Improved Rapid Method of Copying Drawings, Manuscripts, Etc.

THE common method of copying drawings by contact with the blue process or sensitive silver paper, which requires an exposure to the sun of from fifteen minutes to half an hour, seems likely to be superseded to some extent by the introduction of improved gelatine bromide of silver paper.

Gelatine sensitive paper has been difficult to prepare, but by means of recent improvements the manufacturers are now able to furnish it in large sheets uniformly coated, so that its use in various branches of the arts promises to be extensive.

Architects, draughtsmen, engineers, and others who wish to make duplicate copies of their drawings are, by the usual processes, obliged to first make a tracing upon transparent linen cloth, so that the light may easily affect the sensitive paper. Much extra time is lost and expense incurred. By means of the gelatine sensitive paper any ordinary thick card-board drawing can be copied in a few seconds, either by diffused daylight or gas or lamp-light. The copy will be an exact reproduction of the original, showing the letters or figures non reversed.

If it is desired to make a copy in the daytime, any dark closet will answer, where all white light is excluded. The tools required are an ordinary photograph printing frame and a red lantern or lamp.

The sensitive gelatine paper is cut to the size required, and laid with the sensitive side upward upon the face of the drawing, and pressed thereon in the usual manner, by springs at the back of the frame, which is then carried to the window and exposed with the glass side outward from two to five seconds to the light, the exposure varying according to the thickness of the drawing. If gas or lamp-light is used at night, from twenty to thirty minutes exposure is sufficient.

The frame is returned to the dark closet; the exposed sheet is removed to a dark box, and other duplicates of the drawing can be made in the same way. It is thus possible to make from ten to twenty copies of one thick drawing in the same time that it usually takes to obtain one copy of a transparent tracing by the ordinary blue process.

The treatment of the exposed sheets is quite simple; all that is necessary is to provide from three to four large pans or a large sink divided into partitions. The development of the exposed sheets can be carried on at night or at any convenient time, but a red light only must be used. The paper is first passed through a dish or pan of water and then immersed in a solution, face upward, composed of eight parts of a saturated solution of oxalate of potash to one part of a saturated solution of sulphate of iron, enough to cover the face of the paper. Both chemicals are easily obtained at a druggist's. The latent image soon appears, and a beautiful copy of the drawing is obtained, black where the original was white, with clear white lines to represent the white lines of the drawing. With one solution from six to eight copies can be developed, one right after the other. After development the print is dipped in a dish of clear water for a minute, and finally immersed for three minutes in the final or fixing solution, composed of one part of hyposulphite of soda dissolved in six parts of water. It is then removed to a last dish of water, face downward, soaked for a few minutes, then hung up to dry; when dry it is ready for use. Instead of a drawing, manuscript can be placed in the printing frame and exposed as described. All the water marks or peculiarities of the grain of the paper will be faithfully reproduced. The advantages of this process are self-evident.

Intricate mechanical drawings can be so rapidly copied that working copies can be quickly delivered. By this process original manuscripts, certificates, and documents of every kind can be rapidly copied, every detail being brought out, the original paper serving as the negative, the copy being of the exact size as the original.—*Scientific American.*

Handsaws.

SEVERANCE of material was doubtless among the first difficulties which confronted mankind, and to meet this the primal saw, as being at once simple and effective, whether it was the jaw-bone of a snake, the back-bone of a fish, a jagged flint, or whatever else it may have been, was adopted, and furnished the idea for future development far in the long night before the dawn of history. The Greek story is that Talus found the jaw-bone of a snake, and, after discovering from it the properties of a saw, imitated it by notching a piece of metal, and was killed by his uncle through jealousy. Other myths run that Perdix used the back-bone of a fish as a saw, was changed into a partridge by the envious gods, and deified by his countrymen. But the Greeks were egregious wondermongers and liars, and the saw was in use before that people came into the eyes of the world. It was a common tool among the ancient Egyptians, and many specimens of their saws are yet preserved. Even among that people it had lost much of its primitive rudeness, and was made of bronze with teeth well ground or cut out, and was inserted in a handle like the modern case-knife, or bound to the same with thongs and operated with one hand. The teeth were pointed from the handle, and the cutting was done by a thrust movement, as in modern saws. The material to be sawed was placed upright and lashed to posts set in the ground. The Egyptians, as also the Phœnicians, used saws for cutting stone as well as wood, and the stones in the temple of Solomon were faced with saws. Samuel, 1033 B. C., mentions them casually. A two-handed saw has been found in the ruins of Nimroud, and many saws have been brought to light in Thebes.

In the stone age, saws were made of flakes of flint set into a back of wood, and secured by means of bitumen, and the early dwellers in Europe also notched shells. As late as 1768, Captain Cook found the South Sea Islanders using saws made of sharks' teeth lashed to a back piece by sinews. Saws made of obsidian were used in ancient Mexico, and specimens of these have been found buried under the deposits of sand and gravel in New Jersey, proving the existence of a prehistoric coast trade along the Atlantic, obsidian not being found nearer New Jersey than Mexico.

Saws of the bronze age have been discovered in considerable numbers, both in Germany and Denmark, but none have yet been found in England. These are made of plates cast very thin and then cut out.

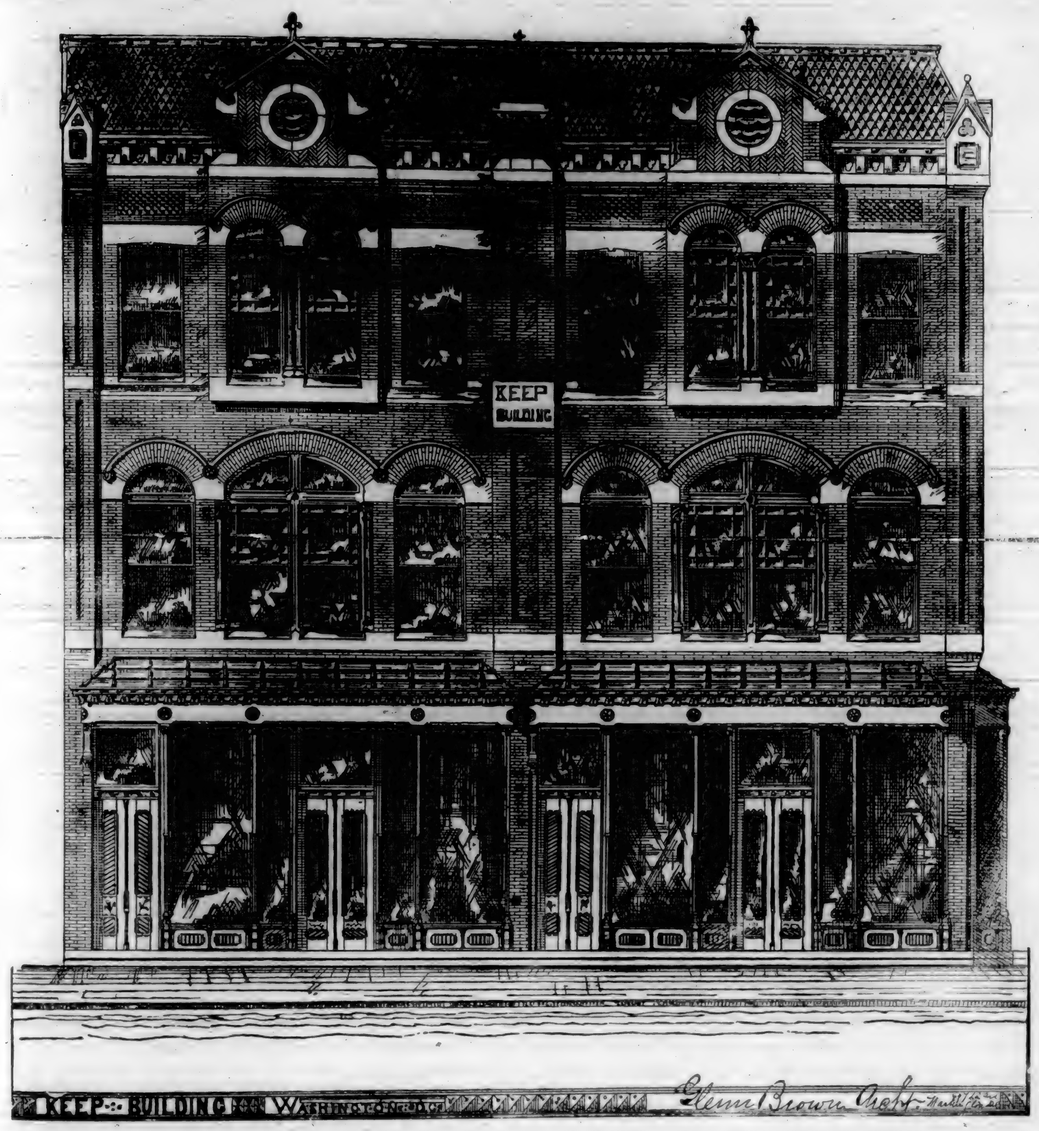
Modern Oriental saws all have the teeth pointed toward the handle, and are operated by a drag movement. This manner of sawing and pointing the teeth seems to be most suitable to rapid sawing, but does not admit of as great accuracy as the thrust movement.

The Japanese saw is shaped like a butcher's cleaver, and has a flat handle which looks as if it might have been whittled out of an inch board, to which it is attached by wrapping tightly with fine split cane. The teeth are very narrow and long, and the sawyer stands on the plank to be sawed, and works with short, rapid, upward strokes.

The plates from which saws are made are rolled from ingots of steel carefully and uniformly tempered and varying in thickness according to the kind of saw to be made. After the blanks for the saws are stamped out, they are further tempered to the desired point by heating, and then immersed in oil for about five minutes. This oil is partially removed by sawdust, and the temper is then let down by reheating and slow cooling. The blank is then straightened by hammering, and the edge, upon which the teeth are to be cut, trimmed, after which the teeth are punched by a fly-press and then filed, tempered, oiled, and wiped, and heated till the oil blazes off. It is then hammered, ground, and glazed and grained with emery, the teeth set, and the blade properly stiffened by heating. Any discoloration is then removed by an acid, and the saw oiled. The correct spacing of the teeth is effected by means of either a double chisel or a file guide. Saws are made tapering from the tooth side to the back in order that they may not pinch or clog in the groove or kerf.

The French method is to roll the blade several times cold in order to make the grain close and the metal homogeneous. It is then heated in a furnace especially designed for the purpose, from which the air is excluded, and then bathed in colza oil in a dark chamber, and tempered by means of a machine in which the blade passes through cast-iron plates heated to a fixed temperature.—*Call Smith, in Industrial World.*

GASES from the furnaces in iron districts are very injurious to trees in the neighborhood. The sulphuric acid contained in the gases is absorbed by the leaves.



DESIGN OF STORE FRONT, BY GLENN BROWN, ARCHITECT.

Special and Sub-Contracts in Building Construction.

THE following remarks from the *Builder* will aptly apply to the professionals of this country:—

"However, as regards one point of recent correspondence—as to an architect's right to scrutinize sub-contracts made between a general and a subordinate contractor for any part of the work connected with a contract—much, of course, depends upon the circumstances and the standing of the contractor employed. Most architects claim the right to closely scrutinize everything done in connection with the erection and completion of the buildings they have designed, of whose requirements they are the best judges, and most experienced contractors do not appear to deny this. The commonly accepted version of a contractor's duties under his contract is that the work will be carried out by competent workmen, under the eyes of proper foremen, at daily wages, in his (the general contractor's) direct employ; and so far at least as London custom is concerned, we know that this is the ordinary practice of all leading contractors. Should an architect find any evasion of the conditions, or should he find that a sub-contract had been made with some subordinate contractor for any of the structural portions of the work, entirely foreign to him—in fact, objectionable, and not what he had a right to expect—it would be difficult to say that he had not a clear right to interfere and insist upon the conditions of the contract being fulfilled, which commonly would be covered by the clause that 'no part of the work shall be sub-let,' &c. Of course, when a contractor has the confidence of an experienced architect, he (the architect) would not have the least desire, nor, in fact, would he find it to his client's advantage to harass the contractor about matters of minor detail connected with his (the contractor's) methods of arranging his business in his own way, and especially when there should be no need for such interference; at the same time, it would look like taking a one-sided view of an architect's proper position—standing, as he does, between the contractor and the client, to see strict justice done to both—to say that he has no concern with sub-contracts entered into between a general and subordinate contractor, because there might occur circumstances when he would have much to do with such arrangements.

"Then as to whether the frequent insertion, in architect's specifications, of the names of special firms of merchants, manufacturers, and others from whom materials connected with the structural work must be obtained—such as the stone, bricks, slates, &c.,—is a modern and unnecessary innovation whenever it occurs, and a sign of undue partiality for certain firms not superior to others, when there exists a large field, so to speak, of firms quite as good, and fully capable of supplying the same class and quality of goods, whether the selection of the most suitable is not more properly a matter for the judgment of the contractor, who undertakes all the risks, and is held to be solely responsible, are questions upon which opinion is not altogether one way. The object, of course, is to obtain the fittest and the best, and certainly the old school of architects seemed to have no difficulty in meeting the case without any special predilections. The careful wording of their specifications was with them, as is now with such of them as remain, of far greater importance to the solidity of their buildings, and their general effect, when finished, than any sentimental preference for the goods of any particular firm of merchants or manufacturers. Of course, these remarks apply to the ordinary run of specifications. Before passing on, it may be mentioned that an authority has said, 'Ambiguity is the bane of modern specifications.' Touching again the question of special or separate contracts made between architect and specialists, or others, and the bearing upon the general contractor and clerk of works, it is necessary that both of them should be fully acquainted with all the details connected with such contracts—that is, as regards what is actually included; whether the builder's work and attendances, &c., have been provided for and included in the estimates, or the contrary. This necessary information on all points should not be given simply orally, as is too frequently the case, not even when directed by the tip of a fluent tongue, but should be fixed in writing. Many specialists give little if any specification describing clearly and in full detail, for the information of others, what they have included in their contracts, and not unfrequently are they their own interpreters of what they have or have not included, and especially does this occur in connection with what is called the 'builder's work'; the general contractor, knowing nothing, hesitates, or acts upon the word of the clerk of works, who may know as little, but, nevertheless, has to arrange and look forward. Any settled arrangement tending to the avoidance of cross charges, misunderstandings, confusion of accounts—and this is really what it comes to—should be welcome to all interests concerned. Here, as in the general work, we may not inaptly quote again, 'Ambiguity is the bane of modern specifications.'"

Five Per Cent. Gain vs. Ten Per Cent. Loss.

IT has been remarked by an able correspondent, writing upon the subject of sub-contracts, that, "It is a difficult matter to bring proof as to the amount of profit derivable from any branch of the building trade." To my mind, this is true, and it rather amusingly reminds one of the tortures described by the experienced in connection with the mystic word "prime-cost;" it is capable of an elastic interpretation according to circumstances, and many astute brains have been before now puzzled over it, and it has not unfrequently been found to contain within itself a considerable element of profit. It need not be said that the "prime cost," as understood by all leading architects and contractors, is that which represents the *net* cost of the labor and materials, &c., without any further additions whatever; it is then susceptible of taking its legitimate and fair profit.

A.

Much soreness has occurred before now by what may be called an anomalous practice, stated to be not so rare as it should be, viz., contractors of standing and repute being invited to tender for works in competition with others not of equal standing, and doing what may be termed a cheap class of work. The former, as is the custom, do not know the names of other competitors; in result, one of the latter usually gets the contract, and the former would not have wasted time and money in working up tenders, but they would have declined had they known beforehand with whom they were classed in competition. The public should understand that it is not with building affairs as with many of the other concerns of life; the apparent saving of 5 per cent. in a contract may, as it has in very many instances before now, prove a 10 per cent. loss.

B.

A Result of Co-operation.

WORKINGMEN managing a co-operative establishment, and performing their own labor, would undoubtedly experience seasons when they would be compelled to accept not only smaller dividends but lower wages, in order to have any dividends at all. Still it is well known that men when working for themselves will put up with privations, and hardships even, which they would not think of submitting to if imposed upon them by others. One of the indirect advantages of co-operative production will be the cultivation of economy, saving, and thrift, among the workingmen who engage in it. The interest in such an establishment would form a nucleus to which every honorable and ambitious workman would have a just pride in adding something every month.—*Western Manufacturer.*

A Curious Discovery.

ONE by one the scenes of the old Franciscan Fathers are being brought to light as excavations are made near the old mission. A singular discovery was made near the city of San Luis Obispo a few days since. The *Tribune* is authority for the statement that some workmen, in making excavations on the side of the San Luis Obispo Mountain, discovered an ancient smelting furnace, the remains of the arches and smelting pots, or crucibles, being quite abundant. The discovery, when taken in connection with the tradition that the old missions of the coast had an abundance of crude silver, is quite significant. The remains of such a furnace are known to exist in the mountains back of Santa Barbara and Ventura, and piles of slag attest the amount of work done there in former times.

THE BENEFITS OF TREES.

Their Effect on Climate, Soil, and Mankind.

AN interesting paper on "Forestry" was read before the Geographical Society lately by C. A. Washburne. He began by speaking of the increase of the population of the world. Mr. Washburne took the opposite stand-point from Malthus, and said that we should not try to devise plans of preventing the increase of population, but to devise means to provide food for them. The world could be made to support seven times its present population, and that way is by increasing our forests. By planting our now barren hills with trees, it would leave them plenty of land in the valley to cultivate grain. It is an undeniable fact that where trees are in abundance the country is thrifty. Speaking of the devastation of timber lands, the speaker cited Arabia, Syria, Egypt, and the countries of the Old World. At one period in the world's history these places supported a vast population, beautiful cities, and wealthy kingdoms. Now there are no more barren places on the face of the earth than are the places that were once the pride of the world. The cause of this wonderful change, according to Mr. Washburne's ideas, was the destruction of the timber. History tells us that many of these countries were once fertile and productive, but as the population increased the forests were destroyed, and the cessation of rains has made them what they are now. California is coming to the same end in the course of time, if we do not profit by the experience of the ancients and save our forests, or, at least, not allow them to become annihilated. Taking the scientific stand-point of the effect of forests in their influence on the rain-fall, the speaker contended that as forests are removed so will the fall of rain decrease, and to substantiate his theory and the theory of scientific men, he cited the effect of cutting off the timber among the Appennines, and in Lombardy. Germany and England, on the other hand, are still thriving nations, and one great cause is that care is taken to preserve the fertility of the soil and keep up their forests. Old Spain again is the reverse. The country is desolate and its people thriftless on account of the lack of vegetation. The effect of planting trees in our own country, especially in California, is very noticeable. Many of our valleys and grain lands are very open, over which the winds sweep, drying up the soil and blighting the crops. In those places where the prudent farmer has planted long rows of trees, the violence of the wind is broken and the growing crops are saved. Where trees grow, rain, on which we all depend, will fall. The only exceptions to the rule of forests and rain going together are the pampas of South America and our great Western plains; but these exceptions, as explained by scientists, are due to the fact that the rain-bearing winds that blow over them are condensed by the trade winds. The farmers in Nebraska, Iowa, and Illinois, are fast exhausting the fertility of the soil, and if they continue to do so in less than two centuries these places will be as barren as the plains around Damascus are at the present day. The speaker then compared the difference in beauty and valuation of two farms, one on which no trees were planted, and another where trees grew in abundance.

The Price of Lumber.

A NEW combination has been formed among the lumber dealers, by which the *dear public are assured* that, in the near future, no danger need be apprehended that any discounts will be allowed below the schedule prices. It has been the custom heretofore to allow contractors 10 per cent. on the rates established by the Lumber Manufacturers' Association; but the managers of that institution have wisely (?) allowed that it would be best for the interests of owners to have them understand precisely the cost of lumber used in the construction of their houses and thus be sure that a portion of the extravagant prices (?) asked by contractors should find its way in the capacious pockets of the poor men who supply lumber.

And, in order that they can thus guard the interests of owners, each one of the poor men forming the association has deposited the sum of $10,000, which shall become forfeited in case lumber is sold for a less price than their law prescribes.

The *dear public* have been so faithfully served by the members forming the association that it is expected that they will readily acquiesce in the demands of the lumber dealers, and not allow the rich contractors to hoard as much wealth as they have done in the past.

Seriously, though, we will be pleased when the time comes that lumber will remain at a fair regular price for a year at a time, so that those who are calculating to commence extensive improvements in the future may be able to judge somewhere near the cost of building before commencing operations.

Every Architect Should Become Identified With the Chapter.

DURING the past month we have had several calls from draughtsmen, seeking information in regard to the classes established by the Chapter of Architects. Three of the applicants were connected with architectural firms in this city.

We would call the attention of architects not identified with the Chapter that it is for their interest to join at once; especially now, as it is the beginning of the year. The small outlay required will be more than gained by the knowledge the students and draughtsmen under your charge will gain under the leadership of the gentlemen who so generously give their time for the advancement of the younger members of the profession. The dues are but small—$6.00 per year.

The Chapter is one of the most flourishing in the United States, numbering forty-six members; it also has a goodly amount of cash in the treasury. Hand in your names at once for membership. Office of the Secretary may be found at room 11, 240 Montgomery Street.

THE *Manufacturer and Builder* gives a simple process for preparing the luminous paint now coming slowly into use. The ingredients of the mixture are simply sulphur and lime, the latter being obtained from oyster shells, which are to be washed with warm water, and calcined for half an hour, then allowed to cool, pulverized, and the white portions separated from the gray refuse. The white lime is then to be put in a crucible, in alternate layers with flour of sulphur, and the cover luted on with a mixture of clay and sand, moistened with beer. The crucible is exposed to a bright flame for an hour, and is then, after cooling, broken open, when the contents will be found of a mottled white and gray color. The gray portions are to be separated and thrown away, but the white part is to be finely ground and sifted through muslin, after which it may be mixed with varnish, oil, or size, and used like ordinary paint. It is essential that objects painted with this substance, which are intended to be luminous at night, should be exposed to sunshine or bright light during the day. If so treated, the paint will retain its qualities indefinitely.

A CAVITY in a grindstone may be repaired as follows: Take a piece of old grindstone, and pound it up quite fine, or procure some fine, sharp sand and sift out the coarsest, using only the fine; make this into a paste with one-third the bulk of hydraulic lime or cement and sufficient water-glass; undercut the cavity in the grindstone, or drill key-holes in it, and fill it with the cement as above made. It will harden very rapidly. Very good artificial stones may be made in this manner in a mould, to which considerable pressure can be applied.

A MACHINE for plastering walls has been invented. It consists of a receptacle for the mortar, the segments of a cylinder in form. It is provided with a hinged leaf or press plate that moves rapidly against the mortar, and as the receptacle is moved upward against the wall, the plaster presses out through a narrow-gauged opening at the bottom.

THE CALIFORNIA ARCHITECT would like to know when dealers will be satisfied with a *fair profit* on lumber, and thus enable those of limited means to erect buildings, and keep within their means for so doing.

DENSE forests are increasing in Australia the climate is growing more moist, and even the great central desert may become habitable.

THIRTY per cent. of forest is considered the best proportion for the most beneficial effect on climate.

AN active tool never grows rusty.

History of Glass.

In the year A. D. 676, "messengers were sent out," according to Bede, from Wearmouth, England, to Gaul, France, to fetch makers of glass (artificers), "who were at this time unknown in England, that they might glaze the windows of the church, with the cloisters and dining-rooms." Bede adds that "they taught the English nation their handicraft, which was well adapted for inclosing the lanterns of the church, and for the vessels required for various uses." About this time Archbishop Wilfred, of York, "filled with glass" the windows of the cathedral, previously "open to the weather," and "such glass," says one, "as permitted the sun to shine through;" from which it may be inferred that glass was made that was impenetrable to the sun's rays. It was recorded, in connection with this cathedral, that "great astonishment was excited, and superstitious agency suspected, when the moon and stars were seen through a material which excluded the inclemency of the weather." Still, the adoption of glass was slow; for in 1214 Robert de Lindeley, Abbot of Peterborough, employed glass "in beautifying thirty of the windows of his monastery, previously stuffed with straw, to keep out the wind and rain;" and for some generations later the domestic windows of England were not furnished with glass, but lattice. When glass windows were first introduced, they were not fixtures, but were regarded as movable chattels, and were so considered until about A. D. 1600.—*Sel.*

PATENTS AND INVENTIONS.

List of U. S. Patents for Pacific Coast Inventors.

From the official list of United States Patents in DEWEY & Co's SCIENTIFIC PRESS PATENT AGENCY, 252 Market Street, San Francisco.

FOR WEEK ENDING OCTOBER 23, 1883.

286,993.—FLOWER-POT HOLDER AND SHIELD—Wm. A. Birch, San Francisco.

287,094.—STATION INDICATOR—W. W. Campbell, San Francisco.

287,003.—NUT LOCK—F. H. Crawford, Redding, Cal.

287,256—ORE GRINDER AND AMALGAMATOR—Peter Eddy, Nevada City, Cal.

287,261.—BARBED WIRE FENCE—J. E. Evans, Spanish Fork, U. T.

287,374.—CAR TRUCK—Thomas J. Furbee, Bishop Creek, Cal.

287,118.—LAND MARKER—L. Gairaud, Santa Clara, Cal.

287,276.—SEWING MACHINE—Geo. Gowing, San Francisco.

287,377.—CABLE GRIP—A. Haman, San Francisco.

287,028.—INDICATOR PADLOCK—A. Jackson, San Francisco.

287,290.—INTEREST INDICATOR—H. E. Jenne, Ben Lomond, Cal.

287,307. CONVERTING MOTION—R. G. Moody, San Jose, Cal.

287,165.—BED LOUNGE—F. Rentschler, San Francisco.

287,166.—PHONOGRAPH—C. C. Reynolds, Prescott, A. T.

287,326.—DRILLING MACHINE—John Richards, San Francisco.

287,173.—ORE CONCENTRATOR—C. C. Rueger, San Francisco.

287,178.—CAISSON GATE—Geo. F. Schild, Vallejo, Cal.

287,198.—CRANK HANDLE FOR LIFTING-JACKS—J. M. Vance, Eureka, Cal.

287,202.—CAR AXLE—A. Walton, San Francisco.

10,658.—TRADE MARK—Franco-California Packing Company.

3,265.—LABEL—Pacific Vinegar Works, San Francisco.

NOTE.—Copies of United States and Foreign Patents furnished by DEWEY & CO., in the shortest time possible (by telegraph or otherwise) at the lowest rates. All patent business for Pacific Coast Inventors transacted with perfect security and in the shortest possible time.

How to Recut Old Files.

To the Editor of The American Artisan:—

PERHAPS some of your readers may not know how to dress their old files and make them useful a second time. As a general thing, tinners' files become filled with copper, etc., long before they are worn out. By the following process files may be recut two or three times:—

Dissolve 4 oz. saleratus in 1 qt. of water, and boil the files in it for half an hour, then remove, wash, and dry them. Have ready in a glass or stoneware vessel 1 qt. of rain-water, into which you have slowly added 4 oz. best sulphuric acid, keeping the proportions for any amount used. Immerse the files in this preparation for a short time, or until the files are cut out clean. Then remove, wash in clear water and dry quickly, and put on a little sweet oil to cover the surface, after which your files are ready for use.

The same liquid may be used at different times, if required, by keeping it in a bottle in a cool place. As it is poisonous, it would be better to label it and keep it away from children.—*C., in American Artisan.*

ARCHITECTS who practice in the large cities will be interested in the answer given by the law editor of *La Semaine des Constructeurs* to a correspondent who asks whether the usual commission can be collected, where old materials are used in building, upon the cost of the work as it would have been if all the materials were new. The reply to this important question is a very satisfactory one, at least for architects in France. It appears that judicial decisions have established the law there that for his services in the construction of a new building an architect is entitled, in summing up the cost upon which his commission is calculated, to reckon all materials, whether old or new, and whether furnished by the proprietor or not, as if new and furnished by the contractor; the courts holding that the work and responsibility of the professional man, and his proper compensation, are the same in both cases. Moreover, if, as often happens in cities, the demolition of structures already existing on the ground forms a necessary preliminary to the construction of a new building, and if the architect of the latter includes in his service the direction of the work of taking down and sorting the old materials, and the provisions for the protection of the public, he is entitled in France, by a decision of the Tribunal of the Seine, to collect commission upon the cost of these operations, in addition to his fees for work upon the new building.—*The American Architect and Building News.*

Masons and Builders' Exchange of San Francisco, Room 11, 314 Montgomery St.

BELOW will be found a list of the members composing this Exchange. Boxes are provided for each member, so that architects, owners, or others desiring the services of any particular member, or those having boxes who are not members, and yet whose business is directly connected with that of the Exchange, can readily secure the attendance of the party sought, by leaving a note in the respective boxes.

ROBERT MITCHELL, President, 807 Turk St.,	Box	26
J. WAGNER, 516 Kearny St.	"	2
CRAWFORD FERRIS, 1723 Eddy St.	"	20
JOS. SMITH, 2635½ Harrison St.	"	36
JOHN MCCARTHY, 2509 Folsom St.	"	7
WM. DUNBAR, 27 11th St.	"	14
GEO. RICHARDSON, 518 Ellis St.	"	39
C. R. WORRELL, 888 17th St.	"	5
J. G. LIEBERT, Treasurer, 330 Oak St.	"	32
JOHN HUGHES, 318 Fremont St.	"	21
J. J. O'CONNER, 648 Minna St.	"	19
M. B. RICHARDSON, 427½ Oak St.	"	1
MATT. MCGOWAN, 614 Linden Ave.	"	18
JOHN CALVERT, 812 Hyde St.	"	40
THOMAS BUTLER, 593 Ash Ave	"	28
ROBERT HIGGINS, 1724 Jessie St.	"	13
JOHN DOWNS, 269 Minna St.	"	18
J. HAFF, 516 Kearny St.	"	6
G. D. NAGLE, 427 Montgomery St.	"	24
N. R. TUCKER, 1411 California St.	"	1
S. L. PLEACE, 634 Stevenson St.	"	18
O. E. BRADY, 822 Valencia St.	"	22
THOS. WHITE, 45 Minna St.	"	4
J. J. CROOKS, 1929 Sutter St.	"	9
JOHN COX, 608 Jones St.	"	16
J. F. RILEY, Secretary, 833 Howard St.	"	38
P. O. SULLIVAN, 543 Stevenson St.	"	35
BYRON BROS., 11 26th St.	"	34
JOHN BYRON, 19 Shotwell St.	"	27
M. FARRELL, 139½ 11th	"	52
CON. HOLMES, 726 Hayes St.	"	10
JOHN HANIVAN, 1705 Jessie St.	"	15
G. W. KNEEDLER, 1013 Vallejo St.	"	51
B. A. THOMPSON, Oakland	"	25
JOHN MCDERMOTT, 124 10th St.	"	33

PARTIES RENTING BOXES IN THE BUILDERS' EXCHANGE.

WARDEN & MCCLURE, Teamsters	Box	30
MCVICKER & ROACH, Stone-cutters	"	8
REMILLARD BRICK CO.	"	23
PAT. BRICK CO.	"	29
CHAS. WARREN, Grader	"	37
L. E. CLAWSON, Patent Chimneys	"	2
A. E. BUCKMAN, Grader	"	42
JAS. E. WHITTIER, Asphaltum	"	41
DAVIS & COWELL, Lime and Cement	"	43
KENNY & MCCUE, Graders	"	44

Portland—Continued Building Prosperity.

ONE would naturally suppose that the building boom of the "Star City of the North" would, at this season of the year, fall off to a mere nothingness. The climatic conditions of the weather are such that the rain descends in quantities sufficient to almost stop building operations. That such is not the fact is evident from the following list of improvements now in progress. Our agent has sent us only the more costly, as a full list, containing all the small jobs, would fill more space than we can spare.

Six-story and basement brick for the N. P. P. R. Co.; *A.*, McKim, Mead & White; *C.*, W. E. Holmes for the rough stone work; cost of present contract, $100,000.

Third, corner D. Nicholi Bros. are having built a three-story and basement brick; *A.*, J. Krumbein; *C.*, Merchant & Bridges for carpenter work, and M. Owens for brick work; $20,000.

Third, corner Jefferson. Two-story brick; *O.*, J. C. Carson; *A.*, J. Lo Romer; $9,000.

Taylor, corner West Park. Architect W. H. Williams is superintending the erection of a $10,000 two-story and basement frame for J. R. Foster; *C.*, Sedge & Jenkins.

Eighteenth, near C. Two-story and basement frame; *O.*, L. Sechtem; *A.*, J. Krumbein; *C.*, G. Gardner; $6,500.

First, corner Clay. S. Harkins is erecting for J. Shade a two-story frame; $5,500.

West Park, corner C. Two-story and basement frame; *O.*, S. Loewengardt; *C.*, E. Kling; $3,500.

Fourth, near College. Two-story frame; *O.*, J. C. Curran; *A.*, G. Marshall, Jr.; *C.*, J. C. Wilson; $2,800.

Eighth, corner B. Two-story frame; *O.*, J. Stewart; *C.*, J. Mahoney; $2,000.

Hall, near First. Two-story frame; *O.*, F. Homstrom; *A.*, W. J. Graham; *C.*, E. F. Staley; $1,500.

North Fifteenth, corner S. Two-story frame; *O.*, M. B. Cook; *C.*, A. M. Young; $2,500.

Fourth, corner L, East Portland. First National Bank is having built a two-story brick; *A.*, Neer & Lo Romer; *C.*, J. E. Mayo; $9,000.

New Tacoma. Four-story brick; *O.*, Tacoma Land Co.; *A.*, McKim, Mead & White; *C.*, F. W. Lewis; $80,000.

Building News in Los Angeles and Vicinity.

Wilmington. One-story frame; *O.*, Mrs. Alexander; *A.*, Mr. Hall; *C.*, Mr. Gougeon; $2,000.

Celis. One-story frame; *O.*, Wm. Wheeler; *C.*, Mr. Hargett; $1,500.

Olive. City Horse Car Co., stables and offices; *C.*, Mr. Hargett; $4,000.

Bath. Two one-story semi-detached cottages; *C.*, Mr. Gougeon; $3,500.

Main. Two-story and basement frame; *O.*, T. E. Rowan; *C.*, Mr. Gougeon; $7,500.

Main. Two-story brick; *O.*, Foster & Brown; *C.*, not let; $35,000.

Los Angeles. Two-story brick; *O.*, Mr. Brown; $10,000.

Two-story brick; *O.*, Mr. Brown; $8,000.

Los Angeles, between Second and Third. Two-story brick; *O.*, Foster & Brown; *C.*, not let; $50,000.

San Fernando. Three one-story frame; *O.*, Arnold & Straton; *C.*, Arnold & Straton; $1,000.

Spring. Two-story frame; *O.*, Mrs. F. E. Howe; *C.*, Arnold & Straton; $3,000.

Hill. One-story frame; *O.*, W. R. Hasson; *C.*, Arnold & Straton; $1,700.

Hill. Two-story frame; *O.*, Mr. McCoy; $2,000.

East Los Angeles. One and one-half story frame; *O.*, Mr. Mathews; $2,000.

East Los Angeles. One-story frame; *O.*, Mr. Mathews; $1,800.

The above are under the superintendence of J. Hall, architect.

Pearl. Two-story frame; *O.*, M. Childs; *A.*, Chas. W. Davis; *C.*, J. Kindleburger; $8,000.

Spring. Two-story brick; *O.*, Mrs. M. Jones; *A.*, Chas. W. Davis; *C.*, J. Harget; $30,000.

Commercial. Two-story brick; *O.*, J. Bosseranie; *A.*, Chas. W. Davis; *C.*, B. F. French; $12,000.

Second, corner Fort. Presbyterian Church; frame; *A.*, Chas. W. Davis; *C.*, J. Webster; $20,000.

Main. Three-story brick; *O.*, L. J. Rose; *A.*, Chas. W. Davis; *C.*, W. H. Riggs; $30,000.

New High. Three-story brick; *O.*, L. J. Rose; *A.*, Chas. W. Davis; *C.*, W. H. Riggs; $10,000.

Los Angeles. Two-story and basement brick; *O.*, Smith & Heffner; *A.*, Chas. W. Davis; *C.*, D. Penman; $10,000.

Los Angeles. Three-story and basement brick; *O.*, Rece & Wessings; *A.*, Chas W. Davis; *C.*, D. Penman; $20,000.

Los Angeles. Two-story brick; *O.*, Harper, Reynolds & Co.; *A.*, Chas. W. Davis; *C.*, D. Penman; $8,000.

First, between Fort and Main. Two-story and basement brick (stable); *O.*, John Foster, *A.*, Chas. W. Davis; *C.*, B. F. French; $20.000.

Main. Two-story frame; *O.*, T. H. Rowan; *A.*, Chas. W. Davis; *C.*, W. H. Riggs; $5,500.

Main. Two-story frame; *O.*, W. Maxwell, *A.*, Chas. W. Davis; *C.*, W. H. Riggs; $7,000.

Fort. Two-story frame; *O.*, N. H. Moore; *A.*, Chas. W. Davis; *C.*, B. F. French; $4,000.

Pearl. Two-story frame; *O.*, Ex-Mayor Toberman; *A.*, Chas. W. Davis; $5,000.

Washington. One-story frame; *O.*, J. Dow; *A.*, Chas. W. Davis; *C.*, Mr. Pierce; $4,000.

New High. Two-story frame; *O.*, Mrs. Evarts; *A.*, Chas. W. Davis; *C.*, — Marsh; $8,000.

Anaheim, Drufus Block. Two-story brick; *O.*, Mr. Drufus; *A.*, Chas. W. Davis; *C*, S. Smith; $20,000.

Canada Canyon. One and one-half story frame; *O.*, A. W. Williams; *C.*, T. W. Cox & Farnell; $2,000.

Downey City. Two-story brick (Masonic Hall); *O.*, Franklin Bros.; $10,000.

San Bernardino. Two-story brick; *O.*, A. G. Burt; *A.*, Chas. W. Davis; *C.*, Ely Davis; $15,000.

BUILDING INTELLIGENCE.

SAN FRANCISCO.

Berry, cor. Sixth. Two-story frame. O.—Coos Bay L. & S. Co. A.—Wolfe & Son. C.—B. F. Ellis. $3,000.

McAllister, near Octavia. Alterations. O.—Mrs. Gross. A.—Wolfe & Son. C.—R. Parker. $1,000.

Battery, nr. Bush. Repairs. O.—— Levi. A.—Wolfe & Son.

Sixteenth, cor. Nebraska. Additions. O.—H. W. Newbauer. A.—Wolfe & Son. C.—R. Casey.

Golden Gate Ave., near Octavia. Two-story frame. O.—A. Bruman. A.—Newsom & Gash. C.—J. Carbary. $15,000.

Sacramento, nr. Fillmore. Two-story frame. O.—J. W. Cherry. A.—McDougall & Son. C.—A. Jackson. $5,000.

Natoma, nr. Seventh. Alterations. O.—Mrs. Moran. A.—McDougall & Son. C.—Hutchinson & McLean $2,800.

Twentieth, near Mission. Three two-story frame. O.—Von Rhein & Co. C.—P. Crowley. $12,000.

Mission, near Twenty-fifth. Two story frame. O.—J. Mulroney. $2,500.

Sanchez, corner Twenty-seventh. One-story frame. O. and B.—J. M. Comerford. $1,500.

Folsom, nr. Twenty-fourth. Two-story frame. O.—G. Ginocchio. C.—S. G. Worden. $6,500.

Prospect Ave., nr. Lizzie. One-story frame. O. and B.—P. Rooney. $700.

Mission, nr Twenty-ninth. Two-story and basement frame. O.—Cerghimo & Debenedite. A.—W. H. Bayless. C.—Mills & Wells. $8,000.

Sanchez, nr Twenty-ninth. One-story frame. O.—Anderson & Co. C.—J. Nelson. $1,500.

Tenth, near Harrison. Alterations. O.—E. McPhillips. $1,000

Tenth, near Harrison. One-story frame. O.—E. McPhillips. $800.

Shotwell, near Fifteenth. Two-story and base. frame. O.—J. Doherty. C.—W Miller. $3,000

Francisco, nr. Taylor. Reconstruction. O.—J. Cuneo. $10,000

North Point, near Larkin. Two-story frame. O.—Mrs. M. Hildebrandt. A.—Theo. A. Eisen. C.—C. B. Mills. $4,000.

Union, cor. Hyde. Two-story frame. O.—J. Powers. C.—W. Simon. $4,500.

Broadway, near Jones. Two story frame. O.—F. Saywell. $1,400

Pine, corner Leavenworth. Four-story frame—B. B. O.—Mrs. J. G. Fair. A.—J. G. Gaynor. C.—J. A. Benham. $100,000.

Bluxome, near Fifth. Two-story brick. C.—Clifford & Mitchell. A.—Schmidt & Havens. C.—W. M. Fletcher. $10,000.

Fair Oaks, x Twenty third and Twenty-fourth. Two-story frame and stable. O.—J. H. Boardman. A.—J. T. Kidd. C.—Knight & Littlefield. $4,000.

Geary, nr. Buchanan. Three two-story frame. O.—J. Goldstone. A.—J. Gosling. C.—D Perry. $14,000.

Post, near Stockton. Rebuilding. O.—Red Men's Hall. A.—Curtis & Bennett. C.—Terrill & Slaven. $25,000.

Sixth, x Bryant and Brannan. Remodeling. O.—J. P. Vandenbergh. $1,700

Mission, x First and Second. Remodeling. O.—J. Tompkinson. C.—W. Newham. $5,000.

Spear, near Folsom. Two-story frame. O.—Hobbs, Wall & Co. C.—C. W. Kinsman. $9,000.

Folsom, corner Hampton Place. Three-story and basement frame. O.—Judge S. C. Hastings. C.—Bassett Bros. $10,000.

Welsh, near Zoe. Two-story frame. O.—Mrs. S. Pretorius. C.—W. Pluns. $2,000.

Kearny, cor Green. Three-story and basement frame. O.—H. Kohler. $7,000.

Greenwich, cor. Montgomery Ave. Remodeling. O.—J. Alcese. $4,500.

Devisadero, near Fulton. One-story frame. O.—J. Warren. A.—J. T. Kidd. $1,500.

Waller, near Buchanan. Frame dwelling. O.—— Wieland. A.—H. D. Mitchell. C.—J. J. Welsh. $2,700.

Devisadero, nr California. One story frame. O.—W. Smith. A.—H. D. Mitchell. C.—J. Geary. $3,000.

Fulton, near Van Ness Ave. Twelve flats. O.—T. Donahue. A.—H. D. Mitchell. C.—R. McCann. $20,000.

Filbert, corner Webster. One-story frame. O.—R. Malone. C.—W. H. Wharff. $1,700.

Capp, x Eighteenth and Nineteenth. One-story and basement frame. O.—P. C. De Bois. C.—W. H. Wharff. $2,500.

Eddy, x Leavenworth and Hyde. Two two-story frame. O.—R. Dinsmore. A.—Schmidt & Havens. C.—I. N. & J. G. Day. $15,000.

Geary, cor. Laguna. Three two-story frame. O.—L. A. Levy. A.—Schmidt & Havens. C.—I. N. & J. G. Day. $27,000.

1613 Post. Alterations. O.—E. Hagnette. A.—Schmidt & Havens. C.—J Furness. $1,800.

Turk, corner Devisadero. Two-story frame. O.—A. Waugh. A.—Schmidt & Havens. C.—W. M. Fletcher. $8,000.

Sansome, x Jackson and Pacific. Alterations. O.—E. J. Le Breton. A.—Schmidt & Havens. C.—J. Mulcahy. $2,800.

Thirteenth, cor. Q. One-story frame. O.—Geo. Boyne. C.—E. B. Wilson. $1,800.

Second, x Fourth and Fifth. One-story frame. O.—R. Klenk. C.—D. & D. Falconer. $1,800.

One and one-half-story frame. O.—G. W. Darling. A.—W. H. Hamilton. C.—D. & D. Falconer. $2,500.

ALAMEDA.

Regent, nr. San Jose Ave. Two-story frame. O.—R. T. Taber. C.—Gilbert & Co. $3,500.

St. Charles, near King Ave. Two-story frame. O.—C. Bartlett. C.—Gilbert & Co.

Central Ave, near Broadway. One-story frame. O.—J. E. Baker. C.—Gilbert & Co. $3,000.

Alameda Ave, near Benton One-story frame. O.—Mrs. N. J. Ashton. C.—Gilbert & Co. $2,200.

Webber. Two-story and basement frame. O.—S. J. Look. A.—Newsom & Gash. C.—C. B. Green. $3,500.

Walnut, nr. Railroad Ave. Two-story frame. O.—J. Young. $2,300.

Santa Clara Ave., near Willow. Two-story frame. O.—G. F. Richardson. C.—Wasson & Pattiani. $3,500.

SACRAMENTO.

O, x Nineteenth and Twentieth. One-story frame. O.—Chas. Arndt C.—H. D. Vandercook. $1,600.

Nineteenth, x O and P. Two-story frame. O.—Mrs. M. E. Brown. C.—H. D. Vandercook. $1,600.

Twenty-third, x G and H. One-story frame. O.—Mrs. Gilpey. C.—H. D. Vandercook. $700.

Ninth, corner P. One-story frame. O.—Mrs. Childs. C.—H. D. Vandercook. $1,050.

W, cor Eleventh. Two-story frame. O.—F. Newman. C.—H. D. Vandercook. $1,700.

H, cor Twentieth. Repairs. O.—Mrs. Muirwin. C.—H. D. Vandercook. $3,500.

Twelfth, cor. I. Two-story and basement frame. O.—Kareth & Nickolaus. A.—Jas. Seadler. Day's work. $3,500.

N, x Twelfth and Thirteenth. Two-story frame. O.—J. L. McCord. A.—J. Seadler. $6,000.

OAKLAND.

Sixth, near Harrison. Two-story and basement frame. O.—H. Fiege. C.—E. W. Mullein. $3,000.

San Pablo Avenue., nr. Twentieth. Two-story frame O.—J. Miller. $2,500.

San Pablo Ave., near Twenty-sixth. Remodeling. O.—H. Konecke. C.—H. Marion. $1,300.

Myrtle, near Fourteenth. One-story and basement frame. O.—N. R. Johnson. C.—C. S. Martin. $2,500.

Kirkham, cor Fourteenth. Two-story frame. O.—Contra Costa Laundry $2,000.

Peralta Heights. Two-story frame. O.—Chas. Newton. A.—— Newsom. C.—Wasson & Pattiani. $4,000.

Eleventh Ave., cor Seventeenth. One-story frame. O.—S. H. Wade. A.—Matthews & Son. C.—Knight & Littlefield. $4,000.

MISCELLANEOUS.

National City. Sanitarium; O., — Potts; A., R. S. Cox; $15,000.

Martinez. One-story frame; O., Mrs. J. Fish; C., Bulger Bros.

Benicia. One-story frame; O., Chas. Durner; C., J. B. McKenzie; $1,200. One-story frame; O., W. A. Gurner; C., J. B. McKenzie; $2,000.

Wheatland. One-story frame; O., Baptist Society; A., A. A. Cook; C., Carl & Croly; $2,800.

Lincoln. Two-story frame; O., Gerber & Burdge; C., E. B. Wilson; $5,500.

Lodi. Contractor A. S. McDonald is erecting the following: Additions to brick building for Grangers' Union, $4,000; one-story frame for W. R. Ellis, $1,500; two-story frame for J. A. Fitzgerald, $2,600; two-story frame for C. R. Montgomery, $7,000; one-story frame for J. Dunbar, $1,800; two-story frame school house for $11,000.

Galt. Two-story frame; O., A. W. Wright; C., A. J. Blanchfield; $1,800. One-story frame; O., Mrs. Fowler; C., A. J. Blanchfield; $1,500.

Woodland. Two-story frame; O., B. Jackson; A., H. D. Mitchell; $10,000.

Livermore. Methodist Church; C., C. W. Bradshaw; $2,000.

San Jose. Contract has been let for the brick foundation of Chas. Lefranc's building, to be built on the north side of Santa Clara Street, west of Farmers' Union Building; two-story and brick base; A., Theo Lenzen; total cost of building $20,000. Six miles from town; two-story frame, B. B.; O., Mr. Cottle; A., Theo. Lenzen; C., E. A. Van Dolzen; $3,500.

Berkeley. Dwight Way; one and a half-story frame; O., Mr. Johnson; $1,800. Cor. Dwight Way and Shattuck Ave.; real estate office of J. L. Barker; frame; $800. Cor. Virginia and Louisa Streets; two-story frame; O., Clarke Brook; C. and A., G. A. Embury; $1,600. Cor. Louisa and Francisco Streets; two-story frame; O. and B., C. Moran; $1,800.

MARKET REPORTS.

LUMBER—*Pine*

Common Rough, up to 40 feet,	per M feet	$22 50
" 41 to 50 "	"	23 50
" 51 to 60 "	"	24 50
" 61 to 70 "	"	26 50
" 71 to 80 "	"	28 50
Refuse Rough	"	18 50
Common Rough, sized with planer $2 additional on above rates, per M feet.		
No. 1 Flooring, 6 inches and over,	"	33 50
" 4 " and under, and 1¼x4 and 1¼x6 Flooring and Stepping		40 00
Rough Clear for Flooring, $1 less than above rates.		
Second Quality Flooring and Stepping	per M feet	28 50
Ship Plank, Rough	"	28 50
" Planed 1 side	"	32 50
" " 2 sides	"	35 00
Deck Plank, Rough	"	33 50
" Dressed	"	37 50
Laths	per M	3 75
Wool Slats	"	10 00
Shakes	"	12 00
Redwood Posts	per piece	17 50

Redwood.

Rough Merchantable	per M feet	$22 50
" Refuse	"	18 50
Surface No. 1	"	40 00
" 1x6	"	37 50
No. 2	"	27 50
Rustic, No. 1, 1x8	"	37 50
" No. 1, 1x10	"	40 00
" No. 2,	"	35 00
" Under 10 feet	"	35 00
T. & G., 1¼x4 and 1¼x6	"	40 00
" 6 in. 12 ft. and over	"	37 50
" " 7 to 11 feet	"	32 50
" " under 7 feet	"	30 00
" " No. 2	"	30 00
T. & G., Beaded, 12 feet and over	"	40 00
" " 7 to 11 feet	"	32 50
" " under 7 feet	"	30 00
Half-inch Surface	"	32 50
Pickets, fancy	"	30 00
" Rough, Pointed	"	20 00
" " Square	"	17 50
Siding, ½ inch	"	27 50
Shingles	per M	2 50
Battens, ½ inch, lineal feet	"	1c

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THE

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Each Subsequent insertion	25 00

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.

Advertisements inserted for three months or less are payable in advance; payable quarterly when inserted for a longer period.

A square is ¾ of an inch in length by width of the column.

When money is sent for subscriptions, the receipt of a copy of this journal is an acknowledgment that it has been received. Unless requested, we do not send receipts.

Every architect in the State should insert his professional card in our columns, and thereby prove that he is endeavoring to assist in building up an architectural journal that will take rank with any printed. The charge is small. We want the influence your names will give, and we promise to spare no efforts in making the "California Architect" fully represent the views of a majority of the Profession on this Coast.

Retrospect of 1883.

THE END OF A REMARKABLY BRISK BUILDING SEASON.

THE end of 1883 is nearly at hand, and we have the pleasure of giving the results of perhaps one of the busiest years in the building intersts ever experienced in this city. Since the beginning of the year there has not been at any time an over supply of good workmen. On the contrary, contractors have kept up a steady growl at being obliged to employ any help they could get. Masons have, for the most part of the time, been very scarce, and have commanded $5.50 a day. Good carpenters have been steadily employed, and even at the present time, almost in the middle of our winter season, mechanics are generally engaged.

The building of "flats" still continues, and the demand more than equals the supply. From present appearances, next year will exceed this in the number of this style of residences. Many are following the ideas of a prominent capitalist — making the internal arrangements convenient and neat, with but little attempt at ornamentation, the front elevation, however, having the appearance of a magnificent mansion. Thus even a mechanic, with all the uncertainties of bad health and lost time, can afford to live in a dwelling, the equal, in looks, of the more aristocratic business man.

We append a monthly statement of the building operations of this year:—

	Frame Build'gs.		Brick Build'gs.		Repairs and Alterations.	
	No.	Cost.	No.	Cost.	No.	Cost.
January	31	$293,600	2	$105,000	8	$76,000
February	39	87,2 9	1	18,000	14	27,010
March	38	198,900	2	30,000	18	68,700
April	71	279,985	1	20,000	12	34 900
May	53	283,500	7	161,700	10	41,400
June	100	439,535	11	85,600	16	48,450
July	66	288,500	3	101,270	9	30,000
August	65	257,300	6	140,500	14	73,600
September	41	373,100	3	163,500	8	31,300
October	27	145,000	..	....	8	21,600
November	43	396,300	1	10,000	12	56,600
December	42	172,150	5	152,700	16	69,875
Total	616	$3,215,649	42	$988,270	145	$579,435

By the above we see that the total number of building improvements of all kinds amounts to

803 Buildings of the value of $5,261,689.

For the sake of comparison we give the figures for the three preceding years:—

YEAR.	BUILDINGS.	VALUE.
1880	397	$1,754,435
1881	533	3,790,732
1882	785	3,896,212
1883	803	5,261,689

Most certainly this is a splendid showing. Several improvements under way are not counted in the above. The Flood mansion is only given credit for the amount spent in this city, no account being taken of contracts let to Eastern parties. The large improvements by the Union Foundry in South San Francisco, are not included. In fact we aim solely to give the number of buildings and the cost thereof, without including the cost of machinery, or the cost of filling in the tide lands, piling, etc., so necessary in some places before buildings can be erected, but which we do not think ought to be included in the estimate for buildings.

Building for 1884 promises to be remarkably brisk, and we think will exceed this year in number and value.

We tender our sincere thanks to those who have so nobly aided us in building this journal to its present standard. The future looks more than bright, and we promise many new improvements in our January issue.

We must congratulate carpenters all over the State in the possession of such good helpmates. This year we have received many letters containing money for first-class architectural and mechanical works, to be used for Christmas presents from the wife to the husband. We are pleased to see this, as it is through study that the mechanic gains the knowledge necessary to overcome the difficult problems daily presented in his daily avocation.

Wishing all our readers a full enjoyment of all those blessings usually experienced at this season of the year, and tendering our heartfelt thanks for their support, so generously given the past year, we close our labors for 1883, and with energy and hope for our watchword, we look forward to 1884, confident that we will excel our past efforts.

NEW METHOD OF PREPARING BLOCKS FOR ENGRAVERS.—At a recent meeting of the Chicago photographers, Mr. Shaw showed the members present his mode of preparing blocks for engravers. He claimed that it was very simple and easily worked. He commenced by breaking an egg, and pouring a little of the albumen on the block, and then thoroughly rubbing it in. It does not sink into the wood. His preparation, which is kept on the surface all the time, is as follows: gelatine, ten grains; albumen, one ounce; water, one-half ounce. Rub this well in with the palm of the hand or a brush—the hand preferred; after this preliminary coating put on a little photina preparation, which is also to be well rubbed in. In five minutes a print from a negative can be taken on this block in the sun, or by the electric light in about three minutes. The process gives good black tones, like those obtained in platinum prints.

S. F. Chapter, American Institute of Architects.

THE regular monthly meeting was held on Monday eve, Dec. 10th. T. J. Welsh occupied the chair.

Committee on Incorporation reported that all necessary measures had been taken to effect said result, and they were simply waiting for a seal to be furnished, in order to complete their work.

Committee on Ammendments to the Plumbing Law asked for further time, as it was their earnest desire to have the work well done.

Warren H. Williams was proposed for membership. Application referred to the usual committee.

Communications were received from the Sect of the American Institute of Architects, which after being read were placed on file.

A communication was received from the managers of the CALIFORNIA ARCHITECT AND BUILDING NEWS, stating that it was their intention to offer four prizes—one of $60.00, one of $50.00, one of $40.00, and a box of drawing instruments—for the best four designs for a country dwelling, to be published in said journal. The managers requested a committee be appointed by the Chapter to determine the relative value of the drawings submitted in the competition. The president appointed the following named Fellows as the committee: Messrs. Sanders, Pissis and Mitchell.

A short discussion ensued upon the stand to be taken by the Master Masons and Builders' Association on and after January 1, 1884. It was the opinion of a majority of the members that, although at first it might seem awkward to make separate contracts for amounts slightly in excess of the amount adopted by the Master Masons, yet, in a little while, harmonious feelings between all the trades may be secured by just and impartial action among those most interested.

(We do not see why the masons have not the perfect RIGHT to the same privileges as are enjoyed by the carpenter contractor. One has as just a claim as the other in being the contractor of the building. But few carpenter contractors would take a job having the master mason as a principal, and why not *vice versa?* In many cases the cost of the brick work exceeds the carpenter work, and we do not understand why the latter class should be recognized as the supreme head of the work as far as the contract goes, collect all the payments, and pay the amount due the mason, the latter being a second party. In case of a failure of the principal contractor it is always the sub-contractors who have to stand the loss. The principal draws the money, and in dividing it to meet all the requirements of a contract he oftentimes remembers his own pocket first. We hope this question will receive a discussion between the parties most interested, and we will with pleasure publish such views as may tend towards a harmonious settlement of the questions involved.—EDS.)

Trade Discounts to Architects.

FOR some time past it has been the custom of manufacturers and dealers to allow architects a plunm generally known as "*the trade discount.*" This is done when the articles are ordered directly by the architect, and the justification of the offer is made upon the fact that the discount is always at some one's service; the builder is not entitled to it, he merely places in the building articles ordered by the architect, consequently the only one to profit is he who gives the order. Another reason advanced for the offer is that an architect often has considerable trouble in examining the different inventions and manufactures of the same class, and no matter what his selection may be he is justly entitled to the "*trade discount,*" being the only one who has had any trouble in the matter.

The question has been asked us, Are architects justified in accepting the offers thus made? Also, What stand does the Institute of Architects take upon this subject?

"The Institute of Architects has from its foundation opposed the practice in toto as a point of honor, holding it to be manifestly inconvenient that the supervisor of building works should upon any pretence be allowed to involve himself in the supply of articles, the quality and price of which he is employed to check in the interest, the purchaser of his client. At the same time it is only fair to add that there are thoroughgoing men of business, as business goes, who still maintain the arguments first mentioned to be sound, and who fail to see why an invariable trade discount should be lost, or why an architect should spend his time upon the selection of cheap articles of taste without remuneration.

"To this, however, the principle adopted by the Institute would still seem to have an answer to give, namely, that whenever any special remuneration is due, it ought to be paid directly by the employer, who it may fairly be supposed, if he be one of those who prefer to take a tradesmanlike view of such matters, will be found ready to indorse his own opinions.

"The practice mentioned is one which we must expect to see developing itself more and more as the times change and the ways of business change with the times; but there are certain principles which ought never to be lost sight of in a profession like that of architectures, such as these: That whatever is done must be done openly and above board, and that no payment can honorably be received except for work done by the recipient. The necessity for acting under any circumstances in any sort of underhand way we wholly deny."

Black Walnut.

BLACK walnut can be grown from the nut, producing a butt fourteen inches in diameter in as many years from the seed, as far north as Massachusetts. No tree valuable for its timber in cabinet uses, unless the black birch be so considered, can attain to that useful growth in that period of time in our northern climate. Maples require twenty years before they become good timber trees; beeches and birches, fifteen years to attain to a diameter large enough to yield nine-inch boards; hickory should have a growth of thirty years; and cherry at least as much.

The cultivation of the black walnut might be made a source of profit, if only as an auxiliary to the ordinary farm products. It requires no particular care, makes an elegant tree even in its youth, and later offers an agreeable shade. The *Sewing Machine Journal* says:—

"One hundred acres of land, seeded to walnut trees, even if they reached maturity in fifteen years, would be more remunerative than many of the crops produced by fifteen of incessant toil. Besides, these trees might be planted and would thrive on spots which are really valueless for agricultural purposes, and while in the course of growth would serve as valuable aids to agriculture as wind-breaks and in other respects."

Our Exchanges.

WE have made arrangements with the editors of the following journals, by which we are enabled to offer quite a reduction to any one subscribing for any one of them in connection with this journal.

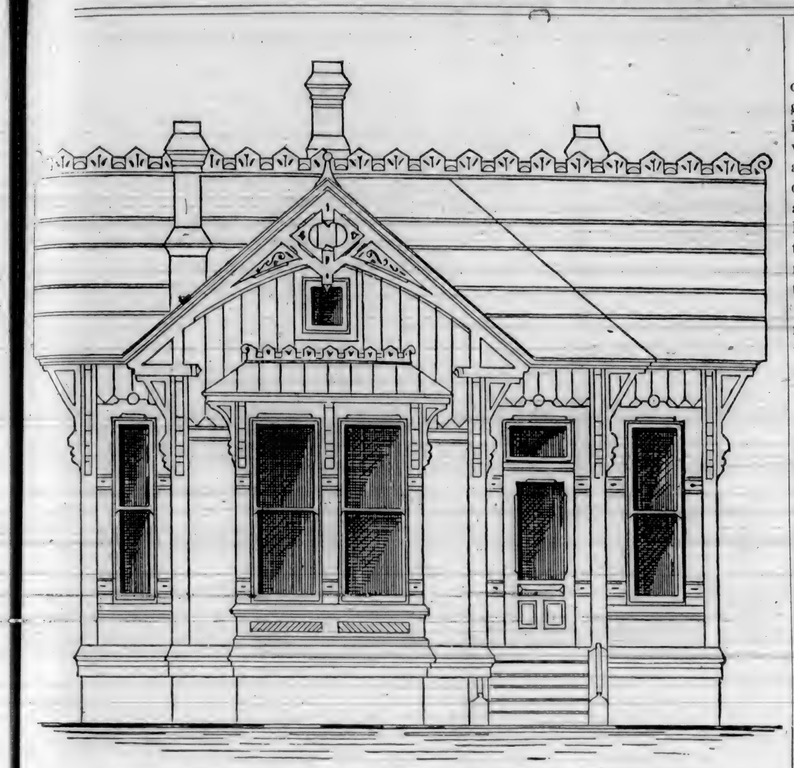
(The figures in parenthesis denote the price of the journals alone.)

CALIFORNIA ARCHITECT AND BUILDING NEWS.
Terms, $2.00 per annum.

With *American Architect* ($6.00), $7.00 per annum.
With *Builder and Wood Worker* ($1.00), $2.50 per annum.
With *Carpentry and Building* ($1.00), $2.50 per annum.
With *American Artisan* ($1.00), $2.50 per annum.
With *Brick, Tile, and Metal Review* ($1.00), $2.50 per annum.
With *Building* ($1.00), $2.50 per annum.
With *North Western Lumberman* ($4.00), $5.00 per annum.
With *Scientific American* ($3.20), $4.50 per annum.
With *Leffels' Mechanical News* ($1.00), $2.50 per annum.
With *Decorator and Furnisher* ($4.00), $5.00 per annum.
With *American Machinist* ($2.50), $4.00 per annum.
With *The Wood Worker* ($1.00), $2.50 per annum.
With *The Builder* ($2.00), $3.50 per annum.
With *American Inventor* ($1.00), $2.50 per annum.
With *Hall's Journal of Health* ($1.00), $2.50 per annum.
With *Cincinnati Building Review* ($1.00), $2.50 per annum.

We will add to the above list from time to time, as our arrangements are perfected with the publishers. We are prepared to furnish any journal printed at the shortest possible notice.

All communications intended for M. J. Marion may be left at the office of his journal. We have received quite an interesting communication from him, but too late for this issue.



FRONT ELEVATION OF COUNTRY HOME, COSTING ABOUT $2,800.

A Country or Suburban Home.

THE accompanying plans are intended, if carried out according to the designs shown, to give a very comfortable home for a small family. Its special features are well-lighted and ventilated rooms, closet room in abundance, and conveniences generally needed in this class of house. The w. c. is placed outside, and yet is easy of access. Bath room is well lighted, and the window is so placed that thorough ventilation is secured. If desired, the mullion shown in dining-room may be changed to a square bay window, similar to the parlor.

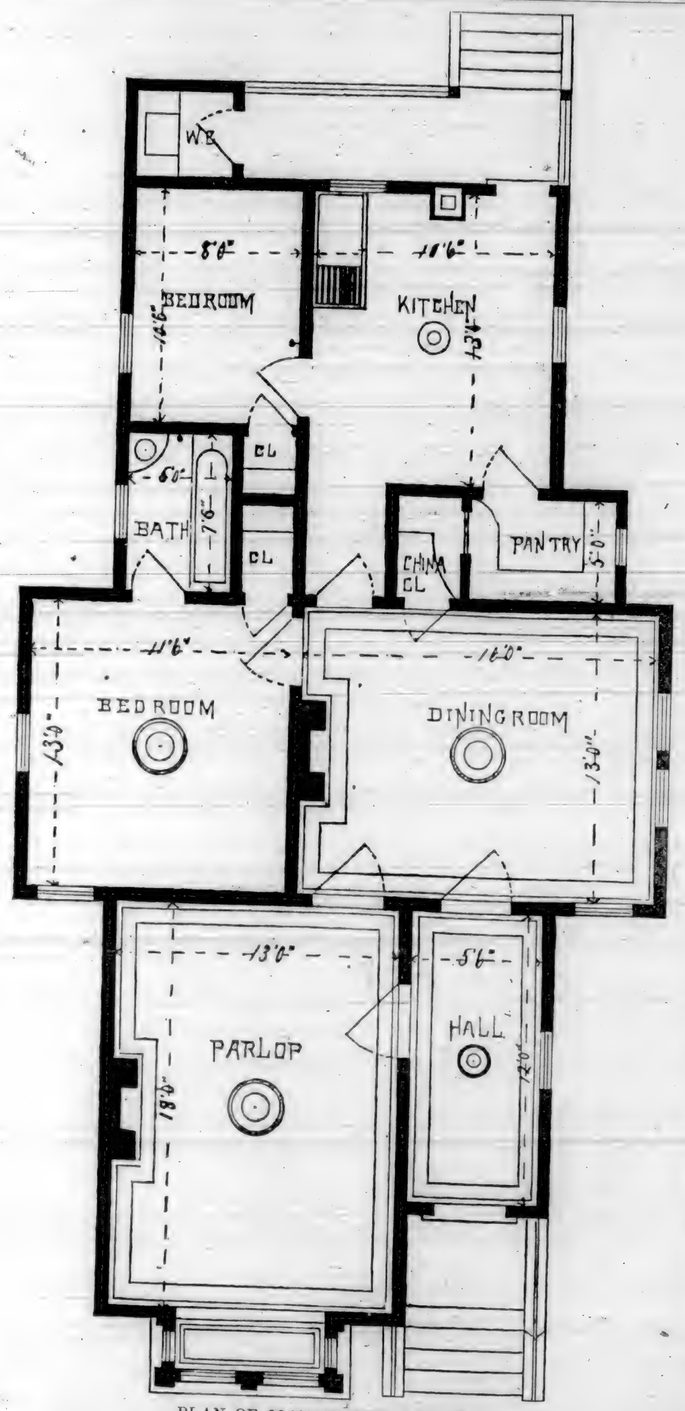
The plan carried out as shown, can be built for about $2,800. This figure may be greatly varied according to style of finishes used.

Cost of Buildings.

WE frequently receive letters containing queries in regard to the cost of buildings, the plans of which have been given from time to time in this journal. Prices vary at different seasons of the year, and those given in the description of plans are the prices for which the buildings could have been erected *at the time of the issue of the Journal containing the plan.* About twenty-five per cent. would have to be added on the estimates given in 1880, 1881, and part of 1882, to correspond with prices at the present time. By comparing price lists, and allowing the difference, a correct idea may be gained of the different values.

AN old but good idea, and one not generally known, is to line the jaws of the vise with sheet lead when clamping saws for filing. If not so lined, the saw will vibrate and probably strip the file.

SIDE ELEVATION OF COUNTRY HOME, COSTING ABOUT $2,800.



PLAN OF $2,800 COUNTRY HOME.

Beware of Creating False Impressions.

The sound of saw and hammer is heard on all sides, and every man that can handle tools is pressed into the service, to meet the grea' demand for new buildings.

The above *in italics* is the gist of numerous articles selected from various country papers that have found their way to our sanctum, and we have purposely placed the words in a prominent position so that parties interested will have their attention drawn thereto.

A country paper to be successful must pay strict attention to the affairs in its immediate neighborhood. It is taken by people living outside of its jurisdiction, that they may keep the run of the local affairs of the town in which it is situated. When the news contained therein is found to be always reliable, it often receives subscribers from sources seemingly at variance with the object of the paper. We propose to speak of a few things in one interest only—that connected with building improvements.

In making statements in regard to new buildings, alterations, or other improvements, be sure that the true facts are stated and in a way not to mislead. A worthy mechanic called at our office not long since, and asked our opinion in regard to locating in a certain town. He had in his hand a local paper of the last issue prior to his call. To read the statements made therein one would imagine there was an immense building boom being experienced. Mr. A was erecting a business block; Mr. B, a comfortable dwelling; C, D, E, and F were making large additions to their barns. Lumber was being hauled for several buildings soon to be started. In fact the sound of saw and hammer was heard on every side, and men could not be had to do the work.

While our visitor was reading, his listener was simply dumb from astonishment. But a few days before we had been through that same town. The business block of Mr. A was 28x40, one story high, rustic front, sides boarded with rough lumber placed endways and battened, divided into two stores, separated by a board partition. One store was intended for a saloon, and the other anything it would rent for.

Mr. B's comfortable dwelling was 12x24; simply a two-room house, boards on end and battened. The large additions to the barns were simply sheds to cover the wagons, etc.; the lumber for the new buildings was similar to that necessary for buildings of the above description.

No doubt to the editor of that paper the work in sight was enough to make him eloquent in praising the business activity of his town. But he should have looked a little deeper and taken into consideration the fact that others besides his own town people read his paper, many of whom were on the lookout to locate in places where a reasonable activity prevailed. Reading the local notices as given, a mechanic would be justified in visiting that locality for the purpose of inquiring into its claims as a business center and offering special inducements to the man who wieldeth the saw and hammer truly and well.

We could cite many instances where parties have been misled by the glowing accounts given by local editors, of immense improvements shortly to be commenced. It is not our purpose, however, to recapitulate. We would simply draw the attention of those who have charge of the local department of the various country journals, to have your statements so plain that there will not be the slightest chance of any one misunderstanding them. If possible give the *cost* of the improvements underway; for it is by this that the mechanic judges of the class of work being done. A business block costing probably a $1,000 would convey at once to his mind just the kind of a *block* that could be erected for that amount of money, and he most certainly would not spend even a four bit piece for fares to get a job on such a *block*.

Remember that mechanics visit the libraries, reading-rooms, etc., especially to get information in regard to building in process of erection all over the State. Since this journal has endeavored to give reports from so many sources, our offices, at times, have been thronged with men inquiring for the best places to locate. Our information is largely obtained from a perusal of our many exchanges. Not wishing to lead others astray, we are ourselves not desirous of being wronged through reading a too glowing account of building improvements.

The Employment of Better Mechanics the Result of High Prices of Materials.

It may seem an anomaly but it is a fact that during the reign of high prices of material the contractor invariably seeks the high priced mechanic, and his reason for so doing is found in the fact that first-class mechanics are less apt to make mistakes and thus the waste of material, so common amongst inexperienced men, is greatly lessened if not almost wholly overcome.

When lumber, for instance, is cheap, or even when it is at a moderately fair rate, the contractor seeks to get the most work done at the least expense. On large jobs, even laborers are substituted in passing lumber to and fro. Apprentices are set at work doing that which should belong to the experienced mechanic. A few feet of lumber don't amount to much, and so but little attention is paid to the blunders made.

When, however, lumber is four and one-half cents a foot for surfaced and the finer grades, it becomes necessary for the principal to look after his employees, as it does not take the cost of but a few boards spoiled in cutting to more than offset the difference in wages.

High prices of material are a death blow to *piece-workers*. It is a notorious fact that these have-to-be-endured men are without consciences in their waste of material. If a floor is to be laid, their motto is simply anyway to get it laid. Rustic is cut with but one idea in their mind, to get it *planted* on as quickly as possible.

The same remarks are applicable to the plasterers and brick-masons' trade. We have been in buildings where the mortar was almost as thick on the floor as it was on the walls. This fact at once shows the inexperienced workman. It is surprising to note the number of half bricks that are found around some buildings. We do not by any means advance the idea that half bricks are equal to whole ones, but we do say that a good workman would so place them in a wall that no one could tell that they were used.

We were much amused the other day at watching a greeny building a chimney. Half bricks were tossed into the lot adjoining only to be picked up by poor Pat to be carried up the second time. The excuse the master (?) chimney builder gave us for throwing away every half brick was that it made too many joints, the one on top of the other.

First-class workmen always have been and always will be the cheapest in the end. In order to obtain their proficiency they must need study, and therein lies the fault of the cheaper men, they have no time to study. A journal devoted to their interests never receives their subscription, as they can never find anything in it excepting what they already know. To all such we would say, if such be the fact, suppose you try a change. Your old way evidently has been a failure, or else you would be receiving better wages. No matter what part of the country you live in, subscribe for and support your home journal published in your interests. Study it well; practice the good advice given, and in a short time you will be able to command the wages justly due to those who study the science of the various mechanical trades.

Hanging Paper on Damp Walls.

The Germans are utilizing a discovery for hanging paper on damp walls. It consists of coating a lining paper on one side with a solution of shellac spirit, of somewhat greater consistency than the ordinary "French polish," and then hanging it with the side thus treated to the damp wall. The paper-hanging is then performed in the usual manner with paste. Any other resin that is equally soluble in spirits may be used in place of the shellac. According to the representations, this process is found equally effective in preventing the penetration of dampness.

Glycerine Glue.—A German chemist has discovered that the strength of glue is very greatly increased by the addition of one-fourth as much glycerine as glue.

Glycerine has many other uses, among which one of the least known is its property of removing pencil marks from paper in a very perfect manner. It may also be combined with starch and plaster of Paris, to form one of the most durable cements for various kinds of apparatus.

Competition Designs!

ONE HUNDRED AND FIFTY DOLLARS

Cash Premiums!

FOURTH PRIZE,

Box of Drawing Instruments.

In order to promote a general desire to excel among Architects and Draughtsmen in the preparation of drawings for this Journal we have concluded to offer the following premiums for the best 4 designs of a Country Dwelling, the successful plans to be published in the California Architect and Building News.

1st, a Cash Prize of $60.00
2d, " " 50.00
3d, " " 40.00
4th, Box of Drawing Instruments.

Plans are to be for a house costing about $5,000. Front and side elevations to be shown, with plans, and a detailed estimate of cost.

All plans to be in the office of the California Architect BEFORE the 1st of May, 1884, in order that they may be presented to the S. F. Chapter American Institute of Architects at their regular meeting on May 2.

The Chapter appointed the following Fellows as a Committee to decide upon the merits of the respective designs submitted:—Messrs. G. H. Sanders, Albert Pissis, and H. D. Mitchell.

We make the above simply as an announcement of our intentions. Our January issue will contain full particulars in regard to the competition. We will be pleased to receive the names of those desiring to compete.

Address all communications in regard to the above to the Business Manager of this Journal, 240 Montgomery Street, S. F.

Country Architecture.

BY A. CURTIS BOND.

OUR illustration this month shows a sea-side cottage, erected during the past summer at Coney Island, one of the near-by bathing resorts of this city. The front we have shown is that facing the sea, the entrance being at the opposite side and looking upon the road. I would say that the small room opening upon the space beneath the bay-window and directly behind the post, as shown in the drawing, is used, in this particular house, as a dressing apartment, where the occupants of the house may prepare for the bath and run down to the surf, which is at the foot of the grounds, but a short distance away.

SPECIFICATIONS FOR SEA-SIDE COTTAGE.

MASON WORK.—Excavate for foundation three feet below present grade on water front, and one foot on road front, and twenty inches around walls for a stone footing course, also excavate for drain, etc., to connect with public drain; all sand and earth so excavated to be used for grading around house when finished.

Foundation to be built within six inches of grade, with good foundation stone, and center wall to be built up within ten inches of first floor to set floor beams on.

BRICK WORK.—All exterior work to be laid up with best quality face brick laid in red mortar. All inside brick work to be of good quality brick, well laid and neatly pointed. Chimneys where topped out above roof to be of face brick.

STONE WORK.—A neat sill of at least twelve inches to be put around entire house. Corners and trimmings of windows, as shown in sketch, and base and caps of chimneys to be of good quality. Sand or brown stone with neat sunken carving over windows as shown in sketch, column of bay window as shown, base and cap of column to be of above kind of stone, shaft of aberdeen granite, neatly polished to show grain between trimmer on first story; to be laid with rough stone neatly pointed with white mortar to show joints. Blue stone steps to first story under veranda.

PLASTERING AND LATHING.—Lath with good quality spruce laths well nailed—then plastered; good coat of mortar for brown coat, then a finishing coat; the first and second story to have hard finish; all the principal rooms on first and second story to have neat cornice, to be selected by the owner, also center as may be selected.

All mason work to be done in a workmanlike manner, and all material used to be of good quality as the market can supply.

TIMBER.—CARPENTER WORK. All floor beams to be 2x10 and to rest on brick wall at least four inches well bridged with good 2x3 spruce bridging, all studs to be 2x4, and all brick walls to be furred with good two-inch furring strips well nailed to joints of buctm.

DOORS AND WINDOWS.—Door and window frames to be made in the usual way of good seasoned one and one-fourth pine, windows to be hung with cord and pulley, and latest pattern of sash fasteners, windows to be glazed with French plate glass in four lights as shown on sketch; all main doors to be one and one-half inch thick with neat panels, except closets paneled on one side only, front door to be two inches thick with raised panels, all to be neatly trimmed with neat moulded pine trimmings.

STAIRS.—Stairs where shown in plan with circular railing. Newel post at foot of stairs of such design as owner may select, with neat moulded hand rail and baluster neatly trimmed. All to be of black walnut.

OUTSIDE TRIMMINGS.—Bay windows where shown, with neat balustradi on top with turned balustraden brackets on angle of corner, with panel at base and arch brackets resting on stone column, a neat balcony on gable over bay window with balcony, with cross braces for balusters and with neat brackets to support all. Gable ends to be finished as shown with open scroll work in angle of circular truss; all to finish with tipe neat brackets where shown on sketch for gable corners. Neat, galvanized, and gold tipped finals on all peak of roofs, of good neat style. Neat veranda on front with baluster around, and good stairs leading to grade.

WATER CLOSETS.—Where shown, set with bowl and trap with flush closet, the waste-pipe to connect with sewer.

PANTRY.—To be fitted up with shelves and drawers.

CLOSETS.—In chambers to have neat six-inch strips with hoses.

FIRE-PLACES, ETC.—Ranges set in kitchen with the necessary appliance for hot and cold water. Dining-room and parlor to have grates set in, with brass fittings, these two rooms to have marble or slate mantles as may be selected; all other rooms to have wooden mantles.

ROOFS.—French and slanting roofs to be covered with good quality blue slater, well nailed; French roof put on top to be covered with good quality charcoal tin, with ridges raised about ten inches apart, to regulate flow of water.

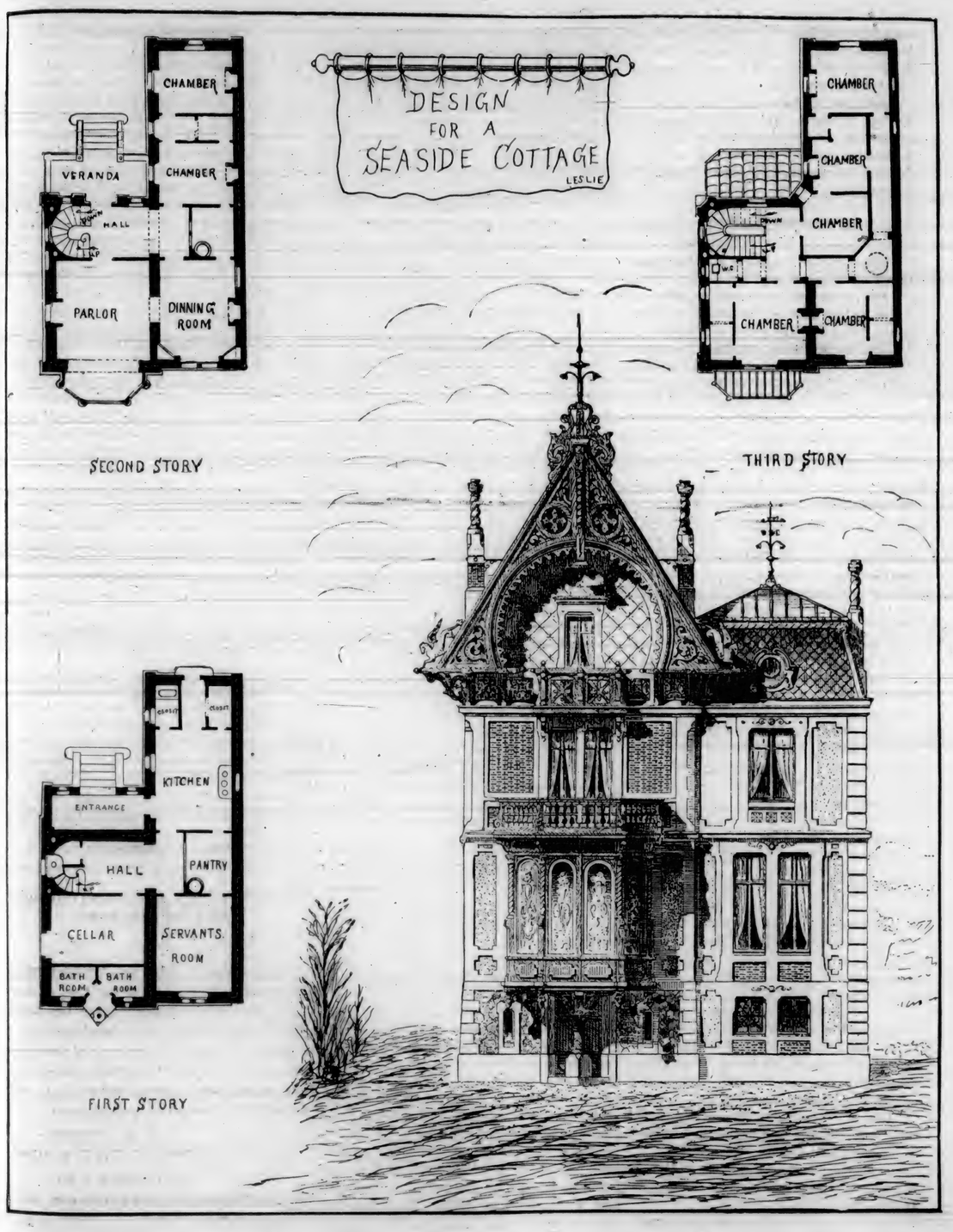
All the work to be done in a workmanlike manner and good material used.

I presume every one is more or less interested in protecting his house against lightning, and upon this assumption by the New York architects, there has been carried on recently a general discussion as to the best method of protecting country houses, or in fact any buildings liable to be struck, from the disastrous effect of a thunder storm. It had become an occurrence of too frequent regularity in and about the city, and it was considered wise to devise some means to avoid it. The foreign architects have had their say in the matter too, and the result of their conferences seemed to bring them back very near to the point from which they started. There is no doubt that an exposed position, or a building with a great deal of metal in its construction, offers an opportunity for the lightning that it seldom misses. One instance within my own knowledge shows this. It is that of a church built upon a high hill; was struck no less than five times in one year, and kept on being struck until a rod was put upon it, a precaution that at first was violently opposed by the minister, who had, it seems, an unaccountable sort of a conceit or lunacy that the holiness of the edifice would be a sufficient guarantee of its permanency.

We cannot consider this question upon the basis of how and where houses *should be* built, but how and where they *are* built. For one person who would avoid a picturesque site from the fear that it might prove attractive to lightning, ninety-nine would select the spot for its other advantages. And for one person whose design for a house would be controlled by electric considerations, there would be an incalculably larger number who would regard economy, fashion, convenience, custom or other motives as determining the style of architecture they would adopt.

Metal enters, more or less, into every house, and it must be observed that it is rather the extent of metallic surface than the bulk that attracts the electricity. An instance is given where a shaft entered a house, tore the gilding from the cornices, twisted the moulding rod, partially fused the wire of the bell pulls, and yet avoided the inmates, of which at the time there chanced to be a goodly company. Smoke has conducted lightning down the chimney, and thus out through the fire-place into the midst of the occupants.

The first point therefore to insure safety in a dwelling-house is to complete the metallic connection of all metallic surfaces of any extent, on or within the building, the necessary connection being not only with each other but with the earth. At the same time it is desirable to protect the salient points of the house, such as pinnacles, gable-ridges, and, above all, lofty chimneys with metallic points, somewhat elevated above the rest of the building and in perfect connection with the earth. Some parties claim that these points should be elevated ten feet, others say thirty feet, and others only five feet above the point to be protected. But I think the settlement of this difference rests entirely upon the theory which attends the use of the rod, if it is for the purpose of attracting the lightning and thus s oner terminating the electric storm, then possibly the higher rods may be preferable, but if the project is merely to protect the house if struck, and divert the current from the inflammable portions, then the ordinary s ort points are all that is necessary. The clouds are often quite near to the earth, in which event every foot of rod is valuable, but if the normal condition of things be taken and the clouds are 1,000 or more feet from us, it is doubtful whether a score of feet even would make any material difference. It has been a mooted point whether the metal rod should be connected directly with the building or if it were not better to insulate it. It is claimed that the insulated rod is rather an attractor of the flash, and thus a means merely of diminishing the ærial electricity, than a house protector. There is one thing certain that during an electric storm the metallic substances in the



house will become charged, and if no means are adopted to draw off this charge, the danger is considerable and it is not certain that this danger would be averted by an external rod isolated from the house.

Bearing in mind, then, as it is necessary to do, the manner in which all conductors, in connection with the earth, become charged in a thunder storm, I think there can be no doubt of the propriety of metallic connection throughout.

Amateur Architects.

"WHAT is another one of the disagreeable things which besets you?"

"The patron who comes into your office with a plan he has 'made all by hims lf' and wants you to follow it. You ask him if he made the drawing to a scale, and he admits that he has not, announcing at the same time that won't make any difference, as he knows just how much room he has got and has planned accordingly. Then you suggest that nothing can be told from his drawing as to how the building will look, and he, getting mad, tells you to go ahead and if it does not look all right it will be his fault." "That's fair enough if he takes the blame."

"He'll take the blame soon enough, but he kicks like a steer when, after we have made a drawing to a scale, he finds his plan a failure, and that we ask pay for humoring his fancy. Why it would just break you all up to see some of the amateur plans and designs I have in my office."

So saying the architect escorted the reporter to his office, and fixing him comfortably in an arm chair, placed before him a large portfolio filled with amateur efforts. They were very interesting, embracing all classes of architecture from the Gothic and Gothic-Normandi to the most unique combinations of Grecian and Græco contours. Talk about the Detroit high school building, it is a nonentity compared with most of these efforts. Scale! there was none; but efforts at harmony and originality were visible everywhere. One particularly striking effect was shown where a dwelling house, having thirty-two feet of frontage, was concealed behind a portico sixty-one feet (according to the width of the building as shown in the plan) high and forty-four feet deep. Another charmingly original idea was a house with a front door sixteen feet wide, and windows eight feet wide, and a two-story house at that. Another plan, the designer of which evidently wanted an observatory, showed a cottage with a tower 116 feet high, according to the scale to which the draughtsman unconsciously worked. And so on, were discrepancies without number, and all of them ludicrous beyond measure.

"Just fancy trying to do something with this," said the architect, laying a drawing in water colors in the reporter's lap.

The plan, evidently the work of a lady, gave, in perspective, views of two sides of a proposed dwelling house.

If it were possible to build according to the design there would be a house of cut stone, with a double arch at one corner resting on two stained glass windows, each twelve feet wide, while a very early English chimney would pass through the arches and windows to a point in the basement, through which a doorway had been cut. Finally, surmounting the heavy stone arches which rest on glass supports, would be a tower balcony eight feet high and twenty-four feet square.—*Press Interview.*

"LA SEMAINE DES CONSTRUCTEURS" gives its opinion in a recent number upon a question which will interest a great many people besides its own readers. A letter to the editor relates that the writer, a clerk in the office of his father, who is a mason and builder, was asked by a thrifty individual to make plans for a building which he thought of erecting The clerk made the plans and took them to the proprietor, who found them satisfactory, and desired that specifications should be drawn up, and the whole submitted for estimate to such contractors as the clerk might select. This was done, but on comparing the estimates it was found that the total estimate exceeded the limit of cost which the proprietor had contemplated; and the plans were modified to lessen the expense. The remodeled drawings had been made nearly satisfactory to the proprietor, and a final consultation was held between him and the designer, at the close of which he requested the latter to lend him tracings of the plans, in order that he might consider them a little further by himself. The clerk unsuspiciously did as requested, whereupon the proprietor had the drawings traced, and, sending back the originals with an insulting letter, proceeded to submit his stolen copies to another contractor for estimate, saying that the plan had been made by "one of his friends." The second contractor happened to be a relative of the clerk, and learning the circumstances, or recognizing the plan, took the liberty of putting the tracings in a place of safety, for restoration to the rightful owner.

THE inquiry which the clerk makes of the editor of *La Semaine* is, whether he can collect payment for his work on the plans and specifications, and, if so, at what rate? The reply is, it must be acknowledged, anything but encouraging to persons who desire to combine in themselves the functions of architect and contractor. In the editor's opinion, a proprietor who requests an architect to prepare plans for him implies in that request a promise to pay him the customary compensation for his trouble; and the architect, like the member of any other profession, has only to prove employment in his professional work to recover the usual remuneration. With a builder's clerk the case is very different. His business is not to make designs, but to help his employer in securing and executing contracts; and neither the proprietor nor other persons would ordinarily see, in the fact of his preparing plans and specifications for a building, anything more than an effort on the builder's part to make sure of a contract which he might lose in the chances of competition if an architect were employed in the usual way. That this would be the ordinary understanding in such a case, in default of any agreement or stipulation to the contrary, is shown, as the editor thinks, by the simple consideration that no one, if it were customary to pay architects' fees to builders' clerks for such work, would choose the inexpert and irresponsible service of the latter in preference to the educated taste and skill, and greater pecuniary responsibility of the professional man. The editor is further of opinion that the preparation of plans and specifications by a builder's subordinate not only do s not entitle the latter or his employer to compensation, but furnishes no ground for claiming a preference in the award of the contract; the understanding in such cases being, as he thinks, that the plans are made simply as an inducement to the proprietor to enter into the contract for their execution. They may accomplish their object, if the builder is fortunate, but if not, he is only entitled to his labor for his pains.—*The American Architect and Building News.*

A RELIABLE estimate lately made upon a certain quarter section of redwood timber in California was 32,000,000 feet. In comparing this with the pine lands of the Saginaw, Mich., district, it is stated that 2,000,000 feet was an extraordinary growth on the best of the land, when good forties were plenty, and 100,000 feet to an acre is called the biggest yield on record in the Saginaw region.

A NEW slate pencil sharpener introduced by a Chicago firm is merely a six-inch rule with V-shaped groove on two sides; they are thoroughly coated with the purest emery, and a hundred slate pencils may be reduced to powder by one of these little instruments before it is worn out. The price is so low that they can be given away as advertisements, the dealer's name being printed on them gratuitously if ordered in sufficient quantity.

Two Dollars Per Annum.

WERE it reasonably possible to place the subscription price of this journal at a lower rate than two dollars per annum, we would cheerfully do so. But, in this city, we labor under many disadvantages not experienced by Eastern publishers, and which render it impossible to adopt a lower standard of subscription rates. The outlays to be encountered in this field of operations do not present themselves in other places, and it requires infinitely greater labor and expenditure to accomplish like results with those produced where all the surroundings and facilities are favorable and easy.

We think all our readers will notice the gradual improvement we have been making in regard to furnishing superior engravings. It has been our most earnest desire to introduce the improved process of photo-engraving, now so successfully worked in the East. In regard to the cuts made by our own process, the first representations of which will appear in our January issue, we would say that it has been the result of much study and perseverance, and we intend to so improve upon it that it will be unnecessary for any one to send drawings to the East for reproduction.

Every architect, draughtsman, student, and builder should possess a copy of this new work. Those parties not members of the profession, who are occasionally called upon to direct building operations, will be greatly benefited by a careful study of this work We will send a copy of the above, and one year's numbers of the CALIFORNIA ARCHITECT upon receipt of $5.00.

What Do You Think of It?

THE *American Cabinet Maker* notes a recent interesting legal decision. A cabinet maker in Michigan, in a written contract, agreed to make a walnut counter for one of his customers, but instead of using solid wood he took for the top and door panels, whitewood, and stained it to imitate walnut. The customer refused to take the counter, and in an action to recover the price which was to be paid, the plaintiff offered evidence to show that it was customary in the trade to make walnut counters with such materials. He also offered o prove some understanding with the defendant, outside of the contract, by which it was agreed that the counter was to be made in conformity with the order. In this case (Greenstine vs. Borchard) the Supreme Court of Michigan decided in favor of the defendant, saying that no evidence could be given outside the contract to contradict it, and that no custom could be proved that white wood stained top and door panels to a counter made a walnut counter.

The Art Amateur for December is a number of holiday size and excellence. It contains numerous working designs, fine illustrations of Derby porcelain; practical articles on decoration, needlework, and china-painting; correspondence, literary, and editorial notes. It is impossible to speak too highly of the varied excellence of this superb publication. Price, $4.00 per annum.

☞ 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.

Cut-off Saw for Lathers.

A CROSS-CUT saw is an indispensable tool to the lather for cutting lath in large quantities for short spaces, and for rigging up platforms to work on, and for cutting supplementary studs or strips where such are necessary. The saw should have rather coarse teeth and have plenty of set. Usually the lather thinks that almost any old, used-up saw is good enough for his purpose, and we find him struggling away with all his strength, cutting through a bundle of lath, when, if he had a saw that was worth anything—as a saw—he would perform his labors with about one-half the effort, and in one-third the time. It is all wrong to think of being able to work satisfactorily with inferior or imperfect tools. There is no economy in using tools of this kind, and any lather who fancies he is going to make or save anything by making use of an old buckled, mortar-stained saw, makes a terrible mistake. Get a good saw and keep it in good order, and it will pay you in two weeks.

WHITING is made by reducing pure white chalk to a fine powder. It is mixed with water and size and used for whitening ceilings and inside walls. It will not stand the weather.

MORTAR for the plasterers' use should be well made, and the following rules should be strictly complied with: 1. The lime should be thoroughly slaked, and brought to a paste or putty state. 2. It should remain in the mortar bed until it is perfectly cool, before mixing in the sand and hair. 3. Good mortar can be used with safety eight or ten days after it is made, but in no case should it be used before it is six days old.

[Some authorities say it is best to use mortar for plastering within three or four days after it is first made. They claim that in mortar which stands ten or more days before using, the lime loses a portion of its strength, and the mortar becomes deteriorated thereby. This to a certain extent is true; but, notwithstanding the loss of strength by the lime, and the consequent deterioration of the mortar, every observant plasterer knows that walls coated with mortar made two or three weeks previous to using, stand better than those coated with "green," or freshly-made mortar. Newly-made mortar, immediately applied, frequently causes the walls to chip, crack, and become mottled. Mortar well tempered and as well seasoned works better and cooler than hastily made new mortar, and invariably gives better satisfaction. Colonel Gilmore, quoting from Vicat, and apparently indorsing the statement, says: "It was supposed, for many years, that the longer lime was slacked before it was used the better mortar it would make. Recent experiments prove, however, that this is not the case with a mixture of fat lime and sand only. Better results are obtained with such mortars if the paste be mixed with the sand as soon as the slaked lime has become cold, and care should be taken to use no more water, in the process of extinction, than may be required to produce a thick pulp."—ED.]

The above extracts are from a new work just published, entitled PLASTER; HOW TO MAKE AND HOW TO USE IT. We will send a copy to any address upon receipt of $1.00.

A WRITER says: "The first boring-tool may be assumed to be an awl of some kind. Pliny states that Dedalus invented the gimlet in 1240 B. C. It was destitute of a screw point, but it may have had a hollow pod, and a cross-head forming a handle. Awls are shown in Egyptian tombs of 1706 and 1490 B. C. The screw point was added to the gimlet in course of time, and within our own recollection the twisted shank, which makes it self-discharging. The hint was taken from the auger proper, which may be called a magnified gimlet, now that their specific features have become so closely assimilated in form and function. The auger (*terebra*) was a Greek tool.

From the early descriptions the auger seems to have been considered a shipwright's tool. It formerly had a curved sharpened end, and a concavity to hold the chips; this was a pod auger. To this a lip was subsequently added for some kinds of boring, and in course of time the depression grew into a spiral, which allows the chips to escape while the boring proceeds, instead of withdrawing the tool as the pod becomes filled. The twisted auger is the American invention, and was made by Lil ey, of Mansfield, Conn., about the beginning of the present century, and afterward by Gurley, of the same place.

Augers may be classified as augers, annular augers, taper augers, augers with secondary bores, reamers, or countersinks, or having expansive cutters.

COMMUNICATIONS from all parts of the country are greatly desired, and will be highly appreciated. The fullest information possible will be cheerfully given to all parties seeking the same through this office.

THE MEXICAN CALENDAR OR SOLAR STONE.

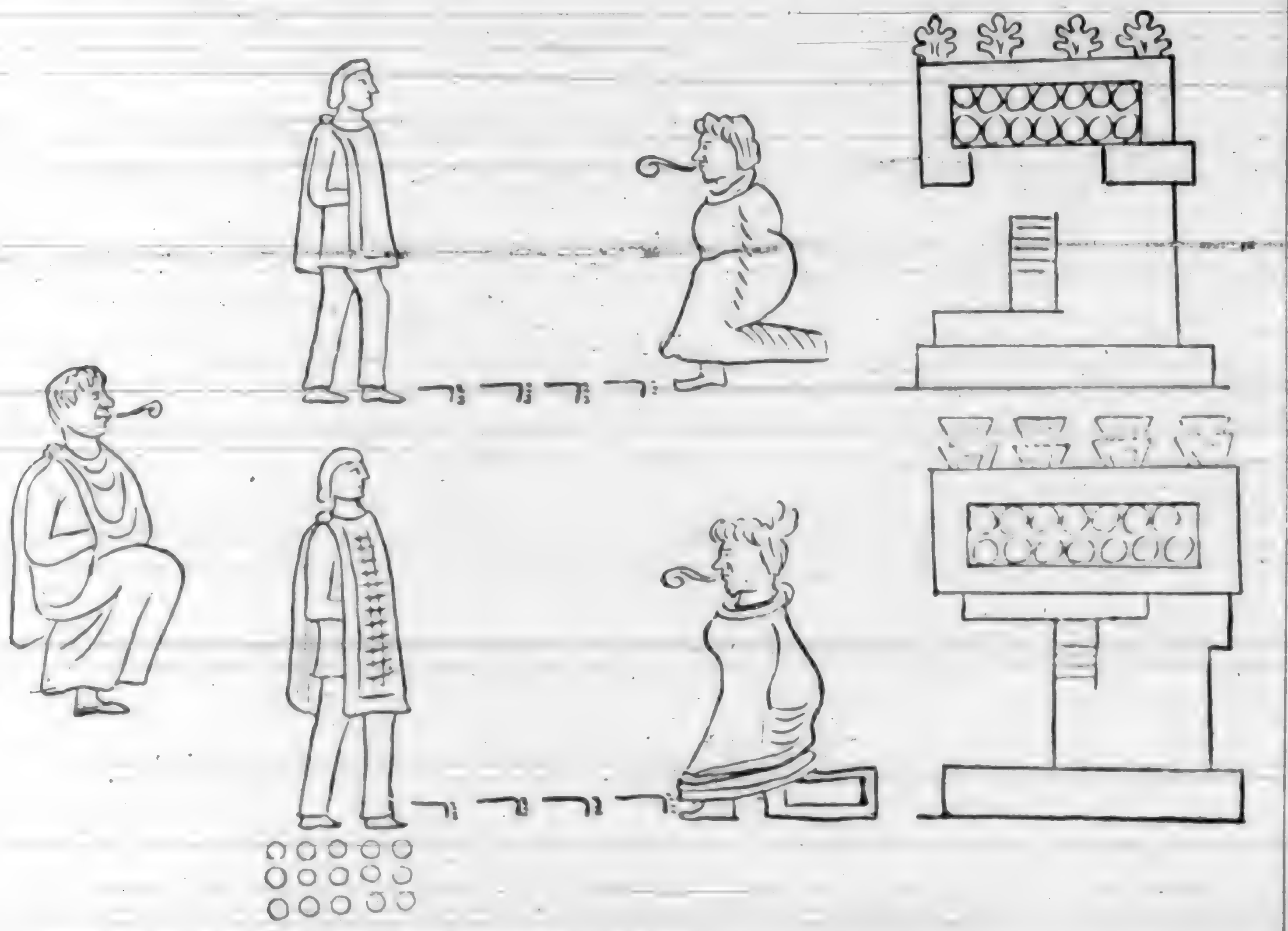
A Lecture Delivered Before the Academy of Sciences and the Geographical Society of the Pacific, on the Nights of the 19th and 27th of November, 1883.

BY EUSEBIUS J. MOLERA.

THE monument bearing the title of this lecture is, on account of the beauty of its design and its size, the greatest and most interesting of Mexican sculptures.

Many Mexican antiquarians have diligently endeavored to solve the mysteries pointed out by the hieroglyphics of this stone, but though a great deal of erudition and research has been shown, the history and meaning of it is yet an unsolved problem.

We shall see to-night that though the theories about the several pictures represented in the stone and their interpretations abound, they are supported only by very controverti-



ble facts. In many instances, starting from a false supposition, the most elaborate conclusions regarding the state of knowledge of the Aztecs are derived. In other cases, after having propounded a pet theory, the facts are twisted by introducing or omitting portions of the hieroglyphics, committing what we might call petty archæological frauds.

The difficulties to decipher Mexican antiquities are, no doubt, very great. In the first place the Mexicans had no phonetic writing, as we use, all their records being kept by picture writing and by tradition. My meaning will be clearer by showing you one of such pictures. The picture here shown is taken from the Vienese collection. We see on the left a man in a stooping position; in the middle two more men standing, and on the right two men stooping. Before the mouths of the stooping men we see a few lines drawn, and under the standing ones fifteen dots or small circles. We also notice on the extreme right of the picture two rectangular figures; the whole of the picture meaning that a man is sending two young men fifteen years old to school, the stooping position indicating the act of bowing or saluting; the lines before the mouth the act of speaking; the lines below, between the middle figures and the left, somewhat similar to footprints, the act of motion, and the rectangular figures on the extreme right the sign *cali* or house, which, with the ornaments, represent school or temple. Finally the fifteen dots under the middle figures represent the age of them.

We can imagine by this sample how difficult it would be to find out *a priori* the meaning of such picture.

The difficulty is increased, inasmuch as though preserving the general characteristics of the delineation of an object, they changed it in all its details. Besides, the same object had different representations, according to the special function that it might perform. We have no truly Mexican chronology; though the history of the Mexican empire scarcely embraces two centuries, we have no fixed dates for any of their events, each writer changing them according to his theories and ideas.

The sources of our information are not authentic, as all the records prior to the conquest were destroyed. The several *codices* made by order of the Spanish Kings and Viceroys, though very valuable and made with all the pains possible, still were made by Indians, who had seen few events of their own history, and had to trust to their information and belief.

The first histories after the conquest were written mostly by priests, who, with their zeal to convert the Indians, exaggerated, no doubt, the atrocities of the aboriginal religion, and by endeavoring to attract the Indians to them exaggerated also the cruelties committed by the military.

It will be conceived, then, that many of the descriptions of the Mexican antiquities are only more or less reasonable theories.

Don Antonio de Leon y Gama, who was an eye-witness when the stone was unearthed, was the first to describe it. He has the merit of having given the first interpretation. He, however, erroneously supposed it to be a calendar, an astronomical instrument, and a sun-dial. Alexander Von Humboldt, Albert Gallatin, Brantz Mayer, and others, have followed Gama. Alfredo Chavero, on a suggestion from Fernando Ramirez, and after him Professor Valentini, have tried to identify this stone with one caused to be built by King Axayacatl. All these authors have made mistakes in their drawings of the stone, and on those mistakes have made most learned dissertations. Gama reverses the position of the sixth figure on the zone of the days of the month. Humboldt, who copied from him, shows a great deal of learning in explaining how this should be the case. Finally, Professor Valentini tells us that the mistake has been made in the tenth instead of the sixth. The zone following the next in Gama has too many elements, and the two last zones are also mistaken, as well as in other parts of his drawing.

The writers following Gama have preserved Gama's mistakes and added others of their own.

Our fellow-townsman, Mr. H. H. Bancroft, with a degree of intrepidity worthy of a better cause, in the description of the stone in his "Native Races of the Pacific Coast," makes this bold assertion: "Gama, Gallatin, Humboldt, Dupaix, and *all* others who have copied from them, do not represent the characters on this stone as they really appear. By a photograph taken by M. Charnay, of which the cut on the next page is a copy, it will be seen that all the figures, days as well as parallelograms, are reversed on the representations given by the above-mentioned authors. That is, the engraver, when making his tracings, did not reverse the figures before drawing them in the stone, an error corrected in the following cut. Therefore, instead of running from right to left, the days really run from left to right."

This statement is at variance with the facts in every particular; in the first place a simple glance at a photograph shows that Mr. Bancroft's cut is wrong, not only by his figures being reversed from right to left, but the skull, for instance, is upside down; and in other parts is at fault. In fact it is a reproduction of the cuts of the authors he names with the additional mistake of reversing it.

Mr. Chavero reproduces Gama's mistake in reversing the skull.

He thinks that the number of days in the year are to be found on the dots close to the sign acatl around the stone, but, being in need of five dots representing the five nemonteni days, he cleverly introduces them in his picture, four on the right and one on the left of the two heads below, though in the stone there are only two on each side.

Professor Valentini's picture, accompanying his description of the calendar stone, contains also several mistakes. The representation of the sun's face is altogether erroneous. He puts a tentetl, or lip-stone, in the under lip, when in reality it is the protruding tongue as in the two heads below. The tongue itself he embellishes with many dots. In the forehead he introduces the name of the sun god Atonatiuh; he sees braided hair in skeins, where only the coarse hair of the Indians is represented, sunken eyes and lineaments of extreme old age where the lines of the god's mask are represented by the artist.

The sign acatl he transforms in tetlaxoni, besides other minor mistakes.

If we consider that in a single dot or small line many times our authors hang very important parts of their interpretations, it will be apparent the importance of giving, first of all, a faithful copy of the monument to be described, and will strike any one that no greater care has been taken in their representations.

The painting before you is a full size representation of the so-called "Mexican Calendar Stone," made by me from an enlarged photograph one-fourth of the full size, and drawings prepared by me in the city of Mexico from the stone itself. I believe it to be the

THE MEXICAN CALENDAR STONE, ONE-TWENTIETH IN SIZE OF ORIGINAL.

only one ever made of that size, and no pains have been spared to make it true in all its details. The original and this copy are eleven feet nine inches in diameter, and the weight of the stone is about twenty-four tons.

I will now proceed to describe the stone, making you acquainted first with that by D. Antonio de Leon y Gama, which is as follows:—

"The Mexican Government, having ordered to level and pave the principal square in Mexico, while digging some of the trenches for the sewers, the stone known as the Mexican Calendar Stone was found very near the surface of the ground, eighty yards to the west of the second door of National Palace and thirty-seven north of the flower market, on the seventeenth day of December, 1790.

Two of the Cathedral Cannons, D. José Uribe and D. Juan Gamboa, commissioners for the building of the cathedral, asked permission to place it in one of the walls of one of the cathedral towers. The permission having been granted by the Viceroy, it was placed in the tower looking west, where it remains to this day.

The principal god worshiped by the Indians was the sun, not only when it shines in its handsomest radiance, but also during eclipses and at night. They represented it in human shape and built splendid temples to it, not only over the famous pyramid at Teotihuacan but in the interior of the principal temple at Mexico, named Quauhxicalco. In Mexico they made many celebrations during the year in its honor, which the King and the nobility attended. The King used to retire for four days into an apartment called Hueyquauhxicalco, or Quauhxicalco, and made penance by fasting and otherwise. During this celebration, which was one of the principal, they sacrificed many captives. This feast was named Netonatiuhqualo, or eclipsed sun, and literally the unfortunate eaten sun (as represented in the picture here shown).

They had many more celebrations, but the biggest was that in honor of its sign Nahui Ollin Tonatiuh, that is the sun in its four motions, accompanied with the via lactea, which they called Citlalinycue or Citlalcueye, which happened in the sixteenth week of thirteen days.

The statue before which the sacrifices were made on the day of Nahui Ollin is the same as the one represented at the center of the stone we are going to describe. It is a monument which contains many of the Mexican epochs, as it points out many of the Mexican celebrations; it was also a pattern which showed the various sun motions in its declination during 260 days of the lunar year, from the equinox to the day that arrived at the Tropic of Cancer and returned to the equinox; that is, the interval spent between the vernal equinox to the autumnal one. It also served as a sundial, by means of which the priests knew the hours they had to perform their ceremonies, by means of sticks or knomons, as we will see later. In this stone it was represented one-half of the yearly solar motion from Aries to Libra, and the diurnal motion from sunrise to sunset.

From what is left of the outer part of the stone, it must have been originally a rectangular parallelopiped. The principal face is square. The wrought part of the stone is not placed at the center of the stone, but a little to the right. The diameter of the circle of the wrought stone is about four yards, and the edge of it nearly coincides with the edge of the stone. It means that there was another stone, which, together with this, represented all the fasts of the Mexican nation.

In the discovery of this stone it is observed the same as it is found in the Roman literature in the six books of Ovide, which contain one-half of the year. The way in which this stone must have been placed is on a horizontal plane, vertically, looking south, with a direction east and west.

The edge of the stone has some ornament without any meaning and about one foot thick, but the figures on the face require an elaborate description, which we are going to give.

At the center of the stone there is seen the sun's picture as represented by the Indian artists. The eight principal beams are the ones represented with the letter R, four of which are over the places which mark the days by fives, and the other four are covered in part by the same divisions. The letter L shows the other eight beams which they also used to ornament the sun's picture, as can be seen in the picture called Tonalamatl. There are also around this circle of divisions little half-circles the same as those over the beams, and they mean the light that surrounds them. To the sun's face join the four squares A, B, C, D, which, together with circles E and F on the sides of the triangle, I on top, and the appendix H at the bottom, form the picture I B E C H D F A, by means of which they represented the sun's motion, and, adding the four numeral characters a, b, c, d, it represents the sign Nahui Ollin Tonatiuh. Inside of each of the four squares is represented one of the signs of the days also marked with the number 4. The one in the square A is the head of a tiger, which, together with the number 4, represents the day Nahui Ocelotle. In the square B is found the hieroglyphic air or wind dedicated to the god Quetsalcohuatl, which was painted at the door or entrance of its temple, and, together with number 4, represents the day Nahui Ehecatl. In the square C is shown with the same number 4 the day Nahui Quiahuitl, with which sign they represented the god Tlalloc, or god of the rain, and finally in the square D is found the hieroglyphic water, which, with the number 4, represents Nahui Atl. It follows that the sun is here represented under the sign and day of the second week of thirteen days of the Tonalamatl, to which corresponds the number 4 and symbol of the solar motion, that is, the day Nahui Ollin, and the signs of the other four squares to the days of the other week of thirteen days in which corresponds the number 4 in the same Tonalamatl, or second calendar. This picture had its origin with the ridiculous fables of the Mexicans about the sun, which they preserved in this picture of Nahui Ollin. According to a manuscript, by D. Fernando Alva Ixtlixuchitl, they believed that the sun had died four times, or that there were four suns which had ended in four ages, and that the fifth sun was the one now shining.

The first sun lasted 676 years, at the end of which, in a year called Acatl, when the sun was at the sign Nahui Ocelotl, men were destroyed from failure of crops, and they were killed and eaten by tigers, which were also finished together with the sun, the destruction lasting thirteen years. The second age ended with the second sun, supposed to be when it was on the sign Nahui Ehecatl, in which, by hurricanes, trees and houses were destroyed, carrying away men, some of whom were converted into monkeys. This destruction happened in the year ce Tecpatl, 364 from the first one on the day Nahui Ehecatl. In another year, named also ce Tecptl, 312 years being elapsed, the third destruction took place, when the sun was at the sign Nahui Quiahuitl, all men were destroyed by fire, and became birds. Finally the fourth destruction happened with the flood, in which all men perished under water, and were converted into fishes. This destruction, they say, was 52 years after the third, in the year called ce Calli, on the day Nahui Atl. The circular figures on either side contain a kind of paws, which refer to the inventors of the Tonatamatl, Cipactonal, and Oxomoco, which were painted in ugly shapes like eagles or owls

The angle I points out the first division of the twenty days of the month which are dedicated to the sun, or the beginning from where they must be counted, as the Indians always counted from right to left, the same as the Hebrews do, and the reverse of our custom.

No. 1 is the first symbol of the year, and is the sign Cipactli, which is represented differently in different calendars, but all agree in a fish with a kind of sword or bone at its nose. No. 2 is Ehecatl. It is the same figure as the one represented in square B, which is named Quebhzalcoatl. No. 3 is a house, Calli, which is also one of the four signs with which they represented the years of the side. No. 4 is a lizard, Cuetzpalin; No. 5 is a snake, Cohuatl; No. 6 is a skull, Miquiztli; No. 7, a head of a deer, Mazatl; No. 8, a rabbit's head, Tochtli, which is also a hieroglyphic of the year; No. 9, water, Atl, which is similar to square D; No. 10, a kind of dog, Itzcuintli; No. 11, a monkey's head, Ozomatli; No. 12, a bended grass, Malinalli; it is the shape of a god of the name Macuilmalinalli; No. 13, a reed, Acatl, which is also one of the signs of the year; No 14 is a tiger's head, Ocelotl, the same as square A; No. 15 is an eagle's head, named Quauhtli; No. 16, another bird's head, named Cozcaquauhtli; No. 17, the motion of the sun, Ollin Tonatiuh, the same as is seen at the center of the circle; No. 18 is Tecpatl or flint, one of the hieroglyphics of the year. No. 19 is Quiahuitl, rain, with the sign they represented Tlalloc, another of their gods, with the same shape as in square C. Finally, No. 20 represents a flower, Xochitl.

There are no numerals inside of these figures, but there are on the circle around them, where can be found 260 corresponding to the twenty weeks of thirteen days of the second calendar or moon's account.

The pointer, which rests on the signs Cipactli and Xoxitl, ends at the outer circle, pointing at the division T, in which there is the symbol Acatl, with thirteen dots, which means that the stone is constructed for the thirteenth year of the fifty-two, but not for the others, as they change on account of losing one day every four years.

The rest of the outer circle represents the milky way, which the Indians called Citlalinycue, a sign which they thought had influence on the sixteenth week of thirteen days of the Tonalamatl, in company with Ollin Tonatiuh, where it is seen similarly represented. The two heads on the lower part of the circle represent the knight of night, named Yohualteuhtli.

I do not know what are the figures around marked with the letter V, though I think they represent clouds. At both sides of the triangle I, are seen two figures marked with K and G. The one with letter G is a flint similar to the one with No. 18, and means the day ce Tecpatl, the beginning of the tenth week of thirteen days of the Tonalamatl, when they had a celebration in honor of the flint, which they called Textecpatl.

The figure M is Ome Ozomatli, or monkey's head. Here follows a very elaborate description of the stone as an astronomical instrument and sun-dial, based on a system of eight sticks or gnomons, which were placed in as many holes placed at equal distances from one another in the stone, around its outer circle. In the stone there are no holes deep enough to support a stick, much less eight of them, and still less equally distant. There has never been found in the ground or elsewhere, or has been any reference made in any author of another stone equal to this, therefore the

astronomical system founded by Gama, which was based on the supposition of the eight gnomons with the two stones, falls to pieces, as well as the glowing accounts of the high attainments of the Indians in practical astronomy.

It is not a calendar; it contains only the circle of the days of the month; but it does not contain the circle of the year nor the circles which they represented as the ones shown herewith.

Señor Alfredo Chavero, perpetual Secretary of the Geographical and Statistical Society in Mexico, is, after Gama, the one who has shown the greatest amount of erudition in describing the Calendar Stone. He has the merit of having proved, on a suggestion from Don Fernando Ramirez (one of the best Mexican antiquarians), the erroneous ideas of Gama and his followers, and that the so-called Calendar Stone was a quauhtxicalli, ded cated to the sun, and upon which war prisoners were slain, and erroneously, in my opinion, supposes to have been wrought under King Axayacatl.

In his Essai on the "Calendario Azteca" he quotes Father Duran, the historian, as follows:—

"The King Axayalacoatl was also busy in working the famous and large stone, very elaborated, where the figures of the months and years, days and weeks, were represented with such detail, worthy to be seen. Such stone many of us saw in the large square near the canal. His grace Alonzo de Montufar, Archbishop of Mexico, ordered the same to be buried on account of the great crimes committed on it, of deaths."

(His. de los Indios de la Nueva España, vol. 1, p. 272.)

Don F. Ramirez appends to this paragraph: "It seems that the stone alluded to is the one called 'Aztec Calendar,' and is now placed in one of the towers of the cathedral."

From the above Mr. Chavero reasons as follows:—

The so-called Calendar Stone is the one now in one of the towers of the cathedral in Mexico. That stone was placed there by order of two canons, as we have seen, being the one found near the canal on the principal square of Mexico on the seventeenth day of December, 1790. According to Duran's description, it is the same stone seen there by himself and others on that spot, and the one caused to be built by King Axayacoatl.

The whole fabric of the argument rests in the assertion of Father Duran that the stone he saw and the one wrought under King Axayacoatl are one and the same.

Mr. Chavero brings forth new quotations in support of his theory, but all from the same author, Duran.

In order to verify the statements of Duran, I have carefully read and compared the statements on the same subject of Sahagun, Clavigero, Critobal del Castillo Torquemada, Ixtlixuchitl, Tezozomoc, and the valuable Codex Ramirez. Though in nearly all these authors the building of the great Cu Teocali, or great temple of Mexico, as well as the stones caused to be elaborated under Kings Moctezuoma the First, and Axayacoatl, are minutely described, yet I have failed in finding the one corresponding with the so-called Mexican Calendar Stone.

In my investigations I have given great weight to the opinions of Mr. Chavero himself, and to those of his associates, Ramirez and Orozcoy Berra. From them I have learned that Duran took substantially all his history from the manuscript "Codice Ramirez." In fact, they say he copied literally in many instances. Chavero says: "I consider this Codex the purest fountain of the history of Mexico, and for that reason I have given it the name of 'Ramirez,' as an acknowledgment of gratitude to the one who preserved it." If the text of Acosta is compared with that of the Codex Ramirez it will be seen that the former copied the latter to the letter. Tezozomoc, though not, strictly speaking, a copyist, followed the same Codex.

These four chronicles, Ramirez, Duran, Acosta, and Tezozomoc, while in reality one and the same, are the only true fountains to write the history of the powerful empire founded by Tenoch and demolished by the last Moctecuzoma (Cronica Mex. by D. H. Alvarado Tezozomoc, precedidada del Codice Ramires, Mexico 1881).

We will now see what these authors say about the stone elaborated under King Axayacoatl.

In the Codes Ramirez fragment No. 1, page 130, the following occurs: "As soon as they arrived in Mexico after the victory, Tlacaellel said to Moctecuzoma to order a stone to the image of the sun, and to name it Quauhxicalli, which means eagle's vase; it was so ordered, so that, at the time of its dedication, the prisoners brought from Cohuaxtlahuacan might be sacrificed. This stone is the one now at the door of the principal church in Mexico, and they say they intend to make a baptismal fount out of it. In this stone the sun is represented in its upper part, and around it the battles that King Moctecuzoma won, viz: Tepeacac, Tochpan, Guaxteca, Cuetlaxtlan, and Cohuayxtlahuacan, all very nicely wrought with other stones, as they had no other instruments."

This stone does not correspond with ours, because though it had the sun's image in its upper part, it was in the shape of a vase, and had the battles above-named wrought around it. Another great stone was elaborated during the reign of Moctecuzoma Second.

Tezozomoc says on the same subject, in page 318, edition quoted above: "Few days after the victory of Cuetlaxtlan and Tochpan, Moctecuzoma decided that, inasmuch as they had so many people from the provinces of Cuetlaxtlan and Tochpan, they might increase and improve the house and temple of Huitzilopochtli, and right there the sacrifice of Huitzilopochtli might take place, by killing the Huestecan prisoners. These after having made the great Cu very high, they built steps to it, and in the middle they put the (tajon) block, where the slaves made in war had to be killed, to commemorate King Chimulpopoca, who had begun it. Cihuacoatl answered, it was well, and the block must not be made of wood, but of stone, with a hole in the middle to put therein the hearts of those who should die on it, after having Huitzilopochtli tasted the blood of them; and that stone should not be built by the Huestecans, but by those of Atzcaputzalco and Cuyuacan, excellent masons, working in the stone the wars of their countries when by you they were subjected to the Mexican Empire. After the stone, or millstone, was finished, they raised it up and placed it in the middle of the large room opposite the principal entrance and of Huitzilopochtli, which was made of stone, and was looking to said stone or wheel, and is the one now in the corner of a house of a son of one of the conquerors, and the sacrificial stone is to-day near the principal church in the city of Mexico." On p 338 we read: "The vase or bowl placed in the great Cu, he called all the vassals, so that they might see the sun's vase, called God Xiuchpilli Cuahhtleehuatl, which we shall try for the first time with the vanquished of Huaxaca." On p. 339: "When the ceremony was ended (the sacrifice of the slaves) one ascended on top of the big house which is the Huitzilopochtli Tlenamalactl, and carried fire in a brasier, and from there a green snake, called Xinheoatli, came down, carried in the arms, and was put in the trough of the hollow stone, called Cuauhxicalli, and there they placed the snake until it was burned and made ashes."

The next time the stones are mentioned is during the King Axayaca. This text is very interesting, as it is the starting point of Prof. Valentine's interpretation of the Aztec Calendar Stone:—

"King Axayaca said to Cihuacoatl a certain day: Father and mauter, I would like very much to repair the round stone which is now used as a brasier and slaughter-trough on top of the house of tetzahuitle Huitzilopochtli, or, if you prefer, to have another made of better workmanship and the one now there may be used in another temple. Cihuacoatl said it was well thought, and immediately caused the neighboring people to be called, viz, those of Atzcaputzalco, Tacuba, Cuyuacan Culhuacan, Cuitlahuac, Chalco, Mizquic, Tezcuco y Huatitlan. About 50,000 Indians gathered together with big ropes and rollers, and went to take a big bowlder at the foot of the great mountain of Cuyuacan. Once brought, they began to work it with flints, strong and sharp, putting the history of the gods, specially Huitzilopochtli; and before they had brought another stone from Ayotzinco, and as they brought it, it fell down on the bridge Xoloco, and never was found again; it may be Huitzilopochtli swallowed it, and thus they brought a bigger one from Cuyuacan. When finished and perfected, Axayaca said to Ilacaleltzin: My father I would like that the stone now on top of the Cu, having been made by my king and mauter Moetecuzoma, be not taken to any other place, but well set, may be placed below the great Cu opposite the house of Huitzilopochtli; and after, said Cihuacoatl: It is also necessary my masters and we, to bring one to build a trough of fine stone that will be used as Cuauhxicalli in the same style, for the blood of the butchered in sacrifice, as it is our present to the honor of our master Huitzilopochtli." P. 409. "They kneeled down before the brasier called Cuauhxicalli."

P. 411. "They came to celebrate the new brasier made Cuauhxicalli of the temple of Huitzilopochtli."

P. 412. "The feast of the butchering of people must be celebrated with great solemnity so that they may see the new temalacatl."

P. 415. "They took them (the prisoners) to the top where Huitzilopochtli was opposite the great temalacatl and the trough called Cuauhxicalli."

P. 416. "They took the heart to the hole of the brasier."

P. 417. "After the guests were gone, Cihuacoatl said: My son you have shown your honor and promise of the temalacatl stone and Cuauhxicalli, stone brasier."

"After finishing the square the walls and pictures of the gods, they hurried the work of the Cuauhxicalli vase, or stone brasier, and in it there was the picture of the sun. Afterward they called the Mexicans, and neighbors, and they raised the great stone or brasier to the top, though the temple was 160 estados high."

P. 516. Speaking of the sacrifice. "They took the hearts of the prisoners and put them into the hole of the stone, called Cuauhxicalli, which had a hole a yard around. This stone is now opposite the principal church" in Mexico.

From what we have read we see that the stones mentioned are:—

1. *Techatl*, which was a block (tajon); it was the common sacrificial stone.

2. *Temalactl*. This was the stone used in the gladiator's sacrifice. It is like a millstone in shape, and had a hole in the middle where the prisoner was tight.

3. *Cuauhxicalli*, from *cuauhtli*, eagle and

xicalli vase, cup. This is the one described so many times; had the sun's image on the top. It had a hollow vase or cup in the middle to receive the blood of the prisoner.

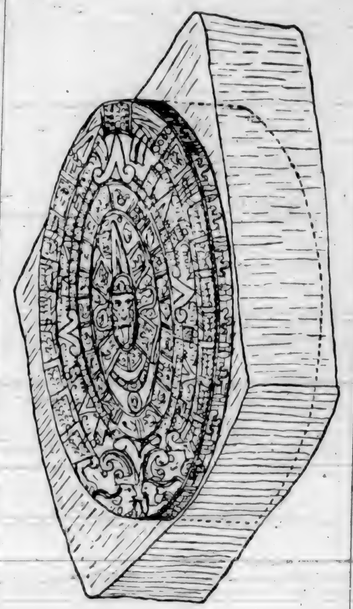
There was another kind of stone like this called:—

Teocuauhxicalli, from Teo, god, and cuauhxicalli. This, according to many authorities, was painted. There is one such stone buried yet in the plaza of the city of Mexico, a description of which was published by Brantz Mayer. Our stone does not correspond to any of the above, nor to any built during the reign of Axayaca, as supposed by Mr. Chavero. He says that our stone is a true cuauhxicalli, but it cannot be, as we have seen that cuauhxicalli are cylindrical in shape, and have a hollow in the middle to receive the blood, and our stone has none. The etymologic of the word says so: *Cuauhtli*, eagle; *xicalli*, vase, cup.

The only text supporting Chavero's theory is Duran, but Chavero himself says that Duran copied from the anonymous author of the "Codex Ramires," and we have seen that this author, as well as Tezozomoc, does not support Duran's statement. On the other hand, Duran's mistake is easily accounted for. He had read on the anonymous manuscript the description of the Cuauhxicalli, where the sun's picture was represented, and having seen in the stone called the Calendar also the sun represented, naturally enough thought it to be the same. But many other stones have been found with the sun represented in them, and as they correspond in other respects to the ones described to have been built during Axayacoatl, we may safely suppose that the one here painted is not Axayacoatl's Cuaxicalli, as supposed by Mr. Chavero. Thisantiquarian has written a very long and elaborated description, showing a degree of erudition hardly equaled by any other exponent of this remarkable monument, but all are theories, supported by few facts.

Prof. Philipe J. J. Valentini, Ph. D., following the ideas of Chavero, has also made a description of this stone. He misquotes Tezozomoc, and from the doctored text of that writer he builds his theory, which is no other than Chavero's. Some of the mistakes he makes in his drawing of the stone we have already shown. I will not detain you with his description, as he does not bring any important facts.

My idea about the so-called Calendar Stone is that it is an *unfinished* stone, similar to the one called the Sacrificial Stone. If you cast your eyes to the two perspective drawings here before you, you will see at a glance the similarity, the only difference being the size and ornamentation. Another reason in support of my theory is that, were not this the case, they most surely would not have carried four times as much stone as they needed, especially when we read of the great trouble in carrying them, which we may easily believe, from the mechanical means at their disposal. Then they intended to use all the stone they carried, and as they used only about nine inches, and it is nearly thirty-six inches thick in my opinion the stone, as intended, was as marked in dotted lines in the perspective drawing.



It may be said that in the sacrificial stone there is an excavation, but about that I will remark that, in the opinion of many, that hollow was made by Vandals, and not Indians; and, supposing it was made by the Indians, we can see it was not made until the stone was finished, and most probably not by the artist, as we see the lines crooked and cut in the figures in a very unsymmetrical way. Then, as our stone was not finished yet, of course they had not made the hollow and gutter. In the histories we find passages in support of my theory, though I don't wish to be understood that I intend to determine the time in which it was built. I will quote them to show that such a stone like the one we speak was built, or, rather, intended to be built, at the time of the last Moctecuzoma and was never finished.

The already-named anonymous author of the "Codex Ramirez" says, p. 77:—

"They say that Moctecuzoma being astonished with the many signs and wonders against his kingdom, decided to bring a very great stone to make sacrifice on it, to pacify the gods. Many people went to get it but it was impossible to move it, breaking all the ropes, etc." Here follows how the stone talked. And when they arrived to the channel at the entrance of this city, it fell down and was lost.

Tezozomoc says on the same subject, p. 662: "Moctecuzoma remembered that in his time he had not made any work to perpetuate his memory. He called Cihuacoatl that he might order to be made for the temple Huitzilopochtli a stone larger two (codos) and higher than that already there. Cihuacoatl called all the masons and stone cutters of the wards of Teopan, Movotlan, Atzacvatco and Cuepopan. He told them that the King ordered them to make a stone like the one on top of the Cu of Huitzilopochtli with the only difference that it should be made larger and taller, and all of you together must go to get it."

P. 665. "When they arrived to the great bridge of Xoloco and in the middle of the bridge, the stone said, 'here and no further,' and after that the bridge broke and many were killed."

Clavigero says, p. 231, London edition, 1787: "In 1509 the war against Xochitepec happened, that State having rebelled. In the year following, Montecuzoma, thinking the altar for the sacrifices too small, and unproportioned to the magnificence of the temple, caused a proper stone of excessive size to be polished and cut, and commanded it to be brought in due form to Mexico. A vast number of people went to drag it along, but in passing a wooden bridge at the entrance of the city it fell, drawing four men, amongst them the priest. The king and the people were a good deal disconcerted, but without giving up the undertaking, they drew the stone with prodigious labor and fatigue out of the water, and brought it to the temple, where it was consecrated with the sacrifice of all the prisoners that had been reserved for this great festival, which was one of the most solemn ever celebrated by the Mexicans."

Another argument has been brought to show that the stone was built under King Axayacatl's reign, and that is the hieroglyphic thirteen acatl on top of the stone corresponding to the year 1479, which, according to some authors, Axayacatl lived; but there are as many authors who state that King Axayacatl was dead and King Tizoczic, who ordered the Cu or great temple to be enlarged and a larger stone to be wrought, died before his projects were accomplished. Then this stone might be one of the unfinished stones of King Tizoczic.

But we have another date written on the sun-face, viz: 2. Acatl, and this date corresponds to the year 1507, which would correspond near enough considering the confused Mexican chronology, to the year in which Montecuzoma the Second ordered the great stone to be wrought. The other date, 13 acatl, would then be the thirteenth day of their first month, Atlacahualco, corresponding to our 10th of March, in which they celebrated the sacrifice of the fattened prisoners.

We see from this that two unfinished stones exist, according to the Mexican chronicles; that under Montecuzoma the Second the largest ever wrought was ordered to be in shape the same as the one on top of the Cu. Ours is the same in shape, excepting that it is not finished, and it is larger, and corresponds therefore to the one ordered by King Montecuzoma the Second.

I have endeavored to give, in a short space of time, a clear idea of the principal theories and interpretations of this monument. I have no doubt that many things have not been presented with the fullness that could have been, and for that I offer as an apology the difficulty of the subject and the limitations of a lecture.

San Francisco, November 19, 1883.

Some materialistic scientists are very fond of quoting the remark of Kant: "Give me matter, and I will explain the formation of a world;" but they omit his other words, "Give me matter only, and I cannot explain the formation of a caterpillar."

Wall supports for clothing: When you drive a nail into a wall, clothes-press, or closet, to hang things on, drive it through a spool up to the head. Select a spool with a hole large enough so that the nail will not split it.

Cracks in Buildings.

The numerous cracks that disfigure that part of plasterers' work which is lathed arise partially, as has been hinted, from the settlement, shrinkage, or contortion of the floor, partition, battening, or cradling, to which the laths are nailed; but sometimes split or damaged laths are used, and at others weak and crooked ones of unequal thickness, that ought to be rejected, are worked in with the rest, and these split and break when nailed overhead where the lathing carries the whole weight of the plaster. In many cases also the laths are much split in the process of lathing, and are often nailed too close together to allow the stuff to insinuate itself and curl behind the laths to form a good clench or key, which is one safeguard against cracked ceilings. Among several causes which contribute towards the impaired appearance of the tops of so many rooms may be mentioned joisting laid at too wide intervals, whereby the laths sag under their burden, and also the folly of fixing and lathing ceiling joists in double or framed floors before the other timbers have settled down and taken their bearings. Then, perhaps, when these dangers have been averted, a quartered partition, that has been wrongly allowed to rest upon the floor, begins to make its weight felt; or, it is found that, after the pricking up coat has been laid, the brandering or counterlathing has been forgotten. In common ceilings sometimes the filling in pieces under the trimmer-arch are too far apart, and often enough the floor is not sufficiently rigid or stiff, even when strutted and tightened with a tension rod, on account of the shrinkage of the joists, to preserve the ceiling formed on its under side from drooping out of the horizontal and cracking, nor from deflecting still more, and shaking and sounding almost like a drum when trampled upon; but of course, notwithstanding what has been said, there are instances of good and substantial floors settling a little without injury to equally good ceilings beneath them. Sometimes cracks owe their commencement to the absence of any key immediately under the joists, where the plaster could not be squeezed through to obtain a hold in consequence of the laths being nailed with too much overlap, it being preferable, nevertheless, to avoid overlaping altogether. There are, however, other conditions depending upon the quality of the plaster itself that have to be satisfied before a ceiling is to be exempt from cracking. The coarse stuff may be partly composed of mold that will cause it to shrink and crack, and the hair may be either deficient in quantity, too short, imperfectly beaten, and worked into the stuff, or it may be dirty or rotten. Even if the sand and hair be both of proper quality, the leak may not have been allowed sufficient time to slime thoroughly before the plaster was required, for workmen cannot be kept waiting, and the consequence is blistering, cracking, and the partial disintegration of the work by the lime blowing. Supposing, however, that the mixture is all that could be desired, that it is evenly spread, hangs together well, is properly scratched or keyed for the floated coat, which also is laid on satisfactorily, there remains the common danger of cracking the ceiling permanently by prematurely applying the setting coat, for unless the other coats are quite dry there will be unequal shrinkage, which must entail cracking. Where cement is used for internal work it is necessary to add a sufficiency of sand to prevent cracking, and to prevent the layers from splitting away from each other it is best to apply it in one coat of equal thickness, taking care to well hand-float the setting coat of neat cement over it before it is too dry, else the face will crack and peel off. Plaster of Paris when mixed with common plaster to make it set more rapidly requires much dexterity in its manipulation to prevent cracks appearing. It would be needless to point to the numerous cracks that are always to be observed somewhere or other about buildings that are externally wrapped up in cement or stucco, particularly near the cornice, parapet and blocking course, or where due care has not been observed in preventing the formation of fissures, in which water has lodged and produced havoc by freezing; and without occupying time by further allusion to the means by which cracking may be avoided in other branches of plasterers' work, it will be an appropriate conclusion to point to the necessity of employing screws with no parsimonious hand in securing enrichments, center-pieces, decorated cornices, and the like heavy kinds of ornamentation, which are sometimes placed profusely overhead, so that there may be as little chance as possible of the cracking proving dangerous as well as unsightly. It is true that the plasterer is hedged in with many troubles to insure a good ceiling, for after having escaped all the dangers briefly adverted to, the joiner by fixing a cupboard front on the chamber floor may crack the coving of the drawing-room cornice, or the gas-fitter in lifting a board to put in a syphon to the gasalier may similarly mar the beauty of the center flower, but this should only open his eyes to the necessity of erring on the side of coherence and strength. It is fortunate, indeed, that so few people are annually injured by falling ceilings, considering how many are cracked and to all appearance ready to fall, as well as the weight of plaster and the momentum it acquires in its descent. In many ill-built houses where the laths are crooked, the plaster, in order to get the ceiling tolerably level, is in some places more than an inch thick, and supposing that a small lump, about three feet super in extent, and which would weigh about twenty-five pounds, were to become detached, it would fall upon a person's head sitting underneath at a vertical distance of only five feet from the hole left in the ceiling with a force which would amount to no less than about 450 pounds.

Before a structure is fit for occupation there are yet other cracks contributed by the bell-hanger, gasfitter, paperhanger, painter, glazier, etc., that would make their appearance. As the nature of many of these will probably occur to the reader, and a detailed account perhaps weary by monotony, it will be sufficient to add that it is as mortifying to the grainer to see his *chef d' ouvre* disfigured by the door panel splitting as it is to the painter to notice the blisters arising from the body of paint he left on the eaves' corbels of unseasoned timber, to become cracked and knocked off in fixing the spouting. The paperhanger observes also that the cracks in the plastering carry his own work with them, and thus it appears that the ramification of responsibility among the trades already noticeable, as between the bricklayer and carpenter, carpenter and plasterer, etc., becomes at last intricate enough to render it exceedingly difficult to lay the fault of any crack at the right door, or, in other words, to establish with anything like certainty the cause of cracks in buildings.—*Building Times.*

Are Apprentices Free When They Are One-and-Twenty?—One of the articles of faith shared alike by generations of masters and apprentices has been that the latter, notwithstanding the length of the term they are bound by their parents or guardians, are legally free the moment they attain their majority. While there are doubtless masters who will be gleeful, there must be a still larger number of apprentices to whom the recent decision in the case of Richardson, Koolman, and Iager, *vs.* Harrison, will be a dreadful blow. As soon as he attained his majority, Master or Mr. Harrison, an apprentice to this well-known firm of electrotypers, chose to absent himself for a time, and on being called to account by his masters, pleaded that being of age, it in itself canceled his indentures. In happy language he further declared that "this trade does not satisfy the appetite of my desire." His masters sued the father for the sum of £120, being the estimated loss of the services of the son until the expiration of the indentures, and what is more, they got it. An application made on behalf of the defendant for a new trial was refused—with costs—by the assistant judge. The decision will affect tens of thousands of apprentices not only in this but in every other handicraft.—*London Printing Trades Journal.*

Chinese Composition.—The Chinese compositor has a merry time while working. One would imagine he was on a six-day go-as-you-please walking match instead of setting type. He cannot sit at the case as our printers do, but must constantly travel from one case to another, as the characters needed are so numerous and they cover so much space that it is impossible to keep them in anything like the room required for the ordinary case. In setting up a piece of copy, the Chinese printer will waltz up and down the room for a few moments, and then go down stairs for a line of lower case. Then he takes the elevator and goes up into the third story after some caps, and then out on the wood-shed after some astonishers. Intelligence in his case is not so much a requisite as being a good pedestrian.

India Ink.

A CHINAMAN named Chen-ki-souen has written a monograph on the famous Chinese ink, more commonly known here as India ink. We find the following interesting extracts, regarding its history and preparation, in the *Deutsche Industrie Zeitung*.

Many articles are found in the extensive literature of China written by their learned men about the paper, ink, and brushes that they use for writing, but unfortunately very little is said about the technology of their inks. It is quite otherwise in the recent book written by Chen-ki-souen, for he describes every stage of its preparation with great accuracy and in detail.

According to our Celestial author, a kind of pigment ink was discovered 2697 to 2597 B. C. It was employed for writing on silk with a bamboo rod. Afterward an ink was prepared from a certain stone (*encre de pierre*), which is still known in China as che-hei. It was not until 260 or 220 B. C. that they began to make an ink from soot or lampblack. The soot was obtained by burning gum lac and pine wood. This ink was made first in round balls and very soon supplanted the stone ink.

For a while the province of Kiang-si appears to have had a monopoly of ink making. Under the dynasty of Tang, in 618 to 905 A. D., there was a special office called an inspector, who had charge of its manufacture. He had to furnish the Chinese court with a certain quantity of this ink annually. Some of the factories seem to have been "royal Chinese" factories. The Emperor Hinan-Tsong (713 to 756 A. D.) founded two universities, to which he sent 336 balls of ink four times a year.

The most celebrated ink factory in China is that of Liting-kouei, who lived in the latter part of the reign of Tang, and is said to have made an excellent article. He made his ink in the shape of a sword or staff, or in round cakes. The test of its authenticity consisted in breaking up the rod and putting the pieces in water; if it remained intact at the end of a month, it was genuine Li-ting-kouei. Since the death of this celebrated man there seems to have been no perceptible advance made in the manufacture of India ink.

In the manufacture of lampblack nearly everything is used that will burn. Besides pine wood we may mention petroleum, oils obtained from different plants, perfumed rice flour, bark of the pomegranate tree, rhinoceros horn, pearls, musk, etc. Nor does fraud seem to have been entirely wanting. According to Chinese authorities, the principal thing is the proper preparation of the lampblack; the best smells like musk, and the addition of musk not only serves to give poor goods the resemblance of fine ones, but really makes it worse.

The binding agent plays the chief part next to the lampblack; ordinary glue and isinglass alone are now used. In old times glue made from the horns of the rhinoceros and of deer was employed.

Good Chinese ink improves with age, and should not be used for a few years after it is made. It is not easy to keep it as it must be protected from moisture. Some persons, in rubbing it up, make circular movements that soon ruin it. It is better to rub it in straight lines back and forth with the least possible pressure.

How Stumps Are Blasted Out.

A CORRESPONDENT of the *Ohio Farmer* gives his experience and some practical directions on this subject, as follows:—

"Last spring I sent to Indiana and hired a man to come and blast our stumps. I paid 42½ cents per pound for the powder, and 15 cents for each stump taken out—he to furnish caps and fuse. The stumps were mostly white and burr oak, from twenty to forty inches in diameter, and had been cut from six to twelve years. Sixty-seven of the worst were taken out at an expense of 68 cents per stump. There were only three or four failures in the whole lot. As they were blown into pieces, it was much less work to pile and burn them than when taken out in the ordinary way.

"I bought material and took out nearly 200 smaller stumps at an expense of about 20 cents each. It took me about ten or fifteen minutes to prepare a blast. I used a two-inch auger on a five-foot shaft for boring under the stump. A crow bar will do in soft ground; those who follow the business use a two and a half inch auger. The charge should be put as nearly under the center of the stump as possible.

"It is not very dangerous to use, as fire will not explode it. The cap is placed in the cartridge, and is connected by a fuse. You light the fuse, which in one or two minutes explodes the cap. The concussion of the cap, which is equal to 500 pounds, explodes the dynamite or Hercules powder. Eight or ten rods is a safe distance if you are facing the stump, or you can easily dodge chunks if any come toward you.

"It will not pay to use it very extensively on green stumps, as it will take from three to eight pounds per stump, and will not give very good satisfaction at that."

The Oil Stone and Its Uses.

TWENTY years ago the oil stone was found only on the joiner's bench, and possibly on that of the machinist, and its sole use was the sharpening of the edges of tools. To-day its use has extended beyond this province of edging tools to that of grinding, reducing, finishing; in fact, invading the limits of the grindstone, emery, rottenstone, tripoli, and reaching almost to rouge. This stone, which is a slate known in science as novaculite—from *novacula*, a razor—is cut and dressed in hundreds of varying forms for differing purposes. In any hardware or mechanic furnishing store it may be found in all manner of shapes under the name of "slips" adapted for sharpening tools of all forms. In dentists' supply stores it may be seen in twenty or more cylindrical and circular forms, and so minute as to be used at a rapid rate of revolution even between the teeth of dental-suffering humanity. Some of these cylinders, ovoids, cones, and edged wheels, are so minute that a pea looks large by their side; yet they are all veritable grindstones.

In the manufacture and finishing of the metals, the oil stone, or novaculite, plays an important part. Our recent exaction as to fits and measures can hardly be filled except by the use of this stone, and it is in demand for truing turned surfaces and planed areas of iron and brass, slowly grinding down the imperfections left by the finish file and the corundum wheel. Recently its powder has largely usurped the place in mechanics' valuation of flour of emery or emery of the higher grades. It is found that a finish "for fit" can be readily obtained by its use in much less time than that by the scraper; and that it does not leave embedded particles of quartz or corundum to keep up a perpetual wear. This material is not strictly an *oil* stone; it can be used with any vehicle, water, benzine, or kerosene oil; it is amenable to all of these. Perhaps its best use is with water, especially when the stone is of the harder sorts, as the Ouachita.—*Scientific American.*

Bent Wood.

A PIECE of timber that has been steamed, whether it is bent or not, has its stiffness increased. It is more brittle than it was before, and for some uses it will not do as well; and yet there is a quality of timber that the steaming process and the kiln-drying process affect very much the same; they both cook the gum in the timber and make it brittle and stiff. There is a grade or class of hickory that is benefited by being steamed or kiln-dried for use as spokes or whiffletrees. There is a kind of hickory that never becomes stiff by a natural process of drying, and one of the desirable qualities of a spoke, rim, or whiffletree is stiffness as well as strength: you take that hickory, and it is the very best we have, and steam it, and it is better suited for these purposes than it was before. It is difficult to tear apart a piece of bent wood; the fibers are interwoven one with the other, and when we come to split the stock open we find that its character is entirely changed.—*The Lumber World.*

IT is a matter of surprise to many that places and sections of country which are entirely unfit for agricultural purposes, are not utilized for tree culture. The black walnut for instance produces a butt fourteen inches in diameter in as many years; it requires no particular attention, makes an elegant tree and offers a desirable shade. No tree valuable for its timber in cabinet uses, will attain anything like the above dimensions in the same length of time; the only exception to this is the black birch.

PATENTS AND INVENTIONS.

List of U. S. Patents for Pacific Coast Inventors.

[From the official list of U. S. Patents in DEWEY & Co's SCIENTIFIC PRESS PATENT AGENCY, 252 Market St., S. F.]

FOR WEEK ENDING NOVEMBER 27, 1883.

289,060.—KEY SEAT CUTTING MACHINE—Geo. W. Bonds, S. F.

289,064.—EXTRACTING PRECIOUS METALS BY LEAD BATHS—Brown & Gates, S. F.

289,217.—GAME TABLE—George Calder, Mill Creek, U. T.

289,079.—PUMP—C. L. Fonts, S. F.

289,245.—DRAWER PULL—F. Frank, Suisun, Cal.

289,094.—SHINGLE SAWING MACHINE—O. C. Hanson, Eureka, Cal.

289,105.—BUILDING FRONT—P. H. Jackson, S. F.

289,107.—SEWER GATE—Samuel Johnson, S. F.

289,108.—SEWER GATE—Samuel Johnson, S. F.

289,268.—ANIMAL TRAP—George W. Jolly, Paraiso, Cal.

289,010.—CELL CASE FOR EGGS—Jos. Lyman, San Jose, Cal.

289,114.—TIRE TIGHTENER—H. B. May, Oregon City, O. n.

289,118.—HARROW, ROLLER, ETC.—J. D. McKinnon, Portland, Ogn.

289,295.—LAYING PAVEMENT—Wm. M. McLane, Los Angeles, Cal.

289,127.—CULTIVATOR—R. K. Nichols, Lower Lake, Cal.

289,128.—CAR BRAKE—Jas. O'Donnell, S. F.

289,134.—DIRT SCRAPER—Jas. Porteous, Fresno, Cal.

289,149.—METALLIC FENCE POST—D. B. Scott, Shingle Springs, Cal.

289,159.—ASH HOIST—John D. Spreckels, S. F.

289,040.—RAILWAY AND CATTLE WATER SUPPLY—C. B. Sykes, Calabasas, A. T.

289,194.—WATER HEATER—J. B. Webster, Los Angeles, Cal.

14,438.—DESIGN FOR BRACELET—R. H. Ahn, S. F.

14,442.—DESIGN FOR WIRE FENCE—G. Hunziker, Cloverdale, Cal.

14,444.—DESIGN FOR CAKE SOAP—Anthony Lucy, S. F.

3,713.—LABEL—N. W. Griswold, Alameda, Cal.

NOTE—Copies of U. S. and Foreign Patents furnished by DEWEY & Co., in the shortest time possible (by telegraph or otherwise) at the lowest rates. All patent business for Pacific Coast Inventors transacted with perfect security and in the shortest possible time.

Should this Journal be received by any subscriber who does not want it or beyond the time they intend to pay for it, let them not fail to write us direct to stop it. We will not knowingly send the paper to any one who does not wish it, but if it is continued, through the failure of the subscriber to notify us to discontinue it, we shall positively demand payment for the time it is sent.

Masons and Builders' Exchange of San Francisco, Room 11, 314 Montgomery St.

BELOW will be found a list of the members composing this Exchange. Boxes are provided for each member, so that architects, owners, or others desiring the services of any particular member, or those having boxes who are not members, and yet whose business is directly connected with that of the Exchange, can readily secure the attendance of the party sought, by leaving a note in the respective boxes.

ROBERT MITCHELL, President, 807 Turk St.,	Box 26.
J. WAGNER, Wagner's Potrero Ave. bet. 22d and 23d Sts.	" 3
CRAWFORD FERRIS, 1723 Eddy St.	" 20
JOS. SMITH, 2635½ Harrison St.	" 36
JOHN MCCARTHY, 2509 Folsom St.	" 7
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GEO. RICHARDSON, 518 Ellis St.	" 39
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JOHN HUGHES, 318 Fremont St.	" 21
J. J. O'CONNER, 648 Minna St.	" 19
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MATT. MCGOWAN, 614 Linden Ave.	" 17
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JOHN DOWNS, 269 Minna St.	" 18
J. HAFF, 516 Kearny St.	" 6
G. D. NAGLE, 427 Montgomery St.	" 24
N. R. TUCKER, 1411 California St.	" 14
S. L. PLEACE, 634 Stevenson St.	" 11
O. E. BRADY, 822 Valencia St.	" 22
THOS. WHITE, 45 Minna St.	" 4
J. J. CROOKS, 1929 Sutter St.	" 9
JOHN COX, 608 Jones St.	" 16
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CON. HOLMES, 726 Hayes St.	" 10
JOHN H. HANIVAN, 1705 Jessie St.	" 15
G. W. KNEEDLER, 1013 Vallejo St.	" 51
B. A. THOMPSON, Oakland	" 25
JOHN MCDERMOTT, 124 10th St.	" 33
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CHAS. CATE & SON	" 58
R. RINGROSE	" 75
J. BENDER	" 73

PARTIES RENTING BOXES IN THE BUILDERS' EXCHANGE.

WARDEN & MCCLURE, Teamsters	Box 30
MCVICKER & ROACH, Stone-cutters	" 8
REMILLARD BRICK CO.	" 23
PAT. BRICK CO.	" 29
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L. E. CLAWSON, Patent Chimneys	" 2
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JOHN KELSO, Grader	" 76
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T. W. PETERSON & Co., Brickmen	" 68
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J. BROWELL, Patent Chimneys	" 71

BUILDING INTELLIGENCE.

SAN FRANCISCO.

Haight, near Octavia. Three-story frame—six flats.
O.—G. G. Burnett.
A.—Wolfe & Son.
C.—H. A. Sheldon.
$11,000.

Post, near Octavia. Two-story and basement frame.
O.—L. Auerbach.
A. Wolfe & Son.
C.—F. Klatt.
$9,000.

Ridley, near Pearl. Two-story frame.
O.—J. E. Youngberg.
A.—Wolfe & Son.
C.—J. Doherty.
$5,000.

Sutter, near Stockton. Additions.
O.—Druids Society.
A.—Wolfe & Son.
C.— — Hock.
$2,500.

Page, near Laguna. Two-story and basement frame.
O.—Mrs. Kennedy.
A.—C. Gedd s.
C.—S. D. Matthews.
$5,500.

724 Union. Additions.
O.— — Hoefen.
C — — Klatt.
$1,000.

Union, near Dupont. Two-story frame.
O.—C. Carrara.
C.—G. Rocco.
$3,000.

Greenwich, near Powell. Repairs.
O —C. Wise.
C.—S. M. Hills.

Greenwich, near Larkin. One-story frame.
O —J. Walsh.
$1,000.

Hyde, near Green. Alterations.
O. Miss K. Adams.
C.—M. Shea.
$2,000.

Vallejo, near Union. Two-story and basement frame.
O.—W. Cluff.
A.—Newsom Bros.
C.—J. Doherty
$10,000.

Webster, nr. Pacific. Two-story and basement frame.
O.—Mrs. Britton
A.—J. C. Pelton.
C.—J. Doherty.
$5,000.

Octavia, corner Pacific. Additions.
O —J. Wigmore.
B —W. Sinon.
$2,500.

Kearny, corner Broadway. Three-story frame.
O.—P. Pettenati.
A.—B. J. Clinch.
C.—W. F. Fitzgerald.
$8,000.

Sacramento, near Davis. Four-story brick.
O.—Deming, Palmer & Co.
A.—T. A. Eisen.
C.—W. B. Krager.
$25,000.

Webster, corner Pacific. Three two-story frames.
O.—Mr. Goodwin.
A.— — Smith.
C.—J. Treadwell.
$13,000.

Washington, corner Polk. Alterations.
O.—J. M. Taylor.
C.—W. Simon.
$12,500.

California, near Octavia. Improvements.
O.—C. De Young.
A.—W. Patton.
C.—R. Smilie.
$15,000.

Commercial, nr. Kearny. Two-story brick.
O.—Mr. May.
C.—F. Grasshoff.
$2,700.

Laguna, corner Ellis. Remodeling.
O.—D. Hunter.
A.—H. T. Bestor.
Day's work.
$15,000.

Stockton, near Lombard. Two-story frame.
O.—G. Rossi.
A.—W. Bayless.
C.—C. Mills.
$3,000.

Valley, cor. Dolores. Two-story frame.
O.—T. H. Downing.
A.—G. A. Bordwell.
$2,500.

Buchanan, near Turk. Two-story frame.
O.—J. Baumeister.
A.—G. E. Voelkel.
C.—H. Thom. Wohrden.
$4,000.

Sutter, corner Webster. Three two-story and basement frames.
O.—B. Schoenwasser.
A.—H. C. Macy.
C.—J. Doherty.
$14,000.

Union, near Mason. One-story and basement frame.
O.—J. Levi.
A.—W. Mooser.
C.—T. W. Kern.
$5,000.

Mission, near Main. Additions.
O.—C. S. Laumeister.
A.—T. A. Eisen.
C.—T. Maxwell.
$2,500.

Mission, nr. Third. Four-story and basement brick.
O.—C. W. Crocker.
A.—Wright & Sanders.
C.—Terrill & Slaven.
$50,000.

Jackson, near Franklin. Two-story and basement frame.
O.—J. M. Johnson.
A.—H. C. Macy.
C.—Mahoney Bros.
$16,000.

Taylor, near Sutter. Two-story and basement frame.
O.—Mrs. Morrell.
A.—A. Pissis.
C.—W. Langstaff.
$4,500.

Eddy, near Leavenworth Additions.
O.—Mrs. Botsford.
A.—Leonard & Son.
C.—J T. O'Brien.
$1,300.

Fifth, x Harrison and Bryant.
O.—Charles Vallet.
A.—A. Laver.
C.—Neal & Grey.
$1,200.

Cliff House. Alterations.
O.—A. Sutro.
A.—A. Laver.
C.— — Crichton.

Mission, x Fifth and Sixth. Improvements.
O.—Thomas Sawyer.
A.—A. Laver.
C.—J. T. O'Brien.
$1,175.

California, corner Mason. City residence.
O.—J. C. Flood.
A.—A. Laver.
C.—For Connecticut brown stone, Mr. Spurr, of New York.

Main, nr. Mission. Three-story frame.
O.—W. F. Buswell.
A.—T. A. Eisen.
C.—T. Maxwell.
$3.000.

Larkin, near Ellis. One-story frame.
O.—Hibernia Bank.
A.—Huerne & Everett.
C.—F. Buckley.
$1,000.

Broadway, cor. Dupont. Two-story frame.
O.—Koch & Apel.
A.—B. E. Henriksen.
C.—G. Krohn.
$7,500.

Folsom, corner Seventh. Two-story frame.
O.—E. Mercier.
A.—T. J. Welsh.
C.—H. Lehous.
$3,500.

Bryant, near Ninth. Two two-story frames.
O. and B.—J. H. Thom. Wohrden.
$5,000.

Shotwell, near Twentieth. Three two-story frames.
O.—G. Edwards.
B.—J. Adams.
$5,000.

Octavia, near Post. Additions.
O.—Monahan.
A.—T. J. Welsh.
C.—J. P. Mackeny.
$2,200.

Eddy, near Webster. Two two-story frame.
O.—Brady & Smith.
A—T. J Welsh.
Days work.
$8,000.

Main, x Market and Mission. Four-story and basement brick.
O.—Louis Taussig.
A.—Schmidt & Havens.
Brickwork.—McGowan & Butler.
Carpenterwork.—Mahoney Bros.
$40,000.

Oak and Buchanan. Two-story frame stable.
O.—W. T. Wenzell.
A.—Schmidt & Havens.
C.—T. Maxwell.
$2,500.

Birch Av., Larkin and Polk.—Five two-story frames.
O.—Mrs. A. Skae.
A.—Schmidt & Havens.
C.—R. Smilie.
$16.000.

Fifteenth, x Noe and Sanchez. Two-story frame.
O.—Chas. Schmidt
A.—Schmidt & Havens.
C.—T. Maxwell.
$4,000.

Twenty-ninth, near Harrison. Two-story frame.
O.—J. Whelan
C.—F. Hogan.
$1,800.

Mission, nr. Fourth. Four-story and basement brick.
O.—H. D. Hanks.
A.—Percy & Hamilton.
C.—J. C. Gibson.
$35,000.

Thirteenth, near Harrison. Additions.
O. and B.—J. S. Wieland.
$1,500.

Folsom, near Sixteenth. Additions.
O.—Enterprise Brewery.
C.—W. F. Hewe.
$3,500.

Channel, nr. Seventeenth. One-story frame.
O.—J. B. Williams.
C.—W. Wickersham.
$2,500.

Dolores, nr. Twenty-ninth. One-story frame.
O.—L. Spott.
C.—Grace & Loftus.
$850.

SAN JOSE.

Stockton Avenue. Two-story frame.
O.—A. B. Miner.
A.—L. Goodrich.
C.—W. S. Boyles.
$6,000.

Third, near St. John. Two-story frame.
O.—F. J. Lacoste.
A.—L. Goodrich.
C.—M. D. Green.
$6,000.

Berryessa. Two-story frame.
O.—School District.
A.—L. Goodrich.
C.—J. S. Selby.
$4,500.

San Pedro, near Market. One-story frame.
O.—J. N. Cora.
A.—A. Vincent.
C.—S. J. Mill Co.
$1,200.

Market, near Santa Clara. Two-story brick.
O.—G. Raggio.
A.—A. Vincent.
C.—S. J. Mill Co.
$3,500.

Julian Avenue. One-story frame.
O.—C. Hellison.
C.—J. Lenzen.
$2,000.

Market, near Santa Clara. Two story brick.
O.—J. S. Lynden.
A.—A. Vincent.
C.—C. Drew.
$2,800.

Vine. One-story frame.
O.—Karl Klein.
C.—J. Lenzen.
$1,700.

Fourth. One-story frame.
O.—M. Glubetuch.
C.—J. Lenzen.
$3,500.

Delmas Avenue. One-story frame.
O.—Van de Castelle.
C.—J. Lenzen.
$3,200.

Stockton Avenue. Two-story frame.
O.—E. C. Singletary.
C.—J. Lenzen.
$18,000.

Market, cor. Bassett. Two-story frame.
O.—Mrs. Morrison.
C.—J. Lenzen.
$6,500.

OAKLAND.

Filbert, near Eighteenth. One-story frame.
O.—R. Murphy.
A.—C. F. Man.
C.—Parrish & Hughes.
$2,200.

Eighteenth, near Grove. One-story frame.
O. and B.—E. Clark.
$1,800.

Telegraph Avenue, nr. Seventeenth. Four one-story frames.
O.—W. Collins.
A.—C. F. Man.
C.—Borden & Milwain.
$6,400.

Linden, corner Sixteenth. Two-story and basement frame.
O.— —Campbell.
C.—J. E. Hanna.
$5,500.

Myrtle. near First. One-story frame.
O.—Mitchell & Co.
$1,600.

Pine, corner Taylor. Four one-story frames.
O. and B.—P. Svenson.
$5,500.

Tenth, cor. Kirkham. Alterations.
O.—J. N. Harris.
$1,000.

Chestnut, nr. Fourteenth. One-story frame.
O.—G. T. Leone.
C.—M. R. Turner.
$1,800.

Twelfth, corner Chestnut. Two one-story frames.
O.—Mr. Crocker.
C.—M. R. Turner.
$3,600.

Seventh, near Chestnut. Two-story frame.
O.—P. Gibbons.
C.—J. Coveney.
$2,000.

Second, near Castro. One-story frame.
O.—J. P. Mill Co.
$1,000.

MISCELLANEOUS.

Alameda. Encinal Avenue, near Chestnut. One-story frame; O. and B., H. C. Brown; $1,600.

Woodland One-story frame; O., J. D. Lauson; C., Wm. Carson; $2,500. One-story frame. O., H. P. Eakle; $1,500.

Cacheville. Two-story frame; O., Geo. Greene; C., G. K. Glenn; $2,500.

Fresno. Two-story frame; O., C. Hutchinson; A., H. T. Bestor; $3,000.

Brooklyn. Highland Park; two-story frame; O., W. J. Stuart; A., W. G. Copeland; C., — Brown; $3.000.

Petaluma. Two-story frame; O., Rodd & Kiel; A., T. J. Welsh; C., J. F. Cleary. $4,500.

Mission San Jose. Additions to Church; A., T. J. Welsh; C., — Binet; $2,900.

MARKET REPORTS.

LUMBER—*Pine*

Common Rough, up to 40 feet, per M feet				$22 50
"	41 to 50	"	"	23 50
"	51 to 60	"	"	24 50
"	61 to 70	"	"	26 50
"	71 to 80	"	"	28 50
Refuse Rough			"	18 50
Common Rough, sized with planer $2 additional on above rates, per M feet.				
No. 1 Flooring, 6 inches and over,			"	33 50
" 4 " and under, and 1¼x4 and 1¼x6				
Flooring and Stepping				40 00
Rough Clear for Flooring, $1 less than above rates.				
Second Quality Flooring and Stepping			per M feet	28 50
Ship Plank, Rough			"	28 50
" Planed 1 side			"	32 50
" " 2 sides			"	35 00
Deck Plank, Rough			"	33 50
" Dressed			"	37 50
Laths			per M	3 75
Wool Slats			"	10 00
Shakes			"	12 00
Redwood Posts			per piece	17 50

Redwood.

Rough Merchantable	per M feet	$22	50
" Refuse	"	18	50
Surface No. 1	"	40	00
" 1x6	"	37	50
No. 2	"	27	50
Rustic, No. 1, 1x8	"	37	50
" No. 1, 1x10	"	40	00
" No. 2,	"	35	00
" Under 10 feet	"	35	00
T. & G., 1¼x4 and 1¼x6	"	40	00
" 6 in. 12 ft. and over	"	37	50
" " 7 to 11 feet	"	32	50
" " under 7 feet	"	30	00
" " No. 2	"	30	00
T. & G., Beaded, 12 feet and over	"	40	00
" " 7 to 11 feet	"	32	50
" " under 7 feet	"	30	00
Half-inch Surface	"	32	50
Pickets, fancy	"	30	00
" Rough, Pointed	"	20	00
" " Square	"	17	50
Siding, ½ inch	"	27	50
Shingles	per M	2	50
Battens, ½ inch, lineal feet	"		1c

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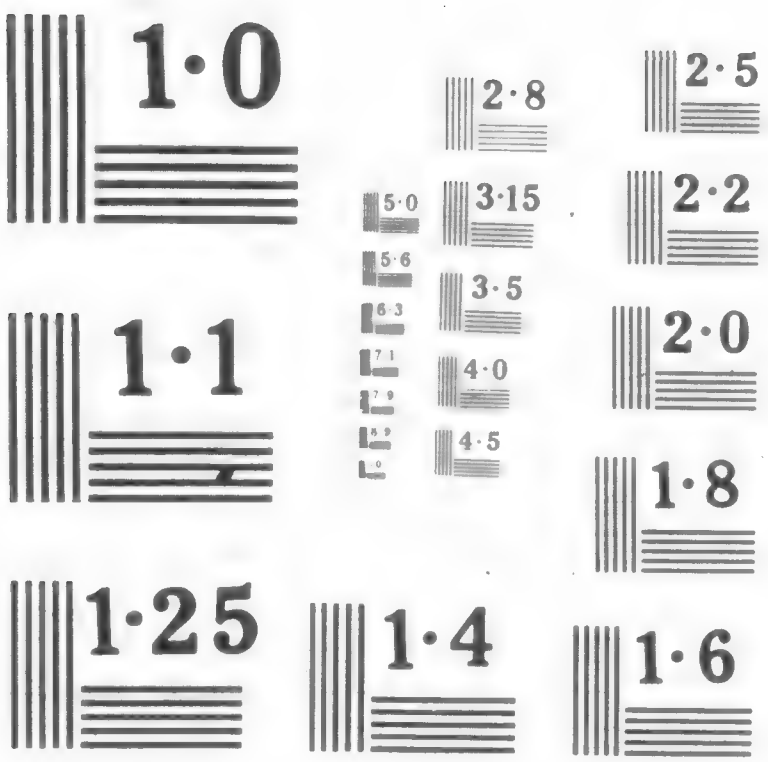

REEL NO: 2

TITLE THE CALIFORNIA ARCHITECT AND BUILDING NEWS
FORMERLY THE CALIFORNIA ARCHITECT AND

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FORMERLY THE QUARTERLY ARCHITECTURAL REVIEW

VOLUMES 5 - 8

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AUTHOR

VOLUME V

DATE 1884

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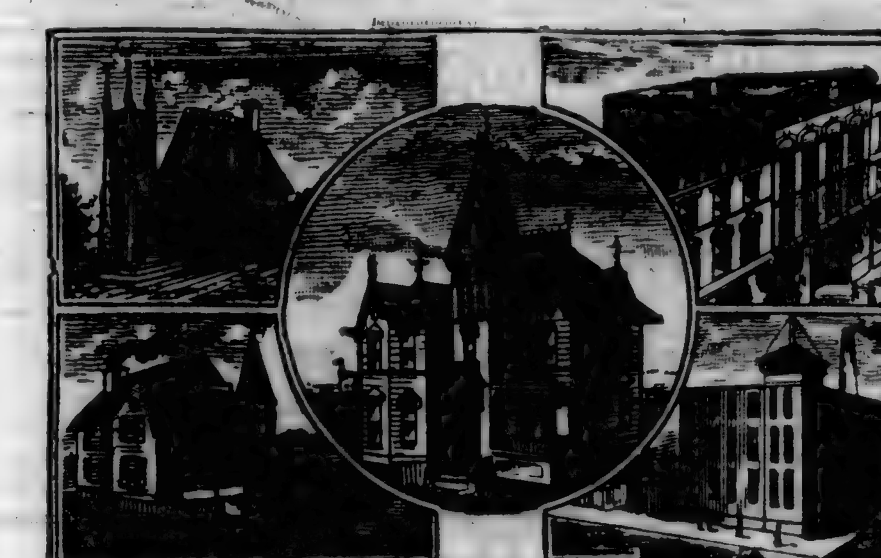
The California Architect and Building News.

VOLUME V. NUMBER 1. SAN FRANCISCO, JANUARY, 1884. $2.00 per Annum, in Advance. Single Copies, 20 Cents.

THE
California Architect



AND
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ENTERED AT POST-OFFICE AS SECOND CLASS MATTER.

Our Fifth Volume.

WITH this issue we present the first number of Volume 5 of this journal. We are well pleased with the encouragement received during the year, and that the general public may know the extent of the good-will manifested towards us by those interested in the different branches of the building interests, we will say that, during the year just closed, we have added to our subscription list

EIGHT HUNDRED AND NINETY-THREE

new subscribers.

The mammoth supplement issued last September had much to do with this large increase. We distributed

FIFTY-TWO THOUSAND

Of that issue, and are more than pleased with the result. Such was the favor with which it was received, and the encouragement offered so large that we will, in the near future, print supplement No. 3, and will positively guarantee an issue of

ONE HUNDRED THOUSAND COPIES.

Eastern advertisers will do well to inquire of us in regard to space, as our past experience has proved that it is but little trouble to fill up all the room we can spare for advertisements, because those favoring us feel assured that the number of copies are printed that we promise.

Our Competition.

WE are well pleased at receiving so many letters from architects all over the country inquiring in regard to the COMPETITION announced in our last and present issue. For the benefit of many inquirers, we would say that it is not confined to the architects of this coast, but is open to all. The professional standing of the gentlemen composing the committee on the awarding of premiums is such that there can be no question upon the result of their decision being strictly just to the various competitors.

Every architect in the State should insert his professional card in our columns, and thereby prove that he is endeavoring to assist in building up an architectural journal that will take rank with any printed. The charge is small. We want the influence your names will give, and we promise to spare no efforts in making the "California Architect" fully represent the views of a majority of the Profession on this Coast.

Business Prosperities.

BUT few if any year in the history of California as a State, has closed more satisfactorily, in a comprehensive sense, to the people of the State, than 1883; and seldom, if ever, have the prospects for the year to come presented brighter and more cheering indications for the future. In all directions, in all lines of trade and commerce, in all mechanical, manufacturing, and labor spheres and circles, there has been a large degree of substantial successes; and the dawn of 1884, and the indications for the year are full of encouragement that the current twelve months will yield their full quota of good things to all classes.

While there have been a few individual failures and non-successes in business, there are but very few of the entire inhabitants of the Pacific Coast who are not able at the present time to make a better financial showing than they could one year ago. Nor is this general prosperity confined to any particular class of individuals, but reaches, in respective degree, from the millionaires down through all gradations of business pursuits to the humblest toiler for daily bread. The thrifty and economical mechanics and workers, who, a few years ago, found it difficult to make all ends meet, have, during the past and preceding year, been able to secure comforts, and make considerable advance in the direction of better circumstances, and scarcity against the various adversities to health and fortune, which are possible to come to any one at any moment without warning. There is no better nor more reliable criterion for judgment as to a general state of prosperity among the people of any city or State than that furnished by the building activities. When architects are busy, building contractors full of work, prices of material high, the working forces of skilled and unskilled labor fully employed, it is safe to assert that "times are good" and "everybody doing well." This has been, and is now, the state of the case in California, and it is safe to urge the assertion as a fact, in prospect, that there will be a greater amount of money expended in building operations during the current year than there has been within the twelve months of either of the preceding ten years. The demand for moderate cost tenements, houses, and flats continues, and it matters not what additional number may be erected this year, they are likely to find ready tenants. There is but slight probability that building will be overdone, as the demand has kept full pace with the supply, and still remains unsatisfied.

A Wrong Statement Corrected.

"*San Francisco erected over 2,000 buildings last year, at an aggregate cost of* $11,000,000."

The above wild statement appeared in the local columns of the daily *Examiner*, January 6th. The information is entirely at variance with the facts as given in the columns of this journal, and there is no foundation whatever for the figures quoted. We have in our employ several whose sole duty it is to take cognizance of every new building erected. The values, as given in this journal, are approximately correct. In our December issue we gave the amount of work for 1883 as

803 BUILDINGS OF THE VALUE OF $5,261,689,

And this statement is as nearly correct as careful inquiry and conscientious attention can command. We notice the above merely that mechanics from abroad will not be deceived as to the amount of work in progress, and thus form wrong conclusions in regard to the value of building activities in progress in this city.

Testing Paints Ground in Oil.

A VERY simple test for determining the comparative value of any white paint ground in oil—namely, weigh out say 100 grains of each paint to be compared, add three drops of linseed oil to each, and spread them with a steel spatula on sheets of glass 6x12 inches as nearly as possible in the same manner. Place the samples thus prepared between yourself and the light, and you will have no difficulty in deciding which is most opaque. The sample which has obscured the light the most, or appears the darkest when held between yourself and the light, must have the greatest body or covering capacity.

THE *Architect*, of London, predicts an early revolution of taste in architecture, which, it thinks, may possibly result in a revival of Greek models. It notes decided symptoms of change in public feeling toward the recent craze for mediæval styles, and a decline in the popularity of "the very remarkable furniture fashion which has found its way into a certain ascendency in English architecture, under the name of 'Queen Anne'—more properly Low Dutch, and sometimes very low Dutch indeed." Lord Coleridge, since his return to England, has made public his opinion that the new Gothic law courts are "uncharacteristic, inappropriate and inconvenient," and, as the *Architect* slyly adds, the Lord Mayor has recently, at a Guildhall banquet, quoted Homer in the original, with a display of classic learning unusual in Lord Mayors. There are more substantial signs than these of the declining popularity of prevailing styles, and a growing regard for classic models; and this authority expects that the competitive designs for the new War Department buildings will include many examples based upon the Greek.

Bound volumes now ready. Price, $2.50 each.

San Francisco Chapter of Architects.

OWING to the regular evening for meeting following so closely the holiday season, the Chapter did not meet this month. It is expected that every member will be present at the next meeting. We are pleased to announce that the President has so far recovered from his indisposition as to be able to resume his usual business activities.

Our Exchanges.

WE have made arrangements with the editors of the following journals, by which we are enabled to offer quite a reduction to any one subscribing for any one of them in connection with this journal.

(The figures in parenthesis denote the price of the journals alone.)

CALIFORNIA ARCHITECT AND BUILDING NEWS.

Terms, $2.00 per annum.

With *American Architect* ($6.00), $7.00 per annum.
With *Builder and Wood Worker* ($1.00), $2.50 per annum.
With *Carpentry and Building* ($1.00), $2.50 per annum.
With *American Artisan* ($1.00), $2.50 per annum.
With *Brick, Tile, and Metal Review* ($1.00), $2.50 per annum.
With *Building* ($1.00), $2.50 per annum.
With *North Western Lumberman* ($4.00), $5.00 per annum.
With *Scientific American* ($3.20), $4.50 per annum.
With *Leffels' Mechanical News* ($1.00), $2.50 per annum.
With *Decorator and Furnisher* ($4.00), $5.00 per annum.
With *American Machinist* ($2.50), $4.00 per annum.
With *The Wood Worker* ($1.00), $2.50 per annum.
With *The Builder* ($2.00), $3.50 per annum.
With *American Inventor* ($1.00), $2.50 per annum.
With *Hall's Journal of Health* ($1.00), $2.50 per annum.
With *Cincinnati Building Review* ($1.00), $2.50 per annum.

We will add to the above list from time to time, as our arrangements are perfected with the publishers. We are prepared to furnish any journal printed at the shortest possible notice.

Wheeler's Patent Wood Filler.

WHEN this celebrated preparation was first introduced on this coast, it was recommended to give a perfect finish to hard wood. But by actual experience, it has been found to be equally applicable to redwood, and to the latter it gives a natural and perfect finish, such as is not obtained by the application of any other article. Its effect upon curly redwood is very fine. Such being its qualities, it should be used by every one who desires to have all the finishes of their houses present a smooth and natural finish. This FILLER can be obtained from the various dealers in paints, etc., throughout the city and State.

The "California Architect" is now in the Sixth Year of Publication.

Competition Designs!

ONE HUNDRED AND FIFTY DOLLARS

Cash Premiums!

FOURTH PRIZE,

Box of Drawing Instruments.

In order to promote a general desire to excel among Architects and Draughtsmen in the preparation of drawings for this Journal we have concluded to offer the following premiums for the best 4 designs of a Country Dwelling, the successful plans to be published in the CALIFORNIA ARCHITECT AND BUILDING NEWS.

1st, a Cash Prize of $60.00
2d, " " 50.00
3d, " " 40.00
4th, Box of Drawing Instruments.

Notice to Competitors.

All plans to be in the office of the CALIFORNIA ARCHITECT ON OR BEFORE the 1st of May, 1884.

All plans not accepted will be subject to the order of the owner, and will be returned upon receipt of the necessary postage.

We claim the right to reproduce in this journal all drawings of which honorable mention is made, and yet not entitled to a prize.

A *non de plume* to be used on all drawings; a letter to accompany the latter, addressed with the name used, containing also the real name and address of the contestant. This is done solely that the person's name and residence will not be known until the committee have made the awards.

A scale of ½ inch to the foot to be used.

Detailed estimate of cost to accompany the drawings. QUANTITY and PRICE of each material used to be given, so that allowance can be made for difference of price between the various sections of the East and this Coast.

Drawings are to show front, rear, and side elevations, with plans of the different floors.

The value of the house when finished to be ABOUT FIVE THOUSAND DOLLARS.

This competition is open to Architects in every portion of the United States.

Drawings to be made on card or bristol-board; to be line shaded; NO color but JET BLACK to be used.

All competitors will receive one year's subscription to this journal FREE, that they may see the various plans adopted.

The merits of the various designs will be decided by a committee appointed by the San Francisco Chapter of Architects.

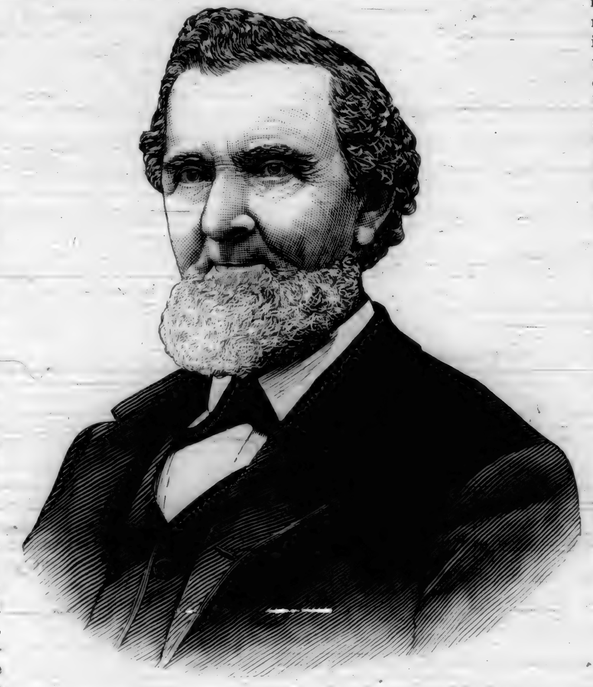
All inquiries in regard to the above will be answered by addressing a letter to the office of this journal, 240 Montgomery St., San Francisco.

WOLFE & SON, Editors and Publishers.

James E. Wolfe.

FOUNDER AND EDITOR OF THE CALIFORNIA ARCHITECT AND BUILDING NEWS.

HAVING completed arrangements which will enable us to produce monthly, two or more faithfully executed, life-like likenesses of the leading architects of the Pacific Coast, we commence our series in present issue with that of the founder, editor in chief, and joint proprietor and publisher of the CALIFORNIA ARCHITECT AND BUILDING NEWS. Our reasons for placing Mr. Wolfe first, is the fact that he was *first* to venture upon the unpromising task of establishing upon the Pacific Coast, a journal devoted to the Architectural, Construction, Sanitary and Kindred Sciences. His editorial work was commenced in 1879—the most discouraging, disastrous and unpropitious period within the history of the Pacific Coast, when all interests, public and private were crushed beneath the Hydra-Headed Monsters—Kearny-izm—Sand Lot-izm—New Constitution-izm etc., etc.,—when thousands of mechanics and others who had not thitherto known what privations and want were, were reduced to a state of actual destitution and suffering;—when the wheels of every clap of mechanical, commercial, manufacturing and other businesses turned slowly or not at all, and cheerful countenances were nowhere seen among the intelligent classes. It was during such times as these when this journal made its first appearance, and it required all the energy, determination, judgment and good management possible in one single individual, to overcome the surrounding difficulties, and bear the struggling waif safely through the terible period to more auspicious times. How well this has been done, aided since 1880 by the junior editor and business manager, the present standing and success of this journal fully attest.



JAMES E. WOLFE.

The subject of this notice arrived in San Francisco July 2, 1851, and therefore enjoys the many advantages of nearly thirty-three years personal experiences in the ups and downs, and exciting scenes of California life. During 1851, he devoted himself to architectural and constructive pursuits, but in 1852 was allured into a disastrous investment in a saw-mill enterprise, then located at the town of old Saucelito, Marin County, which swept away the accumulations,—the result of preceding financial successes. In 1855 he was attracted to the mines of California, and after several years spent in planning and constructing quartz mills in this State, and a sojourn of two years at Victoria, V. I., which was spent in architecture and constructive pursuits, he returned in 1861 to San Francisco since when he has devoted his entire time to the practice of the architectural profession, less part of 1863–64, when, with tens of thousands of others, he was drawn into the terrible vortex of the then *generally* unsuccessful mining enterprises which swept away fortunes—even mortgaged homesteads, jewelry and valuables of every kind, and impoverished perhaps one-half the entire population of this State.

Since 1861, Mr. Wolfe's architectural experiences have been extensive, and many fine edifices attest his qualifications as an architect. With a well preserved advanced age, his numerous friends will doubtless join in hoping that many additional years may be added to those already past, and that the columns of this journal may be made the more interesting by the product of his brain and pen. He is a member of the American Institute of Architects, and takes great interest in its proceedings. He is also one of the oldest practicing architects in the city. Mr. Wolfe was born in the city of Baltimore, Maryland, Nov. 6, 1820.

The Victory Is Ours.

WE have come up through five, and have entered upon our sixth year of publication work, including the quarterly of '79, and with each year have gained in every substantial particular; and as we have run along, we have endeavored to pick up and utilize the lessons and teachings of experience, being well satisfied that we are not yet too old to learn—to the end that we may be able to present to our patrons a journal of standard and increasing merit. This is, and will be, our aim and object, and we renew the pledge of former years, to continue our best efforts in making this—the only California journal of its kind—equal in every essential particular to the best of our Eastern or European contemporaries. We have secured a victory over the many things against which we have been required to contend, and are now well fortified to meet all reasonable probabilities of the future.

Our Advertising Rates.

THEY are published on first page of reading matter, and, unless for large ads, or small ones running a long time, we do not make any reductions. ON AND AFTER THIS ISSUE THE PRICE OF A FULL PAGE ADVERTISEMENT FOR ONE INSERTION WILL BE FORTY DOLLARS. For a longer period special prices will be given. Our large increase in circulation fully justifies us in this step. With improvements constantly being added, and with the aid of our next supplement, we expect and intend to gain at least ONE THOUSAND NEW SUBSCRIBERS this year. Material men will do well to consult us in regard to future contracts, as now is the time to make them, our busy season beginning in April.

A TOOL after it has been forged should be so hardened or tempered that it will never want to come to the fire again until it is so worn down that it requires reforging. This accomplishes two things: First, it saves the time lost in the second hardening; and in the second place, it avoids the damage always done to the cutting power by rehardening without forging.

A LARGE number of cases of diphtheria are reported in West Cleveland. It is supposed that the disease is caused by the stench from offal used as a fertilizer on a farm in that vicinity.

The Old House Altered.

BY A. CURTIS BOND.

With the accumulation of wealth and the assumption, whether understood or not, of the æsthetic and the *recherche*, the disposition is created to branch out and ignore to a considerable extent the humble, or at any rate unpretentious associations of our earlier life. In a degree this is not so strongly marked as it was a very few years ago, and many persons have discovered that the unpretentious may be made quite presentable, and fill the eye of the artist with pleasure, while retaining the delightful memories which do, or should, cling about the familiar objects of the past.

This tendency to tear down and build up again has been more universally shown in architecture, and especially the architecture of country houses, than in any other branch of art. So soon as the new heir acquired possession, he would renovate by removing entirely, and in place of the old-fashioned rambling, comfortable house, there arose a majestic affair of brick or stone or elaborately cut and painted wood. Thus, perhaps not from choice but from an erroneous idea that it is impossible to alter the old house so as to accommodate the new or the increased family, an expense is incurred, and a building is erected that may not possess any of the attractions of the old one. That this may be avoided in the majority of cases I will cite a short chapter in my own experience to show. I do not by any means claim that it is *always* better to re-make the present house in preference to having a new one. I only consider it frequently desirable, how frequently is a question that must be determined by the owner and his architect.

In my sketches I have shown the house as it was when it came into my possession, and as it probably had been ever since it was originally projected. The accommodations were not sufficient for a family of more than two, and in order to make it available for renting, a consideration of no little importance in our part of the country where no one is expected to live in one's own house, it was necessary to enlarge its capacity. Builders, friends of mine, advised me to clear away the property, tear down the cottage and begin all over again. The appearance of the thing was rather unpromising, I admit, and the suggestions of the builders were not entirely without their effect, for I felt very much disposed to do as they would have me. One day, however, I met another friend, an architect, a young man with all the fresh ideas of the nineteenth century about him, combined with a slight touch of the medieval, which latter trait, perhaps, prompted him to discourage my iconoclastic scheme of destruction and urged the renovation of the existing wreck. There were only four small rooms in the entire building, but the architect figured and planned so that he evolved six goodly sized apartments, and in addition a snug bath-room large enough for all the practical uses to which a bath-room is put (see sketch). As the cost of these alterations was certainly one-third what the building of a new house, even on the same unpretentious scale as this one, would be, it was decided to try the experiment. The success of the scheme may be measured by the accompanying illustration, where is shown the old and the new in excellent contrast; the renovated house is by no means elaborate or showy in its appearance, but it is very comfortable, has many pleasing features, rooms that are capable of easy and attractive furnishing and decorating. That the relative conditions of the two places may be judged it might be well to give a short description of both.

The old house had a short hall entered immediately from the front door; from this hall doors led into the dining-room on one side and the parlor on the opposite side; adjoining the parlor was a bed-room having a closet, and off of the dining-room was the kitchen, with a closet built box-fashion in one corner of it. the stairs leading to the attic were an eye-sore in every sense, clumsy, rickety and delapidated: they were boxed off of the dining-room making a very illy shaped room with seven corners; from the kitchen a door lead onto a plain board stoop of three or four steps. Marauding boys had appropriated the outside shutters and made the house a target for their mud balls, so that the paint was hardly discernable, and the weather had united with the boys to make awful havoc.

That was the condition of the building when the architect commenced on it. He began by removing the partition between the parlor and the bed-room directly behind it, making thus one large room which was transformed from the old parlor into a new dining-room. The door which led into the kitchen was left as it had been, and the closet that belonged to the bed-room was utilized for a dining-room pantry; in the rear partition of this pantry a small window or slide was cut, intended to pass through dishes to and from the kitchen. Another pantry similar to this one already built was put at the back of the first one and extended on a line with it into the old dining-room. This second pantry opened by a door into the kitchen, and through the slide or small window communicated with the original pantry, and so with the dining-room. The boxed-in stairs were then removed from the old dining-room and upon the outside of the house, at the side of this room, an extention was built extending to the rear of the house and then following it around until it stopped at the kitchen L. From this extension the stairs which were removed from the old dining-room, are contained and the old dining-room itself becomes square, as is shown. This extention is built out a little over four feet. These stairs from the floor above, turn with a landing and end in the further part of the extension, where is formed a small square hall, having a door at the very foot of the stairs opening onto a back porch, a door opposite the stairs leading into the kitchen and the other side of the square an arch is hung with a handsome *pertice* and discloses the parlor door. The newel post at the foot of the stairs is pretty and effective, and long, narrow windows, having the same rake as the stairs, extend up to the floor above. The end of the extension at the side here is finished out with a slant making a bay-window in the parlor; this bay appears from the interior to contain three windows while in reality there are but two; the third side being a glass door opening to a closet under the stairs. When circumstances seem to warrant, this closet can be converted into a stair leading down into what is now a cellar but which might be made, with very little expense, a basement.

The old closet in the kitchen was removed, the old door changed to a window having beneath it an entrance to the cellar, and a door cut at the rear of the room. Around the entire front and side having the new extension, has been put an attractive piazza, covered and with a balustrade.

The open attic was partitioned off as shown on the plan and an extension built over the kitchen making a nice sewing room with a balcony from the window. Over the extension built for the rear hall is located the bath-room and water-closet, being almost directly over the sink of the kitchen, bringing thus all the water arrangement of the building together and saving considerable in the matter of plumbing bill.

The ceilings and walls were cleaned and covered with white muslin to secure a smooth surface, upon which was laid a neat wall paper with a pretty all-over design, a suitable dado and frieze; the rough board floor was all cleaned off and the floor laid carefully with the following: The boards, being thoroughly cleaned and planed, had the holes and crevices filled with paper putty made by soaking newspaper in a paste made of wheat flour, water, and ground alum, thoroughly mixed. With this same paste then the entire floor was coated uniformly and smoothly, and upon it was laid a thickness of manilla paper, over which another layer of paste was placed and a second thickness of manilla paper put on. This was then allowed to dry perfectly, and finally a thinner layer of paste was applied, over which a layer of fine pattern wall paper was laid and pressed hard. This paper was then sized with a sizing composed of one-half pound of white glue and two quarts of hot water, and when thoroughly dry finished with hard oil and varnished. This gave a floor that was firm and hard and bid fair to be lasting.

In this manner was the old structure made over into a new place. It is neat, tasteful, and inviting, and it has well repaid the investment in the satisfaction given in looking at it. This same result can no doubt be attained by many houseowners, and I hope the experience may be of some value to a portion of my readers, but I would impress upon them that it is necessary in order to bring about this most satisfactory conclusion, to have the aid of an intelligent architect and a conscientious builder.