

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.

Full Set United States Patent Office Reports, 1790 to 1871. for sale cheap; also duplicate volumes previous to 1849. George M. Elliott, Lowell, Mass.

Houghton's Boiler Compound contains nothing that can injure the iron, but it will remove scale and prevent its formation. Houghton & Co., 15 Hudson St., N. Y.

Callow's Lettering Pat., illus. p. 358. Catalogue free.

Persons having Patented Specialties they want placed on the market, address "Agency," P. O. Box 985, Prov., R. I.

Ladies can improve the appearance of their feet by using German Corn Remover. 25 cts. Sold by druggists.

Save cost of fuel and water, repairs, explosion, burning, foaming, compounds, delays, cleaning, and all other evils of impure water, by using Hotchkiss' Automatic Mechanical Boiler Cleaner. 84 John St., N. Y. Circular free.

Beware of counterfeit; only one is genuine, and that is Van Beil's "Rye and Rock."

For Sale cheap.—2,000 candle power "Fuller" Electric Light Machine, complete with lamp and counter-shaft. Davis & Watts, Baltimore, Md.

Supplement Catalogue.—Persons in pursuit of information on any special engineering, mechanical, or scientific subject, can have catalogue of contents of the SCIENTIFIC AMERICAN SUPPLEMENT sent to them free. The SUPPLEMENT contains lengthy articles embracing the whole range of engineering, mechanics, and physical science. Address Munn & Co., Publishers, New York.

Green River Drilling Machines. See adv. p. 396.

Corns can be pulled out by the roots in 4 days after applying German Corn Remover. 25 cts. Sold by druggists.

Propellers, 12 to 26 in. Geo. F. Shedd, Waltham, Mass.

Abbe Bolt Forging Machines and Palmer Power Hammers a specialty. S. C. Forsaith & Co., Manchester, N. H.

List 26.—Description of 2,500 new and second-hand Machines, now ready for distribution. Send stamp for the same. S. C. Forsaith & Co., Manchester, N. H.

Combination Roll and Rubber Co., 27 Barclay St., N. Y. Wringer Rolls and Moulded Goods Specialties.

Tarred Roofing and Sheathing Felts. A. Wiskeman, Waterson, N. J.

Cope & Maxwell Mfg Co.'s Pump adv., page 397.

Punching Presses & Shears for Metal-workers, Power Drill Presses. \$25 upward. Power & Foot Lathes. Low Prices. Peerless Punch & Shear Co., 115 S. Liberty St., N. Y.

Improved Skinner Portable Engines. Erie, Pa.

"Rival" Steam Pumps for Hot or Cold Water, \$32 and upward. The John H. McGowan Co., Cincinnati, O. Rollstone Mac. Co.'s Wood Working Mach'y adv. p. 380.

The Eureka Mower cuts a six foot swath easier than a side cut mower cuts four feet, and leaves the cut grass standing light and loose, curing in half the time. Send for circular. Eureka Mower Company, Towanda, Pa.

Pure Oak Leather Belting. C. W. Army & Son, Manufacturers. Philadelphia. Correspondence solicited.

Presses & Dies. Ferracute Mach. Co., Bridgeton, N. J.

Wood Working Machinery of Improved Design and Workmanship. Cordesman, Egan & Co., Cincinnati, O.

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

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

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

See Bentel, Margendant & Co.'s adv., page 412.

National Steel Tube Cleaner for boiler tubes. Adjustable, durable. Chalmers-Spence Co., 10 Cortlandt St. N. Y.

Corrugated Wrought Iron for Tires on Traction Engines, etc. Sole mfrs., H. Lloyd, Son & Co., Pitts'g' Pa.

Best Oak Tanned Leather Belting. Wm. F. Brebaugh, Jr., & Bros., 331 Jefferson St., Philadelphia, Pa.

Gardiner's Pat. Belt Clamp. See illus. adv., p. 413.

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

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

Presses, Dies, Tools for working Sheet Metals, etc. Fruit and other Can Tools. E. W. Bliss, Brooklyn, N. Y.

For Sequiera Water Meter, see adv. on page 364.

Clark Rubber Wheels adv. See page 380.

For Pat. Safety Elevators, Hoisting Engines, Friction Clutch Pulleys, Cut-off Coupling, see Frisbie's adv. p. 381. Safety Boilers. See Harrison Boiler Works adv., p. 351.

Mineral Lands Prospected, Artesian Wells Bored, by Pa. Diamond Drill Co. Box 423, Pottsville, Pa. See p. 381.

The Sweetland Chuck. See illus. adv., p. 396.

Machine Knives for Wood-working Machinery, Book Binders, and Paper Mills. Also manufacturers of Solomon's Parallel Vise, Taylor. Stiles & Co., Riegelsville, N. J. Skinner's Chuck. Universal, and Eccentric. See p. 397.

Steam Engines: Eclipse Safety Sectional Boiler. Lambertville Iron Works, Lambertville, N. J. See adv. p. 381.

Clark & Heald Machine Co. See adv., p. 413.

50,000 Sawyers wanted. Your full address for Emerson's Hand Book of Saws (free). Over 100 illustrations and pages of valuable information. How to straighten saws, etc. Emerson, Smith & Co., Beaver Falls, Pa.

Telegraph, Telephone, Elec. Light Supplies. See p. 413.

Tight and Slack Barrel machinery a specialty. John Greenwood & Co., Rochester, N. Y. See illus. adv. p. 412.

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

For the manufacture of metallic shells, cups, ferrules, blanks, and any and all kinds of small press and stamped work in copper, brass, zinc, iron, or tin, address C. J. Godfrey & Son, Union City, Conn. The manufacture of small wares, notions, and novelties in the above line, a specialty. See advertisement on page 413.

Grinding Wheels for Models (list free); Experimental Work, etc. D. Gilbert & Son, 212 Chester St., Phila., Pa.

Diamond Saws. J. Dickinson, 64 Nassau St., N. Y.

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

Gould & Eberhardt's Machinists' Tools. See adv., p. 414.

Blake's Patent Belt Studs. The strongest fastening for leather and rubber belts. Greene, Tweed & Co., N. Y.

Walrus Leather, Walrus Wheels, Purc Turkey Emery Star Glue for Polishers. Greene, Tweed & Co., N. Y. The Medart Pat. Wrought Rim Pulley. See adv., p. 413.

For Heavy Punches, etc., see illustrated advertisement of Hilles & Jones, on page 412.

For best Duplex Injector, see Jenks' adv., p. 413.

C. B. Rogers & Co., Norwich, Conn., Wood Working Machinery of every kind. See adv., page 414.

Drop Hammers Power Shears, Punching Presses, Die Sinks. The Pratt & Whitney Co., Hartford, Conn.

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.

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

The only economical and practical Gas Engine in the market is the new "Otto" Silent, built by Schleicher, Schumm & Co., Philadelphia, Pa. Send for circular.

Ore Breaker, Crusher, and Pulverizer. Smaller sizes run by horse power. See p. 414 Totten & Co., Pittsburg. 4 to 40 H. P. Steam Engines. See adv. p. 414.



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) C. B. C. writes: I am about painting my brick house, and a friend suggests using what is called "Brilliant Stucco Whitewash," that it was very much cheaper than oil colors, and, if properly put on, would be as durable as oil colors. He said one end of the White House, Washington, was painted with it and had proved a success. A. The stucco whitewash (see answer to O. E. C., page 375 (40), last volume), when properly prepared and applied, answers very well for out-of-door brick and wood work, and has been used with satisfaction on the north wall of the White House. It does not cover old painted walls so well.

(2) J. A. M. writes: I have a carriage which is trimmed with blue cloth, or rather cloth which has been blue, but now it is much faded. How can I put on some color without taking the trimmings off? A. Dissolve completely 1 oz. good cotton blue (aniline blue 6 B) in alcohol 1 pint, mixed with warm water, 1 quart. Apply with a full brush quickly, so as to obtain a uniform color.

(3) D. A. writes: In your paper, the SCIENTIFIC AMERICAN of May 21, you state the large steam cylinder cast at the Morgan Iron Works was made of gun metal. Will you please inform me through your paper if it was made of brass gun metal or iron gun metal? A. Iron gun metal.

(4) P. N. asks: What is the best method of ventilating an ordinary country school house, the usual size of which is 24x18 feet, and 10 feet high? Suppose the number of pupils to be twenty-five or thirty, and the room to be heated either by wood or coal stove, is the outside pure air heavier than the warm carbonic acid inside the school room? If the warm carbonic acid inside (which settles at the bottom of the room) is lighter than the cold outside air, how can it be forced or got out of the room? If heavier, how can the outside air get in the room near the bottom? Does an ordinary stove remove much more carbonic acid gas than is created by the combustion of the fuel, this on the supposition that there is considerable carbonic acid in the room resulting from breathing, etc.? A. The plan employed in the United States Army Hospitals is perhaps the best, namely: Have (1) under the stove a large opening through the floor, connected by an air shaft (say two feet square) with the outside air (not cellar); 2, openings for the outlet of foul air both around the baseboards of the walls and also near the ceilings; the openings being provided with shutters so that the escape of foul air may be regulated as the weather may require from near the floor or near the ceiling.

(5) P. S. M. writes: I am about setting up a horizontal tubular boiler, 8 feet by 2 feet, to heat my house. Could I attach a magazine similar in principle to that used in base-burning, self-feeding stoves, which would supply coal to the fire during the night, thereby keeping up a more equable heat and requiring less frequent firing? If such a thing is practicable how can it best be accomplished? A. A magazine cannot be readily attached to a horizontal boiler, but vertical boilers have been made with a central magazine extending parallel with the flues and provided with a ring at the lower end projecting into the fire box. Such boilers give good satisfaction.

(6) A. H. C. writes: 1. I have a telephone line, two miles in length, upon which I use the Blake transmitter and bell telephone and telegraph instruments for calling. How can I make condensers so as to get rid of the resistance and induction in the telegraph instruments, and how shall I connect them? A. It cannot be done with the ordinary telephones. See Professor Dolbear's telephone in last issue of the SCIENTIFIC AMERICAN. 2. Please give me directions for making a Leclanche battery (new pattern). A. See SUPPLEMENT, No. 159.

(7) Student asks: What is the height above sea level of Mount Mitchell, Mount Clingmans, Roan Mountain, and Bald Mountain, all in North Carolina? A. The twelve highest peaks of Black Mountains, North Carolina: Clingman's Peak, 6,701; Balsam Cone (Guyot's Peak), 6,661; Sandoz Knob, 6,612; Hairy Bear, 6,597; Cattaill Peak, 6,593; Gibbs' Peak, 6,586; Mitchell's Peak, 6,576; Sugar Loaf, 6,401; Potato Top, 6,389; Black Knob, 6,377; Bowler's Pyramid, 6,345; Roan Mountain, 6,318.

English Patents Issued to Americans.

From May 27 to May 31, 1881, inclusive. Electric wire supporter, W. C. Allison, Philadelphia, Pa. Meter, fluid, B. Holly, Lockport, N. Y. Musical instrument, C. G. Conn, Elkhart, Ind. Ore crusher, H. H. Howland, San Francisco, Cal. Railway signal, G. H. Roth, Boston, Mass. Railway switch, W. T. Martin, Philadelphia, Pa. Sewing machine, D. C. Smyth, Hartford, Conn. Spring bed bottom, H. A. Dalrymple, Gardner, Mass. Tricycle, J. A. McKenzie, Galesbury, Ill. Weavers harness, Kendish Loom Harness Company, Providence, R. I. Wire fabric, machine for making, W. C. Edge, Newark, N. J.

[OFFICIAL.]

INDEX OF INVENTIONS FOR WHICH Letters Patent of the United States were Granted in the Week Ending May 31, 1881, 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 and their patent numbers, including items like 'Air, process of and apparatus for drying, G. H. Reynolds', 'Annunciator, speaking tube, W. R. Ostrander', etc.

Table listing inventions and their patent numbers, including items like 'Corks, machine for cutting tapered, G. W. Greene', 'Cotton chopper, J. F. Smith', 'Cotton picker, W. Goodwin', etc.