

Business and Personal.

The Charge for Insertion under this head is One Dollar a line for each insertion; about eight words to a line. Advertisements must be received at publication office as early as Thursday morning to appear in next issue.

Inventors wishing Premium Lists of the N. Y. State Fair, free by mail, address Lingens & Co., Patent Sellers, Publishers of Patent Herald, Amsterdam, N. Y.

Wanted.—Address of Parties Making Rolls for Leveling Half-inch Iron. W. H. Butler, 291 Broadway, N. Y.

Wanted.—Second-hand Hydraulic Press, 600 to 1,000 tons capacity. E. R. H., Cooley's Hotel, Springfield, Mass.

Fine Gray Iron Castings to order. A. Winterburn, Foundry, 16 De Witt St., Albany, N. Y.

Wanted, first-class large Planer, new or second-hand. Address Lambertville Iron Works, Lambertville, N. J.

C. B. Rogers & Co., Norwich, Conn., Wood Working Machinery of every kind. See adv., page 140.

2d-hand Machinists' Tools, Lathes, Planers, and Drills, for sale. Address Hawes Machine Co., Fall River, Mass.

Recipes and Information on all Industrial Processes. Park Benjamin's Expert Office, 50 Astor House, N. Y.

Dish Washing Machine wanted; one that is capable of washing 25,000 daily. A liberal offer will be made any party possessing such a machine, by addressing D. W. M., Box 773, New York city.

Experts in Patent Causes and Mechanical Counsel. Park Benjamin & Bro., 50 Astor House, New York.

Telephones repaired, parts of same for sale. Send stamp for circulars. P. O. Box 205, Jersey City, N. J.

Corrugated Wrought Iron for Tires on Tractor Engines, etc. Sole mfrs., H. Lloyd, Son & Co., Pittsburg, Pa.

Malleable and Gray Iron Castings, all descriptions, by Erie Malleable Iron Company, limited, Erie, Pa.

*Apply to J. H. Blaisdell for all kinds of Wood and Iron Working Machinery. 107 Liberty St., New York. Send for illustrated catalogue.

Our new Stylographic Pen (just patented), having the duplex interchangeable point section, is the very latest improvement. The Stylographic Pen Co., Room 13, 169 Broadway, N. Y.

Advertising of all kinds in all American Newspapers. Special lists free. Address E. N. Freshman & Bros., Cincinnati, O.

Skinner & Wood, Erie, Pa., Portable and Stationary Engines, are full of orders, and withdraw their illustrated advertisement. Send for their new circulars.

Sweetland & Co., 126 Union St., New Haven, Conn., manufacture the Sweetland Combination Chuck.

Power, Foot, and Hand Presses for Metal Workers. Lowest prices. Peerless Punch & Shear Co., 53 Dey St., N. Y.

The Brown Automatic Cut-off Engine; unexcelled for workmanship, economy, and durability. Write for information. C. H. Brown & Co., Fitchburg, Mass.

For the best Stave, Barrel, Keg, and Hoghead Machinery, address H. A. Crossley, Cleveland, Ohio.

Best Oak Tanned Leather Belting. Wm. F. Forepaugh, Jr. & Bros., 531 Jefferson St., Philadelphia, Pa.

National Steel Tube Cleaner for boiler tubes. Adjustable, durable. Chalmers-Spence Co., 40 John St., N. Y.

Split Pulleys at low prices, and of same strength and appearance as Whole Pulleys. Yocom & Son's Shafting Works, Drinker St., Philadelphia, Pa.

Stave, Barrel, Keg, and Hoghead Machinery a specialty, by E. & B. Holmes, Buffalo, N. Y.

Nickel Plating.—Sole manufacturers cast nickel anodes, pure nickel salts, importers Vienna lime, crocus, etc. Condit, Hanson & Van Winkle, Newark, N. J., and 92 and 94 Liberty St., New York.

Peck's Patent Drop Press. See adv., page 140.

Presses, Dies, and Tools for working Sheet Metal etc. Fruit & other can tools. Bliss & Williams, B'klyn, N. Y.

Hydraulic Jacks, Presses and Pumps. Polishing and Buffing Machinery. Patent Punches, Shears, etc. E. Lyon & Co., 470 Grand St., New York.

Sheet Metal Presses, Ferracute Co., Bridgeton, N. J.

Wright's Patent Steam Engine, with automatic cut off. The best engine made. For prices, address William Wright, Manufacturer, Newburgh, N. Y.

For Mill Mach'y & Mill Furnishing, see illus. adv. p. 147.

Burgess' Non-conductor for Heated Surfaces; easily applied, efficient, and inexpensive. Applicable to plain or curved surfaces, pipes, elbows, and valves. See p. 284.

Eclipse Portable Engine. See illustrated adv., p. 125.

For best low price Planer and Matcher, and latest improved Sash, Door, and Blind Machinery, send for catalogue to Rowley & Hermance, Williamsport, Pa.

Blake "Lion and Eagle" Imp'd Crusher. See p. 141.

Special Wood-Working Machinery of every variety. Levi Houston, Montgomery, Pa. See ad. page 142.

Saw Mill Machinery. Stearns Mfg. Co. See p. 141.

Improved Solid Emery Wheels and Machinery, Automatic Knife Grinders, Portable Chuck Jaws. Important, that users should have prices of these first class goods. American Twist Drill Co., Meredithville, N. H.

For Standard Turbine, see last or next number.

Fire Brick, Tile, and Clay Retorts, all shapes. Borgner & O'Brien, M'f'rs, 23d St., above Race, Phila., Pa.

The \$4 Drill Chuck sent free on receipt of price. A. F. Cushman, Hartford, Conn.

Machine Diamonds, J. Dickinson, 64 Nassau St., N. Y.

Steam Hammers, Improved Hydraulic Jacks, and Tube Expanders. R. Dudgeon, 24 Columbia St., New York.

4 to 40 H. P. Steam Engines. See adv. p. 125.

Wanted.—The address of 40,000 Sawyers and Lumbermen for a copy of Emerson's Hand Book of Saws. New edition 1880. Over 100 illustrations and pages of valuable information. Emerson, Smith & Co., Beaver Falls, Pa.

For Separators, Farm & Vertical Engines, see adv. p. 157.

For Pat. Safety Elevators, Hoisting Engines, Friction Clutch Pulleys, Cut-off Coupling, see Frisbie's ad. p. 157.

For Wood-Working Machinery, see illus. adv. p. 157.

Tight and Slack Barrel machinery a specialty. John Greenwood & Co., Rochester, N. Y. See illus. adv. p. 157.

Elevators, Freight and Passenger, Shafting, Pulleys and Hangers. L. S. Graves & Son, Rochester, N. Y.

For Patent Shapers and Planers, see illus. adv. p. 156.

Comb'd Punch & Shears; Universal Lathe Chucks. Lambertville Iron Works, Lambertville, N. J. See ad. p. 78.

Wheels and Pinions, heavy and light, remarkably strong and durable. Especially suited for sugar mills and similar work. Circulars on application. Pittsburg Steel Casting Company, Pittsburg, Pa.

Mineral Lands Prospected, Artesian Wells Bored, by Pa. Diamond Drill Co. Box 424, Pottsville, Pa. See p. 157.

C. J. Pitt & Co., Show Case Manufacturers, 226 Canal St., New York. Orders promptly attended to. Send for illustrated catalogue with prices.

Catechism of the Locomotive, 625 pages, 250 engravings. The most accurate, complete, and easily understood book on the Locomotive. Price \$2.50. Send for a catalogue of railroad books. The Railroad Gazette, 73 Broadway, New York.

Elevators.—Stokes & Parrish, Phila., Pa. See p. 157.

Machine Knives for Wood-working Machinery, Book Binders, and Paper Mills. Large knife work a specialty. Also manufacturers of Solomon's Parallel Vise. Taylor, Stiles & Co., Riegelsville, N. J.

Penfield (Pulley) Blocks, Lockport, N. Y. See ad. p. 157.

Lightning Screw Plates and Labor-saving Tools, p. 108.



HINTS TO CORRESPONDENTS.

No attention will be paid to communications unless accompanied with the full name and address of the writer.

Names and addresses of correspondents will not be given to inquirers.

We renew our request that correspondents, in referring to former answers or articles, will be kind enough to name the date of the paper and the page, or the number of the question.

Correspondents whose inquiries do not appear after a reasonable time should repeat them. If not then published, they may conclude that, for good reasons, the Editor declines them.

Persons desiring special information which is purely of a personal character, and not of general interest, should remit from \$1 to \$5, according to the subject, as we cannot be expected to spend time and labor to obtain such information without remuneration.

Any numbers of the SCIENTIFIC AMERICAN SUPPLEMENT referred to in these columns may be had at this office. Price 10 cents each.

(1) F. W. L. asks if there is any way to test for gold as an alloy of other metals, and if so, what?

A. Rub the alloy upon a piece of hard slate (the touchstone used by jewelers is better), warm the stone and moisten it with strong nitric acid. If the metallic streaks do not disappear gold is present in the alloy.

(2) J. A. G. writes: 1. In making a dynamo-electric machine, half the size of the one described in SUPPLEMENT No. 161, what Nos. of wires should be used? The Nos. given are 16 and 18. A. Use Nos. 18 and 20. There is no object in making a dynamo machine smaller than the one referred to. 2. Is there any process by which the melting point of paraffine may be raised, leaving it tasteless and inodorous? A. We know of no way. 3. Are celluloid collars, etc., injurious or poisonous to the wearer? Dealers here say so, but I think only because they wish to discourage the use of celluloid goods. A. They are not considered poisonous.

(3) V. V. S. writes: I wish to drill a hole one-quarter inch in diameter through a piece of 21-ounce glass. How can I do so without breaking it? A. It can be done by means of an ordinary steel drill hardened in mercury, and moistened while drilling with turpentine containing a little gum camphor. A safer way, however, is to use a one-quarter inch copper tube as a drill, and apply emery and oil or water to it as it revolves.

(4) O. & C. ask: 1. For a cheap substitute for shellac varnish. Is there another solvent for shellac, besides alcohol, that will answer as a varnish, and which will dry moderately quick? A. Shellac is soluble in alcohol, wood naphtha (crude methylic alcohol), in aqueous solution of borax (borax 1, shellac 6), and to some extent in strong ammonia water. 2. What is the most practical book with receipts for staining woods, making cheap varnishes, etc. A. You should address the book dealers who advertise in these columns for their catalogues, etc.

(5) A. R. C. asks: 1. Would a square foot of cold iron belarger or smaller if heated to 4,000° or 5,000° Fah.? A. It would occupy less space. 2. Why is it that a piece of solid iron will float on a ladle of melted iron? A. For the same reason that ice floats on water. See p. 116, et seq., Tyndall's "Forms of Water." 3. What are the relative amounts of carbon in cast iron, wrought iron, and steel? A. Cast iron, 2.0 to 5.0 per cent; wrought iron, 0.1 to 0.25; steel, 0.15 to 0.5. 4. Is there more carbon in hard cast iron than in soft? A. Yes.

(6) J. W. writes: 1. I should like to know how to make a sample of strong nitric acid, 48° for nitrosulphuric. I took all the moisture I could out of nitrate of soda, and used sulphuric acid at 63°, but could not get any stronger than 44° nitric; perhaps I may have used too much sulphuric acid; namely, equal quantity to nitrate. A. Dry the nitrate thoroughly, use strong sulphuric acid, and do not overheat or force the distillation or drive it too far. See Mowbray's "Trinitrolycerine." 2. Also how to make a pure sample for chemical purposes, as it is too red? A. Redistill at a gentle heat, rejecting the first and last portions.

(7) W. C. B. asks if there is anything that will render canvas fireproof. I am making an awning for steam launch, and she throws sparks so badly as to burn the awning. Would it be practicable to get an asbestos awning, and would it be very expensive? A. Saturate the awning with a strong aqueous solution of tungstate of soda (comm.). Asbestos cloth is rather expensive.

[OFFICIAL.]

INDEX OF INVENTIONS

FOR WHICH Letters Patent of the United States were Granted in the Week Ending August 10, 1880.

AND EACH BEARING THAT DATE. [Those marked (r) are reissued patents.]

A printed copy of the specification and drawing of any patent in the annexed list, also of any patent issued since 1866, will be furnished from this office for one dollar. In ordering please state the number and date of the patent desired and remit to Munn & Co., 37 Park Row, New York city. We also furnish copies of patents granted prior to 1866; but at increased cost, as the specifications not being printed, must be copied by hand.

Table listing inventions with names and patent numbers. Includes entries like 'Acid, pulverulent preparation of phosphoric, E. N. Horsford', 'Air compressing apparatus, R. M. Catlin', 'Aluminous cake, manufacture of, F. Laur', etc.

Table listing inventions with names and patent numbers. Includes entries like 'Gate, F. J. Lee', 'Gate, W. S. Wilkinson', 'Gate closer, C. D. Sawyer', 'Gear, friction, L. Biscaccianti', etc.