

Business and Personal.

The Charge for Insertion under this head is \$1 a Line.

Agricultural Implements, Farm Machinery, Seeds, Fertilizers. R. H. Allen & Co., 189 & 191 Water St., N. Y.

For Sale—Large lot second hand Machinists' Tools, cheap. Send for list. I. H. Shearman, 45 Cortlandt Street, New York.

Microscopes, from 50 cts. to \$500, for Scientific investigation and home amusement. Magnifying Glasses, Spy Glasses, Telescopes, and Lenses. Price List free. McAllister, M'f'g Optician, 49 Nassau St., New York.

Flectwood Scroll Saw, with Boring Attachment, for all descriptions of light Scroll Sawing. See adv't. page 285. Trump Bros., Manufacturers, Wilmington, Del.

Priority of Invention legally established; expense, \$3. Send \$1 to E. Redmond, Rochester, N. Y., and learn how.

For Sale—A Surveyor's Transit and Steel Tape. L. R. Burns, Port Chester, New York.

Die Sinker Wanted—Good wages and steady work. Apply at once, Hull & Belden Co., Danbury, Ct.

Headley Portable Steam Engines. Send for Circulars to R. H. Allen & Co., New York, Makers and Dealers in Agricultural Machines.

The best goods are the cheapest in the long run, when wear of machinery and difference in power required are considered. All who have tested E. H. Kellogg's Engine, Spindle, Signal, Cylinder, and Sewing Machine Oils freely acknowledge the fact. Manufactured only by E. H. Kellogg, No. 17 Cedar St., New York.

Wanted—Parties experienced in c-massing, to introduce Hood's Adjustable Brush Handle. See description in this paper. Send 50 cents for sample to Hood & Joseph, Indianapolis, Ind.

"Book-Keeping Simplified." The whole system briefly and clearly explained. Cloth, \$1. Boards, 75 cts. Sent postpaid. Catalogue free. D. B. Waggener & Co., 424 Walnut Street, Philadelphia, Pa.

Codding's Steak Tenderer—Sample by mail, 50c. Agents Wanted. Address Desper Mfg. Co., Barre, Mass.

Our Lightning Screw Plate will do ten times the work of common tools, and do it ten times as well. Wiley & Russell M'f'g Co., Greenfield, Mass.

A complete bedroom earth closet for \$5. Send for pamphlet. Sanitarian M'f'g Co., 41 Courtlandt St., N. Y.

Experienced Engineer, Draughtsman, and Machine Salesman wants a situation. Address Wells, 97 Liberty St., New York.

A Square Business House.—Ever since assuming control of the Journal, we have had dealings with the advertising firm of Geo. P. Rowell & Co., No. 41 Park Row, New York City, and have found them just, upright and honorable gentlemen in every instance; just such men as it is a pleasure for persons wishing to advertise or newspaper men to do business with. We cheerfully recommend them to those wishing to make their wants known through the press.—Rockford (Ill.) Journal.

See Advertisement. A good Manufacturing Business for Sale.

Wanted—50 or 60 Tuns good Linseed Cake. Address, stating price, &c., to J. C., Post Office, Utica, N. Y.

Novelties, Notions, etc., introduced here. Communicate with C. L. Williams & Co., San Francisco, Cal.

Wooden Ware Patent for Sale. 2947 N. Y. P. O.

Hydrant Hose Pipes and Screws, extra quality, very low. Send for prices. Bailey, Farrell & Co., Pittsburgh, Pa.

A Valuable Patent on Saw Mills, just issued; will sell part of the U. S. and the entire Canada right. F. E. Town, 181 Broadway, New York.

American Metaline Co., 61 Warren St., N. Y. City.

For price of small copper boilers to drive small steam engines, address, with dimensions, and enclose stamp to Geo. Parr, Buffalo, N. Y.

Grindstones, 2,000 tuns stock. Mitchell, Phila., Pa.

Lathe Gear Cutters, Wm. P. Hopkins, Lawrence, Ms.

The "Catechism of the Locomotive," a book of 625 pages, 250 engravings, fully describes the theory, construction, and management of American Locomotives. Price, post-paid, \$2.50. Address The Railroad Gazette, 73 Broadway, New York.

For 13, 15, 16 and 18 inch Swing Engine Lathes, address Star Tool Co., Providence, R. I.

Wanted—Machinery for splitting out or riving Pipe Staves 60 inches long, 3 to 5 inches wide, and 1 1/2 inch thick, from White Oak Timber, for the New Orleans market. Address Geo. G. Hughes, Jackson, Tenn.

Mills for Flour & Feed, White Lead, Colors, Ivory Black, Printing Ink, &c. John Ross, Williamsburgh, N. Y.

Telegraph and Electrical Instruments and Batteries, cheap. M. A. Buell, 86 Bank St., Cleveland, O.

Models for Inventors.—H. B. Morris, Ithaca, N. Y.

Three Second Hand Norris Locomotives, 16 tuns each; 4 ft. 8 1/2 inches gauge, for sale by N. O. & C. R. R. Co., New Orleans, La.

See N. F. Burnham's Turbine Water Wheel advertisement, next week, on page 365.

2nd Hand Engines and Boilers for Sale at Low Prices. Address Junius Harris, Titusville, Pa.

Diamonds and Carbon turned and shaped for Scientific purposes; also, Glaziers' Diamonds manufactured and reset by J. Dickinson, 61 Nassau Street, N. Y.

The "Lehigh" Emery Wheel. A new patent. Address Lehigh Valley Emery Wheel Co., Weissport, Pa.

Agents.—100 men wanted; \$10 daily, or salary-selling our new goods. Novelty Co., 300 Broadway, N. Y.

Thomas's Fluid Tannate of Soda never fails to remove Scale from any Steam boiler; it removes the scale-producing material from all kinds of water; cannot injure boiler, as it has no effect on iron; saves 20 times its cost both in fuel and repairs of boiler; increases steaming capacity of boiler; has been tested in hundreds of boilers; has removed Bushels of Scales in single cases. It is in Barrels 50 lb., 1/2 Bbls. 250 lb., 3/4 Bbls. 125 lb. Price 10 cents per lb., less than 1/2 price of other preparations, and superior to all others. Address orders to N. Spencer Thomas, Elmira, N. Y.

For Tri-nitro-glycerin, Mica Blasting Powder, Electric Batteries, Electric Fuses, Exploders, Gutta Percha Insulated Leading Wires, etc., etc., result of seven years' experience at Hoosac Tunnel, address Geo. M. Mowbray, North Adams, Mass.

Genuine Concord Axles—Brown, Fisherville, N. H.

Price only \$3.50.—The Tom Thumb Electric Telegraph. A compact working Telegraph Apparatus, for sending messages, making magnets, the electric light, giving alarms, and various other purposes. Can be put in operation by any lad. Includes battery, key, and wires. Neatly packed and sent to all parts of the world on receipt of price. F. C. Beach & Co., 246 Canal St., New York.

Peck's Patent Drop Press. Still the best in use. Address Milo Peck, New Haven, Conn.

The "Scientific American" Office, New York, is fitted with the Miniature Electric Telegraph. By touching little buttons on the desks of the managers signals are sent to persons in the various departments of the establishment. Cheap and effective. Splendid for shops, offices, dwellings. Works for any distance. Price \$6, with good Battery. F. C. Beach & Co., 246 Canal St., New York, Makers. Send for free illustrated Catalogue

Small Tools and Gear Wheels for Models. List free. Goodnow & Wightman, 23 Cornhill, Boston, Mass.

Hotchkiss Air Spring Forge Hammer, best in the market. Prices low. D. Frisbie & Co., New Haven, Ct.

For Solid Wrought-iron Beams, etc., see advertisement. Address Union Iron Mills, Pittsburgh, Pa. for lithograph, &c.

Spinning Rings of a Superior Quality—Whitinsville Spinning Ring Co., Whitinsville, Mass.

All Fruit-can Tools, Ferracute Wk's, Bridgton, N. J.

For best Presses, Dies, and Fruit Can Tools, Bliss & Williams, cor. of Plymouth and Jay, Brooklyn, N. Y.

Mechanical Expert in Patent Cases. T. D. Stetson, 22 Murray St., New York.

For Solid Emery Wheels and Machinery, send to the Union Stone Co., Boston, Mass., for circular.

Faught's Patent Round Braided Belting—The best thing out—Manufactured only by C. W. Arny, 301 & 303 Cherry St., Philadelphia, Pa. Send for Circular.

Hydraulic Presses and Jacks, new and second hand. Lathes and Machinery for Polishing and Buffing Metals. E. Lyon, 470 Grand Street New York.

The Lester Oil Co., 183 Water St., N. Y., Exclusive Manufacturers of the renowned Synovial Lubricating Oil. The most perfect and economical lubricant in existence. Send for Circular.

Temples and Oilcans. Draper, Hopedale, Mass.

Notes & Queries

A. L. B. will find a recipe for cement for grindstones on p. 251, vol. 31.—A. K. can temper millpicks by the process described on p. 202, vol. 31.—D. F. B. will find a description of silicate of soda on p. 225, vol. 23.—A. N. can destroy the trunks of trees by the method given on p. 219, vol. 31.—F. B. will find directions for preparing gun cotton on p. 282, vol. 31.—R. J. can proportion cone pulleys by the rule given on p. 180, vol. 26.

(1) A. asks: Can I study chemistry without a knowledge of Latin? A. Yes.

(2) F. F. asks: What will whiten a person's skin? A. We do not know of anything that we can recommend for this purpose.

(3) A. S. asks: How can I take wrinkles out of parchment paper? A. Moisten it with water and place in a book under pressure.

I have a brass watch which has been quicksilvered. The silver comes off and leaves a nasty gray color. Can you tell me how to silver it? A. The best method would be to detach the case and subject it to a sufficiently high temperature to vaporize the mercury. You had better electroplate the case with silver. See p. 299, vol. 31.

(4) L. F. H. asks: In the substance of the cerebrum, beneath the folding of the gray matter, are various divisions and subdivisions. What special uses do they perform? A. Consult Dalton's "Physiology."

(5) A. N. W. asks: 1. What would be the cost of a Grove electric battery, consisting of 40 cells? A. \$80. 2. To make the above would cast iron cells do as well as earthenware? A. No. Use glass. 3. Would tin answer? A. No. 4. What cheap material will do for inside porous cells? A. Clay cells. 5. What are the proper dimensions for a single cell? A. Four inches high by 3 1/2 wide. 6. Is the U the proper shape for the amalgamated zinc? A. W will answer. 7. Is 1 plate of platinum inside the porous cell? A. Yes. 8. How is the zinc fastened to the cell and in the battery? Is zinc joined to zinc, and platinum to platinum, or zinc to platinum? A. The zinc of one cell is joined to the platinum of the next. 9. Can you recommend any good practical handbook on electricity? A. Yes, Ferguson's.

(6) W. Y. T. asks: I have seen it reported that cryolite has been discovered in Nevada. Is this so? A. It is probable that, if the report were true, a specimen would have been forwarded to us for examination. We have glauberite, salt, gaurussite, borax, saltpeter, sulphur, and crytomorphite from these localities, but no cryolite.

(7) S. A. T. asks: How can I dye the enclosed sample of yellow leather black? A. Steep the leather for a short time in a strong solution of copperas (sulphate of iron) in water.

Please give me a recipe for making stick pomatum, perfumed. A. This pomade is generally composed of mutton suet, but is sometimes made of hard body, to which is added in summer 1 oz. wax for every lb. body. Lard body can also be used, but the proportion of wax must be increased. In its preparation, always melt the least fusible body first. In molding, care must be taken not to run the pomade while too hot, as cavities will occur in the center, rendering the sticks liable to break. To perfume, the usual odors are, 1 lb. pomade, essence bergamot, lavender, thyme, orange peel, of each 1 drachm. Color with annatto.

Please give me a recipe for a waterproof cement with which I can join canvas. A. Place in a wide-mouthed bottle a number of pieces of gum rubber, and pour over them a quantity of bisulphide of carbon. Close the bottle, and allow it to stand for some time, until the rubber has all gone into solution; then add to this an equal quantity of a solution of rosin (colophony), in spirits of turpentine. Allow to evaporate in the open air until of the desired consistence.

How can I soften brushes which have become hard with paint? A. Place them in turpentine for a short time.

How can I make marine glue? A. Cut 3 parts india rubber into small pieces, and dissolve it, by

heat and agitation, in 34 parts of naphtha, chloroform, or benzine; add to this 65 parts powdered shellac, and heat the whole with constant stirring until the shellac is dissolved, then pour it while hot on metal plates, to form sheets. When used, it must be heated to 248° Fah., and applied with a brush.

Can a kettle lined with porcelain be repaired in any way? The lining is burnt. A. It would be necessary to have the whole interior cleaned and re-enameled. See p. 137, vol. 27.

(8) C. D. C. asks: What is the effect of buckwheat on the blood? Does it drive the impurity of the blood to the outside, or does it make the blood more impure and, by reason of excess, cause impurities to come to the surface? A. The harm is not due to any injurious ingredient in buckwheat. It is to be ascribed to the large amounts of butter and fatty matters eaten at the same time.

(9) J. O. A. Y. says: A friend of mine and myself had a dispute as to polar or magnetic attraction. He said the needle of the surveyor's compass in all latitudes pointed to the true north. I maintain that the needle only points true north in two places. Which is right? A. The declination of the needle is very different in different places; in some places it is 10°, 20°, 30°, and even 90°, west of the true meridian, and in other places it varies as much to the east.

(10) L. P. C. asks: 1. Is metallic lead useful for precipitating quicksilver from a solution of bichloride of mercury? A. No. 2. If sulphuric acid be poured into a solution of bichloride of mercury, would it cause the precipitation of an insoluble salt of mercury, such as sulphate of mercury? A. Yes.

(11) H. L. C. asks: 1. If I make two magnets, 2 1/2 inches long with 1/2 inch cores, and wind one with No. 22 wire until it is 1/2 inch deep, and wind the other to the same depth with No. 14 wire, which will hold the heaviest weight? A. The latter. 2. If I make the cores 1 inch in diameter and use the same length of wire, will they hold more than before? A. No. 3. If two pairs of magnets of the same kind be put in the same circuit, will the two pairs hold more than one pair, or does the extra length of wire diminish the power of one pair in proportion to what is gained by the other? A. The maximum magnetic effect is produced when the resistance of the coils of the magnet equals that of the battery.

(12) L. R. K. asks: How can I crystallize grass? A. Dry the leaves, steep in a strong solution of alum for a few minutes, and dry again.

(13) C. P. W. asks: 1. Is it because electricity accumulates on the surface of bodies that lightning rods are made flanged, so as to expose more surface? A. Yes. 2. Are the inclosed specimens copper pyrites? A. Yes, twin crystals. 3. Please explain why has a man, born in the year 1800 and now living, not lived in both the eighteenth and nineteenth centuries? A. He has. A previous answer on this subject was an error.

(14) S. H. L. says: We have a telegraph line of galvanized iron wire, about 2,200 feet long. We use four Morse sounders. How many Callaud jars, 4 1/2 x 7 inches, would it take to run such a line? A. Ten.

(15) T. A. J. asks: Why will sulphuric acid become frozen? I got some a few days ago and placed the bottle in the cellar. It was not very cold, but the bottle cracked by the acid being frozen into a crystal mass. A. The phenomenon was probable due to the acid in question being quite dilute or very concentrated. If the former, there is nothing remarkable in its freezing, as strong oil of vitriol freezes at -15° Fah. The most concentrated sulphuric acid, when exposed to a temperature of 32° Fah., crystallizes and remains solid even at a temperature of 45°. When the fuming acid of Nordhausen is exposed to a low temperature, a crystalline substance separates, which is a hydrate containing one half as much water as the common liquid acid.

1. I made a battery cell according to the directions on p. 132, vol. 32. Which is the positive pole? A. The wire leading from the plate at the bottom of the jar is the positive pole of the battery. 2. Can I connect this cell to a Smee cell in silverplating, to make more current? A. Yes; connect the positive pole of this battery with the zinc of the Smee cell. 3. I have a nickel solution; and the anode will not dissolve and go on the work to be plated. Is the solution too weak, or is the battery too weak? A. Probably the former.

(16) S. asks: Is the so-called aerated bread (made light with a gas generated from nitric acid and marble dust) injurious to health? A. It has been used in vast quantities, and has always been found wholesome. It is not as palatable to many as good fermented bread.

(17) H. M. says: A young man has lately experimented on vulcanized rubber (old shoes, etc.), and has obtained (by the action of certain re-agents) several substances of different colors. I send you samples of five of those colors. What do you think about them? A. May not the colors be due to the substances put in, and not to the bodies gotten out by the various reagents? For example, the brilliant yellow color on examination proved to be chromate of lead, which certainly does not exist in old rubber shoes.

(18) H. B. asks: 1. Are the ashes of coal of any value for manure? A. Coal ashes are not of great benefit as fertilizers. 2. Will they do for walks in gardens, if put on 2 or 3 inches thick? A. They are used extensively for this purpose. See p. 50, vol. 32.

(19) F. S. asks: 1. I hear that bichromate of potash added to glue would render it insoluble in water. I see (on p. 272, vol. 32) that bichromate applied to gelatinous films and exposed to light makes them insoluble. Is it bichromate of potash?

A. Yes. 2. What proportion should be mixed with glue? A. The plates are flooded evenly with gelatin and allowed to dry. They are then placed in a bath consisting of an aqueous solution of bichromate of potash, which combines with the gelatin. The film so changed, on exposure to light, is rendered insoluble.

(20) J. O. B. asks: Which is the better conductor of sound, wood or glass? A. Glass. 2. Would glass conduct sound better when resting upon glass? A. Probably. As to your other question, consult some good work on the subject.

(21) L. T. S. asks: Is it as good to soak or boil green timber in hot coal tar as to kiln-dry the timber and then coat it with the same? The timber is to be used just beneath the surface of the ground. What is the ordinary increase in durability of pine timber when prepared with coal tar? A. The decay of the timber is due to a fermentation and putrefaction which take place in the sap, and this liquid portion is gotten rid of in kiln-drying, and its place occupied in part by the tar. If retained, it is difficult to prevent the decay from going on. No definite time is given, authorities say simply: "Much more durable."

(22) F. A. says: You state that wood ashes are good to scatter over the ground about fruit trees. Would an admixture of coal or coke ashes be deleterious? A. The benefit of using wood ashes is due to the large percentage of potash which they contain; and as this is present only in minute quantities in coal ashes, the latter would not be of much service as fertilizers.

(23) C. S. F. asks: Can you give me a recipe for the cure of moles and freckles? A. Corrosive sublimate 5 grains, muriatic acid 30 drops, lump sugar 1 oz., alcohol 2 ozs., rose water 7 ozs. Agitate together till all is dissolved. Apply night and morning.

You state that coffins can be made of papier maché made waterproof with asphaltum. Why cannot this preparation be put on wood placed underground or in the water, to prevent rot? A. It has long been used for this purpose.

(24) D. L. B. asks: What is good for sticking leather together? A. Melt together in an iron pot equal parts of pitch and india rubber.

What kind of cement will do to take a mold from type, which will bear heating to 200° Fah.? I want to make rubber stamps. A. Plaster of Paris.

(25) J. M. L. asks: 1. How can I procure pure tin from the ordinary block tin? A. Ordinary block tin is nearly pure tin. It may be still further refined by melting and briskly agitating for some time, and afterwards allowing it to remain quiet for several hours, first having skimmed off any impurities on the surface. The upper part of the melted metal may then be run off into iron molds and considered as refined tin, most of the impurities having been left behind in the lower portions of the pot. 2. Of what is type metal composed? A. Type metal is an alloy of lead, with one third or one fourth of its weight of antimony. 3. What alloy melts at the lowest temperature? A. Newton's fusible alloy is composed of 2 parts bismuth, 1 of lead, and 1 of tin, and melts at 201° Fah., so that it liquefies readily in boiling water.

(26) P. J. S. asks: How can I dissolve silicate of soda in large quantities? A. It may be readily dissolved by boiling in water for some time.

(27) W. R. G. asks: By what process can oxygen gas be obtained, and put in a tank or vessel so that it can be taken by inhalation? A. Oxygen is obtained for this purpose as described in answer to J. H. L., p. 218, vol. 32, the only difference being the addition of a small quantity of caustic potash to the water in the wash bottle, to remove all traces of chlorine and carbonic acid. In charging the tanks, an ordinary steam gage is attached to the connection; and by means of an air pump, the gas is forced into the tank until the gage indicates a pressure of about 240 lbs. The screw valve is then closed, and the reservoir is ready for use.

(28) E. L. asks: What is the best way to kill a bird or other animal preparatory to stuffing it? A. Use chloroform.

(29) C. S. F. asks: Can any fluid be solidified, so as to withstand a great amount of heat? A. Boil a quantity of silicate of soda (water glass) in water for some time; allow to settle, and then decant the clear liquid. The addition of some muriatic acid to the liquid will convert it immediately into a stiff, hard jelly. This, if thoroughly washed with hot water, when heated, will resolve itself into nearly pure white sand, which will withstand a very high temperature.

(30) F. T. W. asks: What can be done to remove a bad smell from rain water? A. Allow it to be well sunned and aired. Filter through carbon filters, or deodorize with freshly burnt charcoal. Or add sufficient permanganate of potash to impart a permanent red color, raise to boiling point, allow to cool, and decant the water from the sediment.

(31) H. C. says: The pressure gage and the safety valve on my boiler do not agree. The steam blows off freely with the weight at 80 lbs. on the lever, while the gage shows but 60. The safety valve is 1 1/8 inch in diameter. I have examined the gage and find nothing wrong. How can I calculate the proper weight for the valve? A. When you have no steam in the boiler, secure the valve stem to the lever, and attach a spring balance to the lever just over the center of the valve stem. Then raise the lever slightly, so as to get the valve clear of the seat, and note the reading of the spring balance. Then divide this reading by the area of the valve in square inches (0.5184 in your case), and the quotient will be the pressure in lbs. per square inch at which the valve opens. The attention of all who wish to test their safety valves is invited to this extremely simple and accurate method.

MINERALS, ETC.—Specimens have been received from the following correspondents, and examined, with the results stated:

J. K.—Your medicine is rhubarb; take as much of it as you please.—V. E. Jr.—Your conclusions, drawn from the tests applied, are not in every case correct; but we have not succeeded in finding the dye.—J. McM.—It is iron pyrites.—G. J. McD.—It is magnetic oxide of iron, quartz colored red by oxide of iron, and chrysocholla or silicate of copper.—M. G. L.—It is a white talc. Use clay and silica, in proportions determined by experimenting with this material.—C. S.—The box of minerals sent contains mica, quartz, garnet, and feldspar, none of which require assay, and black magnetic oxide of iron.—O. S. C.—It is remarkably fine white talc. It can be used as a lubricant, to extract grease, etc., to mark on cloth (as French chalk), and in the manufacture of certain varieties of porcelain.—W. B. L.—It is carbonate of lime, and does not necessarily indicate the presence of silver.—J. H. P.—They have the character of cement rock of partial purity, and their working qualities would have to be tested by a manufacturer of hydraulic limes.—The bottle of water forwarded by Mr. Thompson for analysis contained a considerable amount of organic matter and the chlorides and sulphates of lime, magnesia, and the alkalis. It had an alkaline reaction.

COMMUNICATIONS RECEIVED.

The Editor of the SCIENTIFIC AMERICAN acknowledges, with much pleasure, the receipt of original papers and contributions upon the following subjects:

- On a Marine Railway. By G. A. F.
On the Mouths of the Mississippi. By O. P. S.
On Spiritualism. By L. G. F.
On a Meteor. By P. O. H.

Also enquiries and answers from the following. A. O.—C. G. D. Jr.—J. G. B.—D. E. W.—A. J. K.—N. F.—O. S. T.—R. N. W.—J. A.—F. C. B.—J. N. Y.

HINTS TO CORRESPONDENTS.

Correspondents whose inquiries fail to appear should repeat them. If not then published, they may conclude that, for good reasons, the Editor declines them. The address of the writer should always be given.

Enquiries relating to patents, or to the patentability of inventions, assignments, etc., will not be published here. All such questions, when initials only are given, are thrown into the waste basket, as it would fill half of our paper to print them all; but we generally take pleasure in answering briefly by mail, if the writer's address is given.

Hundreds of enquiries analogous to the following are sent: "Whose is the best fan blower? Who makes induction coils, and what are the prices? What is the price of nitrate of silver in large quantities? Who sells the deodorized bisulphide of carbon? Who sells the best grindstones? Who makes the best steam engine indicators?" All such personal inquiries are printed, as will be observed, in the column of "Business and Personal," which is specially set apart for that purpose, subject to the charge mentioned at the head of that column. Almost any desired information can in this way be expeditiously obtained.

[OFFICIAL.]

INDEX OF INVENTIONS

FOR WHICH

Letters Patent of the United States were

Granted in the Week ending

April 27, 1875,

AND EACH BEARING THAT DATE.

[Those marked (r) are reissued patents.]

Table listing inventions with patent numbers and dates. Includes items like 'Air, etc., cooling, A. Jas.', 'Alarm and fire extinguisher, S. Sanderson', 'Annunciator, self-closing, E. Axthelm', etc.

Main table of inventions with patent numbers and dates. Includes items like 'Churn, A. Oot.', 'Churn, rotary, C. H. Warren', 'Cigar mold fastening, S. Simonson', etc.

Continuation of the main table of inventions. Includes items like '4,666.—J. S. Shaller, Boston, Mass., U. S., et al. Knitting machine', '4,667.—G. W. Duflosson, Toms River, N. J., U. S. Treating jute, etc., for paper making', etc.

Advertisements.

Back Page - - - - - \$1.00 a line.
Inside Page - - - - - 75 cents a line.
Engravings may head advertisements at the same rate per line, by measurement, as the letter press. Advertisements must be received at publication office as early as Friday morning to appear in next issue.

FLEETWOOD SCROLL SAW advertisement with an illustration of the saw and descriptive text.

TENTH INDUSTRIAL EXHIBITION

UNDER THE AUSPICES OF THE
Mechanics' Institute of San Francisco.
Manufacturers, Mechanics and others are advised that the above EXHIBITION will be opened in San Francisco on the 17th DAY OF AUGUST next, and continue open at least one month.

PATENT COLD ROLLED SHAFTING advertisement with an illustration of a shaft.

THE FACT THAT THIS SHAFING HAS 75 PER CENT GREATER strength, a finer finish, and is truer to gauge, than any other in use, renders it undoubtedly the most economical.

DESIGNS PATENTED.

Table of patented designs including '8,284.—PICKLE JARS.—C. A. DuVivier, Summit, N. J., et al.', '8,285.—MEDAL.—T. R. Hartel, Philadelphia, Pa.', etc.

TRADE MARK REGISTERED.

2,411.—NOTE PAPER.—J. Leach, Passack, N. J.

SCHEDULE OF PATENT FEES.

Table listing patent fees: 'On each Caveat.....\$10', 'On each Trade mark.....\$25', 'On filing each application for a Patent (17 years).....\$15', etc.

CANADIAN PATENTS.

LIST OF PATENTS GRANTED IN CANADA, APRIL 22 to 28, 1875.
4,665.—C. and L. Gouette, St. Ann de Stukely, P. Q. Varnish. April 23, 1875.

RICHARDSON, MERIAM & CO. advertisement for 'Manufacturers of the latest improved Patent Daniels' and Woodworth Planing Machines, etc.'

PORTABLE STEAM ENGINES COMBINE the maximum of efficiency, durability and economy, with the minimum of weight and price. They are widely and favorably known, more than 1,000 being in use. All warranted satisfactory or no sale. Descriptive circulars sent on application. Address THE J. C. HOADLEY CO., Lawrence, Mass.

Model Engines advertisement with an illustration of a steam engine and text 'Complete sets of Castings for making small Model Steam Engines 1 1/2 in. bore, 3 in. stroke, price \$4; ditto 2 in. bore, 4 in. stroke, price \$10, same style as cut. Eureka Foot Lathes only 15 Dollars. Gear Wheels and Parts of Models. All kinds of Small Tools and Materials. Illustrated Catalogue Free.

FOR SALE.
A part or whole interest in A GOOD MANUFACTURING BUSINESS, prosecuted by PATENTS, may be moved to any part of the country. A large business may be done, paying over 100 per cent profit on all goods sold. Reasonable backing of capital. Persons interested, address MACHINERY, care of DAUCHY & CO., 191 Fulton Street, New York.