofing purposes.

Painting the Roof.—An excellent paint for the purpose is composed of 10 lbs. Venetian Red, 1 lb. Red Lead, 1 gallon Pure Linseed Oil.

The substitution of benzine or fish oils for the pure linseed oil should not be allowed.

The roof will last longer and be less liable to rust if painted on the under surface before laying. It is a good plan to put one or two layers of felt paper under the tin to serve as a cushion for same, and to deaden the noise made by the rain falling on the tin.

A year after the first coating the roof should be painted again, and then a good roof will only require painting once in four years.

A roof of first-class material well soldered and properly laid should last forty years.

Suggestions to Those Specifying Tin Roofing.—In the light of the facts herein stated, we would suggest to architects and others desiring the very best quality of tin roofing that when they specify "Gilbertson's Old Method," or "Camaret" guaranteed brands, they should insert the full name of the brand in the specification and should require that every sheet be stamped not only with the name of the brand but also the thickness IC or IX.

TO PREVENT SCREWS FROM RUSTING.—It is well known that iron screws are very liable to rust, more especially when they are placed in damp situations. When they are employed to join parts of machinery, they often become so tightly fixed that they can only be withdrawn with considerable trouble, a fracture sometimes resulting. In order to avoid this inconvenience, screws are generally oiled before being put in their places, but this is found to be insufficient. According to the *Moniteur Industrielle*, mixture of oil and graphite will effectually prevent screws becoming fixed, and, moreover, protect them for years against rust. The mixture facilitates tightening up, is an excellent lubricant, and reduces the friction of the screw in its socket.

CONTRACTORS, ATTENTION!

For \$5.00 we will insert your business card for one year, and send you this Journal free.

The "Universal Tinker and Amateur's Assistant."

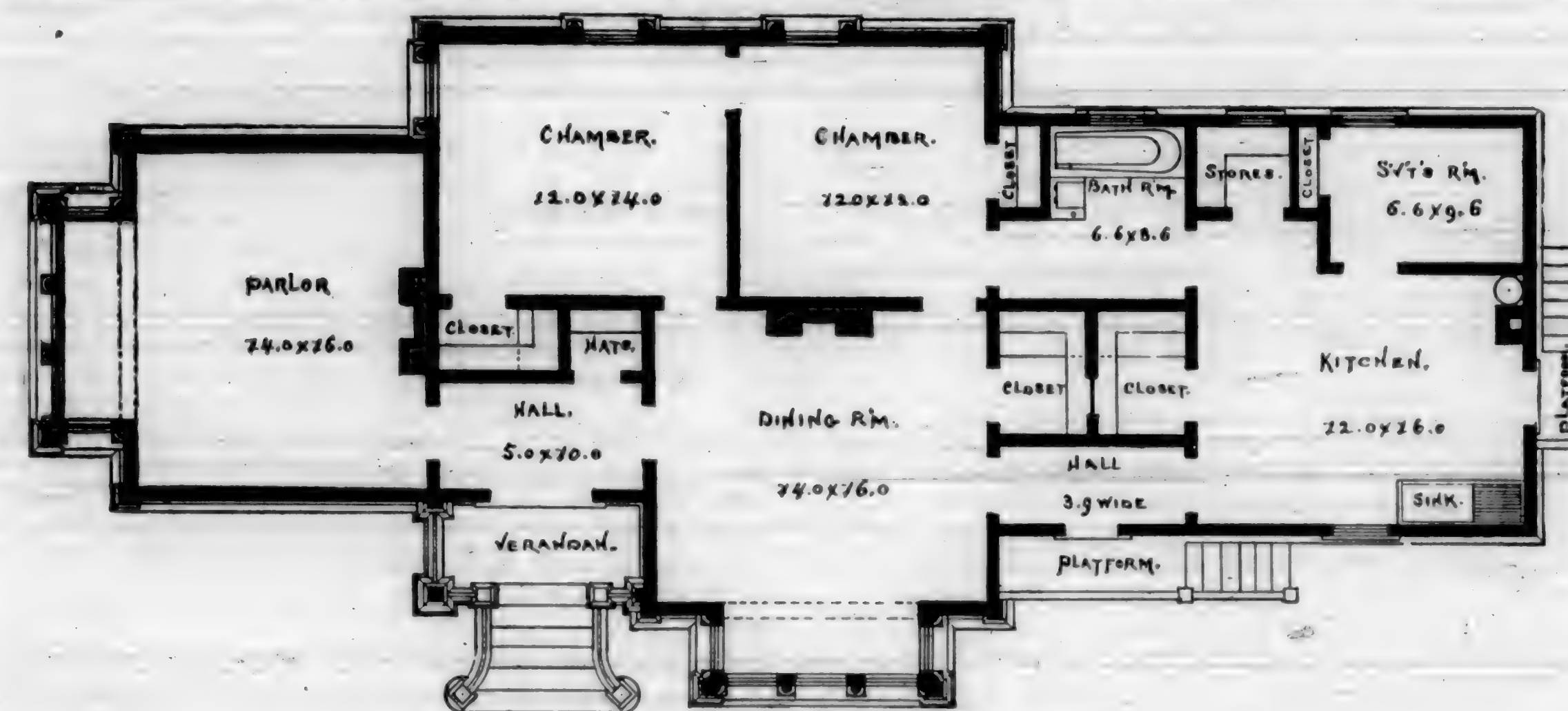
THIS is the title of a new monthly journal to be issued about the 1st of July, 1887.

The new journal is not intended to take the place of the valuable juvenile papers or magazines that are now so popular among our young folks; it is rather intended for young men and women than for boys and children. It will not be a "story-teller" unless the story told has a mechanical or scientific application. It will not be a "picture book," yet it will be illustrated with diagrams, designs and working drawings, and a sprinkling of illustrations of new tools, new amateur machines, new and old devices for doing work, and engravings of finished amateur effort.

The *Universal Tinker* will not confine itself to constructive work, but will take up every subject that may be brought before it and that may be dealt with from an amateur's standpoint.

It is intended at first to make it a sixteen-page journal, but may be enlarged or reduced as circumstances may warrant. The price will be \$1.00 per year, payable in advance, but if at the end of the year we are encouraged to enlarge or further improve the *Universal Tinker* we shall increase the price to two or three dollars a year.

Any further information will be cheerfully furnished by addressing the proprietors, Hodgson & Bertrand, 294 Broadway, New York City, N. Y.



PLAN FOR A COMFORTABLE COUNTRY DWELLING

Plan for a Comfortable Country Dwelling.

THE above plan is very complete in all those little details that go to make a home in the country truly pleasant. Access to all the rooms is very conveniently arranged. The parlor is situated away from the living portion of the house. Every room is abundantly supplied with windows and closet room. The kitchen and its apartments will recommend themselves to the consideration of every thrifty housewife. Sizes of all the rooms are very distinctly marked.

Suggestions to Country Builders.

CHAS. HARDY, in the *National Builder*, says: Travel and intimate observation in the States of Illinois and Missouri reveal the fact that very few carpenters and contractors have made much pecuniary headway. Indeed it would hardly be erroneous to state that for the amount of business done few branches of trade have less profit to show.

The cause of this is probably to be found in the fact that, although nominally wages appear to be satisfactory, yet the average reduced by the inevitable interruption to work that the winter season brings with it, during which any small surplus is consumed. Contracts, too, are of short duration, and especially in the smaller cities the interval between two contracts is a long one. A system of letting contracts by bids or competition, however fair it may be in theory, still works very unjustly where many of the bidders make no accurate, thorough and itemized estimate. It is common, extremely common, to hear a country bidder say that his employes have earned more than himself on a job, or had he to pay wages he would have been money out of pocket at its completion; and that to avoid this, he had worked it out him-

self alone, at a remuneration which left him only starvation wages or even worse. This is of course not intentional.

Very few indeed have any system which enables them to see day by day what is the result that a given job is showing. At the best this is discovered at the end of the season. It is no wonder that they underestimate; for underestimation is the natural consequence of over eagerness to obtain a contract, unchecked by a thorough and accurate fore-estimate of the result.

Underestimating means working for nothing and forcing others to do the same; it means impoverishment and poor work. The contractor has himself and his family to maintain, and the temptation is great to get out by doing poor work. I would suggest that every contractor purchase an account book large enough to enter, line by line, upon a single page every item of his estimate, giving quantity, price and labor for each item. Let him leave opposite to this page a blank page, on which he may enter on the corresponding line opposite the actual amount purchased, and the actual amount paid, together with the actual amount of labor expended upon the item, and he will thus be able to see the result of his contract.

Were such a system adopted it would never be abandoned. An estimate, if clear and explicit, would be gone over twenty times, with the result that the contractor would become expert in estimating, and a mistake once made would never be repeated.

There is an advantage in taking the items in a certain order

and pre-erving that order. It is impossible to exaggerate the good effects of a system which enables the tradesman to know day by day exactly how he stands.

Every contractor has an interest in his competitor's knowing how to estimate correctly. It does not need many underestimators to ruin a business for a season.

Carpenters are far too apt to imagine that all that is wanted to make a successful contractor is to be a good mechanic. This is a great mistake. The country contractor should be a good business man, and have a constant clear insight into his business. His business is not like that of a merchant where he is constantly selling the same articles in small quantities at a steady profit to the same customers. With the contractor each new contract is on a new basis, with a new customer in one large amount, composed of varying quantities, at various prices; and it is evident that it must require vastly more care and forethought to conduct his business successfully than one that is steadier. He is also entitled to a profit upon the labor he employs and pays for. He should also estimate the risk of damage to the building while in course of construction.

Prudence and wise precaution are not a waste of time and trouble, and if not exercised when called for, the consequence will assuredly have to be borne in loss and anxiety.

A COAT of coach varnish will keep sap from striking through painted work.

CONTRACTORS, ATTENTION!

For \$5.00 we will insert your business card for one year, and send you this Journal free.



ELEVATION.

A Country or Village Residence.

THE above engravings represent the floor plan and perspective view of a country or village residence, also suitable for the city, are beautiful in design, and illustrate the advantages and necessity of employing an architect, by their well-proportioned, neat and graceful elevations, and compact, convenient, and well-arranged plans.

This building was erected in Santa Cruz, Cal., furnishing a home for one of its most prominent citizens. In reality the building has a pleasing, graceful appearance, so desirable in villages or country homes. As you approach the building the heavy, projecting cornices and gables, with neat brackets, fancy shingling, and ornamental finials; the bay-windows with chamfered pilasters and carved brackets, surmounted by graceful and spacious balconies; the large porch with turned columns, and balusters, and the front door with raised panels and ornamental glass transoms, etc., cause you to stop and admire the architecture before you enter. Upon entering the building you find yourself in a large hall with a beautiful flight of platform stairs leading to the second story, and inclosed by black walnut newels, railings, and balusters. On the right is a door communicating with the parlor, and in front, one with the dining-room. The parlor and sitting-room are separated by large, paneled, sliding doors, which can be thrown open, making a very large and beautiful apartment. In the center of the ceiling of the rooms are decorated center-pieces, and the parlor, sitting, and dining-rooms have moulded cornices of plaster of Paris.

The kitchen is provided with a large pantry, in which is a slide to pass dishes, food, etc., into the dining-room; it also has a large closet with shelves and drawers for linen, towels, etc.

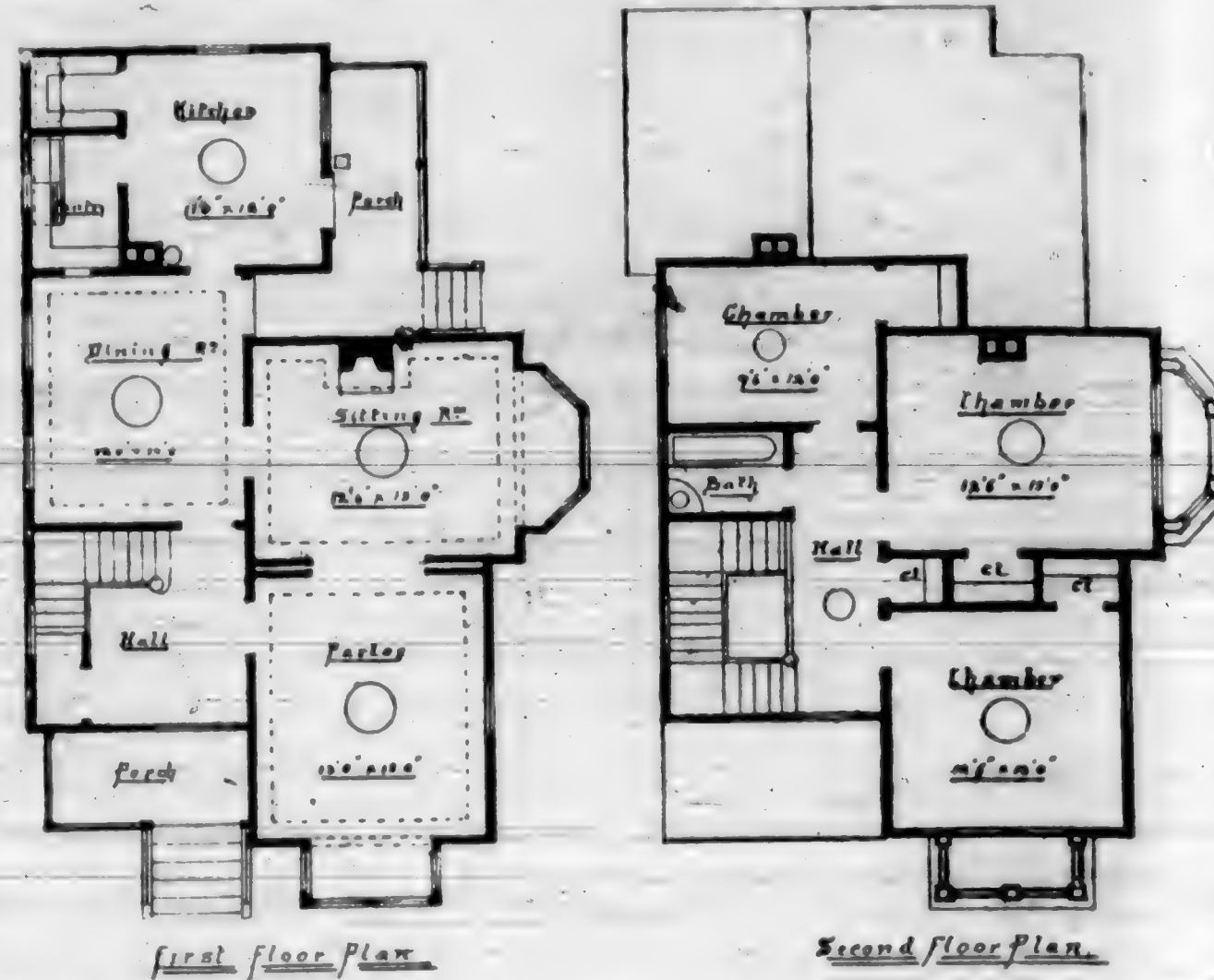
The rear porch is inclosed by a neat railing, and for convenience a slop hopper is placed near the kitchen door.

This design is a most desirable one for any family wishing the conveniences and pleasures of a model home. Any information desired will be promptly forwarded by addressing David Salfield, architect, 216 Kearny Street, San Francisco, Cal.

Black Walnut.

BLACK walnut has been extensively used, the New York Herald remarks, in making furniture for nearly fifty years. The demand for it, however, is on the increase. The forests of the North have been pretty well cleared out, and now the Southerners are looking forward to a chance in the market. Tennessee and Arkansas lead the van. Black walnut timber has been cut in almost incredible quantities in both these States, and land-owners have reaped a rich harvest. Next comes the States further south. They have immense tracts of timber-land covered, not only with the walnut tree, but also with the best woods required in carriage building. It is suggested by the New Orleans Picayune that the time is not far distant when Northern capital will be invested in manufactories on the edge of Southern forests and the banks of Southern streams. To which the Herald replies: "Our neighbor may rest assured that if there is money in it Northern cash will meet Southern enterprise half way."—Scientific American.

An exchange refers to it as a singular fact that bricklaying is one of the parts of skilled labor that invention has never interfered with. Bricks are laid one by one to-day as they were in Egypt and Babylon four thousand years ago. It might also have added that bricks are put into the hat in about the same way as in the time of Noah.



NEVER paint a kitchen floor—oil and stain it.

WHITE marble mantels are again coming into favor.

THE pressure of wind on a slanting roof is equal to twenty pounds to a square foot.

WHITE paint, white furniture, curtains, white walls, and white woodwork is the latest agony.

AN inch of well-haired mortar between floors will be found to effectually deafen them against sound.

TIN roofs should always be painted on the under side with mineral paint and be laid in single sheets, flat lock.

NEWLY plastered walls and newly laid shingles should not be painted for six months. Shrinkage will then be over.

SINKS for kitchens are now made of iron enameled, porcelain, soap-stone and crockery-ware; 20x40 is the best size.

CEMENT concrete four inches thick troweled down and finished with a coat of Portland cement makes the best cellar bottom.

THE cause of many incipient fires is the faulty construction of chimney flues. Always see that they are thoroughly plastered inside.

THERE is no absolute need of painting zinc work, for exposing it to the atmosphere has the effect of coating it with a thick film of oxide which protects it from the future action of the air as effectually as paint.

A MIXTURE of cork, silica, and lime is coming into use in Germany as a building material. It has the advantage of keeping out heat and cold, and is also claimed to be an excellent preventive of dampness and deadener of sound. It is substantial, light, and durable, and seems to be especially adapted for ceiling and wall lining.

ARTISTIC TILES AND MANTELS.

ONE of the most artistic displays in Tiling, Mantels, Brass goods, etc., can be found in the rooms of E. A. Pattison & Co., 308 Stockton St., San Francisco. The design in tiling entitled "Cupid among the Roses," is worthy of particular mention. This firm is the sole Pacific Coast Agent for the Perth Amboy Terra Cotta Co. A large and well selected line of wooden and iron mantels is kept constantly on hand, and the prices are such as to command the attention of those about building. The floors of Messrs. Pattison & Co's warerooms are covered with Tile and Parquette flooring of the most beautiful and artistic designs, and should be examined before purchases are made elsewhere. Special personal attention is given to furnishing designs and estimates for all work connected with the tasteful arrangement of everything connected with Mantels and Tiling. This firm also makes a specialty of stained glass. Write or call for information as per address mentioned.

COUNTRY
BUILDING INTELLIGENCE

In this and succeeding issues we intend to devote considerable space to information in connection with buildings, from every portion of the coast.

Only reliable news will be found in this column. Our custom has been for the past eight years, to furnish only data which could be relied upon. We will not publish rumors of "THIS AND THAT IS GOING ON" unless we are reasonably assured that such is truly the case. In all cases we will file our authority for any statements made in this column. No doubt mistakes will sometimes occur, but these we intend to be a rare exception to our rule of reliable news.

We desire the co-operation of country editors and mechanics to this department of this journal. By spreading the news of building engagement in your part of the country, you enhance the value of your section by proclaiming it a go-ahead community.

Architects should also notify us of "plans to figure on;" we do not charge anything for the insertion of such notices. Remember this journal is in the EIGHTH YEAR of its existence, and is the only journal published this side of the Rocky Mountains in the interest of Architects, Contractors, and Material Men.

Alameda.

William Neal is building two neat cottages on the corner of Clinton Avenue and Oak Street. They will contain four and five rooms respectively, and will cost about \$1,500 each.

Lumberman's Hand-Book, for \$2.00.

Practical Geometry, for \$1.00.

A small cottage has been erected on Clinton Avenue, near Oak Street by J. H. Young. He intends enlarging it in a few weeks.

Builders' Companion, for \$1.50.

Builders' Work, for \$5.00.

Fresno.

J. L. Smith, the contractor, is building a very neat and attractive family residence for himself, on the extreme northern portion of I Street. The main building is 17x28, with a front extension 12x10, two stories in height. The estimated cost is \$1,250.

Building Superintendence, for \$3.00.

American Cottage Homes, for \$3.00.

Webster Brothers, of the City Drug Store, have decided to build a one-story brick building immediately south of the buildings recently completed by J. M. Braly, on I Street. It will front twenty-two feet on I Street, and be eighty-five feet deep, and will be fitted up in first-class shape.

Science of Carpentry, for \$4.00.

Universal Assistant, for \$2.50.

A. Wilheimer has made arrangements to erect a brick building opposite the old city hall building, on I Street. It will be 22x85 feet in size, one story, and will have a fine plate glass front.

Builders' Companion, for \$1.50.

Builders' Work, for \$5.00.

Geo. L. Bradley has purchased the lots formerly occupied by the dwelling of R. H. Fleming, on I Street, and will erect a substantial brick building thereon.

Steel Square Problems, for \$1.00.

Workshop Companion, for 35c.

In addition to the above the following parties will build: S. H. Williams, C. L. Purring, C. H. Sweet, Wm. Faymonville, Mrs. Bedford, and others.

Building Superintendence, for \$3.00.

American Cottage Homes, for \$3.00.

Kingsburg.

Mr. Landrum Smith will commence building in May.

Grimshaw on Saws, for \$4.00.

Mechanics' Geometry, for \$4.00.

Modesto.

In a few weeks Messrs. Wood & Turner will erect a commodious building.

Artistic Homes, for \$3.50.

Modern House Painting, for \$5.00.

The Modesto Bank has decided to build a fine two-story brick building.

Cutting Tools, for \$1.50.

Cummings' Details, for \$5.00.

Mrs. Parker is about to build a fine dwelling.

Cutting Tools, for \$1.50.

Home Hand-Book, for \$10.00.

Oregon Items.

It is probable that another immense warehouse and dock will be built on the river front between the Albina sawmill and the O. R. & N. docks this summer.

Practical Perspective, for \$5.00.

Woodwards' Country Homes, for \$1.50.

Merges & Vosper have let the contract to Buxton & Sparks for construction of two cottages on Russell Street near the corner of Kirby.

Science of Carpentry, for \$4.00.

Universal Assistant, for \$2.50.

Charles Schmid, of Portland, is having a two-story frame store built on the east side of Helm Street, just south of the Tivoli saloon. F. Miller is the contractor.

Science of Carpentry, for \$4.00.

Universal Assistant, for \$2.50.

Artistic Homes, for \$3.50.

Modern House Painting, for \$5.00.

The old central school building on the southeastern corner of Sixth and Alder Streets, Portland, will be remodeled, at a cost of \$3,000, as a hotel.

Plaster, How to Make It, for \$1.00.

Shavings and Sawdust, for \$1.50.

John M. Pittenger, of Albina, will build a fine residence.

American House Carpenter, for \$5.00.

Cutting Tools, for \$2.00.

Work on the new paper mill at La Camas has been commenced, a force of men now clearing away the debris of the old mill.

Builders' Companion, for \$1.50.

Builders' Work, for \$5.00.

Wm. M. Wisdom, of Portland, has purchased a piece of ground in the Belmont Park at Mount Tabor, and he will erect a dwelling-house thereon. Others contemplate making similar purchase and improvement.

Lumberman's Hand-Book, for \$2.00.

Practical Geometry, for \$1.00.

The Orphan's Aid Society of Salem intends to build a home for children in that city. It will cost about \$15,000, and be modeled after that of Portland.

Artistic Homes, for \$3.50.

Modern House Painting, for \$5.00.

The women of the Portland church congregations have raised about \$1,000 for the new Y. M. C. A. building.

Practical Perspective, for \$5.00.

Woodward's Country Homes, for \$1.50.

A new Catholic school is to be built in Pendleton.

Science of Carpentry, for \$4.00.

Universal Assistant, for \$2.50.

Bids have been received for construction of W. S. Ladd's four-story brick, in Portland, on the southeast corner of Front and Morrison Streets. The entire cost will be \$60,000.

American House Carpenter, for \$5.00.

Cutting Tools, for \$2.00.

Dr. S. E. Josephi intends to build a private sanitarium in Portland costing about \$10,000.

Every Man His Own Mechanic, for \$3.50.

Tredgold's Carpentry, for \$7.50.

N. K. West is having a two-story brick store erected on the corner of Fourth and N Streets, Portland.

Builders' Companion, for \$1.50.

Builders' Work, for \$5.00.

Buxton & Sparks have commenced construction of two frame cottages on the northeast corner of Russell and Borthwick Streets, for Merges & Vosper, of Hillsboro, Oregon. Mr. Merges will also build, in a short time, a handsome residence.

American House Carpenter, for \$5.00.

Cutting Tools, for \$2.00.

Petaluma.

Capt. John Henry is building a warehouse.
American House Carpenter, for \$5.00.
Cutting Tools, for \$2.00.

San Jose.

One mile from town, two-story frame with barn. Owner, R. Wiltz; architect, Theodore Lenzen; contractor, J. D. Stewart; cost, \$5,000.

Wonders of Art, for \$1.25.
Limes, Cements, and Mortars, for \$4.00.

On First Street. Mr. Farrington is adding \$3,000 in improvements on his brick building. Theodore Lenzen, architect.

Album of Mantels, for \$3.00.
History of Architecture, for \$15.00.

Mr. Kelly is building a frame cottage. Cost, \$2,500. Theodore Lenzen, architect.

Practical Perspective, for \$5.00.
Woodward's Country Homes, for \$1.50.

G. J. Koenig is building a \$2,500 house. Theodore Lenzen, architect.

Hand Railing and Stair Casing, for \$1.50.
for Drawing Carpenters, for \$1.75.

J. W. Lyndon, Los Gatos, Queen Anne cottage. \$8,000. G. W. Page, architect.

Shavings and Sawdust, for \$1.50.
American Cottage Building, for \$3.50.

Mr. Johnson, East San Jose. \$1,700 cottage. Jacob Lenzen & Son, architects.

Lumberman's Hand-Book, for \$2.00.
Practical Geometry, for \$1.00.

Mrs. Winchester, Los Gatos Road, Eastlake house, \$2,400. Robert Summers, builder.

American House Carpenter, for \$5.00.
Cutting Tools, for \$2.00.

E. O. Smith, Eastlake house on First Street, \$8,000.

Building Superintendence, for \$3.00.
American Cottage Homes, for \$3.00.

C. J. Martin, extensive improvements on Hamer House.

Album of Mantels, for \$8.00.
Architects' Companion, for \$2.50.

Snook Hotel, Southern Pacific depot, \$4,000, Russel Bros., builders.

Woodward's Farm Homes, for \$1.00.
Woodward's Graperies, for \$1.00.

SAN FRANCISCO BUILDING NEWS.**B**

Broadway, bet. Van Ness Avenue and Franklin. Frameschool building.

O.—P. Birmingham.
A.—T. J. Welsh.
C.—Bateman Bros.

\$20,000.

Broderick and Washington. Two-story frame.

O.—C. E. Hempel.
C.—C. S. Waterbury.

\$3,000.

Bush, bet. Powell and Mason. Additions.

O.—G. Hageman.
A.—B. E. Henriksen.
C.—Moore Bros.

\$3,000.

C

Clipper, near Noe. Frame dwelling.

O.—Mrs. A. Keppler.
C.—G. Houston.

\$1,400.

California, cor. Pierce. Five two-story frames.

O.—James Whartenby.
A.—Moore & Schulze.
C.—R. Smilie.

\$25,000.

California, bet. Kearny and Montgomery. Four-story brick.

O.—Abby M. Parrott.
A.—Pissis & Moore.
Masons—Riley & Loane.

Carpenter—W. M. Fletcher.
\$75,000.

Clementina, bet. Fourth and Fifth. Two-story frame.

O.—Alex Donaldson.
A.—M. J. Welsh.
C.—J. J. Dunn.

\$3,500.

D

Devisadero, near Geary. Two-story frame.

O.—J. F. McComie.
\$4,500.

Dolores, near Twenty-eighth. Two-story frame.

O.—Flanagan.
\$3,000.

Dolores, near Twenty-sixth. Two one-story frames.

O.—R. Bergfeld.
\$4,000.

Dolores, near Twenty-ninth. Two-story frame.

O.—R. Bergfeld.
\$3,000.

Devisadero, near California. Two two-story frames.

O.—Duncan.
A.—W. F. Smith.
C.—J. V. Hussey.

\$7,000.

Devisadero, near Eddy. One three-story frame and two two-story frames.

O.—J. W. McDonald.
A.—T. J. Welsh.
\$12,000.

E

Eddy, cor. Glasgow. Additions.

\$500.

Ellis, bet. Taylor and Jones. Two-story frame.

O.—A. Smith.
A.—H. D. Mitchell.
\$7,000.

F

Fifth, cor. Bluxome. One-story brick building.

O.—F. L. Whitney.
C.—Mahoney Bros.
\$5,000.

Folsom, bet. Fourth and Fifth. Three-story brick building.

O.—A. Field.
A.—J. E. Wolfe.
Mason—E. R. Shain.

Carpenter—Moore Bros.
\$40,000.

Fourth, near Louise. Additions.

\$500.

G

Green, near Buchanan. Two-story frame.

O.—J. Hulach.
C.—A. P. Payson.
\$4,500.

Green, near Laguna. One-story frame.

\$1,200.

Geary, bet. Jones and Leavenworth. One two-story and one three-story frame.

O.—A. Koenig.
A.—P. R. Schmidt.
C.—R. Smilie.

\$46,000.

Green, near Buchanan. One-story frame.

O.—Wm. Reston.
A.—Miller & Armitage.
C.—C. Christie.

\$1,800.

H

Howard, bet. Fourth and Fifth. Three-story frame.

O.—Ellen McKernan.
A.—J. I. Clark.
C.—J. G. Adams.

\$12,000.

Hayes and Baker. Two-story, attic and basement.

O.—F. Heyward.
A.—C. I. Havens.
C.—Mahoney Bros.

\$20,000.

Hayes and Devisadero. Two-story frame.

O.—Miss E. W. Luecke.
A.—Moore & Schulz.
C.—J. T. Grant.

\$5,000.

Harrison, bet. Ninth and Tenth. Two two-story frames.

O.—Anna Mangles.
A.—M. P. Schetzel.
C.—B. Dryer.

\$6,500.

I

Hyde, bet. Post and Sutter. Three-story frame.

O.—Mrs. Conolin.
A.—M. Balczynski.
C.—R. O. Chandler.

\$7,000.

Howard, near Twenty-fourth. Two two-story frames.

O.—Margaret P. Jennings.
C.—George Neuston.
\$4,500.

Haight, bet. Steinar and Pierce. Two-story frame.

O.—P. Laherty.
Cost, \$6,000.

J

Jackson, near Franklin. Additions.

O.—J. D. Fry.
A.—Copeland & Banks.
Day Work.

\$1,500.

Jackson, near Devisadero. Two-story frame.

O.—A. S. Brackett.
C.—Wilson & Son.
\$5,000.

K

Kell, near Fillmore. Frame building.

O.—H. S. Murphy.
A.—M. Balczynski.
C.—R. O. Chandler.

\$5,500.

Fillmore, bet. Fell and Oak. Two-story frame.

O.—J. Flood.
A.—T. J. Welsh.
C.—J. W. Smith.

\$8,000.

C

Green, near Buchanan. Two-story frame.

O.—J. Hulach.
C.—A. P. Payson.
\$4,500.

Green, near Laguna. One-story frame.

\$1,200.

Geary, bet. Jones and Leavenworth. One two-story and one three-story frame.

O.—A. Koenig.
A.—P. R. Schmidt.
C.—R. Smilie.

\$46,000.

M

Montgomery and California. Alterations and additions.

O.—Mrs. A. M. Parrott.
A.—Pissis & Moore.
C.—Mahoney Bros.

\$15,000.

McAllister, near Lyon. Two-story frame.

O.—Thos. McDonough.
A.—W. C. Hoagland.
C.—J. F. Easley.

\$3,800.

Montgomery Avenue, bet. Filbert and Greenwich. Two-story frame.

O.—M. Sichel.
A.—P. R. Schmidt.
C.—P. Griffin.

\$7,500.

Montgomery Avenue, near Union. Two-story frame.

O.—J. M. Orjabin.
A.—Miller & Armitage.
C.—L. Neissman.

\$7,500.

Golden Gate Avenue and Webster. Two two-story frames.

O.—E. C. Quereh.
A.—T. J. Welsh.
C.—S. S. Greene.

\$13,000.

N

Golden Gate Avenue, cor. Broderick. Two-story frame.

O.—J. W. Keer.
A.—Percy & Hamilton.
C.—Ingerson & Gore.

\$8,000.

Grove, bet. Broderick and Baker. Two-story frame.

O.—McGrough.
\$4,000.

H

Howard, bet. Fourth and Fifth. Three-story frame.

O.—Ellen McKernan.
A.—J. I. Clark.
C.—J. G. Adams.

\$12,000.

Hayes and Baker. Two-story, attic and basement.

O.—F. Heyward.
A.—C. I. Havens.
C.—Mahoney Bros.

\$20,000.

Hayes and Devisadero. Two-story frame.

O.—Miss E. W. Luecke.
A.—Moore & Schulz.
C.—J. T. Grant.

\$5,000.

O

Onk, bet. Lyon and Scott. One-story frame.

O.—M. Windmuller.
A.—P. R. Schmidt.
C.—T. Knorpf.

\$2,800.

Oak, near Buchanan. Two-story frame.

O.—Mrs. Marshall.
C.—C. M. Saulsbury.

\$4,000.

P

Page and Devisadero. Two-story frame.

O.—Sweet.
A.—J. Newsom.
\$5,000.

S

Seventh and Harrison. Two-story frame.

O.—Wm. Wehmoller.
C.—G. Houston.
\$2,800.

San Jose Avenue and Twenty-fifth. Addition.

\$1,000.

Seventh and Minna. Four-story frame.

O.—L. A. Meisano.
A.—John & Zimmerman.
Mason—Hock.
Carpenter—Miller.

\$14,000.

T

Tehama, bet. Fourth and Fifth. Four two-story frames.

O.—Ellen McKernan.
A.—J. J. Clark.
C.—J. G. Adams.

\$6,000.

Tennessee, bet. Solano and Mari-
posa. Five one-story frames.

O.—Mr. Reece.
\$6,000.

Twenty-fourth and Church. Two-story frame.

O.—W. C. Thompson.
A.—C. V. Pierce.
C.—Hawks & Bray.

\$2,500.

Tenth, near Market. One-story frame.

O.—Christensen & Lord.
\$1,000.

Twelfth Avenue and Clement.

Frame dwelling.

O.—Mrs. Whiteside.
C.—Thompson.
\$2,000.

Twenty-sixth, near San Jose Ave.
nue. Two-story frame.

O.—Fisher.
C.—Mead.
\$1,500.

Twenty-sixth, near San Jose Ave.
nue. Additions.

\$500.

U

Union and Polk. Two-story frame.

O.—Mr. Cummerton.
C.—Ellis.
\$3,500.

Union, near Buchanan. One-story frame.

O.—J. W. Cudworth.
Day Work.
\$1,600.

V

Valencia, bet. Herman and Rid-
ley. Two-story frame.

O.—T. J. Bass.
A.—A. J. Barnett.
C.—A. Jackson.

\$2,500.

Valencia and Willow. Two two-story frames.

O.—Joseph Moore.
A.—C. I. Havens.
C.—Doyle & Son.

\$7,000.

Van Ness, bet. Turk and Eddy. Two-story frame.

O.—E. W. Joy.
A.—A. J. Barnett.
C.—A. Miller.

\$7,000.

W

Washington, near Mason. Three-story brick.

O.—Powell Street Railroad Co.
C.—C. Green.
\$25,000.

Y

York, bet. Twenty-fourth and
Twenty-fifth. Two-story frame.

O.—C. Shooppe.
A.—Salfield & Kohlberg.
C.—A. Klann.

\$3,300.

Fell, near Fillmore. Frame building.

O.—H. S. Murphy.
A.—M. Balczynski.
C.—R. O. Chandler.

\$5,500.

Fillmore, bet. Fell and Oak. Two-story frame.

O.—J. Flood.
A.—T. J. Welsh.
C.—J. W. Smith.

\$8,000.

Green, near Buchanan. Two-story frame.

O.—J. Hulach.
C.—A. P. Payson.
\$4,500.

Green, near Laguna. One-story frame.

\$1,200.

Geary, bet. Jones and Leavenworth. One two-story and one three-story frame.

O.—A. Koenig.
A.—P. R. Schmidt.
C.—R. Smilie.

\$46,000.

Green, near Buchanan. One-story frame.

O.—Wm. Reston.
A.—Miller & Armitage.
C.—C. Christie.

\$1,800.

Golden Gate Avenue and Webster. Two two-story frames.

O.—E. C. Qu

SECTION 1. Section 1183 of the Code of Civil Procedure is amended so as to read as follows:—

Sec. 1183. Mechanics, material men, contractors, sub-contractors, artisans, architects, machinists, builders, miners, and all persons and laborers of every class, performing labor upon or furnishing materials to be used in the construction, alteration, addition to, or repair, either in whole or in part, of any building, wharf, bridge, ditch, flume, aqueduct, tunnel, fence, machinery, railroad, wagon road, or other structure, shall have a lien upon the property upon which they have bestowed labor, or furnished materials, for the value of such labor done and materials furnished, whether at the instance of the owner or any other person acting by his authority, or under him as contractor or otherwise; and any person who performs labor in any mining claim or claims, has a lien upon the same, and the works owned and used by the owners for reducing the ores from such mining claim or claims, for the work or labor done, or materials furnished by each respectively, whether done or furnished at the instance of the owner of the building or other improvement, or his agent; and every contractor, sub-contractor, architect, builder, or other person, having charge of any mining, or of the construction, alteration, addition to, or repair, either in whole or in part, of any building or other improvement as aforesaid, shall be held to be the agent of the owner for the purpose of this chapter. In case of a contract for the work, between the reputed owner and his contractor, the lien shall extend to the entire contract price, and such contract shall operate as a lien in favor of all persons, except the contractor, to the extent of the whole contract price; and after all such liens are satisfied, then as a lien for any balance of the contract price in favor of the contractor. All such contracts shall be in writing when the amount agreed to be paid thereunder exceeds one thousand dollars, and shall be subscribed by the parties thereto, and the said contract, or a memorandum thereof, setting forth the names of all the parties to the contract, a description of the property to be affected thereby, together with a statement of the general character of the work to be done, the total amount to be paid thereunder, and the amounts of all partial payments, together with the times when such payments shall be due and payable, shall, before the work is commenced, be filed in the office of the County Recorder of the county, or city and county, where the property is situated, who shall receive one dollar for such filing; otherwise, they shall be wholly void and no recovery shall be had thereon by either party thereto; and in such case, the labor done and materials furnished by all persons aforesaid, except the contractor, shall be deemed to have been done and furnished at the personal instance of the owner, and they shall have a lien for the value thereof.

SEC. 2. Section 1854 of the Code of Civil Procedure is hereby amended so as to read as follows:—

Sec. 1184. No part of the contract price shall, by the terms of any such contract, be made payable, nor shall the same or any part thereof be paid in advance of the commencement of the work, but the contract price shall, by the terms of the contract, be made payable in installments at specified times after the commencement of the work, or on the completion of specified portions of the work, or on the completion of the whole work; provided, that at least 25 per cent of the whole contract price shall be made payable at least thirty-five days after the final completion of the contract. No payment made prior to the time when the same is due, under the terms and conditions of the contract, shall be valid for the purpose of defeating, diminishing, or discharging any lien in favor of any person, except the contractor, but as to such liens, such payments shall be deemed as if not made, and shall be applicable to such liens, notwithstanding that the contractor to whom it was paid may therefore abandon his contract, or be or become indebted to the reputed owner in any amount for damages or otherwise, for non-performance of his contract or otherwise. As to all liens, except that of the contractor, the whole contract price shall be payable in money, and shall not be diminished by prior or subsequent indebtedness, offset, or counterclaim, in favor of the reputed owner and against the contractor; no alteration of any such contract shall affect any lien acquired under the provisions of this chapter. In case such contracts and alterations thereof do not conform substantially to the provisions of this section, the labor done and materials furnished by all persons except the contractor shall be deemed to have been done and furnished at the personal instance and request of the person who contracted with the contractor, and they shall have a lien

Written notice of labor performed.

for the value thereof. Any of the persons mentioned in section 1183, except the contractor, may at any time give to the reputed owner a written notice that they have performed labor or furnished materials, or both, to the contractor, or other person acting by authority of the reputed owner, or that they have agreed to do so, stating, in general terms, the kind of labor and materials, and the name of the person to or for whom the same was done or furnished, or both, and the amount in value, as near as may be, of that already done or furnished, or both, and of the whole agreed to be done or furnished, or both. Such notice may be given by delivering the same to the reputed owner personally, or by leaving it at his residence or place of business, with some person in charge, or by delivering it to his architects, or by leaving it at their residence or place of business, with some person in charge, or by posting it in a conspicuous place upon the mining claim or improvement. No such notice shall be invalid by reason of any defect of form, provided it is sufficient to inform the reputed owner of the substantial matters herein provided for, or to put him upon inquiry as to such matters. Upon such notice being given, it shall be the duty of the person who contracted with the contractor to, and he shall, withhold from his contractor, or from any other person acting under such reputed owner, and to whom by said notice the said labor or materials, or both, have been furnished, or agreed to be furnished, sufficient money due, or that may become due to such contractor, or other person, to answer such claim and any lien that may be filed therefor for record under this chapter, including counsel fees not exceeding one hundred dollars in each case, besides reasonable costs provided for in this chapter.

SEC. 3. Section 1187 of the Code of Civil Procedure is amended so as to read as follows:—

Sec. 1187. Every original contractor, within sixty days after the completion of his contract, and every person, save the original contractor, claiming the benefit of this chapter, must within thirty days after the completion of any building, improvement, or structure, or after the completion of the alteration, addition to, or repair thereof, or the performance of any labor in a mining claim, file for record with the County Recorder of the county in which such property, or some part thereof, is situated, a claim containing a statement of his demand, after deducting all just credits and offsets, with the name of the owner or reputed owner, if known, and also the name of the person by whom he was employed, or to whom he furnished the materials, with a statement of the terms, time given, and conditions of his contract, and also a description of the property to be charged with the lien, sufficient for identification, which claim must be verified by the oath of himself, or of some other person; any trivial imperfection in the said work, or in the construction of any building, improvement, or structure, or of the alteration, addition to, or repair thereof, shall not be deemed such a lack of completion as to prevent the filing of any lien; and in case of contracts, the occupation or use of the building, improvement, or structure, by the owner, or his representative, or the acceptance by said owner or his agent of said building, improvement, or structure, shall be deemed conclusive evidence of completion; and cessation from labor thirty days upon any unfinished contract, or upon any unfinished building, improvement, or structure, or the alteration, addition to, or repair thereof, shall be deemed equivalent to completion thereof for all the purposes of this chapter.

Description of property.

SEC. 4. Section 1191 of the Code of Civil Procedure is hereby amended so as to read as follows:—

Sec. 1191. Any person who, at the request of the reputed owner of any lot in any incorporated city or town, grades, fills in, or otherwise improves the same, or the street or sidewalk in front of or adjoining the same, or constructs any areas, or vaults, or cellars, or rooms, under said sidewalks, or makes any improvements in connection therewith, has a lien upon said lot for his work done and materials furnished.

SEC. 5. Section 1203 of the Code of Civil Procedure is hereby repealed.

SEC. 6. This Act shall take effect and be in force from and after its passage.

ESSENTIALS OF PERSPECTIVE.

By L. W. MILLER. Price, \$1.50. The newest as well as one of the best of the books on the subject.

ASKED, ANSWERED, and COMMUNICATED.



Not Enough Draughtsmen.

SEVERAL times, in the columns of this journal, we have called attention to the scarcity of draughtsmen. And although several promptly answered our appeals, the demand is now greater than at any previous time. From ten different towns and cities, and from numerous offices in this city, comes the demand for first-class draughtsmen, and there are none to fill the places. We can immediately place several in good positions, if they will send us their address, and state their qualifications. Wages will vary from \$18 to \$25 per week, according to ability.

Wrong Statements Corrected.

In the May issue of the *Carpenter*, the following statement appears:—

CALIFORNIA.

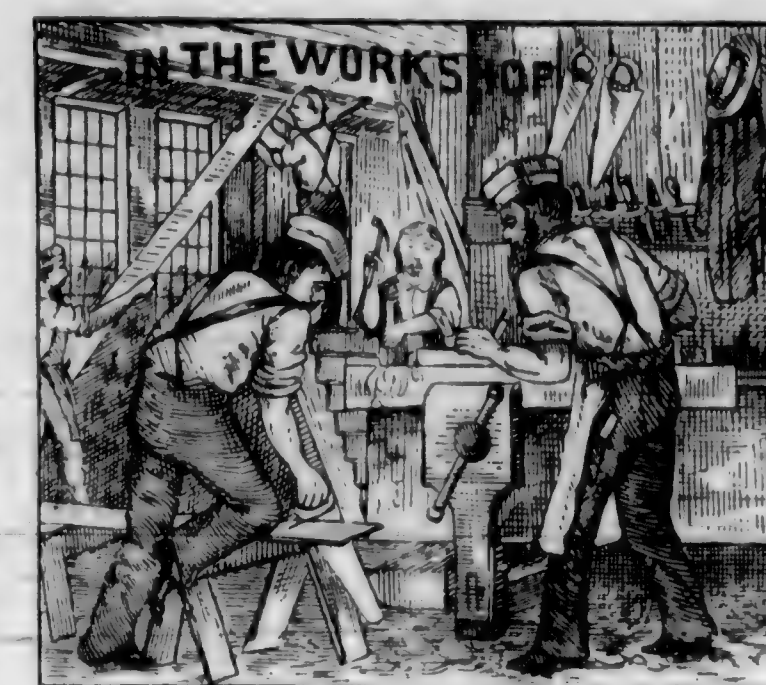
"Stay away from the Pacific Coast. The cheap railroad fares have flooded every town with hordes of idle labor willing to work for even a dollar a day. Wages flat and work scarce."

ALAMEDA.—Moderate; \$2.50 to \$3. 9 hours.
SAN FRANCISCO.—Overstocked; \$2.50 to \$3. 9 hours.
SAN RAFAEL.—Medium; \$2.25 to \$3. 9 hours.
OAKLAND.—Dull; \$2 to \$3. 9 hours a day.
LOS ANGELES.—Fair; \$2.50 to \$3. 9 hours.
PASADENA.—Medium; \$2.50 to \$3. 9 hours.
SAN DIEGO.—Medium; \$2.25 to \$3. 9 hours.
SANTA BARBARA.—Dull; \$2.40 to \$3.
SAN BERNARDINO.—Quiet; \$2.00 to \$3.00."

In several places in the same issue, attention is called to the remarkable dullness in building circles, and the low prevailing wages received by mechanics. We do not know the source from whence the *Carpenter* gets its information, but we emphatically protest against any journal printing news and disseminating the same as gospel truths, without first receiving the most unqualified assurances from different sources, that the statements made are correct. We have frequently noticed, in trade journals, that the opinion of one man is given as the sentiment of the entire community, and should his feelings be warped by presumed bad treatment of any of his workmen companions, the neighborhood is to be condemned and written down, because the one man hath so ordained.

San Francisco is not "overstocked" with carpenters willing to work for "\$2.50 to \$3.00 per day of nine hours." Carpenters are generally well employed, and the ruling rate of wages is \$3.50 per day, and no carpenter will work under that rate. Unfortunately, we have an army of floor-layers, piece-workers, etc., who will take anything they can get at any price; but, in behalf of the CARPENTERS of the Pacific Coast, we

Architects, Contractors, Carpenters, and mechanics generally are respectfully requested to furnish us items of interest for this column. We will gladly answer any and all questions pertaining to the architectural and building interests. If illustrations are necessary to explain your ideas, send us a sketch of them, and we will make the cuts. We especially invite suggestions from apprentices and young mechanics.



Cutting Rafters.

I HAVE a rule for cutting rafters one-third pitch which may interest the readers of *Carpentry and Building*. Suppose the building to be 18 feet wide. I take half the width of the building, which in this case is 9 feet. I multiply by 2½, and call the answer inches, giving in this case 22½ inches, or 1 foot 10½ inches. I add this to half the width of the building, which gives the length of the rafter 10 feet 10½ inches. Since this overruns, say ½ inch to the foot, it would make this measurement ½ inch too long. Call this ½ inch, which leaves the rafter 10 feet 10 inches in length. The figures I would make in a problem of this kind would be as follows:—

18	9
4½	1 10½
22½	10 ft. 10 ins.

The matter of subtracting the ½ inch excessive length in this case, alluded to above, would be done in the head. I shall be glad to know what the readers of the paper think of this method.—S. J. P. in *Carpentry and Building*.

Characteristic of a Good Floor.

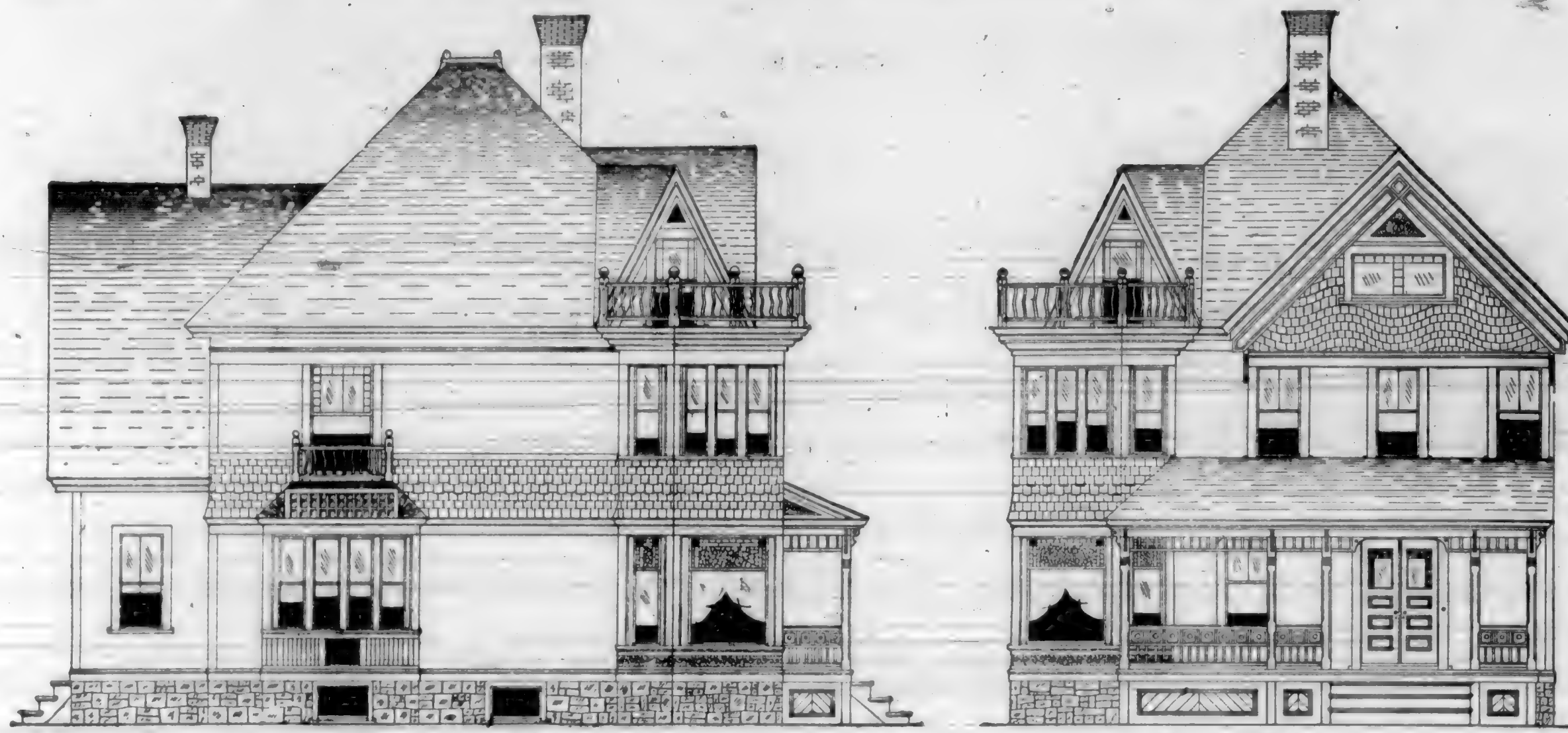
ONE of our contemporaries in specifying the features of a good floor arranges the specification in the following form:—

A good floor should be
A test of the builder's skill;
Of thoroughly seasoned lumber;
Without cracking boards;
Without splintering edges;
Without gaping joints;
Without curling section;
Flat as a table-top;
Rigid and smooth;
Almost imperceptibly jointed;
Undisturbed when laid;
Laid on straight-edged joists;
Without heading joints;
Laid without showing nails;
Of edge-nailed boards;
Laid on a bed-floor.
A good floor is a rarity.

WHY DOES VARNISH CRACK?—How many paintings and how much decorative coloring is spoiled by cracking of the varnish. Much of this is due to poor mastic varnish. Good varnish on good color coats will not give any signs of cracking, until, by repeated varnishings, it has accumulated a thick coating of brittle, inelastic gum. On the principle that it takes two to make a quarrel, two or more coats of varnish must be given before this trouble makes itself manifest. As in all drying concretion occurs, one cause of cracking is putting on one coat before another is perfectly dry. To reduce the risk of cracking to a minimum, where varnish is to be applied as a finish, all coatings should have oil in their composition, and yet be mixed to dry flat, and they should be applied very evenly and thinly, even if this necessitates an extra job.

Varnish colors may be painted on the glass of inside of window to imitate stained glass. Some very brilliant colors may thus be obtained.

THE production of cut nails in the United States in 1886, is the greatest in the history of the country, being 8,160,963 kegs, as against 6,696,815 kegs in 1885.

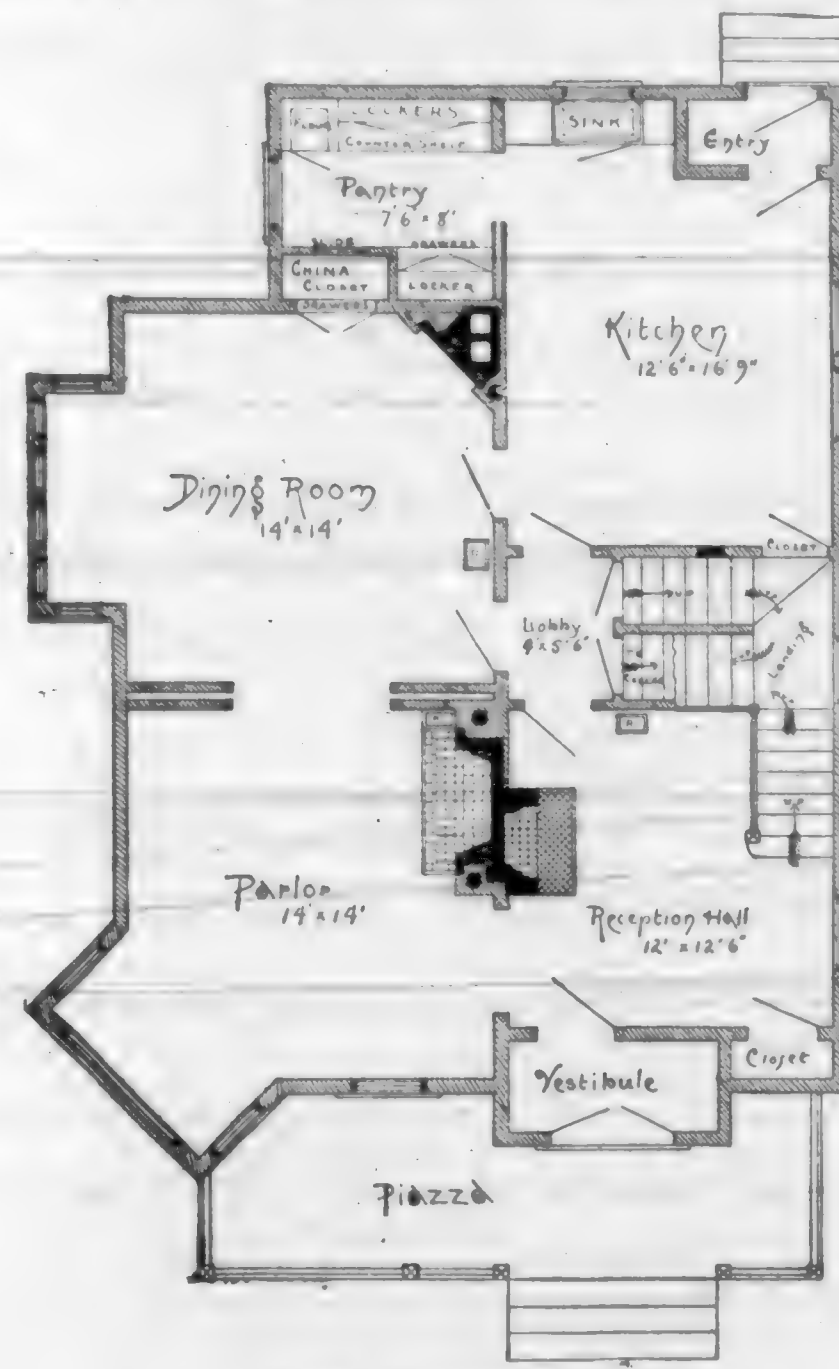


A Cozy Home; How It Was Built.

FRANK L. SMITH, ARCHITECT.

THE suburban cottage and its construction have become of prime interest to a large class of people at the present day. Being of comparatively small cost, and lending itself to varied and attractive design, a man of quite limited means may aspire to the ownership of a cozy home, where he can put into execution the ideas he may have fostered for a long time as to what a house and its furnishings should be. He studies the many architectural publications, and sees many designs that please him in some respects, and many more that he has no use for whatever. Turning from one to the other, not finding just what he wants, he despairs of obtaining a ready-made plan. The chances of his doing so are about even with his getting a ready-made coat that will be a perfect fit. He may find something that will answer, but falls far short of what he wants.

The average man who is to build a low-cost dwelling does not seek or employ an architect's services, for the reason that he believes he can put the money to better use in the furnishings of the house, and the inevitable result is that he is not satisfied. One forgotten thing after another will crop up, and a change is made here, and a change there; and finally, after nearly endless



FIRST FLOOR PLAN.

worry, he enters a completed house that is not what he wanted, and that has overrun his estimate. He resolves to build again as soon as he can dispose of his first venture, and a second time will profit by his previous experience. But the building of one house is not sufficient to enable a man to steer clear of the many pitfalls in house building, and the only satisfactory and economical way is to employ an architect in the beginning.

Make up your mind what you wish to have and to spend, and if the two do not agree, either take what your money will buy, or do not build. Employ an architect in whom you have confidence, and do not be in a hurry. Carefully study the sketches he will make for you, have everything arranged beforehand and reduced to writing, and there is no reason why your house should cost you a cent beyond the estimate, or cause you more anxiety than getting a new suit of clothes.

A client of mine came in the office and said, "I want a snug, cozy home. I have not a great amount at my disposal, but that little I want spent judiciously. I do not want an inch of room wasted. There must be three rooms upon the first floor, with a large entrance or reception hall, easy flight of stairs, dining-room and parlor communicating with sliding doors, one fire-place at least, large kitchen, with ample pantry accommodations, and back stairs, bay-window in dining-room, and corner bay-window in parlor. On second floor there must be four chambers, ample closets, bath-room, and access to the attic, though latter is not to be finished. All rooms are to be accessible from a common hall, and the whole to be quiet, and yet attractive in appearance. Now can I get such a house built for \$3,000?"

Here was a client whose requirements were modest, and whose wants are similar to those of one-half the people who build houses. In a short time I had prepared the plans illustrating this article. The house was commenced, and in three months ready for occupancy. Everything having been fully determined upon in the beginning, the owner had but few suggestions to make as the work progressed, and his dreams were unclouded by visions of "extra" bills; that too often prove the bugbear of building operations.

Are you not in need of an architect's services? If you intend to build a house, you certainly are. But I hear you say that your friends and neighbors have built houses time and again, and that they managed to get along without an architect, and consequently have saved money.

It certainly is true that the large majority of dwelling-houses are built without the services of an architect; yet it does not follow that such services are not beneficial, and even necessary.

When you have a case at law, you do not appear before the justice in your own behalf, but rather place your interests in the hands of an able advocate. When your child is ill, you do not go at once to the apothecary; but, instead, you call the family physician, and let him first prescribe.

The architect stands to his client very much in the light of both attorney and physician. He makes a "diagnosis" of your case, after a careful investigation; prescribes in the shape of

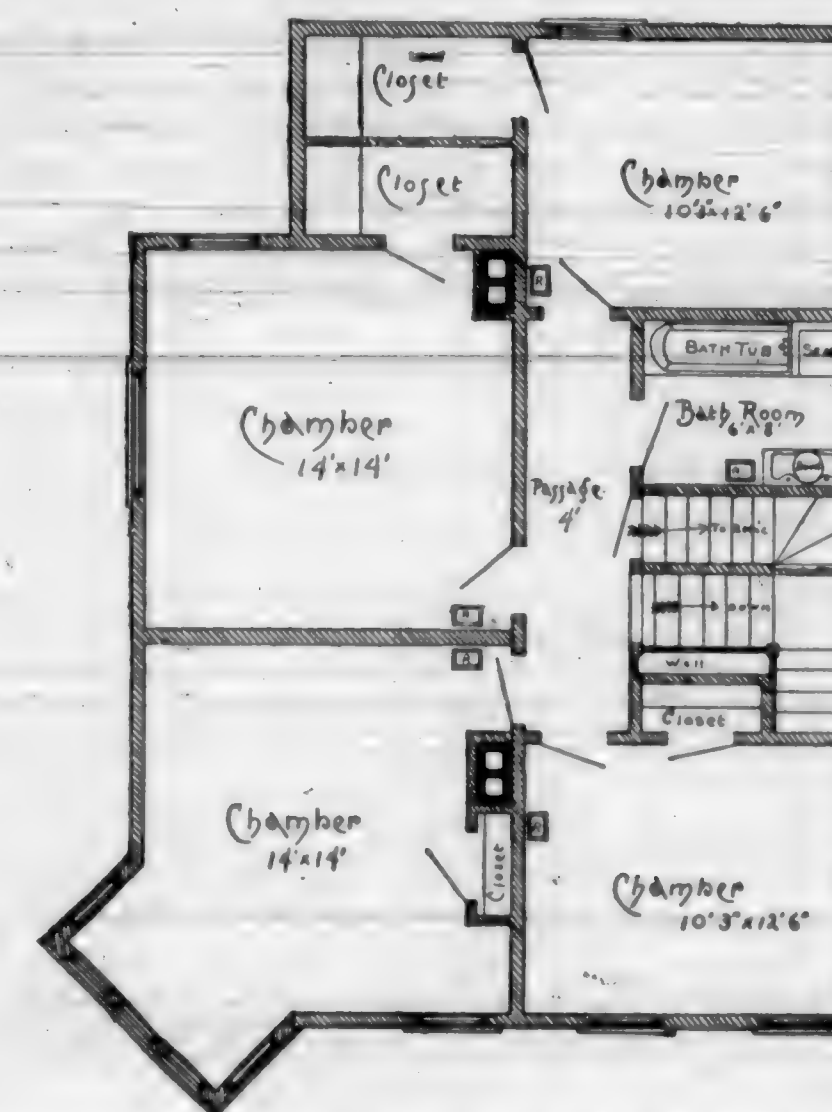
plans and specifications; sends you to the carpenter, who compounds the prescription. He draws up the legal papers, audits the accounts, and, in the end, assures you that you have been fairly dealt with, and have received what you have paid for.

An architect is not necessarily a builder, any more than a physician is an apothecary; nor is the carpenter necessarily an architect, any more than the apothecary is a physician.

The architect can save you money. He discovers your wants, your likes, and your dislikes. He reduces them to a tangible form; he draws up the specifications so minutely that every variety of material and labor is distinctly set forth as to its quality and kind.

When completed, plans and specifications are presented to a builder for an estimate. He knows exactly what is expected of him. There is no chance for controversy or quibble; all has been settled by the owner through his architect. In consequence, if several contractors estimate upon the building, it is known that their figures are all upon the same basis.

Where a carpenter receives his orders directly from the owner, in some such a way as this, "Build me a house like Mr. Brown's,



SECOND FLOOR PLAN.

but with such and such changes," there never can be any definite contract, for the changes and alterations, in the way of "extras," amount to a very considerable sum in most cases. Carpenters like these "extras," though they often grumble about them, for they are the fat pickings of the job, and are often a source of more profit than the original contract.

"Extras" are to be rigidly avoided, and it is the duty and province of the architect to so perfect his plans and specifications that none will be necessary. On almost every building erected in such a manner, enough might be saved on the extra work to more than pay for an architect's services.

This article and the illustrations accompanying are from a new work entitled, "A Cozy Home," the price of which is but twenty-five cents. We are indebted to the author, Frank L. Smith, architect, for the use of the cuts and the extracts from the book. "A Cozy Home" contains ten full sets of plans, one set of which is here represented complete. To anyone contemplating building, the "Cozy Home" will give many valuable ideas. We have a full supply on hand, and will send a copy, post-paid, upon the receipt of twenty-five cents.

Draughtsmen Wanted.

We have situations for 20 good draughtsmen. Send your address to this office for full particulars. Those wanting places in first-class offices please correspond with us immediately, as the demands are urgent.

Are Advertisements Read?

WE have always taken the ground that advertisements in a trade journal are as much read as the editorial matter itself. In fact, many people subscribe more for the purpose of keeping the run of all the new things connected with the building interests than they do for the "good ideas" contained in the reading columns. Those that study and invent or manufacture superior articles for use in buildings or connected therewith, are sure to let people know of their wares through the columns of the trade journals. The following pithy observations are not original with the editor of this journal, but they will be well worth careful reading:

The first time a man looks at an advertisement he does not see it.
The second time he does not notice it.
The third time he is dimly conscious of it.
The fourth time he faintly remembers having seen something of the kind before.
The fifth time he half reads it.
The sixth time he turns up his nose at it.
The seventh time he throws the paper down impatiently.
The eighth time he ejaculates, "There's the confounded thing again!"
The ninth time he wonders if there is anything in it.
The tenth time he thinks it might possibly suit somebody else's case.

The eleventh time he thinks he will ask his neighbor if he has tried it, or knows anything about it.

The twelfth time he wonders if the advertiser can make it pay.

The thirteenth time he rather thinks it must be a good thing.

The fourteenth time he happens to think it is just what he wanted.

The fifteenth time he for a long time resolves to try it as soon as he can afford it.

The sixteenth time he examines the address carefully and makes a memorandum of it.

The seventeenth time he is tantalized to think he is hardly able to afford it.

The eighteenth time he sees painfully how much he is in need of that particular article.

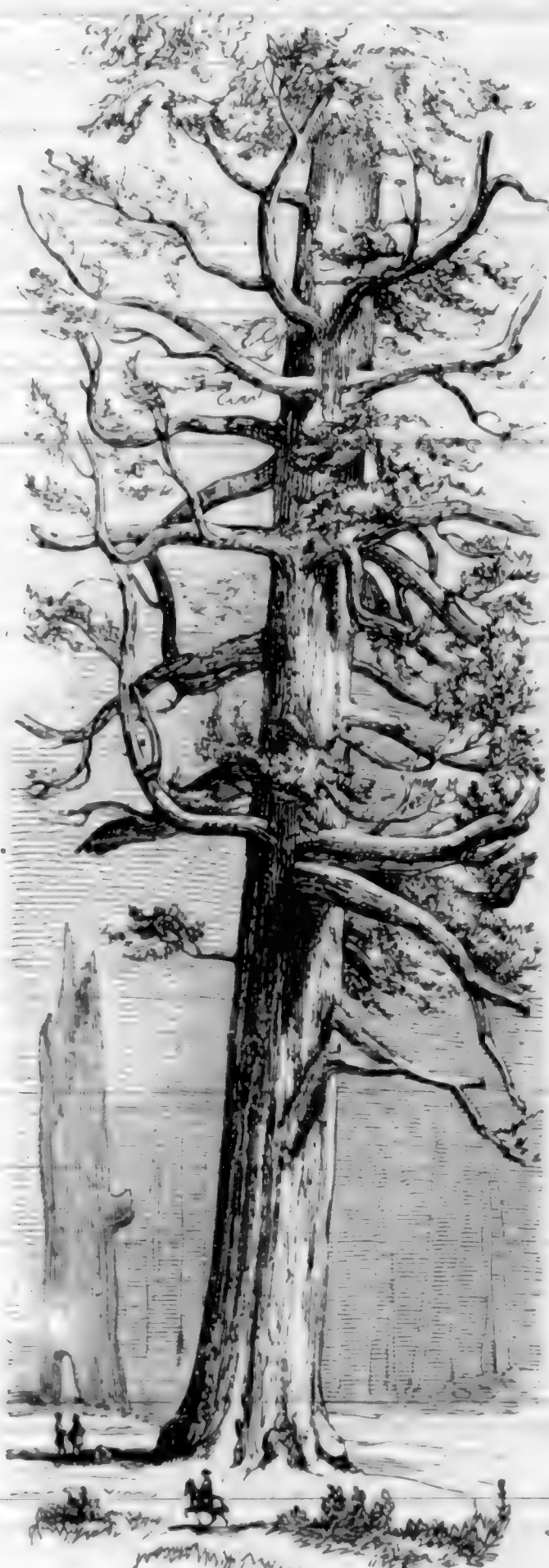
The nineteenth time he counts his money to see how much he would have left if he bought it.

The twentieth time he rushes frantically forth and buys it.



"In the Heart of the Sierras"—The Noble Trees of California.

HERE statement of dimensions and altitudes of the grand trees of California, can give no realizing sense of their idealistic presence and magnitude. It is the grandeur of their exalted individuality and awe-inspiring presence that thrills through the soul, and fills it with profound and speechless surprise and admiration; and not merely of one tree, but of whole vistas formed by their stately trunks. Who, then, by pen or pencil, can picture these as they are seen and felt?



CUT 1. THE GRIZZLY GIANT.

Once fairly within the impressive precincts of the grove of big trees, we are soon brought face to face with one of the oldest, most storm-tossed, and grizzled of this entire family of Brobdingnags. It is called

"THE GRIZZLY GIANT"

(see cut 1), and it looks at you as defiantly as the oldest veteran grizzly bear ever could. By careful measurement, we found its dimensions to be, at the ground, including a jutting spur, ninety-one feet, and three feet six inches above the ground, seventy-four feet six inches. Professor Whitney places its circumference, eleven feet from the ground, at sixty-four feet three inches; with its two diameters at base, thirty, and thirty-one feet; and eleven feet above base, twenty feet.

The "Mariposa" is eighty-six feet in circumference at the ground, and seven feet

above it, is sixty-six feet. This tree seems to have been badly burned by two consuming fires, at different periods, after each of which the new growth has, visibly, attempted its restoration. The "Workshop" is an immense living giant, with a capacious hollow at its base, which forms a room twelve by sixteen, in which all sorts of little souvenirs are made from broken pieces of the big tree.

The "Haverford" (named after the "Friends" College, Philadelphia), in which sixteen horses have stood at one time, is burned into three compartments; across two of the spurs of which the distance is thirty-five feet; and transversely, thirty-three feet.

The "Washington" has a girth of ninety-one feet at the base, is round and very symmetrical. Although burned out somewhat near the ground, the new growth, as usual, is rapidly healing the wounds that fire has made. This is an especially excellent provision of nature for preserving and perpetuating this grand species, when in its prime; inasmuch as while restoring the ravages of the elements by the new growth, a much needed support is added to the abutments, which intercepts and prevents its premature downfall.

The "Ohio" is seventy-six feet in girth at the ground, and six feet above the ground is fifty-five feet. The "U. S. Grant" is sixty-five feet six inches below, and forty-five feet above. The "General La Fayette" is thirty feet in diameter, and is situated about thirty yards from the above two.

The "Wawona," the "Tunnel Tree" (see cut 3), through the heart of which a wagon road passes, is not only one of the great attractions of the Big Tree Grove, but may be considered one of the sights of California. At the base this tree is twenty-seven feet in diameter; while the enormous trunk, through which the excavation is made, is in solid heart wood, where the concentric rings, indicating its annual growth, can be readily seen and counted, and its approximate age determined by actual enumeration, and thus satisfactorily settle that interesting fact beyond the least peradventure. The arch, or "tunnel," as it is called, is ten feet in height, by a width of nine feet six inches at the bottom, and six feet six inches at the top. "Driving through a living tree," one would suppose to be as great a feat as Daniel O'Connell's, who boasted that he could "drive a coach and four" through any act of Parliament ever made in the British House of Commons.

The "New York" is one hundred and four feet in circumference, and over three hundred feet in height. The "Ohio" is one hundred and three feet in circumference, and three hundred and eleven feet in height. The "Massachusetts" is ninety-eight feet, with an altitude of three hundred and seven feet.

A few points of interest may be well to notice in regard to the "Mother of the Forest." If cut up into inch boards, it would make five hundred and thirty-seven thousand feet of sound lumber. From the ground to the first branch it is one hundred and thirty-seven feet. Its full height is three hundred and twenty-one feet, with a circumference at the base of ninety feet. One hundred and sixteen feet from base it is thirty-nine feet six inches circumference. The average thickness of bark is eleven inches, although in places it exceeds two feet.

Great as are these majestic proportions, they are eclipsed by those of the "Father of

the Forest." This tree, when standing in its primitive majesty, is accredited with exceeding four hundred feet in height, with a circumference at its base of one hundred and ten feet. Now, with its majestic form pro-



CUT 2. MINER'S CABIN.

to the ground, the following measurements recently taken, proves that he was among the giants of those days, and that "even in death still lives." From the roots, to where the center of the trunk can be reached on horseback, it is ninety feet. The distance that one can ride direct through it on horseback, is eighty-two feet six inches. But no one can approximately realize the immense proportions of this prostrate forest sire, without climbing to its top, and walking down it for its entire length; by this, he will ascertain that it was nearly two hundred feet to the first branch.

"Old Hercules," the largest standing tree in the grove until 1862, then being three hundred and twenty-five feet in height, by ninety-five feet in circumference at the ground; this was blown down by a heavy storm in that year.

Let us take a peep at the original Big Tree stump. It is perfectly smooth, sound, and level. Its diameter across the solid wood after the bark was removed (and which was from fifteen to eighteen inches in thickness), is twenty-five feet, although the tree was cut off six feet above the ground. On July 4, 1854, the writer formed one of a cotillion party of thirty-two persons, dancing upon this stump; in addition to which the musicians and lookers on numbered seventeen, making a total of forty-nine occupants on its surface at one time.

This tree was three hundred and two feet in height, and at the ground ninety-six feet in circumference before it was disturbed. Some sacrilegious vandal removed the bark to the height of thirty feet, and had it transported to England, where it was burnt at the Crystal Palace fire. The next act in this botanical tragedy was the cutting down of the tree in order to accommodate those who wished to carry home specimens of its wood as souvenirs of their visit. But how to do this was the puzzling conundrum. If one could fittingly imagine so ludicrous a sight as a few lilliputian men attempting to chop down this Brobdingnagian giant, his contempt would reach its becoming climax.

Measurement of Brickwork and Masonry.

BRICKWORK is measured by either one of four methods, viz.: By the number of bricks it contains; by the number of cubic feet; by the perch of 25 cubic feet; or by the reduced rod consisting of 272 superficial feet and a width of a brick and a half. The first method is most generally employed, and the cubic foot and perch in a few localities. The reduced rod is the method used principally in England.

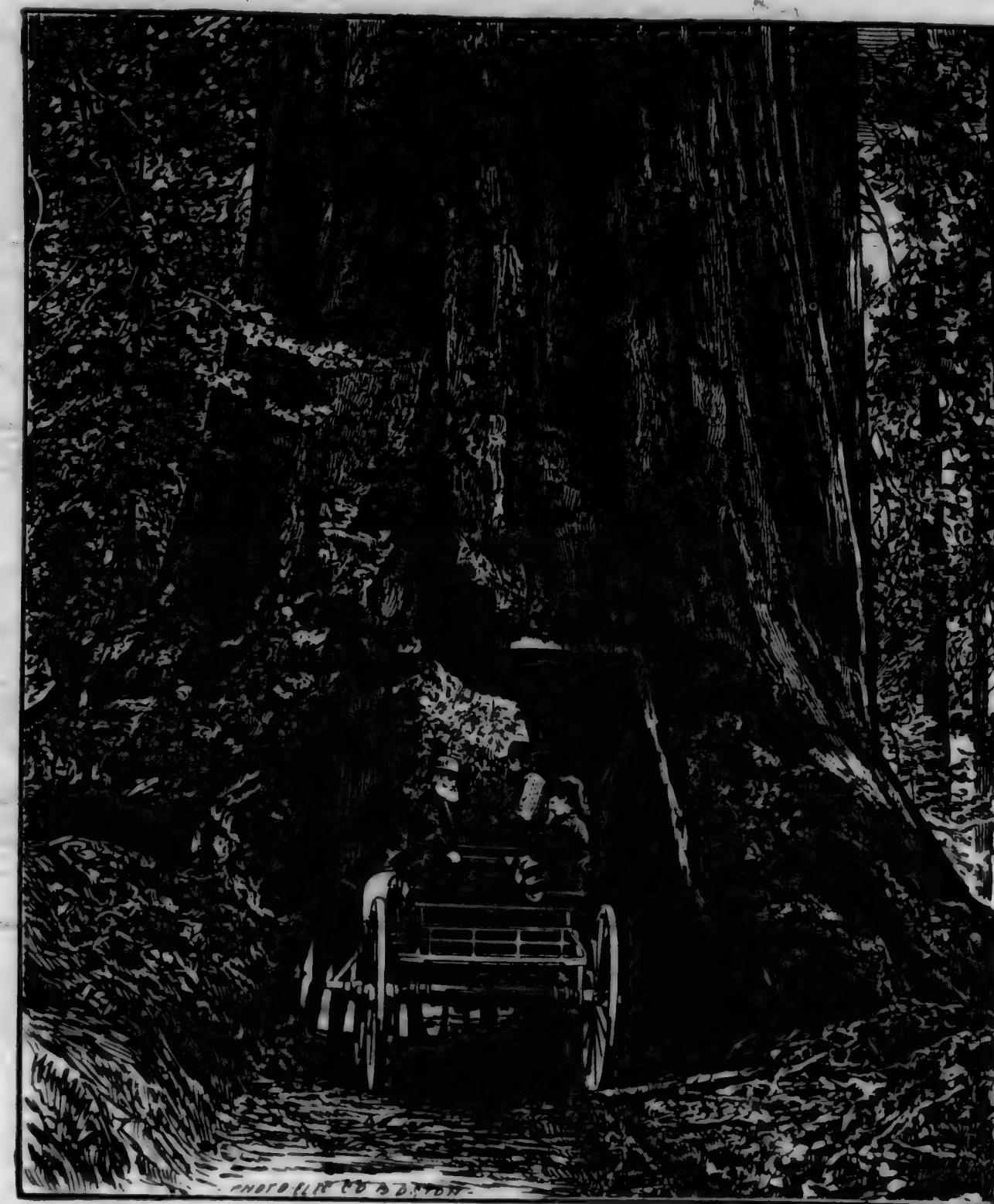
To ascertain the number of bricks contained in a wall: First find the superficial area, then multiply by 7½ (the number of bricks in one foot of brickwork four inches thick), and then multiply by the number of half bricks in the thickness of the wall. Example: How many bricks does a wall 12 ft. x 20 ft. and 2 bricks thick contain? Answer, 7,200, viz.: 12 x 20 = 240 x 7½ = 1,800 x 4 = 7,200.

Ashlar masonry, or that which is dressed on either face, bed, or side joints, is measured by the cubic foot; rubble masonry, sometimes in the same way, but usually by the perch of 25 cubic feet.—Scientific American.

Saw-Dust Ornaments; How Made.

A MOULD, or die, which has the design to be produced artistically engraved and sunk in it, is covered with thin strips of chemically prepared veneer of any desired kind of wood, and a material previously prepared, consisting chiefly of sawdust, is fed on the top of the veneer; the mould is then closed and heated, and afterward subjected to a hydraulic pressure of some tons to the square inch. The article to be produced is then taken from the mould in a semi-shaped state, inspected, recovered with veneer as often as may be found necessary, and after five or six minutes a panel, or frieze, is produced equaling in artistic effect handwork that has taken very many days to produce. These panels have a fine surface and show up the grain of the wood well; they can also be sawed, planed, or bored like ordinary wood.

PRESERVATION OF PENCIL AND CHARCOAL DRAWINGS.—Pencil drawings may be fixed by immersing them in weak skin-milk, or coating over them, rapidly, a solution on the drawing side, of two ounces of best alcohol, in which four grains of camphor have been dissolved. An ounce of shellac dissolved in half a pint of alcohol, applied lightly with a brush, will serve to fix charcoal drawings.



CUT 3. DRIVING THROUGH LIVING TREE "WAWONA."

This, therefore was given up as altogether too chimerical and impracticable. Finally the plan was adopted of boring it off with pump-augers (see cut 4). This employed five men twenty-two days to accomplish; and after the stem was fairly severed from the stump, the uprightness of its position and breadth of its base prevented its overthrow; so that two and one-half of the twenty-two days were spent in inserting wedges and driving them into the butt of the tree by logs suspended on ropes, thereby to compel its downfall. While these slow and apparently hopeless attempts were being undertaken, and the workmen had retired for dinner, a gust of wind took hold of its top, and hurled it over without the least seeming effort; its fall causing the earth to tremble as by an earthquake.

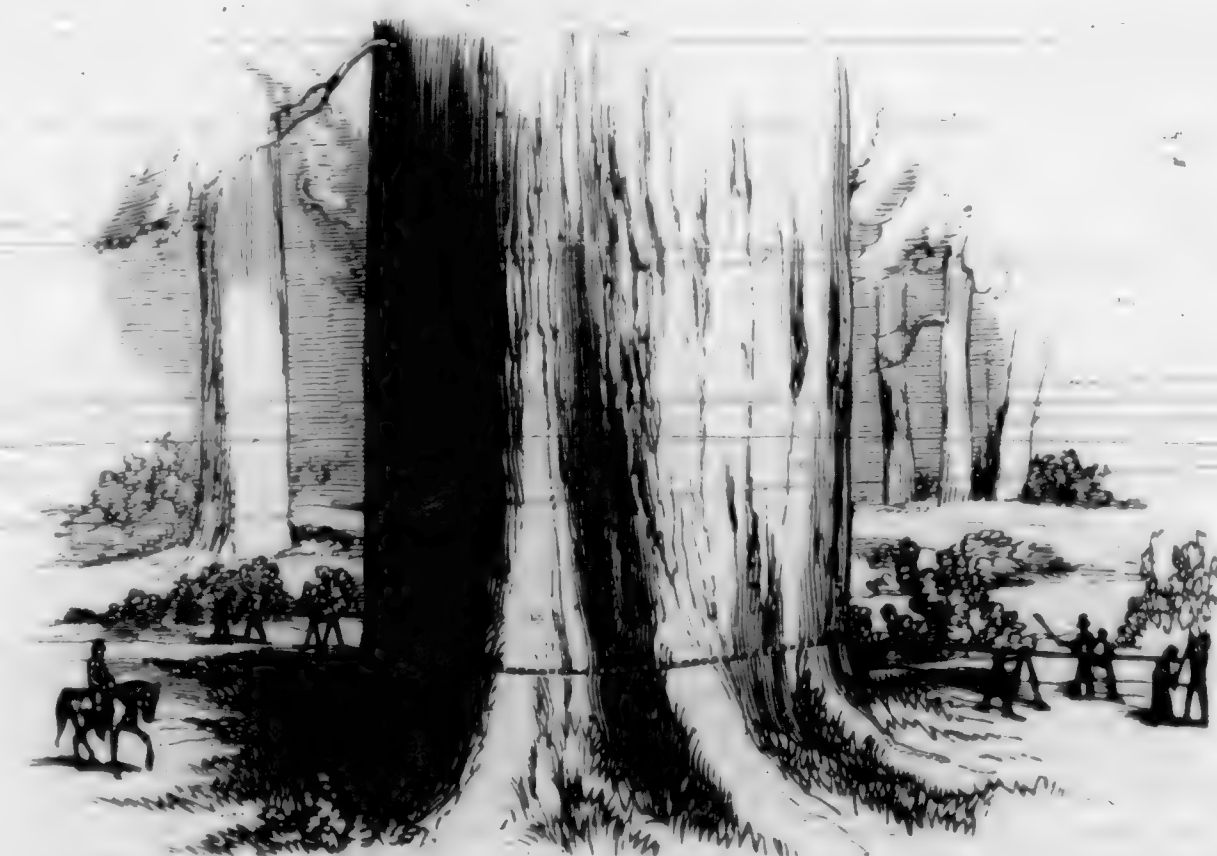
The cuts illustrating this article and the description thereof, are taken from a new work, by J. M. Hutchings, entitled, "In the Heart of the Sierras," the Yosemite Valley, both historical and descriptive; and scenes by the way; Big Tree Groves; the High Sierra, with its magnificent scenery, ancient and modern glaciers, and other objects of interest; with tables of distances and altitudes, maps, etc. Profusely illustrated. Copies may be had by addressing the Pacific Press Publishing House, Twelfth and Castro Streets, Oakland, Cal., or at the branch office, No. 18 Post Street, this city. Price, in fine English Cloth, embossed in jet and gold, gilt edges, \$4.50. Finer bindings furnished if desired.

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TO SOFTEN WROUGHT IRON.—To soften wrought iron, heat until it becomes a low red color, and cool it in soft soap. Re-heat

it to a low red as before, and let it cool in lime. It is said that this treatment makes the iron very soft.

PAINTING OF BUILDINGS.—The taste of the ancient Greek was too artistic and complete to allow him to indulge in the vulgar pride of parading the marble of the Parthenon when he could heighten its effects. Color was applied to all those parts which by form or position were protected from the rain. Thus the sculptures on the pediment and frieze were given highly colored backgrounds, and the sculptures themselves were painted. The brush was also employed to adorn the work of the chisel in the cervices or mouldings of the capital, and the walls beneath the colonnade were covered throughout with pictures, on the ground of polished marble illustrative of the divinity to whom the temple was dedicated.



CUT 4. BORING DOWN THE ORIGINAL BIG TREE WITH PUMP-AUGERS.

