

Business and Personal.

The Charge for Insertion under this head is One Dollar a line for each insertion; about eight words to a line.

11 Ton Compound Slotter for sale cheap. Slots 18 in.; radius 24 in.

Patents for sale.—Excellent Garden Hand Pump, Well Pumps, Combined Sprinkler and Nozzle.

H. L. Ferrine, Mech. Draughtsman, 617 7th St., Washington, D.C.

Wanted—A Machine for Straightening Wire. Address, with price, E. M. Chafee, Onondaga Valley, N. Y.

At the American Institute Fair, New York, 1879, the "MacKinnon Pen" was awarded the grand medal of superiority.

For Power Paper, Lard, Cider Presses, see adv. p. 252.

The Asbestos Roofing is the only reliable substitute for tin; it costs only about one-half as much, is fully as durable.

The Brown Automatic Cut-off Engine; unexcelled for workmanship, economy, and durability.

Catalogue of Useful Books on Applied Science sent free. E. & F. N. Spon, 446 Broome St., New York.

Blake Lion and Eagle Imp'd Crusher. See adv. p. 236.

Foundry and Machine Shops for sale. Established in 1846. Write for description to E. J. Hoen, Addison, Steuben Co., N. Y.

4 to 40 H. P. Steam Engines. See adv. p. 230.

Corrugated Traction Tire for Portable Engines, etc. Sole manufacturers, H. Lloyd, Son & Co., Pittsburg, Pa.

Spokes and Rims, white oak and hickory, best quality, to any pattern, and Hammer Handles of best hickory.

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

Collection of Ornaments.—A book containing over 1,000 different designs, such as crests, coats of arms, vignettes, scrolls, corners, borders, etc., sent on receipt of \$2.

Best Oak Tanned Leather Belting. Wm. F. Forepaugh, Jr. & Bros., 381 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. Vocom & Son's Shafting Works, Drinker St., Philadelphia, Pa.

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

Solid Emery Vulcanite Wheels—The Solid Original Emery Wheel—other kinds imitations and inferior.

Twenty-five per cent saved by the use of H. W. Johns' Asbestos Liquid Paints.

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

Nickel Plating.—Sole manufacturers cast nickel anodes, pure nickel salts, importers Vienna lime, crocus, etc.

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

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

Forsyth & Co., Manchester, N. H., & 213 Centre St., N. Y.

Electrical Indicators for giving signal notice of extremes of pressure or temperature. Costs only \$20. Attached to any instrument. T. Shaw, 915 Ridge Ave., Phila.

Instruction in Steam and Mechanical Engineering. A thorough practical education, and a desirable situation as soon as competent, can be obtained at the National Institute of Steam Engineering, Bridgeport, Conn.

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

Portable Forges, \$12. Roberts, 107 Liberty St., N. Y.

Eclipse Portable Engine. See illustrated adv., p. 222.

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

Peck's Patent Drop Press. See adv., page 236.

Special Wood-Working Machinery of every variety. Levi Houston, Montgomery, Pa. See ad. page 238.

For best Portable Forges and Blacksmiths' Hand Blowers, address Buffalo Forge Company, Buffalo, N. Y.

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

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

Wanted—The address of 40,000 Sawyers and Lumbermen for a copy of Emerson's Hand Book of Saws.

Eagle Anvils, 9 cents per pound. Fully warranted.

For Pat. Safety Elevators, Hoisting Engines, Friction Clutch Pulleys, Cut-off Coupling, see Frisbie's ad. p. 252.

Tight and Slack Barrel machinery a specialty. John Greenwood & Co., Rochester, N. Y. See illus. adv. p. 252.

The Horton Lathe Chucks; prices reduced 25 per cent. Address The E. Horton & Son Co., Windsor Locks, Conn.

For Patent Shapers and Planers, see illus. adv. p. 251.

Emery Wheels of all kinds, and Machines at reduced prices. Lehigh Valley Emery Wheel Co., Weissport, Pa.

For Sale.—Two Windmill Patents, and set of patterns for same. None better. F. C. Maxwell, Columbus, O.

For Mill Mach'y & Mill Furnishing, see illus. adv. p. 254.

Hydraulic Cylinders, Wheels, and Pinions, Machinery Castings; all kinds; strong and durable; and easily worked.

Mineral Lands Prospected, Artesian Wells Bored, by Pa. Diamond Drill Co. Box 423, Portersville, Pa. See p. 253.

Self-feeding Upright Hand Drilling Machines of superior construction. Pratt & Whitney Co., Hartford, Ct.

The only economical and practical Gas Engine in the market is the new "Otto" Silent, built by Schleicher.

Elevators.—Stokes & Parrish, Phila., Pa. See p. 254.

Mackenzie Cupola and Blower. The very best apparatus for melting iron; and with water bath for smelting lead, silver, or copper ores.

Machine Knives for Wood-working Machinery, Book Binders, and Paper Mills. Large knife work a specialty.

For Middlings, Mill and Mill Furnishing, see adv. p. 222.

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Notes & Queries

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.

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) S. H. H. asks how two minerals in powdered form, one specific gravity of 2.5 and the other of 3.5, can be separated.

(2) C. C. H. asks for a cheap method of determining the presence of zinc in old pewter and britannia ware.

(3) G. A. W. asks: 1. Is the presence of air in steam boilers injurious? 2. How is air expelled from boilers? 3. Generally, when getting up steam, by leaving the safety valve open until the steam blows freely from it.

(4) W. and B. write: As to the per cent of power produced by overshot water wheels, we know of no tests having been made in this country.

(5) J. A. M. asks as to the proper size of cylinders for double engine (diameter and stroke); ample size for boiler for same, size of propeller and pitch of same, for fast steam yacht, 55 feet over all, 11 feet beam, 4 feet 3 inches draught at stern, to steam 15 knots at best speed in smooth water.

(6) E. W. T. asks (1) how to stop leaks in boilers, especially at ends of (expanded) tubes. A. If the tubes are not too much wasted away, they can be made tight with a calking or expanding tool.

(7) J. F. asks: Is there anything that will remove scales from steam boilers without injury to the boiler? A. There are many compounds used for the removal of boiler scale; they are nearly all effective with some kinds of water and useless with others.

(8) J. J. H. asks: 1. What is the best means of preventing scale in boilers where hard water is used and boiler inaccessible? A. See reply to J. F. on this page.

(9) J. J. W. writes: I am compelled to use in my boilers the water from a stream that is muddied by the washing of iron ore.

(10) H. L. C. asks: About what is the relative temperature of the water and the steam in a steam boiler when under pressure of 40 to 100 lb. per square inch? A. After a boiler has been in operation long enough for a thorough circulation, the temperature of the water is the same as the steam, and the latter determined by its pressure, if there be no superheating.

(11) J. H. J. asks (1) for the proper mode of adjusting the slides of an engine in working position. A. A line is drawn through the center of the cylinder, and the slides set parallel to it in both directions.

(12) J. D. asks: 1. Can water be heated to a higher temperature than 212° Fah.? A. Yes. 2. How much greater percentage can I get from a copper heating surface than iron surface in a boiler, built locomotive style? A. Practically there is little or no difference between copper and iron.

(13) E. R. M. asks: Would a young mechanic make a locomotive runner with practice on the road with a good engineer that has had four years' experience with different kinds of steam engines, and have studied both Forney's and Roper's Catechisms of the Locomotive? A. Yes, with self-reliance, close observation, and industry.

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

N. G. Co.—It is a variety of serpentine resembling corallite, a hydrosilicate of magnesia, (see p. 465, Dana's Mineralogy.)—A. G. S.—It is fool's gold, iron pyrites, sulphide of iron.

should give 65 to 80 per cent; the average turbine will give 60 to 70 per cent.

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[OFFICIAL.]

INDEX OF INVENTIONS FOR WHICH

Letters Patent of the United States were Granted in the Week Ending March 23, 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.

Agricultural boiler, D. Felgar... 225,814
Agricultural implement, W. A. Chapman... 225,688
Animal trap, G. W. Lindsey... 225,708
Animal trap, J. Quigley... 225,783
Annunciators, push key attachment for, J. F. Martin... 225,843
Bag tie, J. Hill... 225,830
Baling press, portable, B. M. Watts... 225,773
Barrel dumper, Briggs & Jones... 225,792
Basin, wash, H. A. Skelley... 225,890
Bed and bolster, woven wire, Wagner & Friedrich... 225,737
Bed, wardrobe, N. G. Rood... 225,765
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Bell, call, J. P. Connell... 225,690

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Bisulphide of carbon engine, W. S. Colwell... 225,689
Bit brace, N. Spofford... 225,768
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Brush, galvanic, B. H. Robb... 225,723
Bugs from potato vines, machine for removing, G. E. Risley... 225,870
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Button for cuffs, etc., H. E. Moore... 225,853
Button, separable, G. K. Webster... 225,896
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Canister, C. A. Fredericks... 225,818
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Car coupling, R. F. Krohn... 225,840
Cars, sand distributor for street, S. S. Wood... 225,904
Carpet lining, G. S. Page... 225,718
Carriage bows, spring support for, Wilgus & Johnson... 225,738
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Caster, pickle, W. C. Beattie... 225,786
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Crayon sharpener, J. Suter... 225,732
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Gas producer, A. Faber du Faur... 225,813
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Glass, wood, rubber, etc., ornamenting smooth surfaces of, R. Cunningham... 225,802
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Insulating telegraph wires, A. K. Eaton... 225,811
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Jewel case, W. C. Beattie... 225,787
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