

Business and Personal.

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For Sale.—New 23 3/4" by 14 ft. Engine Lathe. Latest design. Rod and screw feed and compound rest. \$650. S. M. York, Cleveland, O.

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Ball's Variable Cut-off Engine. See adv., page 13. Fire Brick, Tile, and Clay Retorts, all shapes. Borgner & O'Brien, M'rs, 23d St., above Race, Phila., Pa.

Peck's Patent Drop Press. See adv., page 356. For best Portable Forges and Blacksmiths' Hand Blowers, address Buffalo Forge Co., Buffalo, N. Y.

Paragon School Desk Extension Slides. See adv. p. 13. Brass & Copper in sheets, wire & blanks. See adv. p. 14. Cope & Maxwell M'g Co.'s Pump adv., page 13.

The Chester Steel Castings Co., office 407 Library St., Philadelphia, Pa., can prove by 15,000 Crank Shafts, and 10,000 Gear Wheels, now in use, the superiority of their Castings over all others. Circular and price list free.

The Improved Hydraulic Jacks, Punches, and Tube Expanders. R. Dudgeon, 24 Columbia St., New York. Machine Diamonds, J. Dickinson, 64 Nassau St., N. Y.

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Tight and Slack Barrel machinery a specialty. John Greenwood & Co., Rochester, N. Y. See illus. adv. p. 13. Something new and interesting in Stemwinding Permutation Locks. See adv. of D. K. Miller Lock Co., p. 14.

Fine Taps and Dies in Cases for Jewelers, Dentists, Amateurs. The Pratt & Whitney Co., Hartford, Conn. C. B. Rogers & Co., Norwich, Conn., Wood Working Machinery of every kind. See adv., page 14.

Supplee Steam Engine. See adv. p. 13. Lightning Screw Plates, Labor-saving Tools. p. 402. Malleable and Fine Gray Iron Castings to order, by Capital City Malleable Co., Albany, N. Y.

New Engine Lathes for sale, for instant shipment; 18 and 20 in. swing; 6 to 10 ft. bed; modern improvements. Forsaith & Co., Manchester, N. H., or 209 Center St., N. Y.

Wanted.—Superintendent for Malleable Iron Works. One familiar with running blast or air furnace preferred. Address "M. I. W.," 2116 Market St., St. Louis, Mo.

Drop Forgings. Billings & Spencer Co. See adv., p. 405. Common Sense Dry Kiln. Adapted to drying of all material where kiln, etc., drying houses are used. See p. 405. The Sweetland Chuck. See illus. adv., p. 406.

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

Electric Lights.—Thomson Houston System of the Arc type. Estimates given and contracts made. 631 Arch, Phila. "Abbe" Bolt Forging Machines and "Palmer" Power Hammers a specialty. Forsaith & Co., Manchester, N. H.

List 28, describing 3,600 new and second-hand Machines, now ready for distribution. Send stamp for same. S. C. Forsaith & Co., Manchester, N. H., and N. Y. city. Draughtsman's Sensitive Paper, T. H. McCollin, Phila., Pa. For Mill Mach'y & Mill Furnishing, see illus. adv. p. 388.

Steam Pumps. See adv. Smith, Vaile & Co., p. 388. Nickel Plating.—Sole manufacturers cast nickel anodes, pure nickel salts, polishing compositions, etc. Complete outfit for plating, etc. Hanson & Van Winkle, Newark, N. J., and 92 and 94 Liberty St., New York.

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Ice Making Machines and Machines for Cooling Breweries, etc. Pictet Artificial Ice Co. (Limited), 142 Greenwich Street. P. O. Box 3083, New York city.

Agents Wanted.—None but intelligent and energetic need apply. Must furnish good recommendations, or no notice will be taken of applications. Exclusive territory given. Agents are now making from \$10 to \$15 a day. Address, for terms, The Infalible Coin Scale Co., 267 Broadway, New York city.

Improved Skinner Portable Engines. Erie, Pa. Jas. F. Hotchkiss, 84 John St., N. Y.: Send me your free book entitled "How to Keep Boilers Clean," containing useful information for steam users & engineers. (Forward above by postal or letter; mention this paper.)

Steel Stamps and Pattern Letters. The best made. J. F. W. Dorman, 21 German St., Baltimore. Catalogue free. Machinery for Light Manufacturing, on hand and built to order. E. E. Garvin & Co., 139 Center St., N. Y.

Beer apparatus, L. Winterbauer. 259,625. Bicycle, T. B. Jeffery. 259,313. Bicycle step, G. F. Harwood. 259,535. Billiard table, C. W. Allen. 259,454.

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Bolting cloth, device for tightening, M. Harmon. 259,689. Boring axle holes in hubs, etc., machine for, W. R. Wood and S. Barr. 259,447.

Box. See Fare box. Packing box. Pill packing box. Show box. Toy money box. Boxes, mica lamp chimneys, etc., metallic joining for, G. Townsend, 2d. 259,606.

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.

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. 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.

Correspondents sending samples of minerals, etc., for examination, should be careful to distinctly mark or label their specimens so as to avoid error in their identification.

(1) D. A. O. asks: 1. What will be the disadvantage, if any, in using a 15 horse power engine with a 10 horse power boiler, provided not more than 6 or 8 horse power is required? A. There will be a greater loss from radiation and condensation in the larger engine than in one exactly adapted to its work. 2. If 50 pounds steam in 10 horse power boiler will give 8 horse power with 10 horse power engine, what steam with same boiler will be required to give 8 horse power with a 15 horse power engine? A. This will depend upon the relative diameter of cylinders. 3. What will be the difference in fuel required? In how deep a well can a steam jet be successfully used, and what is the best method of raising water from a well 60 feet deep, to supply a steam boiler? A. A steam injector can only be relied upon to raise water 10 or 15 feet. A pump would be a necessity.

(2) H. M. F. writes: What do you think of the following receipt as a gray hair restorer? Take a quantity of black tea and boil down strong, and then, placing a large tennenny nail within the tea fluid, cork all in a bottle, and use once a week. This remedy is said to supply the "iron" to the hair which is lost and return it to its original color, dark. Do you think this remedy will in time destroy the hair? I am afraid it might cause baldness. A. Tea contains tannin, and this in connection with iron salts produces ink. Ink gives gray hair black (temporarily), but possesses no value as an invigorator or restorer of gray hair. See "Hygiene of the Hair," by Dr. Erasmus Wilson, in SUPPLEMENT, No. 102.

[OFFICIAL.]

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FOR WHICH

Letters Patent of the United States were Granted in the Week Ending

June 13, 1882,

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 25 cents. In ordering please state the number and date of the patent desired and remit to Munn & Co., 261 Broadway, corner of Warren Street, 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.

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 est electric intensity upon the earth beneath; that this
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 the surface of the earth, or upon it. The greatest nega-
 tive tension would be upon such objects as trees, moun-
 tains, houses, etc. Prof. Chambers claims if this nega-
 tive tension could be prevented from being induced
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 would or could take place between the cloud and such
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 tricity that might be induced on the building, and
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