



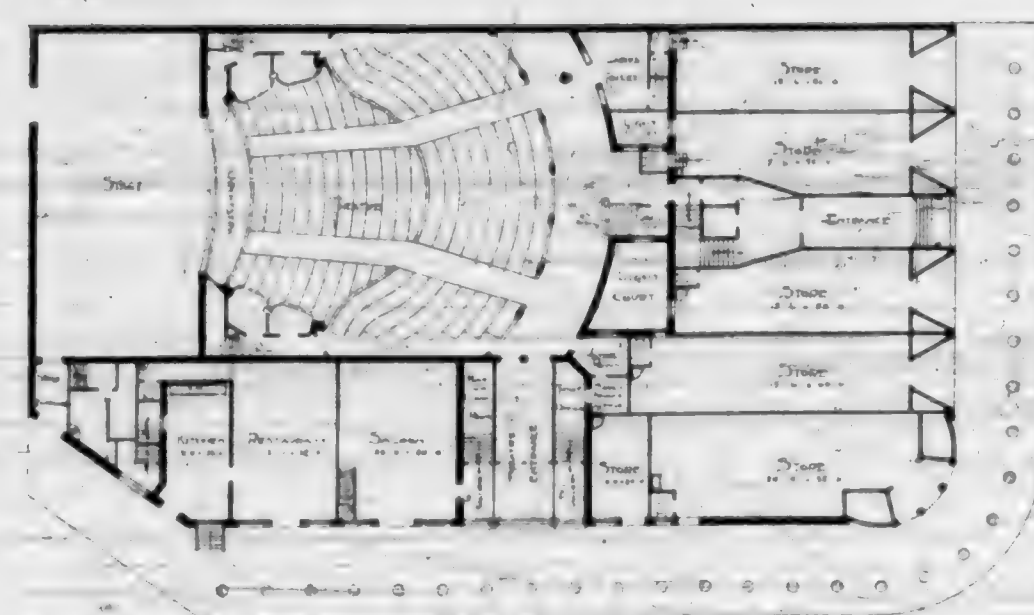
HIGH SCHOOL FOR CITY OF SAN BERNARDINO Cal:

T. H. GOFF, ARCHITECT. San Bernardino

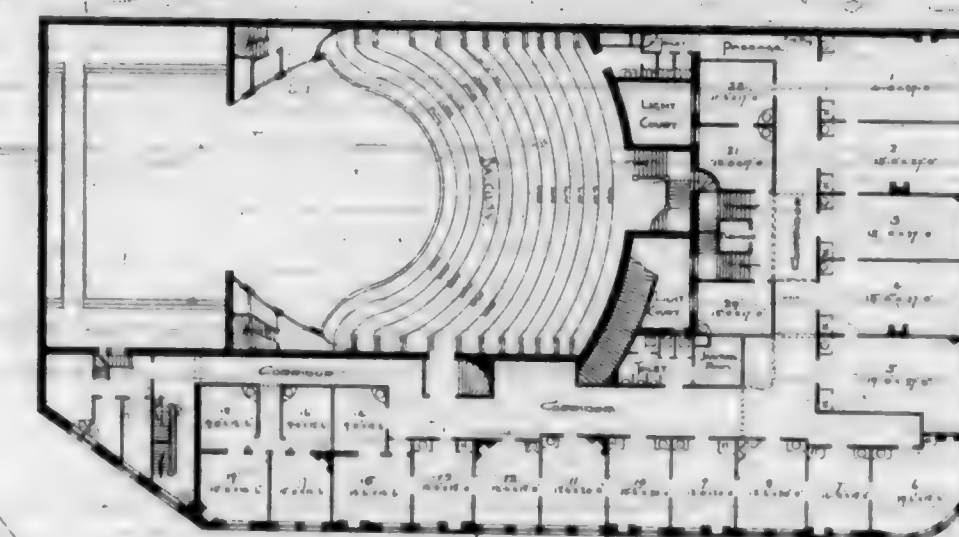


THE OLYMPIC CLUB
SAN FRANCISCO

HENRY A. SCHVLZE ARCHITECT



First Floor Plan



Second Floor Plan

"The MACDONOUGH."

Oakland



Mooser & Culbertson - Architects

THE DIFFERENT KINDS OF ASH.

The following inquiry is from the lumber buyer of a large manufacturing concern:

I have a limited knowledge of ash lumber, and in buying it am often unable to classify it with certainty.

1. Is there any way to distinguish absolutely between white, gray, brown and black ash plank? Newhall and Gray have different names, viz., white ash, red ash, green ash, blue ash and black, water or hoop ash.
2. Which of these are synonymous with gray and brown?
3. To which variety does calico ash belong?
4. Does eastern and western black ash differ in appearance or quality of lumber?

There seem to be so many slightly differing shades of color, and degrees of strength and elasticity, as to cause much diversity of opinion among those with whom I meet, and as I have little opportunity to become familiar with standing trees or with logs, I desire definite knowledge to guide in selection of plank.

5. Does selected gray, brown or black equal in strength and suitability for mechanical uses the average of first or forest growth white ash?
6. In what portions of the principal ash producing states can the toughest lumber of the different varieties be obtained?

If these questions can be suitably answered in your columns, kindly print the information at an early date, and greatly oblige

A NEW SUBSCRIBER.

When reduced to lumber there is no method known by which to "distinguish absolutely" between white, gray, brown and black ash. Botanists distinguish by the leaf, bark and fruit, but with these data for determination absent, the judgment is at fault. The white ash, however, is most easily determined from its light color, medium density and elasticity, and some experts even claim to judge almost the locality from which the tree came, by breaking a sliver between the fingers. The ash is a tree which, as a rule, prefers a low, rich, moist, but not wet, soil, with a rather heavy clay loam subsoil. It is quite tolerant of change of conditions, but suffers greatly in quality when growing on dry or limestone soil.

The white ash, as is well known, is the most valuable of the ash family, reaching a height sometimes of 120 feet, and a diameter of five feet. It is found from Canada to Florida, and as far west as the first tier of states west of the Mississippi river, but reaches its greatest and richest development in the Ohio river bottoms, including, in a general way, the southern parts of Ohio, Indiana and Illinois, and the bottom lands of western Tennessee and eastern Missouri and Arkansas. The terms white, red, green, blue, etc., are common designations, rarely accurate, frequently local, given to the different species, but which are often misleading, as the same term is applied to different species in different places. The white ash is so called from the fact that the bulk of the wood is a light yellow or cream color when fresh cut, turning to a pale brown on exposure, and the core or heart is small, often only three or four inches wide in a tree 30 inches in diameter.

The blue ash gets its name from the fact that the inner bark when soaked in water yields a dark blue dye. The wood is darker in color, generally a rich brown, heavier, more solid, and, as a rule, more brittle. It will stand nearly the same transverse strain, but breaks with a less splintered fracture than white. The blue ash is chiefly confined to the territory east of the Alleghenies, and though not as common nor as valuable as white ash, is much used for the same purposes. It is indistinguishable in lumber except by the darker color and greater weight and hardness. The blue ash, a medium sized tree growing on the upland and especially limestone soil, comes next to the white in quality and in extent of territory over which it is found. It is chiefly confined to the states west of New York and north of the Ohio river, but including Iowa and Missouri. It is the heaviest of the ashes, and from the character of the soil it prefers, is naturally quite brittle, but it has a good light yellow color and works well with a high polish in manufacture. The green ash is also a widely spread species, of equal value with the blue, and more elastic. It is supposed to take its name from the pale green color of the leaves, as it prefers a low, almost swampy, soil. It shrinks badly in drying, and is not a very durable wood, except when kept dry as in interior work.

The only other botanical species which has a well recognized name is the black or hoop ash, so called from the dark color of the heart wood. This term, however, is not distinguishing, as the blue and green species when exceptionally dark receive the same name. The wood of the black ash is readily split into thin layers, which are used for barrel hoops,

and it is softer and lighter than the white. The color of the sap wood is so light that it is quite undistinguishable from the white ash. The tree is a small one, preferring low wet bottom lands and swamps.

Other kinds of wood called ash are the wafer ash, or hop tree, a small tree of little economic value, and the yellow ash, or yellow wood, gopher wood, or shittim wood, a beautiful tree, but very scarce, found in Tennessee and the mountains of North Carolina and Kentucky. Its firm, strong-grained, yellow wood takes a beautiful polish and is very durable, but unfortunately it is so rare as to be almost impossible to procure. In fact, it is said that there are not a thousand trees in all the Allegheny and Blue Ridge ranges. The bark is smooth and light gray, and the leaves in shape resemble the beech, but are arranged on a leaf stalk like the ash. It grows as far north as Massachusetts, and a number of handsome specimens can be seen in and around Boston and Cambridge.

As has been said before, any grading based on color is misleading, is not based on any necessary differences in quality, and varies with different localities. The term gray or brown may be applied to a dark colored white ash growing on the upland, or to a specimen of the blue, green or black ash. Calico ash is a similar name used to designate those specimens of the white ash whose heart wood is variegated and of unusual size. Such specimens are often seen in the delta of the Mississippi or the bottom lands between Cairo and Vicksburg.

As a general rule when elasticity is the prime requisite, the selected white ash of medium weight and rather coarse quality is demanded, such as for light wagons or where the material must be reduced to the smallest size consistent with safety. For purposes where strength is required or initial resistance to flexion or indentation, the brown or black varieties are to be preferred, and where there is a generous margin of safety allowed between size of the finished article and the strain that will be put on it. The brown lumber also will, as a rule, resist weather the best, though the real cause is not to be found in the color but in the character of the wood depending almost entirely on the soil in which it grew. The "toughest" lumber, using that term to denote the most elastic, is found where the white ash reaches its most favorable development.

The relative value of northern and southern ash for various purposes has not yet been carefully investigated, and much remains to be done. In fact, little has yet been accomplished in this line in the investigation of any of the woods of this country, though it is a question of great importance to the manufacturing interests. Each kind of wood has its own special value, and both producer and consumer can work together to better advantage, when the qualities of the various species are known and recognized. The government is doing something from year to year under the able direction of Mr. Fernow, chief of the division of forestry. Many firms, however, and a number of the larger corporations, especially railroads, have been compelled to take up this work in their departments of tests, and consignments of lumber are sometimes rejected for causes which appear to the lumbermen quite insufficient. A year or two ago a large quantity of heavy timbers to be used in the Auditorium were rejected because they were short leaf yellow pine. Of course if the specifications called for long leaf and nothing else, the rejection was right, but scientific investigation shows that the practical difference between the two kinds is often very small, and in the instance under consideration the one would have been precisely as good as the other. The prejudice against the short leaf, however, was such that it had to go. In structures of wood, investigations will soon be possible as a result of the numerous experiments now being made, and the effect will be to make manufacturers more careful, and to give greater security to human life.—*Henry L. Tolman in the Northwestern Lumberman, December 26, 1891.*

The Illinois Board of World's Fair Commissioners has ordered specifications for the architectural reproduction in drawings of all the Illinois state institutions and public buildings, sixteen in number.

ARCHITECTURE—A WOMAN'S STUDY.

We take the following article from the "Architectural Review" published in 1870—by Samuel Sloan of Philadelphia.

We have ever been of opinion that the refined taste inherent in woman's very nature, most especially fits her for the æsthetic requirements of architectic study, and we will confess to some surprise that while the gentle sex is in quest of mental occupation, the charms which surround this art of ours should fail to attract them to inquire into its claims to attention, as a something worthy their application.

With such an impression we awaited the, to our mind, certain development of woman's evident destiny, and were not a little pleased to meet in the *Woman's Journal* with the following:

"Why do not some of our bright girls who graduate from High, and Normal Schools, and who are looking for a vocation, study Architecture? It is a profession that pays well, after it is thoroughly learned, and one in which women of a certain kind of talent might excel." * * *

There are many professional men who would not doubt give females an opportunity of making themselves proficient in drafting, and that they would answer their expectations, we feel that we can judge from what we have seen some accomplish. There is, in fact, no good reason why the delicacy of woman's hand, and the preceptive taste so peculiarly her own, should not be productive of admirable drawings and acceptable designs. In literature she has acquired a position which rivals that of man himself. In painting and in sculpture, she commands respect. In music she stands pre-eminent. In all the sciences which are said to complete a polite education, she is ever forward and not infrequently first. Then why should she not add Architecture, with all its lore of history, and its elegant accuracy of science, to her accomplishments? The day is already dawning which shall see woman greatly elevated above her too long existent inequality of mental position; and now that the other professions are gallantly opening ranks to receive her, it is not too soon for architects also to acknowledge her claims, and invite her to a trial of her ability in culling the choicest flowers of beauty to adorn the classic elegancies of design.

We do not propose, or even suppose that the gentler sex will ever assume the ruder and more masculine (so to speak) out-of-door operations, connected with the practical department of our profession—not at all; but, we do think that in the arrangement of plans, in Domestic Architecture for instance, that woman is the best judge of the convenience and economy of dwellings, for she it is who is the most interested party, and even in the external appearance of our homes who so anxious for the picturesque and the pleasing as she who presides there.

A liferary woman is never so intently particular in her work, as when with heartfelt affection she depicts the detailed beauties of the humblest cottage home. Does not this characteristic show that taste, the most natural and refined reigns in her bosom and sways her very imagination. What more is asked than the cultivation of this genuine art-love to make woman devoted to Architecture, with all its graces and attractions so winning, because so kindred to her mind?

By all means, then, let us offer her a liberal welcome, and we shall reap the grateful benefit in the expansion of that patronage we look for so ardently for our profession, and without which, with all its claims to the widest recognition, it will but live on slowly, patronized by the comparatively few, but scarcely recognized by the great majority.

Bellamy—"If the theories of socialism were adopted, sir, men would live as happily as children do now." Smith—"Yes, each one watching greedily to see that nobody else got a bigger apple."

"How's this, Dauber? You've painted Father Time with a mowing machine instead of a scythe." "That's all right. We artists of the modern school keep up with inventive progress."



Electricity Simplified—The Practice and Theory of Electricity, by T. O'Connor Sloane, E.M., Ph. D. Illustrated—Published by Norman W. Henley & Co., New York.

The work on Electricity is the plainest of any that has come under our knowledge. Every student of electricity should have one.

The book is to be had from Messrs. Osborn & Alexander, 401 Market street, San Francisco. We may present some chapters from this work in future numbers of our paper.

Practical Centring by Owen B. Maginnis, with illustrations—published by W. T. Comstock, New York, and for sale by Messrs. Osborn & Alexander, 401 Market street, San Francisco.

This is a book that should be in the hands of every builder and every workman in the trade.

The book treats of centring for all classes of stone, brick or wood work, and for scaffolding, and the cutting of rough or finished lumber for work of this description.

The work is so fully illustrated that we cannot well make extracts from its pages.

The Cosmopolitan with its usual complement of good things comes to us for January, 1892. Price \$3.00 per year.

The Fortnightly Review, monthly, by the Leonard Scott Publication Co., 231 Broadway, New York. Price \$4.50 per year.

This review is one of the essential periodicals of the present day. Twice every month the reader is supplied with the freshest thoughts of the world's great writers and thinkers.

Lippincott's Magazine comes to us for January, 1892. This popular magazine has been before the public for twenty-five years and has advanced with the requirements of the cultivated taste in literature to a first position. The stories represent the actual conditions of life, the authors being prominent in their special lines. The stories are complete in each number. J. B. Lippincott Co., Philadelphia. Price \$3.00 per year.

The Timber Trades Journal, an English periodical devoted to the timber interests of the world, has opened a branch office at 136 Liberty street, New York. Our dealers in Pacific Coast woods may find it to their interest to communicate with said journal.

The Phrenological Journal for January, 1892, comes to us full of useful knowledge about the science of health and human nature. Price \$1.50 per year. Fowler & Wells Co. publishers, 775 Broadway, New York.

We have received the first number of the *Pacific Builder*, a new monthly periodical devoted to the building interests of the Pacific Coast. It is published by May S. Purteile, at Portland, Oregon. Price \$1.00 per year. It starts out with a good healthy look, and we wish it success.

The Mexican Financier, published in New York, and simultaneously in the City of Mexico, by the Seeger & Guernsey Company, is a very useful paper to the trading public who may have business with the people of Mexico.

NOTICE OF MEETINGS.

SAN FRANCISCO CHAPTER, AMERICAN INSTITUTE ARCHITECTS, meets second Friday of each month at Academy of Sciences Building.

GEO. H. SANDERS, Pres. OLIVER EVERETT, Vice-Pres.
H. T. BESTOR, Sec. JOHN M. CURTIS, Treas.

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

JOHN RICHARDS, Pres. L. WAGONER, Vice-Pres.
OTTO VON GELDERN, Sec. GEO. F. SCHILD, Treas.

CALIFORNIA ELECTRICAL SOCIETY, meets the first and third Monday evening of each month at the Academy of Sciences Building.

W. C. QUIMBY, Pres. O. BROOKS, Vice-Pres.
W. C. CROSETT, Sec. W. C. CROSETT, Treas.

MASTERS PAINTERS' ASSOCIATION OF THE PACIFIC COAST
E. M. GALLAGHER, Pres. H. G. JARMAN, Sec.

THE annual meeting of the Technical Society of the Pacific Coast, was held at the rooms in the Academy of Sciences Building, 819 Market street, on Friday, January 15th, for the purpose of electing the officers and directors for the ensuing year.

Reports of the officers were submitted, showing the transactions of the past year, and the President in his annual address reviewed the work of the Society.

The following officers were elected for the year 1892:—President—John Richards, Mech. Eng.; Vice-President—Luther Wagoner, Min. Eng.; Treasurer—Geo. F. Schild, Naval Arch.; Secretary—Otto Von Geldern, Civil Eng. Directors—H. C. Behr, Geo. W. Dickie, W. R. Eckart, C. E. Grunsky, and A. Schierholz.

THE regular meeting of the San Francisco Chapter of the American Institute of Architects, was held the 15th inst. at 408 California street. The President, Geo. H. Sanders presiding.

The vacant position of Secretary was filled by the election of H. T. Bestor.

A report on the Chapter Classes was received from Mr. Sanders, and free hand crayon drawings, in "black and white," were received and placed on the wall.

For the January competition, three "pen and ink" drawings were received.

A committee, consisting of Messrs. Sanders, Pissis, Everett, Gash and Cuthbertson, was appointed on Competitions of the Students Classes.

The drawings of these competitions will remain on exhibition at the headquarters of the Chapter, 408 California street, and all Architects or persons interested in this work, are invited to inspect the same.

President Sanders read a paper on the Post Office Site as an Architectural problem, which was ordered printed in the California Architect, and copies forwarded to the daily press of San Francisco. This paper will be found in full in another column.

AT the expiration of each subscription the bill for the succeeding year is mailed, and we shall be pleased to renew the name on our subscription books. The price is three dollars per year, in advance.

From various sources for a long while past have come demands for a revision of the building laws of New York city, and an organized movement has now been begun to secure the passage of an amended law by the next legislature. In order to accomplish this a Board of Revision has been formed, composed of gentlemen named by the American Institute of Architects, the Architectural Iron Works Association, a carpenter and mason from the Mechanics' and Traders' Exchange, a representative of the Real Estate Owners' Association and of the Board of Fire Underwriters, the Superintendent of the Bureau of Buildings and the Counsel of the Fire Department. This board will meet twice a week, to hear the views of architects, builders, real estate owners and others interested in the subject, and will then endeavor to frame a law which shall meet all objections against the present one.—*Fire and Water.*

LEGAL DECISIONS.

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

ATTORNEY'S FEES OF OWNER IN LIEN CASE.—Where the owner of a building has been compelled to enforce liens, to which both he and the contractor were parties, he is entitled to set off against the contract price, not only the amount of the judgments recovered, but all that he had been compelled to pay to relieve his property from the liens, including his attorney's fees and costs.
Cavell v. Washburn, Supreme Court of California, 27 Pac. Rep. 859, (68C).

LIABILITY OF WIFE FOR CONTRACT OF HUSBAND.—Where a husband contracts for the erection of a house on his wife's separate property, the fact that the wife examined the plans for the building, watched the progress of the work, and personally and by letters urged the material-men to push on the work, are sufficient to sustain the verdict that the wife is liable to the mechanic's lien of the material-men. In such case it was proper to charge "that a husband cannot, by making a contract like this, charge his wife's property, unless it appears that the materials were furnished with her knowledge and consent." If she assented to the contract made by her husband in this respect, * * * if she knowingly received the goods, assented to the application of the goods to her property, she is bound by the contract.
Boney v. Thackam, Supreme Court of Pennsylvania, 22 At. Rep. 754, (123C).

PENALTY CLAUSE IN BUILDING CONTRACT.—A person named Kemper and one named Candon entered into a written contract whereby Candon agreed to build a wall, etc., or else at his election, to remove a certain house three feet, and put it in as good condition as it was before; and in such contracts the parties further stipulated as follows: "It is mutually agreed between said parties that a failure on the part of said Candon to perform these obligations shall entitle said Kemper to recover from him the sum of five hundred dollars as liquidated and ascertained damages for the breach of this contract." Candon elected not to build the wall, etc., and afterwards failed to remove the house. The cost of removing the house, and putting it in as good condition as it was before, would not have exceeded \$100. When the parties made the contract, and stipulated for damages in case of breach, fixing the amount at \$500, they could not have had in contemplation actual compensatory damages; and therefore the sum of \$500 mentioned in such contract as liquidated and ascertained damages must be treated as a penalty, and not as liquidated damages, and therefore it cannot be enforced, and only actual damages can be recovered.
Candon v. Kemper, Supreme Court of Kansas, 27 Pac. Rep. 829, (200C).

SERVICE OF LIEN NOTICE ON WIFE.—A wife, who, in addition to her dower and homestead rights, has been awarded exclusive possession of a homestead pending a suit for divorce and alimony instituted by her, is a proper party to an action to enforce a mechanic's lien thereon, and where judgment by default has been obtained in such action against the husband alone by collusion between him and plaintiff, she may become a party, and contest the alleged lien.
Weston v. Weston, Supreme Court of Wisconsin, 49 N. 884, (867C).

LIEN FOR LUMBER FURNISHED TO RAILROAD CONTRACTOR.—Lumber sold to a subcontractor of a railway, for the erection of shanties for its employees and suitable stables for his teams, is not within the statute granting a lien for labor performed on material furnished in the construction, repair, and equipment of the railroad, and gives no right of action against the railway company.
Stewart Chute Lumber Co. v. Missouri Pac. Ry. Co., Supreme Court of Nebraska, 49 N. W. Rep. 769, (75).

BUSINESS MOSAICS.

The San Francisco Mineral Paint Co., the manufacturers of Royal Metallic Paint, an artificial stone coloring and mortar stain, have resumed operations with new machinery and are grinding their material to the finest possible limit that the latest improved machinery will permit. From people who have used it, and are judges of such material, it is pronounced to be the best in the market.

The following letter was received from N. & G. Taylor Co., importers and dealers in Tin Plate, Metals, Sheet Iron, Wire, etc.:

Philadelphia, January 6, 1892.

Editor of "CALIFORNIA ARCHITECT AND BUILDING NEWS."—We are very glad indeed to say that the Block Tin received by us from the Temescal mines was found equal to any tin we ever used. We used some of it in the manufacture of Solder, but the major portion was used in the manufacture of Bright Tin-plate.

It affords us great pleasure to say that we made Bright Tin-plate from Steel sheets made in Pennsylvania, Block Tin from the Temescal mines in California, and the work was done by men born, bred and raised in Philadelphia. If this is not American Tin-plate from a to z and will not satisfy those doubters who are endeavoring to create such an impression against the industry, we really don't believe they would be satisfied if they did all the work themselves.

To us the manufacture of Tin-plate is nothing new nor mysterious; we feel that we have understood the business for many years and that our position is quite different from most importers, in place of being bound to the sale of certain makers' brands and subject to their whims and wishes, we have had brands that we own, which we sold under the most positive guarantees offering absolute protection to the buyer, and we consider it good sound business judgment to prefer to make such plates here under our own supervision in place of having them made three thousand miles away according to our instructions.

In addition to making Bright Tin-plate we are making Taylor's Guaranteed Roofing Plates, which are known the country over, they are:—Taylor "Old Style," "The Taylor Roofing Tin," "Taylor's Columbia." All of the finest quality, the value regulated by the quantity and quality of the coating.

"He who would bring back the wealth of the Indies, must take with him the wealth of the Indies." Which means that you can't have the value without the cost. You get just what you pay for. The only question is what grade you will buy. Of somethings the cheapest is the best; but of important things, the best is the cheapest.

Removal—John A. Roebing's Sons Co., manufacturers of Wire, Wire Rope, Sash Cord, Fire Proof Wire Lathing, Bare and Insulated Electric Wires for all purposes, have removed from their old quarters, No. 8 California and No. 14 Drumm streets, to their new and commodious building No. 25 and 27 Fremont street, in the middle of the block between Market and Mission streets.

This firm has lately furnished for the new Crocker building, corner of Market and Post streets, quite a quantity of the celebrated Roebing Fire Proof Stiffened Wire Lathing.

The Jos. Dixon Crucible Co., Jersey City, N. J., makes a specialty of Graphite Compositions. In looking over the list of preparations where graphite can be used with success, one can see many uses where this material is superior to anything heretofore brought forward. Being of itself practically indestructible it forms the resisting qualities of a paint where heat is present, also as a resistant to friction in lubricants for heavy machinery.

For Crucibles it has long been known. The lead pencils made by this company have won by their superior excellence, the first position for business or artists use.

We call special attention to Supplement and advertisement of the Colton Marble Co., showing the grand staircase in the Academy of Sciences Building in this city. Mr. John C. Pelton, Jr., Manager, Office, Flood Building, Room 42.

Young Husband—"Well, my dear, did you succeed in finding a stove to suit you?" Young wife—"Indeed, I did. Such good luck! I got a stove that will never cost us a cent for coal. The dealer said it was a self-feeder."

The well known firm of Smith and Trowbridge, "West Coast Wire Works," have dissolved partnership, Mr. James Trowbridge purchasing the interest of Mr. Smith.

The souvenir from Messrs. Merchant & Co., for the year 1892, is received. The illustrations are unique as is usual with this firm. The first illustration shows the earth with Chicago as the central point; long lines of passenger steamships from all parts of the world are centering towards Chicago to inspect the manufactures of Merchant & Co. Plate No. 2 shows the World's Fair grounds with the metal tower of this firm. This tower is to be 4,000 feet high and topped out as a "Star Ventilator", and is proposed to be used to ventilate the building at the World's Fair. The different nations are seen concentrating in all manner of conveyances towards this grand exhibit.

Plate No. 4 shows the method of inspecting the roofing plates.

Plate No. 7 shows the top of the "Star Ventilator" over the 4,000 foot tower, where people of all nations are viewing the wonderful city and country around.

Plate No. 8 shows a grotto cooled to an agreeable temperature by the celebrated "Star Ventilator".

Plate No. 9 shows a close room where most of the inmates have fainted, and where a Brownie is about to place in the ceiling a "Star Ventilator".

Plate No. 10 shows the same room with the contented and-pleased look of the inmates after the ventilator is placed in position.

Plate No. 12 shows a large sheet metal retort which is being viewed with consternation by the Russian, it being so superior to anything heretofore manufactured, that the Russian sheet metal is likely to be superseded in the market.

Plate No. 20 shows Miss Columbia placing the crown of honor upon the head of Messrs. Merchant & Co's. Brownie.

Write your advertisements clearly and truthfully, using sufficient space to show what you are prepared to furnish, have them printed continuously, then if you have anything that anybody wants, your returns will be satisfactory.

The Marshall Improved Window Furniture Company last week completed their contract for three hundred windows and sixty wash-stand doors on the Fair building, cor. Pacific and Front streets.

F. Sims, one of the firm of Sims & Morris, Western Iron Works of this city, dipped 40,000 shingles in 77 gallons of Carbolineum Avenarius. These shingles were dipped for two minutes without breaking bundles and when taken out were found to have been thoroughly penetrated and fully saturated with the preparation of Carbolineum.

The J. L. Mott Iron Works are continually adding to their already large number of articles for plumbers use. This firm has always been the manufacturer of the most perfect appliances characterized by beauty and strength, and the sanitary needs of the day in such articles are present in a marked degree. The arrangements for attachment are so perfect and gas tight, that no sewer emanations find their way into the house by this means.

Bath rooms, lavatory sinks and toilet rooms, when fitted with their appliances can be thoroughly cleansed all around the same, leaving no place where refuse or dirt can find a lodgement, as all such places are by their method unmasked.

The Mott Company has for years followed the plan of making all their articles in such a manner as to bear out their superiority over others in the market. By this means they have a standard value that at once recommends them to the favor of any person who has a knowledge of their quality. The latest productions from this firm are fully up to all the advanced sanitary questions of the times.

TENDERS TO BE RECEIVED.

Sealed proposals will be received at the office of the Supervising Architect, Treasury Department, Washington, D. C., until 2 o'clock P. M. on the 29th day of January, 1892, for furnishing and delivering at Freight Depot in city where required, Scales for the U. S. Government Building at the following cities:

Burlington, Vt.; Evansville, Ind.; Grand Rapids, Mich.; Macon, Ga.; New Orleans, La.; New York, N. Y.; Oswego, N. Y.; Philadelphia, Pa.; Sandusky, Ohio; Wheeling, W. Va. and Winona, Minn., in accordance with the specification, copies of which may be had at this office.

Bids for one or more of the scales must be accompanied by a certified check for a sum not less than 2 per cent. of the amount of the bid.

The Department will reject all bids received after the time fixed for opening the same; also bids which do not comply strictly with all the requirements of this invitation.

Proposals must be enclosed in envelopes, sealed and marked, "Proposals for scales for U. S. Government Buildings" and addressed to

W. J. EDBROOKE,
Supervising Architect.

December 31, 1891.

Sealed proposals will be received at the office of the Supervising Architect, Treasury Department, Washington, D. C., until 2 o'clock P. M. on the 5th day of February 1892, for all the labor and materials required for the trench excavation, concrete and stone foundations, stone masonry, cut stone brick work of the basement and area walls, first floor and basement beams and girders, basement columns, etc., for the U. S. Court House, Custom House and Post Office at Omaha, Nebraska, in accordance with the drawings and specification, copies of which may be had on application at this office or the office of the Superintendent.

Each bid must be accompanied by a certified check for a sum not less than two per cent of the amount of the proposal.

The Department will reject all bids received after the time herein stated for opening the same; also bids which do not comply strictly with all the requirements of this invitation.

Proposals must be enclosed in envelopes, sealed and marked, "Proposal for Trench Excavations, Basement and Area Walls, Iron Beams, Columns, etc., for the U. S. Court House, Custom House and Post Office at Omaha, Nebraska," and addressed to,

W. J. EDBROOKE,
Supervising Architect.

January 8, 1892.

CITY BUILDING NEWS.

Battery near Pacific. All cast iron work; owner, Jas. G. Fair; architect, H. A. Schulze; contractors, O'Connell & Lewis; cost, \$2,760; signed, Nov. 17; filed, Dec. 9; payments, 1st day of each month 75 per cent. of work done; balance 35 days.

Battery near Pacific. Carpenter and stairwork; owner, Jas. G. Fair; architect, H. A. Schulze; contractor, Smilie Bros.; cost, \$20,837; signed, Nov. 17; filed, Dec. 9; payments, 1st day of each month 75 per cent. of work done; balance 35 days.

Battery near Pacific. Excavating, brickwork, etc.; owner, Jas. G. Fair; architect, H. A. Schulze; contractor, John McCarthy; cost, \$22,150; signed, Nov. 17; filed, Dec. 9; payments, 1st day of each month 75 per cent. of work done; balance 35 days.

Battery near Pacific. Painting, graining, etc.; owner, Jas. G. Fair; architect, H. A. Schulze; contractor, J. M. Sindlinger; cost, \$1,595; signed, Nov. 21; filed, Dec. 9; payments, 1st day of each month 75 per cent. of work done; balance 35 days.

Battery near Pacific. Sandstone, pier, caps, etc.; owner, Jas. G. Fair; architect, H. A. Schulze; contractor, J. P. M. Phillips; cost, \$2,205; signed, Nov. 21; filed, Dec. 9; payments, 1st day of each month 75 per cent. of work done; balance 35 days.

Battery near Pacific. Tinsmith work, etc.; owner, Jas. G. Fair; architect, H. A. Schulze; contractor, J. C. Roberts; cost, \$2,686; signed, Nov. 17; filed, Dec. 9; payments, 1st day of each month 75 per cent. of work done; balance 35 days.

Battery near Pacific. Wood and iron, lathing; owner, Jas. G. Fair; architect, H. A. Schulze; contractor, Thos. Mannix; cost, \$2,345; signed, Nov. 21; filed, Dec. 9; payments, 1st day of each month 75 per cent. of work done; balance 35 days.

Battery near Pacific. Wrought iron work; owner, Jas. G. Fair; architect, H. A. Schulze; contractors, Biglow & Little; cost, \$5,432; signed, Nov. 17; filed, Dec. 9; payments, 1st day of each month 75 per cent. of work done; balance 35 days.

Broderick near Ridley. To build; owner, J. Caley; architect, W. H. Lillie; contractors, Harrington & Johnson; bond, \$2,500; cost, \$4,670; signed, Dec. 17; filed, Dec. 18; payments, \$700, frame up; \$700, enclosed; \$700, brown coated; \$700, standing finish on; \$702.50, completed; \$1,167.50; 35 days.

Castro near 23rd. To build; owner, Joseph Harris; architect, M. J. Welsh; contractor, F. C. Kleebauer; bond, \$883.75; cost, \$3,335; signed, Dec. 11; filed, Dec. 11; payments, \$883.75, frame up; \$883.75, brown coated; \$883.75, completed; \$883.75, 35 days.

De Long near Frederick. To build; owner, C. Lehnhardt; architects, John & Danyszynski; contractor, J. L. Hansen; cost, \$2,940; signed, Dec. 28; filed, Dec. 31; payments, \$700, frame up; \$800, brown coated; \$700, completed; \$740, 35 days.

Dolores near Cumberland. To build; owner, Geo. Walcott; architect, R. H. White; contractor, Robt. Currie; bond, \$965; cost, \$3,485; signed, Dec. 22; filed, Dec. 28; payments, \$720, frame up; \$720, ready for brown coat; \$720, standing finish on; \$720, completed; \$965, 35 days.

Elgin Park near Ridley. Alterations and additions; owner, Carlo Oliva; architect, A. J. Barnett; contractors, Antonelli; bond, \$800; cost, \$1,405; signed, Dec. 5; filed, Dec. 5; payments, \$500, where house movers appliances are all removed; \$900, completed; \$575, 35 days.

Elizabeth near Castro. To build; owner, C. B. Van De Mark; architect, Edward Burns; contractor, Jas. Campbell; cost, \$2,830; signed, Dec. 1; filed, Dec. 5; payments, \$712.50; frame up; \$712.50, brown coated; \$712.50, completed; \$712.50, 35 days.

Ellis near Buchanan. To build; owner, Winnie Lafferty; contractor, S. T. Crawford; cost, \$6,000; signed, Dec. 23; filed, Dec. 28; payments, \$1,200, frame up and roof boards on; \$1,800, brown coated and enclosed; \$1,950, completed; \$1,050, 35 days.

Filbert and Dupont. Plastering and lathing; owner, Rev. R. De Carolis; architect, Chas. J. Devlin; contractor, Martin Carrick; cost, \$1,100; signed, Dec. 3; filed, Dec. 5; payments, \$400, brown coated; \$425, completed; \$275, 35 days.

Filbert bet. Fillmore and Steiner. To build; owner, J. E. Habergarten; contractor, L. B. Schmidt; cost, \$2,000; signed, Dec. 22; filed, Dec. 28; payments, \$1,000, brown coated; \$500, completed; \$500, 35 days.

Franklin near Clay. To build; owner, A. P. Totalling, Jr.; architects, Kenitzer & Kollofrath; contractor, Adam Miller; cost, \$15,105; signed, Dec. 14; filed, Dec. 24; payments, \$2,000, frame up; \$2,500, enclosed and roof completed; \$2,000, brown coated; \$3,350, woodwork completed and ready to paint; \$1,555, completed; \$3,750, 35 days.

Geary Street, No. 623. Plumbing and gas-fitting; owner, R. N. Vance; contractor, Jas. Brnatt; cost, \$1,500; signed, Dec. 28; filed, Dec. 28; payments, 75 per cent. of the value of work done on 1st day of each month; balance 35 days.

Geary near Buchanan. To build; owner, C. C. Butter; architects, Shea & Shea; contractors, E. C. Warden & Son; cost, \$12,365; signed, Dec. 8; filed, Dec. 16; payments, \$1,545, rough frame up; \$1,545, rustic on; \$1,545, partitions set and outside finish on; \$1,545, brown coated; \$1,545, white coated; \$1,545, completed; \$3,002, 35 days.

Geary and Leavenworth. To build; owners, Michalitschke Bros.; architects, John & Bulezinski; contractors, Richardson & Gale; cost, \$12,000; signed, Dec. 12; filed, Dec. 12; payments, 75 per cent. as work progresses; balance 35 days.

Geary and Polk. Painting, gilding and natural woodwork; owner, David T. Pierce; architects, R. H. & R. W. Walker, Agent of Althea Walker; architects, Smith & Freeman; contractors, Smith & Freeman; cost, \$1,900; signed, Dec. 10; filed, Dec. 11; payments, 1st day of each month 75 per cent. of value of work done; balance 35 days.

Gough and Broadway. Carpenter work; owner, D. F. Walker, Agent of Althea Walker; architects, Smith & Freeman; contractor, A. Jackson; cost, \$27,145; signed, Dec. 2; filed, Dec. 7; payments, \$2,000, foundations in; \$3,000, frame up; \$1,000, ready for plaster; \$1,000, plastered; \$1,000, ready for putty; \$3,535, completed; \$6,787, 35 days.

Gough and Broadway. Painting; owner, D. F. Walker, Agent of Althea Walker; architects, Smith & Freeman; contractor, Gus V. Daniels; cost, \$1,794; signed, Dec. 1; filed, Dec. 7; payments, \$300, house primed; \$500, inside and outside has two coats; \$49, 35 days.

Gough and Broadway. Plumbing; owner, D. F. Walker, Agent of Althea Walker; architects, Smith & Freeman; contractors, Dudley Bros.; cost, \$3,297; signed, Dec. 2; filed, Dec. 7; payments, \$1,000, rough work done; \$50, completed; \$847, 35 days.

Grove and Baker. To build; owners, J. Arguello and wife; architects, Martens & Coffey; contractor, W. W. Adams; cost, \$13,945; signed, Dec. 22; filed, Dec. 28; payments, \$2,000, frame up; \$2,000, enclosed and roofed; \$2,000, brown coated; \$2,000, white coated; \$2,345, completed; \$3,470, 35 days.

Haight Street, Nos. 436 and 438. Alterations and additions; owner, A. Sandell; contractors, Mullins and McGowan; bond, \$775; cost, \$3,100; signed, Dec. 14; filed, Dec. 22; payments, \$388, house raised and brickwork done; \$387, framed; \$775, rough plastered; \$775, completed; \$775, 35 days.

Jackson near Baker. Carpenter work; owner, E. T. Howes; architects, Smith & Freeman; contractor, John G. Adams; cost, \$5,000; signed, Dec. 23; filed, Dec. 28; payments, \$1,050, frame up; \$1,050, ready for plastering; \$1,050, brown coated; \$1,050, completed; \$1,400, 35 days.

Jackson and Laguna. Cabinet work; owner, A. Schwabacher; architects, Percy & Hamilton; contractor, F. W. Knilling; cost, \$5,500; signed, Dec. 15; filed, Dec. 21; payments, 1st Saturday of each month, 75 per cent. of work done; balance 35 days.

Jackson and Laguna. Carpenter and mill work; owner, A. Schwabacher; architects, Percy & Hamilton; contractors, Barrett & Bell; cost, \$14,508; signed, Dec. 15; filed, Dec. 21; payments, 1st Saturday of each month, 75 per cent. of value of work done; balance 35 days.

Jackson and Laguna. Concrete work; owner, A. Schwabacher; architects, Percy & Hamilton; contractors, Ransome & Cushing; cost, \$8,300; signed, Dec. 15; filed, Dec. 21; payments, 1st Saturday of each month, 75 per cent. of work done; balance 35 days.

Jackson and Laguna. Plumbing and gas-fitting; owner, A. Schwabacher; architects, Percy & Hamilton; contractors, Dudley Bros.; cost, \$3,923; signed, Dec. 15; filed, Dec. 21; payments, 1st Saturday of each month, 75 per cent. of work done; balance 35 days.

Jackson and Laguna. Ornamental and plain plastering; owner, A. Schwabacher; architects, Percy & Hamilton; contractor, Henry Fisher; cost, \$2,285; signed, Dec. 15; filed, Dec. 21; payments, 1st Saturday of each month, 75 per cent. of work done; balance 35 days.

Jackson and Laguna. Painting, varnishing, etc.; owner, A. Schwabacher; architects, Percy & Hamilton; contractors, M. J. & J. J. Danovany; cost, \$1,425; signed, Dec. 15; filed, Dec. 21; payments, 1st Saturday of each month, 75 per cent. of work done; balance 35 days.

Langton Street, No. 125. To build; owner, Robt. J. Young; contractor, A. G. Marling; bond, \$500; cost, \$2,400; signed, Dec. 8; filed, Dec. 8; payments, 75 per cent. at end of every two weeks as work progresses; balance 35 days.

Leavenworth near Sacramento. To build; owner, G. D. Mayle; architects, John & Bulezinski; contractor, Wm. Plums; cost, \$4,400; signed, Dec. 9; filed, Dec. 10; payments, \$1,200, frame up; \$1,200, partitions set; \$1,200, white coated; \$1,200, completed; \$1,600, 35 days.

Market St.—Palace Hotel. Furniture for writing and reading room; owners, Sharon Estate; architect, A. P. Brown; contractors, West Coast Furniture Co.; cost, \$1,552; signed, Dec. 3; filed, Dec. 12; payments, \$1,552, completed and accepted.

Market St.—Palace Hotel. Ventilating shafts in courts; owners, Sharon Estate; architect, A. P. Brown; contractors, W. W. Montague & Co.; cost, \$1,725; signed, Dec. 23; filed, Dec. 24; payments, 75 per cent. completed; 25 per cent. 35 days.

Market, Post and Montgomery. Show and counter cases; owners, Geo. C. Shreve & Co.; architect, A. P. Brown; contractors, W. L. & B. Smith; cost, \$18,500; signed, Dec. 4; filed, Dec. 12; payments, 40 per cent. upon shipment of goods from N. Y., 60 per cent. upon acceptance.

Market, Post and Montgomery. Cartan, pierre and plaster ornaments, owners, Geo. C. Shreve & Co.; architect, A. P. Brown; contractor, Henri L. Bouchet; cost, \$1,250; signed, Nov. 20; filed, Dec. 12; payments, 60 per cent. when shipments are delivered from N. Y., 40 per cent. upon acceptance.

McAllister and Jones. Decorative painting; owners, Hibernia S. & L. Society; architects, Pissis & Moore; contractors, Moretti & Trezzini; cost, \$3,920; signed, Dec. 1; filed, Dec. 17; payments, 1st and 15th day of each month 75 per cent. of value of work done; balance 35 days.

McAllister and Jones. Mosaic marble floors; owners, Hibernia S. & L. Society; architects, Pissis & Moore; contractors, Chatain & Gilletti; cost, \$1,455; signed, Dec. 1; filed, Dec. 17; payments, 1st and 15th day of each month 75 per cent. of value of work done; balance 35 days.

McAllister and Jones. Mantels and paneled ceilings; owners, Hibernia S. & L. Society; architects, Pissis & Moore; contractors, Pink & Schindler; cost, \$6,388; signed, Dec. 1; filed, Dec. 5; payments, 75 per cent. as work progresses on 1st and 15th day of each month; balance 35 days.

Sacramento and Montgomery. Painting, glazing, etc.; Pacific Life Ins. Co.; architects, Wright & Sanders; contractors, Geo. J. Smith & Sons; cost, \$5,548; signed, Dec. 8; filed, Dec. 11; payments, 75 per cent. as work progresses; balance 35 days.

Steiner and Ellis. To build; owners, T. F. Misgill and wife; contractors, Peterson & Person; bond, \$400; cost, \$5,336; signed, Dec. 8; filed, Dec. 10; payments, \$1,300, frame up; \$1,400, brown coated; \$1,300, completed; \$1,336, 35 days.

Tehama Street, Nos. 353 to 357. Carpenter work; owner, J. Spaulding; architects, Shea & Shea; contractor, A. C. Hussey; cost, \$1,500; signed, Dec. 16; filed, Dec. 18; payments, 75 per cent. as work progresses; balance 35 days.

Twelfth Ave. near "M". To build; owner, Chas. H. Knus; contractors, Parker & Bane; cost, \$1,400; signed, Nov. 30; filed, Dec. 7; payments, \$300, enclosed; \$450, brown coated; \$400, completed; \$250, 35 days.

Twenty-fifth and Capp. To build; owner, Michael Curran; architect, W. H. Bayless; contractors, Doyle & Son; bond, \$6,000; cost, \$12,000; signed, Dec. 4; filed, Dec. 5; payments, 75 per cent. as work progresses on 5th day of each month; balance 35 days.

Vallejo near Buchanan. To build; owner, Bertha Cellarius; architects, Townsend & Wynken; contractor, J. W. Wissinger; cost, \$7,575; signed, Dec. 18; filed, Dec. 22; payments, \$405, 1st floor beams on; \$1,000, rough floors laid; \$1,500, brown coated; \$1,000, white coated; \$1,500, completed; \$1,970, 35 days.

Waller near Masonic Ave. To build; owner, Mary J. Nachtigall; architect, N. A. Comstock; contractor, Chas. Kinsman; bond, \$2,500; cost, \$5,500; signed, Dec. 2; filed, Dec. 10; payments, \$1,375, frame up; \$1,375, brown coated; \$1,375, completed; \$1,375, 35 days.

Washington near Walnut. To build; owner, W. O. Ludovic; architect, Wm. Carlett; contractor, Wm. Linden; cost, \$7,400; signed, Dec. 7; filed, Dec. 8; payments, \$3,000, roof on; \$1,512.50, brown coated; \$1,000, inside finish on and doors hung; \$1,887.50, 35 days.

ALAMEDA COUNTY.

Bella Vista near 11th Ave., Oakland. To build; owner, E. S. Chapman; contractors, A. W. Puttiani & Co.; cost, \$5,000; signed, Dec. 16; filed, Dec. 17; payments, \$1,350, rustic and roof shingles on and chimneys built; \$1,250, window frames set, brown mortar on and exterior primed; \$1,150, completed; \$1,250, 35 days.

Blake Street near Shattuck Ave., Berkeley. To build; owner, C. A. Briggs; contractors, Cheney & Baum; cost, \$1,750; signed, Dec. 12; filed, Dec. 12; payments, 1/2 enclosed; 1/4, brown mortar on; 1/4, completed; 1/4, 30 days.

Broadway and 14th Streets, Oakland. Concrete arches; owner, Jos. Macdonough; architects, Mosser & Cuthbertson; contractors, Gray Bros.; cost, \$3,700; signed, Dec. 14; filed, Dec. 23; payments, 75 per cent. of the value of work done; balance, 25 per cent., 35 days.

Broadway and 14th Streets, Oakland. Gas work; owner, Jos. Macdonough; architects, Mosser & Cuthbertson; contractor, T. H. Andrews; cost, \$6,000; signed, Dec. 5; filed, Dec. 23; payments, 75 per cent. of the value of work done; balance, 25 per cent., 35 days.

Broadway and 14th Streets, Oakland. Sandstone; owner, Jos. Macdonough; architects, Mosser & Cuthbertson; contractor, David O'Neill; cost, \$1,300; signed, Nov. 30; filed, Dec. 23; payments, 75 per cent. of the value of work done; balance 35 days.

Carrollon Tract. To build; owner, A. H. Yeazell; contractor, H. J. Goetzman; cost, \$2,550; signed, Dec. 18; payments, one sorrel horse on date of said contract at agreed price of \$300; balance of said \$2,550, to be paid as follows: \$25, completed, and \$25, 30 days, and so on, \$20 in each 30 days, until entire sum of \$2,550, has been paid.

Central Ave. near Lafayette, Alameda. To build; owner, E. A. Fischer; architect, Chas. S. Shaner; contractors, J. E. Henderlong Bros.; cost, \$4,430; signed, Dec. 24; filed, Dec. 25; payments, \$825.50, rough frame up and rafters on; \$850, enclosed, rustic on and window frames in; \$850, brown mortar on; \$850, plastering and all woodwork done; \$1,107, 35 days.

Channing Way Dana, Berkeley. To build; owners, D. W. & M. Parkhurst; contractors, A. W. Puttiani & Co.; cost, \$7,750; signed, Nov. 30; filed, Dec. 5; payments, \$2,500, rustic and roof shingles on and chimney built; \$1,750, window frames set, brown mortar on and exterior primed; \$1,500, completed; \$2,000, 35 days.

Delaware Street near Shattuck. To build; owner, Mary Holden; contractor, Chas. H. Thrane; cost, \$1,630; signed, Dec. 12; filed, Dec. 14; payments, \$543.33, frame up, enclosed and roof on; \$543.33, brown mortar on; \$543.33, 35 days.

Felton and Herzog Streets, Gd. Gl. To build; owners, John A. Carson and wife; contractor, H. F. H. Brown; cost, \$1,630; signed, Dec. 23; filed, Dec. 24; payments, \$543.25, roof on and outside completed; \$543.25, completed; \$543.25, 35 days.

Grand Street near San Jose Ave., Alameda. To build; owners, Nettie R. & E. B. De Golia; contractors, A. W. Puttiani & Co.; cost, \$4,500; signed, Dec. 4; filed, Dec. 7; payments, \$1,150, rustic and roof shingles on and chimney built; \$1,750, window frames set, brown mortar on, etc.; \$840, completed; \$1,100, 35 days.

Linda Vista Terrace, Oakland. To build; owner, E. D. Ormsby; architect, J. Conant; contractor, Jacob Steinbock; cost, \$3,400; signed, Dec. 17; filed, Dec. 19; payments, 1/4, frame up and rustic on; 1/4, first coat of plaster is on; 1/4, ready for last coat of paint; 1/4, 35 days.

Lot 19, block 728. To build; owner, Colombo Raffo; contractor, Frank C. Bignami; cost, \$2,900; signed, Nov. 5; filed, Dec. 8; payments, \$900, frame up; \$975, one coat plaster on; \$971, 35 days.

Myrtle near 12th St., Oakland. To build; owner, F. H. Baunig; architects, Percy & Hamilton; contractors, Cornelius & Reed; cost, \$2,800; signed, Dec. 23; filed, Dec. 27; payments, 1/4, frame up and rustic on; 1/4, first coat plaster on; 1/4, ready for last coat of paint; 1/4, 35 days.

Park Ave. near San Jose, Alameda. Alterations; owner, O. E. Derby; architect, A. H. Denke; contractor, Geo. Kueppler; cost, \$925; signed, Dec. 15; filed, Dec. 15; payment, \$300, building is covered in; \$300, completed; \$325, 30 days.

San Pablo Ave. near 16th St., Oakland. Brickwood in extension building; owner, W. Hall; architects, J. J. & T. D. Newson; contractors, Remillard Brick Co.; cost, \$1,535; signed, Dec. 17; filed, Dec. 18; payments, 75 per cent. of the value of work done and materials furnished to be paid on 2nd and 16th of each month, and the remaining 25 per cent., 35 days.

San Pablo Ave. near 16th St., Oakland. All plate and glass work in store fronts; owner, Winslow Hall; architects, J. J. & T. D. Newson; contractors, L. & H. Cobbledick; cost, \$2,200; signed, Dec. 10; filed, Dec. 11; payments, 75 per cent. of work done and materials furnished on 1st and 15th of each month; balance 25 per cent., 35 days.

San Pablo Ave. near 16th St., Oakland. Plumbing, etc.; owners, J. C. & E. Coleman; architects, J. J. & T. D. Newson; contractors, Wm. S. Snook & Son; cost, \$1,450; signed, Dec. 9; filed, Dec. 10; payments, 1st and 15th day of each month 75 per cent. as work progresses; balance 25 per cent., 35 days.

San Pablo Ave. near 16th St., Oakland. Painting; owners, J. C. & E. Coleman; architects, J. J. & T. D. Newson; contractors, Doody & Hooley; cost, \$1,907; signed, Dec. 9; filed, Dec. 10; payments, 1st and 15th day of each month 75 per cent. as work progresses; balance 25 per cent., 35 days.

San Pablo Ave. near 16th St., Oakland. Brick, carpenter, plastering, etc.; owners, J. C. & E. Coleman; architects, J. J. & T. D. Newson; contractors, L. & H. Cobbledick; cost, \$2,200; signed, Dec. 9; filed, Dec. 10; payments, 1st and 15th day of each month 75 per cent. as work progresses; balance 25 per cent., 35 days.

Suburban Tract — lot 14, block A. To build; owner, Robt. A. Barker; contractor, J. J. Rose; cost, \$1,650; signed, Dec. 5; filed, Dec. 7; payments, first payment, house up and enclosed; second, house completed; third, 35 days.

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W. J. CUTHBERTSON, President.

OLIVER EVERETT, Secretary.

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3 Inch.....	3 00	9 00	15 00	27 00
4 Inch.....	4 00	12 00	20 00	36 00
5 Inch.....	5 00	15 00	25 00	45 00
6 Inch.....	6 00	18 00	30 00	54 00
7 Inch.....	7 00	21 00	35 00	63 00
8 Inch.....	8 00	24 00	40 00	72 00
9 Inch.....	9 00	27 00	45 00	81 00
10 Inch.....	10 00	30 00	50 00	90 00
11 Inch.....	11 00	33 00	55 00	99 00
12 Inch.....	12 00	36 00	60 00	108 00
13 Inch.....	13 00	39 00	65 00	117 00
14 Inch.....	14 00	42 00	70 00	126 00
15 Inch.....	15 00	45 00	75 00	135 00
16 Inch.....	16 00	48 00	80 00	144 00
17 Inch.....	17 00	51 00	85 00	153 00
18 Inch.....	18 00	54 00	90 00	162 00
19 Inch.....	19 00	57 00	95 00	171 00
20 Inch.....	20 00	60 00	100 00	180 00



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THE Competative designs for the California State Building at the World's Fair, have been submitted and placed on exhibition

What struck us most in viewing the wealth of creative ability, brains and time exhibited at the rooms of the Cali-

fornia World's Fair Commission was the prodigal waste of time, money and vital force therein shown.

Twenty-nine different designs are here shown for a \$75,000 building, at least half of which show a creditable amount of ability and worth.

Nearly all have elaborately wrought and colored perspectives and some of very large size, involving an incommensurate expenditure of time and money leaving out the before mentioned vital force.

An unwritten law of the profession should be that members going into competition would not take advantage of their superior wealth in money or even of their superior wealth of time to get an unfair advantage over those who are lacking in these; but leave the decision to a companion under uniform conditions—which conditions would be a sketch only sufficient to elucidate the points of the plan but no meretricious accessories to mistake the facts and lead the judges to be carried away beyond the actual facts or to be influenced by sympathy that one of the competitors, poor fellow, has gone to a tremendous expense and therefore we ought to do something for him.

By the evidences of fierce competition exemplified in this contest, we are surely on a no higher plane than the lawyer whose business it is to bias a judge or jury by anything no matter how dishonest or improper.

We would like to see in the future, owners of honesty, who desire competition, set their face against this unnecessary waste which really instead of helping them to a decision, confuses them with a multitudinous and elaborate exposition of detail and prettiness.

The moral method seems to be to present only a slight sketch—with as little expenditure of life as possible, sufficient to give an idea to the owner of the possibilities of the design.

WORLD'S FAIR NOTES.

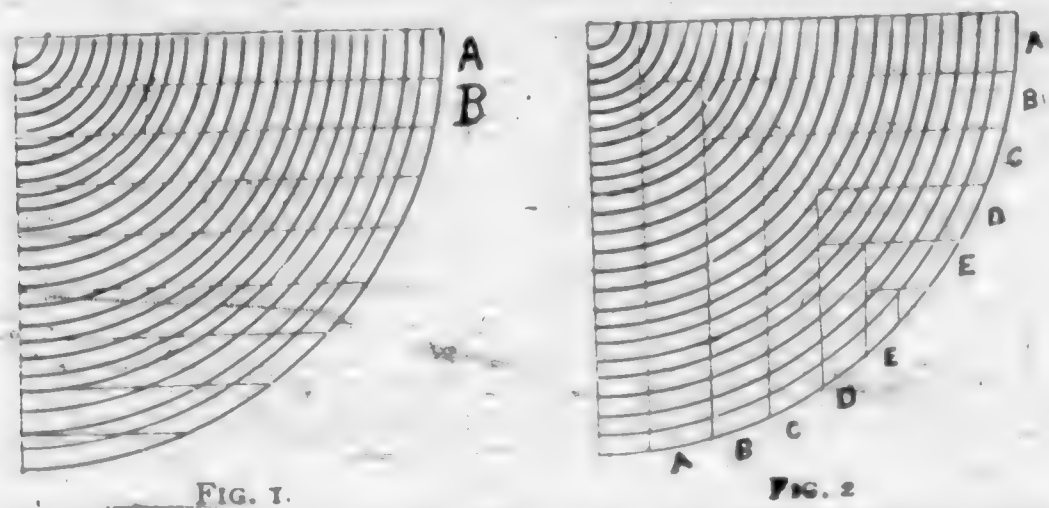
A Proposed Palace of Pure Silver.

The *San Francisco Chronicle* says:—A resident of West Fourteenth street, New York, has made the most novel and original suggestion on record for an interesting exhibit at the World's Fair. In a letter to Secretary Foster to-day he says: "I wish to point out to you that you have in your power, with the consent of Congress, to construct the most beautiful and magnificent, as well as the most valuable, exhibit the world ever saw. I allude to building a palace of silver, constructed of the silver now in bullion and coin in the Government's vaults at the various depositories. If the Government could get permission from Congress to recast 15,000 tons of it into slabs of say 600 pounds and one inch thick. This would give 600,000 superficial feet, out of which could be built the most beautiful structure the world has ever seen. It would build a structure 400 feet by 300, with a tower 300 feet high, on which could be placed an American eagle with wings of 100 feet spread. A silver palace worth \$100,000,000 would be an attraction that would draw millions of people who always want to see something new and grand. Not over \$1,000,000 need be expended in the construction of such a palace, which could be guarded by the army."

SAWING HICKORY AND ASH FOR CARRIAGE WORK.

By FITZ.

THE scarcity of good timber and the well-known fact that for carriage work the situation of the grain layers has a marked influence upon the durability of the finished vehicle, makes it of the utmost importance that the plank be cut in a manner that will prove the most profitable. Until within a comparatively few years, the expense of sawing, except in the old method of cutting through and through, cutting plank as shown by the quarter section, Fig. 1, was so great as to make it unprofitable to cut up in any other way. By



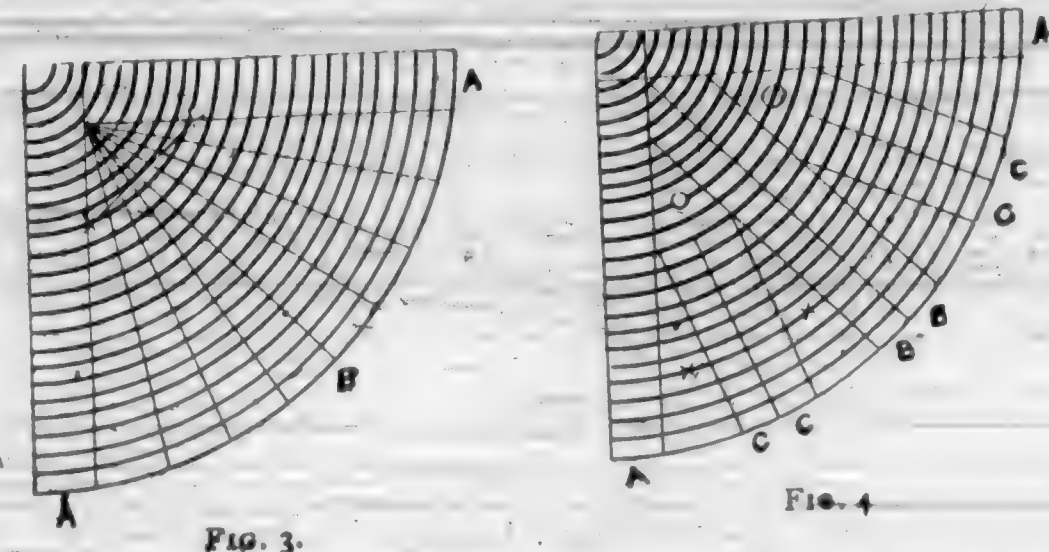
this method the center planks, A and B, were the only ones in which the grains run in the general direction desired, but even these were defective, particularly plank B, the center, the toughest part of the wood, was unfit for side or spring bars, unless the thickness was such that they could be cut edgewise instead of on the flat of the plank. Each succeeding plank after B grew less and less valuable, compelling the use of bars with the grain in the wrong direction, or causing great waste in timber and in time in cutting the various pieces; then, too, there is much greater loss from warping and springing than there would be if the grains run in a different direction. The various faults combined caused, in the aggregate, a loss of at least 50 per cent. in the quantity of suitable plank for first-class carriage work.

The improvement in saw mill machinery has made it possible to perform work which could not have been done with the old-style gate saw, not only as to the sawing itself, but also in the handling.

Logs are now quarter-sawed as cheaply as they were planed before the day of improved machinery. This quarter-sawing first came into demand to meet the requirements of architects and furniture manufacturers, for oak to

be worked in a manner that would place the grain in a most desirable position for showing its beauty. Since then other timbers have been quarter-sawed for other purposes where increased strength was required. The machinery, therefore, for quarter-sawing is very complete, and there is nothing to prevent carriage makers having quarter-sawed timber. This is important, particularly for ash and hickory, not only for the best results as to the location of grain, but also as a check to the waste.

There are various methods of quarter-sawing, and it matters little which is adopted so far as cost is concerned; it



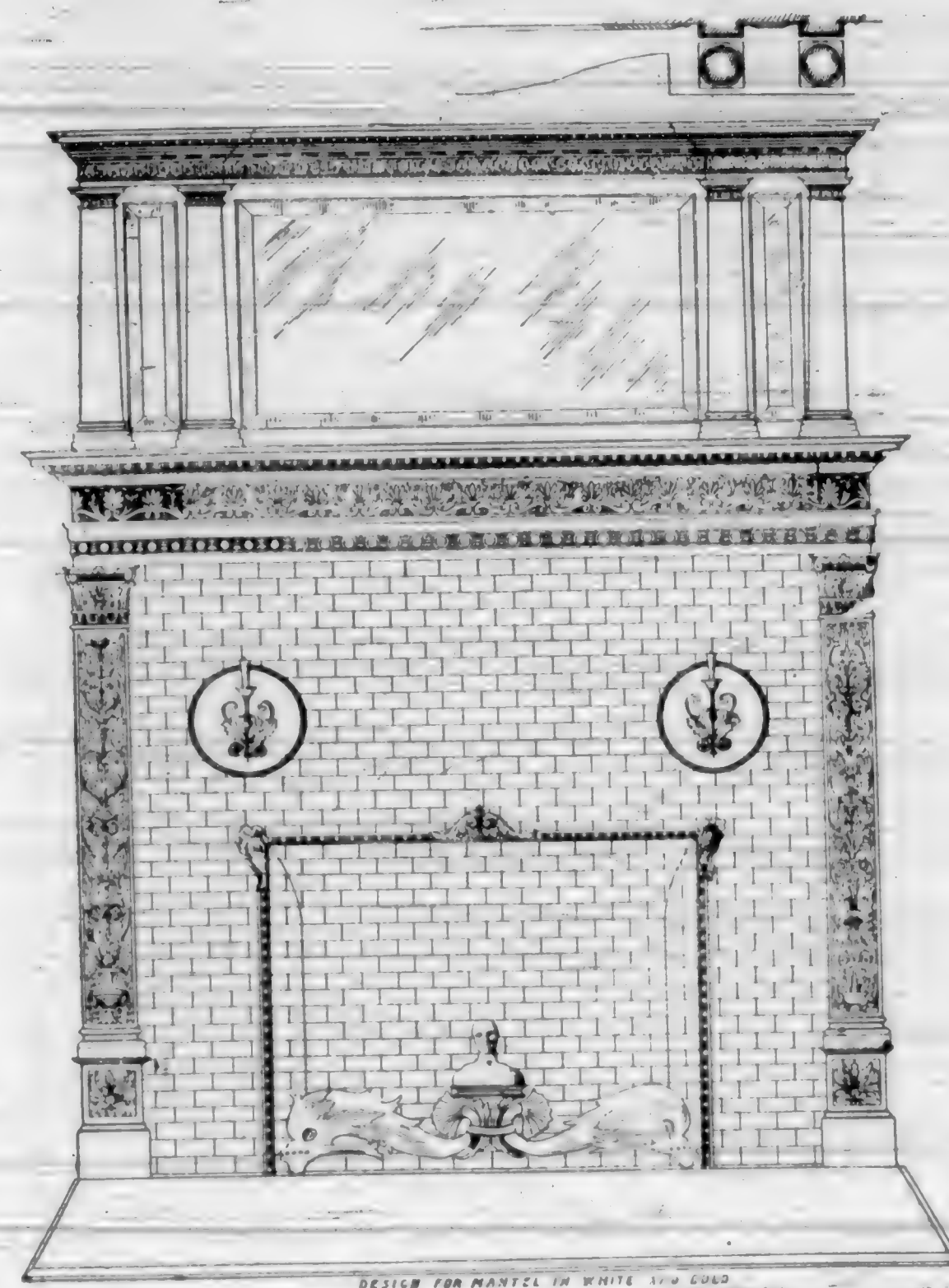
follows, therefore, that the method which will give the best result as to position of grains, and reduce the loss to the lowest figure, is one that should be adopted. Fig. 2 shows a very common method. One which is something of an improvement on the old plan as shown by Fig. 1, but it does not give as good a result, as too great a part of log is improperly cut. The planks A A are the only ones that are perfect. B B answers fairly well, while in C C the angle of the grain impairs the stiffness of the cut strips, making them of doubtful value. The trouble increases with D D, while E E and the triangle between them are unsuited to carriage work. In fact, about one-fifth of the entire log is wasted, or rather is unsuited to the principal uses for carriages, such as shafts, side bars, and spring bars. It can be used for axle beds, perches, head-blocks, etc., but is no better for these uses than if cut in proper form.

Fig. 3 illustrates another method. The first cut planks, A A, are in all respects the same as the first cuts of Fig. 2. The balance is cut into triangular pieces, the saw kerf radiating from a common center. By this method planks are secured with the grains in proper position to work to the best advantage. The waste at the center may be avoided by cutting off the point on the line X X, or by first splitting on line and then removing the triangles. The uneven thickness may be urged as an objection to this method of sawing, but it is much less than it appears, as bars of all kinds are required of different thicknesses. If care is taken in marking out, the loss will be very light. The main objection is the loss that results of a portion of the finest timber in the log, at the triangle, after the first planks are cut.

The plan of sawing as shown by Fig. 4 is without doubt the most desirable, giving, as it does so many planks of uniform thickness, and having the grain in the proper position. In this the first cut planks, A A, are similar to those of Figs. 1 and 2. These being removed, the triangles between A and B are cut away and planks B B sawed. These have the grain precisely in the same position of that in A A, the planks, however, being narrower. A little waste occurs in cutting these at the beveled edges, but a careful workman can reduce it to the merest trifle. These being cut, the triangles O O are cut away and the balance is cut to give planks C C. These, though narrow, have the grain in the correct position. The only pieces that are wasteful are the four marked X and the two marked O, but none of these are all waste. The two marked O are large enough to get a good full bar out of each, with the grain in proper position. Those marked X will give one, if not two each, leaving very little waste. If the log cut this way is small there will be but one plank instead of the two indicated by C, but even in this case the loss is slight, and every plank is in shape to cut to the best advantage and give the best results.

In some sections, the old saw mill, fed by the little stream in the spring of the year, with its gate and mule saw, is the most accessible, and because of that very much valuable timber is cut to waste. It would be far more profitable to

sell the timber in the log than to saw it into unmarketable plank. Care in this respect and in sawing would go far towards removing the apprehension of a scarcity of hickory and ash timber, beside making that in the market far more valuable to the users.—"We take the foregoing from the 'Wood Worker' and which originally appeared in the 'Blacksmith and Wheelwright'."



The Mantel here shown is built of white enameled brick and the ornaments worked up in gold. Designed by Samuel Newsom, architect.

ELECTRICITY SIMPLIFIED.

THE ETHER—ELECTRICITY.

A recent work from which we reprint the first Chapter.

"There are in nature certain mysteries, if such a name does not appear too poetical, which have never been solved and may remain so for all future generations. The conservative scientist is apt to include among such things gravitation, electricity, and perhaps light. To explain the phenomena of light, an almost inconceivable entity termed the luminiferous ether has had to be invented. By assuming such a thing to exist and to be endowed with almost inconceivable properties, light is explained and its phenomena are brought into the domain of mathematics. But no direct proof of the existence of the ether has yet been found, and we hardly can venture to hope for one.

The modern treatment of electricity deals with it as representing and including special phenomena of this ether. Some go so far as provisionally to define it as being the ether itself, and to treat static excitement, magnetism, current electricity, etc., as due entirely to different states of the ether.

The luminiferous ether is by calculation deduced as being of the following general properties. It is supposed to be a medium most resembling a gas in constitution, yet possessing rigidity like a solid, as well as elasticity like that of a gas. Its density is equal to 936 one-thousand-million-

millionths (936-1,000,000,000) that of water, or equal to that of air at 210 miles above the earth. Its rigidity is one one-thousand millionth (1-1,000,000,000) that of steel. It is sometimes compared to an all-pervading jelly, through which waves of light and other radiant energy and of electromagnetism are constantly throbbing. Particles of ordinary matter move through it without resistance. It interpenetrates the molecules of matter, and hence an air pump is entirely without effect upon it. There is no such thing as an ether vacuum (Daniel). It cannot be excluded from empty space.

Such is the hypothetical luminiferous ether, an ultra-gaseous body possessing the properties of both a solid and of a gas. It should be looked upon as an expedient for the present, as something most useful in formulating theories, but unproved. A theory is often little more than a symmetrical skeleton to sustain our laboriously acquired collection of facts. The test of the utility or perfection of a theory is its ability to foretell what will happen under given conditions. It may be able to do this and yet be wholly fictitious.

Light is radiated from one body to another across enormous intervals of space. The mind cannot conceive of one body acting upon another without some connecting medium. The same applies to gravitation and electricity. The ether originally invented to account for the transmission of light through distances, of unknown degrees of immensity in the case of the heavenly bodies, has been found a useful factor in formulating a theory of electricity.

If any object is excited electrically, every object within its range of action, that is to say, which is not screened from its effects, is also affected. This involves the same kind of action across a space as obtains in the case of light. It is termed radiant action and is a manifestation of radiant energy. Again, an electric current or the poles of a magnet produce magnetic effects in their vicinity upon objects not in contact with them. This involves action at a distance also.

These are among the reasons which have induced scientists to invoke the luminiferous ether to aid in explaining and accounting for electrical phenomena. As employed in the present work it will be found useful in enabling the mind to better formulate a theory of the science. Extraordinary as the idea of the ether may appear, it is evident that the modern achievements of electricity are just as strange. They are of such nature as to be entitled to an extraordinary line of explanation.

The sun is at such a distance from the earth that it takes light over eight minutes to travel from its surface hither. The nearest of the fixed stars are so remote that in many cases days and years are consumed in the passage of light from them to us. If one of these bodies were suddenly annihilated we should see its light after it ceased to exist. The sun would seem to continue to shine for eight minutes and twenty seconds after its extinction. We may even now seem to see stars which long ago ceased to be luminous, and distant suns may now be radiating light into space, which light will not reach us to show us a new star, for years to come.

All this is so strange and deals with such infinite relations of quantities as regards distances and time that the luminiferous ether, viewed from such a standpoint, seems not too extravagant a conception to account for the high velocity and intensity of radiant energy.

Pulses or waves of electric energy are found to act like light, to be capable of transmission through some bodies, of reflection from others, and of refraction and interference. The relations between electrostatic and electromagnetic units indicates a ratio corresponding to the velocity of light. These considerations give direct ground for utilizing the theoretical ether as a medium for the propagation of electrical disturbances.

The term radiant energy is continually acquiring new scope in physics. Many phases of electrical disturbance fall under this heading. Others may be attributed to radiant force.

The passion for unification at one time tended to obliterate the old distinction between static and dynamic electricity. Now a true basis for such division must be recognized and may to a certain extent be determined by the consideration of force and energy. True static phenomena are phenomena



of ether stress or of force; electromagnetic wave and current phenomena are related to ether waves or energy.

FORCE, ENERGY, MASS AND WEIGHT.

Physical concepts, such as force, mass, energy and other elementary things, have received within recent years much accuracy and definition of description and attributes. Only a few years ago great confusion existed, notably in the distinction between force and energy. The enunciation of the absurd doctrine of the conservation of force, and its support in many essays and papers by those who were assumed to be the leading thinkers of the day, is an illustration, now but a few years old, of this fact.

This accuracy has led, and is leading, to more and more subdivisions, which brings about a multiplication of units, and increase in nomenclature especially in electricity, which has already been felt to be a misfortune, although it is not easy to see how it is to be avoided.

For the purposes of this work it is quite unnecessary to enter into all of these subdivisions. There are a few elementary mechanical ideas which may be enunciated before the electrical part is entered on. These involve subjects which are often sources of error and misunderstanding.

As physics and mechanics are based upon measurement, units of different kinds have been established. They are based upon length, time and weight. The relations of these factors to the compound units are termed the dimensions of the unit. The centimetre, gram, and second are the bases of measurement, and the fundamental units constructed or built up upon them are termed the centimetre-gram-second or C. G. S. units.

FORCE is that which, acting on a quantity of matter or mass, can change its rate of motion or can impart motion to it. It can be called into existence or annihilated under adequate conditions; in other words, there is no conservation of force. Its unit is that force which can in one second impart to one gram of matter a velocity of one centimetre per second. This unit is termed the *dyne*. The weight of one gram is equal to about 981 dynes. A dyne is equal to about $63\frac{1}{2}$ grains.

The exertion of force along a path in space, which condition necessarily implies motion against resistance, is termed WORK. Its unit is a dyne exerted through a path one centimetre long. The most convenient way to express force is to refer it to gravitation. Hence the unit of work is generally defined as the raising of 1-981 gram to a height of one centimeter against gravitation. The name of the unit is the *erg*.

The power of doing work is termed ENERGY. A weight of 1-981 gram by frictionless machinery could, in descending one centimeter, raise another body of the same weight the same distance. Hence it would be said to possess energy of position, a form of potential energy, equal to one erg. The sum of energy in the universe is invariable; energy can be neither created nor annihilated by natural causes. This is the doctrine of the conservation of energy, which has replaced the discarded one of the conservation of force.

If a bullet is fired from a gun, the energy of the combustion of the powder is in part expended in driving the bullet forward; in part in driving the gun backward, producing recoil; in part in heating the gun and bullet, and in various other ways. None of its energy is destroyed. The bullet strikes a target and is brought to rest. Its energy is not destroyed, it is only transformed. Some appears as heat energy—indeed most of it directly or indirectly takes this form; none disappears.

If this doctrine is true, perpetual motion against resistance, as generally understood, is impossible. There is very little doubt of this doctrine's truth.

It follows from the above that energy cannot, properly speaking, be expended, and that work is not done at the expense of energy. Work simply denotes the reciprocal of a given form of energy, and is produced by the disappearance of that particular form of energy, and is the result of its conversion into some other form. A weight raised by the combustion of coal is the reciprocal of the heat energy, and no more represents work than it does the product or the result of the conversion of heat energy into mechanical potential energy. In other words, work and energy may be treated as

identical. To do work, energy is required, and is absorbed in the process by being converted into some other form or forms. The other forms, either one or more of them, are in many cases some irreclaimable form or forms, which can never again be utilized. This is so often the case that the available energy of the universe is undoubtedly tending to zero. This zero will be attained when all objects have the same temperature.

A body placed at a height above a plane possesses what is termed potential energy, referred to the plane. Its advantageous position indicates a power of doing work. Another example of potential energy would be a strained spring, possessing the energy of stress.

A body in motion, by virtue of its inertia or resistance to reduction of velocity, can do work, and is said to possess kinetic energy. A body at rest in a certain sense may be said to possess the same with reference to moving bodies, because all rest and motion are relative.

An example of the transformation of energy can be taken from the above. A one-pound weight raised one hundred feet has expended upon it one hundred foot-pounds of energy, and possesses that amount of potential energy. If now it is allowed to fall through the same distance, it parts with its potential and assumes kinetic energy. When it has fallen one hundred feet, if in a vacuum, it will at the one-hundred foot mark possess none of its original potential energy, but in its place will have one hundred foot-pounds of kinetic energy. As it strikes the ground and comes to rest, this energy will change into heat energy and other forms, but it will remain the same in amount—one hundred foot-pounds.

Mass is the quantity of any portion of matter. Owing to centrifugal force a body weighs less at the equator than at the North Pole; upon the surface of the moon it would weigh far less. Yet its mass would be the same although its weight might vary. Were transportation cheap enough, and were the other conditions favorable, a merchant could make money by selling by weight, in northern or southern latitudes, goods which he had purchased by weight in equatorial latitudes, provided he weighed with a spring-balance. He would buy and sell the same weight, but would buy a greater mass than he sold.

WEIGHT is mass acted on by gravity. As gravity varies, weight will vary, even though the mass remains the same: all which has been just illustrated.

In electricity we have force and energy. Heat energy in driving an engine that drives a dynamo becomes ultimately converted into electric energy. An electric machine or a battery on open circuit maintains its terminals at a varying potential, or in such state as to exercise electromotive force. This force, producing a current through a resistance, does work. As for electric mass and weight, as yet they are not recognizable, and probably do not exist.

MYTHOLOGY.

LUNA, (the moon) was the daughter of Hyperion and Terra, and was the same, according to some mythologists, as Diana. She was worshipped by the ancient inhabitants of the earth with many superstitious forms and ceremonies. It was supposed that magicians and enchanters, particularly those of Thessaly, had an uncontrollable power over the moon, and that they could draw her down from heaven at pleasure by the mere force of their incantations. Her eclipses, according to their opinion, proceeded from thence; and on that account it was usual to beat drums and cymbals to ease her labors, and to render the power of magic less effectual. The Arcadians believed that they were older than the moon.—A maritime town of Etruria, famous for the white marble which it produced, and called also *Lunensis portus*. It contained a fine capacious harbour, and abounded in wine, cheese, etc. The inhabitants were naturally given to augury, and the observation of uncommon phenomena.

RURAL NOTES.

WHEREVER fences are used to inclose fields, some practical method must be devised for the passage of persons from one field to another.

Where gates either hung on hinges or sliding, are used, there is a liability that they may be left open by some forgetful or careless person. Turn stiles are objectionable for several reasons. Any opening for passage through the fence is liable to attract the attention of animals to such an extent that when a breakage is made in the line it will in most cases be near such passages.

The methods here shown may be used for fences formed of either boarding, rails, pickets or barbed wire.

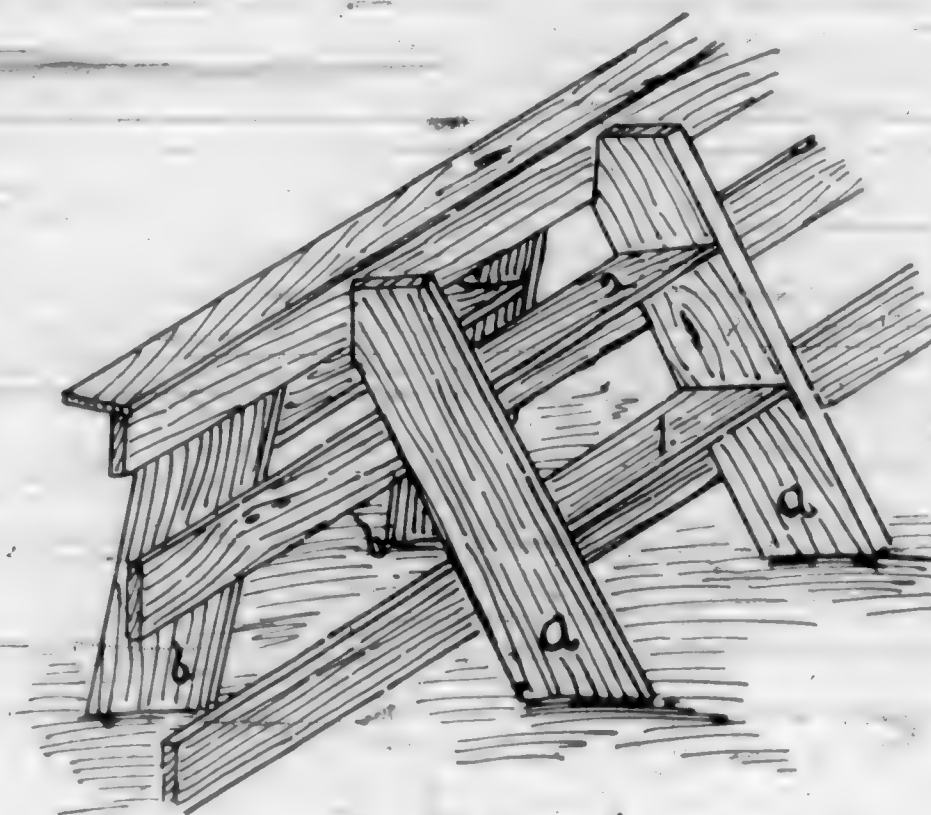


Fig. 1.

Fig. 1, shows the common step-ladder, having side pieces a-a and b-b, and steps 1-2—or more on one side—with corresponding steps on the opposite side. For permanency the steps should be let into the sides before nailing together.

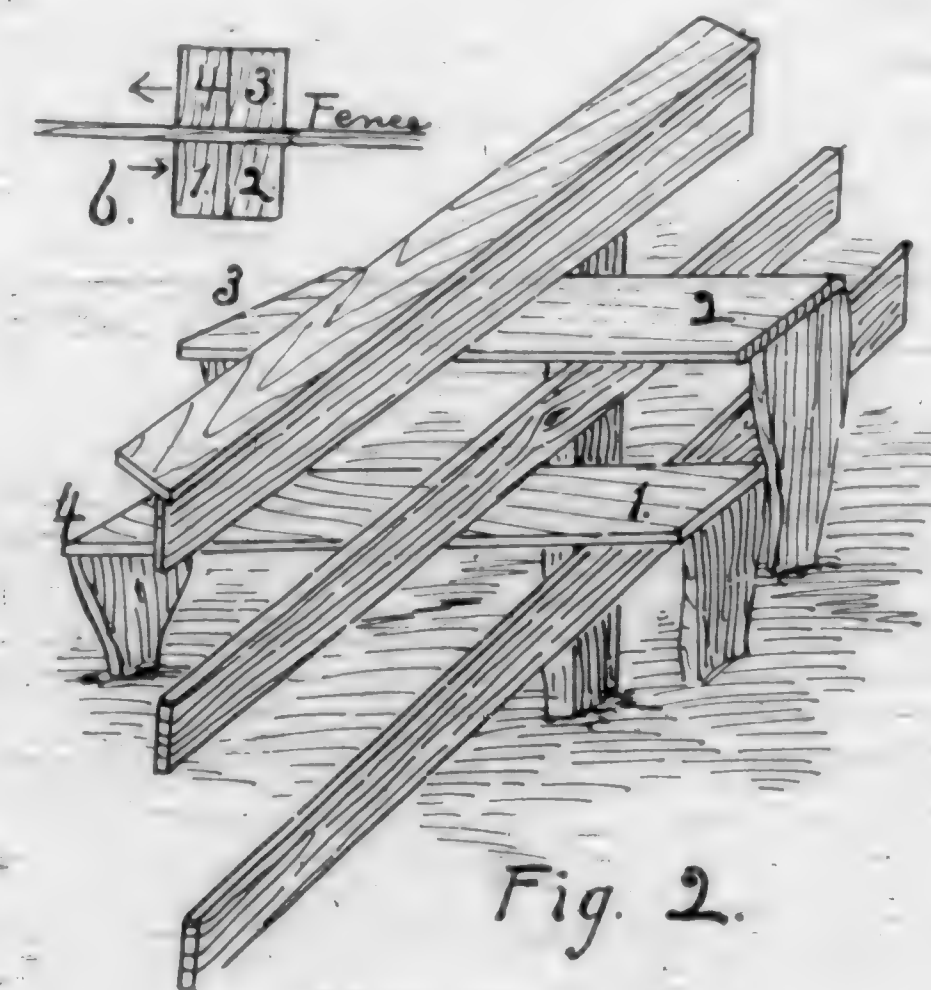


Fig. 2.

Fig. 2, shows an arrangement that is quite common in some sections. The steps extend to equal distance on each side of the fence, 1-2 or more steps up at one side and the same

down at the other side—at b, is shown the line of fence and steps. The ends of the steps are supported in various ways, the cheapest being a board sharpened at the lower end and driven into the ground.

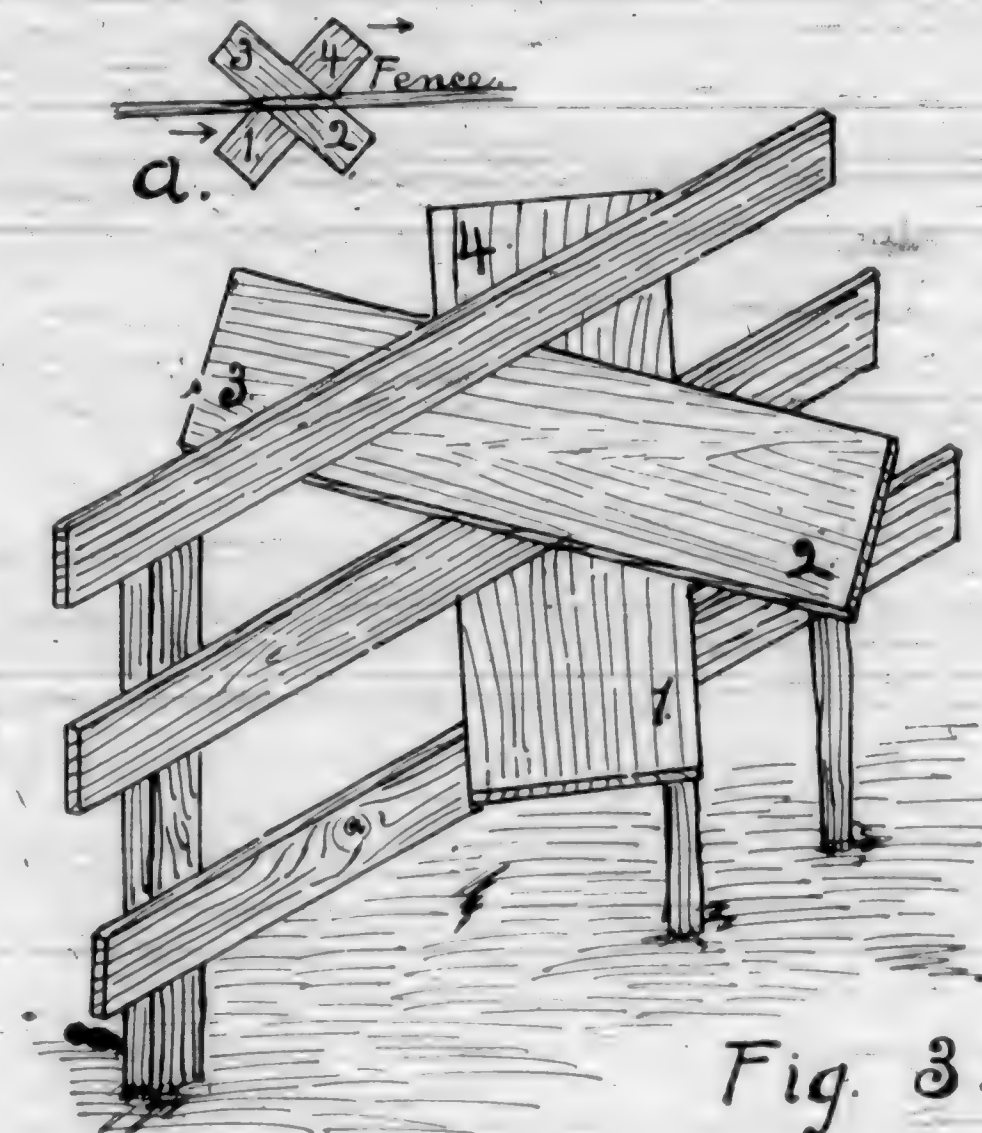


Fig. 3.

Fig. 3, shows another arrangement where the steps are set at an angle as shown at a. The ends of steps being supported by stakes same as in Fig. 2. In this case as in the others the number of steps can be regulated according to the height.

In Fig. 1, the person passes up on one side at right angles to the line of fence and then down at the other side. In Fig. 2, the person passes up in the direction of the arrow, shown at b—turning about at top and descending as shown by the arrow at the opposite side of the fence. In Fig. 3, the person passes up in the direction of the arrow at a, stepping over and descending at the other side in the same direction.

There is an objection to all these methods as described, for the reason that animals confined within an inclosure usually pass along the fence lines and any projecting parts, such as steps, etc., may be wrecked or the animals injured by these projections.

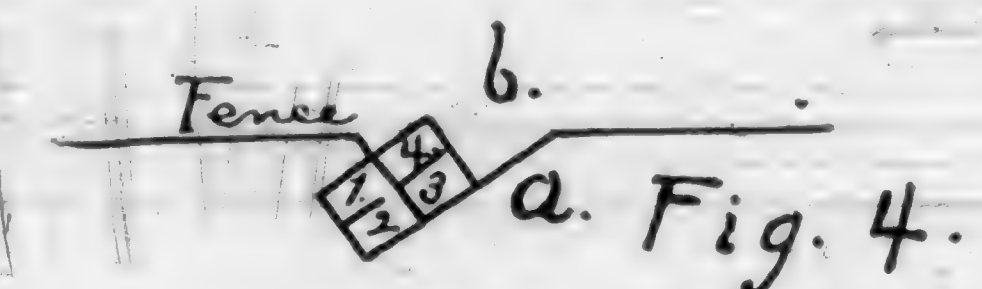


Fig. 4.

This defect may be reduced to a minimum by the arrangement shown in Fig. 4, where the fence is formed with a recessed angle at b, so that the steps shall not project beyond the general line of fence. The protected portion being placed at the side most liable to injury

BRICK AS A BUILDING MATERIAL AND THE TRUE ART
OF LAYING THEM.

By J. W. Crary, Sr.

BRICKLAYING is a peculiar art. The *trowel*, is one of the very oldest of mechanical tools, and is by all odds, the most difficult to handle with perfect expertness. Not one bricklayer in six can use a trowel with perfect skill. In order to be a first-class bricklayer, the use of the trowel must be commenced in boyhood. The boy must have a natural mechanical talent, and a particular liking for the trowel, so that to handle and play in mortar with a trowel, as a matter of diversion, as well as art, is a choice pleasure.

There is a peculiar dexterity in taking mortar up from the mortar-board, and then spreading it skillfully on the wall, so as to make a perfect, regular "bed" for the brick. To do this cleanly and nice, without wasting mortar, is a rare art. The mortar should be so spread that the brick, when down to the "*line*," will have a perfect, even bearing, without "*flushing*" much mortar out, back, or front. Mortar should not be spread for more than six to seven brick at a time, then the brick should be wet and laid with a peculiar *shake* and pressure of the left hand, so that they will come down very near the *line*, and only a tap of the trowel is needed to adjust them right to the line after they are laid. I need not say, that brick should be laid plumb and level, though some good front workmen will "*hack*" the joints a little above the first story front, that is, to incline the front of the brick a little over, so that presents more "*face*" when seen from it below. Some contend that a front brick should be laid a little out at the bottom where the wall is seen below the eye, and a little out at top, when viewed above the eye. The old technical name for these differences is "*liping*" and "*hacking*"; the top of the brick is cut over, and the bottom under, which give the joint a lip-like appearance. The object is to prevent the show of defects in perpendicular lines, under different views of light and shade. It is a matter of no great importance; it is simply a small draft and principle in favor of beauty, for no scientific builder will say that a brick is laid wrong when its front is plumb, and its bed joint level. The objection to a "lip" joint is that it catches rain, dirt and dust. The smoother the front of a wall, the longer it will retain its freshness and beauty.

There are five other tools than the trowel, that belong to the brick layer, viz., the "Scutch," the "Hammer," the "Chisel," the "Plumb" and the "Level." These, with the trowel, constitute the bricklayer's "kit" of tools, and, although few and simple, the man that has mastered a perfect knowledge and use of them is a first class mechanic.

TO GET AND START A GOOD FOUNDATION FOR A WALL.

If it were not for the fact, that brick, when properly laid form the strongest wall known to builders, the careless, and generally ignorant attention given to foundations, would cause most all walls to crack vertically. Foundations are the main essential in building, and if the principle art is not well understood and strictly applied in all cases, the whole superstructure is imperfect and unreliable. I have seen large and costly buildings made comparatively worthless by negligence or ignorance in preparing the foundation. When walls crack or settle, it is necessary for the architect or engineer to invent an excuse, and the fault will often be laid on the brick, or bricklayer. I could name some prominent public buildings in different places of the country, where this was the case.

There are four general kinds of surfaces to build on, viz., sand or gravel, clay, stone and mud or alluvial soil, such as found in New Orleans. In building on sandy land, if it be level, the trenches for foundation should be deep enough to be below the frost, and all loose, unpacked earth or vegetable matter; then, before brick are laid, the foundation should be thoroughly rammed, so that all inequalities in the looseness of the sand will be equalized; then, the surface being leveled, the best hard brick should be laid and first course well settled. It should never be forgotten by the bricklayer that it is the first bottom course of brick that he must depend on for a good foundation, and that one good heavy stroke in setting the brick as he lays them in the first course is of

more importance than all the nice care he can take in his wall above the bottom course. If the surface of the ground is unlevel or a hillside then the trenches for foundations should be dug out the same depth from the inclined surface. This leaves *steps* or offsets at the bottom at proper intervals, according to the incline plane of the surface. It is not infrequently the case where buildings are put up on a hillside to see one part of the foundation started near the surface and other parts at considerable depth below. This shows a want of ability or honesty in the builder or architect. Still a great deal of this kind of botchery is done everywhere, by common builders.

What I have said of sandy foundations will apply to clay, and to rock, where the entire surface is rock, but if one part be rock and other parts be of other kinds of material, then, after proper excavation, a heavy body of concrete well rammed, or else piling, if in a wet place, is necessary in order to equalize resistance to pressure. It does not follow that the foundation anywhere shall be solid as the rocky part of it, but it must be known that the weakest part of the foundation will much more than resist any pressure that the superstructure or needed weight would amount to. Any skillful builder can make this test. It is simply to find what a given surface of the foundation will resist and how much would ever be put on it.

HOW TO BUILD A FOUNDATION OF ALLUVIAL SOIL OR MUD.

New Orleans is the principal place in the United States where buildings must be on soft alluvial soil, and as it is not generally known how foundations are laid there, and as I have had much personal experience in doing brick work there, I will give a short description of such work. A trench is made of suitable width and deep enough to find water, then plank is put down lengthwise, with foundation, then crosswise, making two courses of plank, the water will cover the plank. Brick work, with cement mortar, is then started on the plank and the work proceeds to completion. As the building progresses, and for two or three years after it is done, it settles until it comes to a bearing equal to the resistance of the mud and soil surrounding the plank foundation. The City Hall of New Orleans had settled, up to 1856, about sixteen inches. I saw that the use of plank as a foundation was a mistake, and instead I used concrete made of brick-bats, stone and coarse sand and cement, which was rammed down thoroughly, then starting the brick work with a broad base, at least three times the thickness of the wall proper, all settling of the walls was permanently prevented. The object in ramming a foundation is to adjust all inequalities. Some places will be soft, loose and spongy. All should be rammed until it ceases to settle.

In my preceding article on this subject I have treated mainly on the importance of good brick, good mortar, good foundations and good skill in building walls. I will now try to give some good hints about the best way to build brick walls strong, serviceable and economical.

There is seldom an account of a great fire, that does not show fatal accidents from the falling of brick walls, and the injury and displacement of such as do not fall, so as to leave them useless. In most cases, this is the result of faulty planning by the architect, and bad workmanship, though the bricklayer is not in fact responsible, as he is, at least, supposed to be, under the orders of the architect.

PARTY WALLS OR DIVISION WALLS THE MOST IMPORTANT

If a wall dividing a pair of buildings, or dividing buildings in a row, or dividing two distinct properties be built on true principles, and with proper care and skill, in nine cases out of ten it will stand firm, and in good condition to be used as at first. In all cities the law requires that party walls shall be built a certain thickness, according to the height of the building the length of the wall or its fire-proof character, is not—considered, and the consequence is, when a hot fire burns out—on one side of such wall, that side must expand and curve and crack, and if there be nothing to support it on the opposite side, the vertical curve will cause the wall to over-hang, so that it will lose its balance and fall.

Now if a party wall be built on a good foundation, and on true principles, the outside four inches of the wall on both sides, will be set off from the inside, three-quarters of an