

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.

The publishers of this paper guarantee to advertisers a circulation of not less than 50,000 copies every weekly issue.

The Edison Recording and Alarm Gauge, made and sold at 91 Liberty St., New York, causes a gong to ring in office and engine room when over-pressure occurs;

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

Wanted.—A good second-hand Pile Driving Engine. Address S. L. Wiley, Greenfield, Mass.

Wanted.—An Oil Mill of the most improved pattern, for the manufacture of cotton seed oil from the seed of the sea island cotton.

For Sale, in one lot, cheap, 200 "Mead" Sewing Machines, without stands. Apply P. O. Box 1595, Montreal, Canada.

For Sale.—The large factory building, at Marion Station, on the Pennsylvania Railroad, in Jersey City,

A thoroughly practical mechanic desires to correspond with a firm in want of a draughtsman, who can design, construct, and execute.

Carre's French Cylindrical Carbons for Electric Lights; assorted sizes; imported and for sale by C. Raoux,

New Tubular Boiler, about five H. P., for sale cheap. Address W. N. W., Box 773, New York.

Scroll Saws; cheapest and best. D.S. Abbott, Olean, N.Y.

H. W. Johns' Asbestos Liquid Paints are strictly first-class pure linseed oil paints, and contain no water.

For Wood-Working Machinery, see illus. adv. p. 125.

Competent man wanted understanding wire rope conveyers for lumber, coal, etc. Address Rathbun & Co., Oswego, N. Y.

Steel Name Stamps, 15 cents per letter; steel figures, \$1 per set. C. L. Anderson, Cleveland, Ohio.

For Mill Machy & Mill Furnishing, see illus. adv. p. 125.

Wanted.—A few sober, industrious Machinists and Moulders. Address H. B. Smith Machine Co., Smithville, Burl. Co., N. J.

New Inventions examined and tested. Designs and improvements. Reports for investors. Recipes and information on all industrial processes.

Latest improved methods for working hard or soft metals, grinding long knives, tools, etc. Portable Chuck Jaws and Diamond Tools.

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

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

Chase's Pipe Cutting & Threading Machine. Send for circular. Chase Machine Co., 120 Front St., New York.

Sawyer's Own Book, illustrated. Over 100 pages of valuable information. How to straighten saws, etc.

Ice Machines selected. Information on all kinds. Benjamin's Sci. Expert Office, 37 Park Row, New York.

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

Special Tools for Railway Repair Shops. L. B. Flanders Machine Works, Philadelphia, Pa.

For Pat. Safety Elevators, Hoisting Engines, Friction Clutch Pulleys, Cut-off Coupling, see Frisbie's adv. p. 125.

The "Fitchburg" Automatic Cut-off Horizontal Engines. The "Haskins" Engines and Boilers. Send for pamphlet.

Tight and Slack Barrel machinery a speciality. John Greenwood & Co., Rochester, N. Y.

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

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

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

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

Steam Engines; Eclipse Safety Sectional Boiler. Lambertville Iron Works, Lambertville, N. J. See adv. p. 46.

Patent Steam Cranes. See illus. adv., page 125.

Nellis' Cast Tool Steel. Castings from which our specialties Flow Shares. Also all kinds agricultural steels and ornamental fencings.

Best Turkey Emery in bbls., segs, and cases. Special rates for large quantities. Greene, Tweed & Co., N. Y.

Wheels and Pinions, heavy and light, remarkably strong and durable. Especially suited for sugar mills and similar work.

Mineral Lands Prospected, Artesian Wells Bored, by Pa. Diamond Drill Co. Box 423, Pottsville, Pa. See p. 125.

Deoxidized Bronze. Patent for machine and engine journals. Philadelphia Smelting Co., Phila., Pa.

Rue's New "Little Giant" Injector is much praised for its capacity, reliability, and long use without repairs.

Catechism of the Locomotive, 625 pages, 250 engravings. The most accurate, complete, and easily understood book on the Locomotive.

Elevators.—Stokes & Parrish, Phila., Pa. See p. 126.

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

The Twiss Automatic Cut-off; also Vertical and Yacht Engines. N. W. Twiss, New Haven, Conn.

J. F. Tallant, Engineer, Burlington, Iowa, makes a speciality of saving fuel and increasing power of defective boilers and engines.

Mica in sheet and scrap for sale in quantity to suit. Parties using Mica in any form please send for samples.

A No. 6 Root Blower, steel shafts of extra strength, and used less than four months, in good order.

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

For Sale.—Foundry and Machine Shop, third city in State; good business. Box 275, Winona, Minn.

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

Steam Engine for sale very low. See advertisement on another page.

A Rare Chance.—We have on hand a 40 H. P. Horizontal Oscillating Engine, built for special work, but never used.

Campbell's Self-acting Window Shade Rollers are the best in the market. Models and terms to the trade.

Forsyth & Co., Manchester, N. H., & 213 Centre St., N. Y. Bolt Forging Machines, Power Hammers, Comb'd Hand Fire Engine & Hose Carriages, New & 2nd hand Machinery.

Electrical Indicators for giving signal notice of extremes of pressure or temperature. Costs only \$20.

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.

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., & Broz. 531 Jefferson St., Philadelphia, Pa.

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.

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

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

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

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

Solid Emery Vulcanite Wheels.—The Solid Original Emery Wheel—other kinds imitations and inferior. Caution.—Our name is stamped in full on all our best Standard Belting, Packing, and Hose.

Sheet Metal Presses, Ferracute Co., Bridgeton, N. J. Telephones repaired, parts of same for sale. Send stamp for circulars. P. O. Box 265, Jersey City, N. J.

Eclipse Portable Engine. See illustrated adv., p. 94.

For best low price Planer and Matcher, 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.

Special Wood-Working Machinery of every variety. Levi Houston, Montgomery, Pa. See adv. page 45.

NEW BOOKS AND PUBLICATIONS.

THE ALIENIST AND NEUROLOGIST. Quarterly, Vol. I. No. 1. Edited by C. H. Hughes, M.D. St. Louis: Ev. E. Carreras. Price \$5 a year.

This journal of scientific, clinical, and forensic psychiatry and neurology, is intended especially to meet the wants of the general practitioner of medicine.

VISITOR'S GUIDE TO THE SMITHSONIAN INSTITUTION AND NATIONAL MUSEUM, WASHINGTON, D. C. Edited by W. J. Rhee. Washington: Judd & Detweiler. Paper, pp. 96. Price 35 cents.

Contains an illustrated description of the present building, and a cut of the new building; also a descriptive guide to the cases and objects displayed in the several departments of the museum.

Hints & 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.

(1) H. D. P. writes: In No. 21 of SCIENTIFIC AMERICAN of 1879, you give receipt for making ink to be used with copying pad.

(2) H. J. D. asks: Will brass make a durable cylinder for a small steam engine (bore 3 inches, stroke 4 inches)?

(3) E. N. J. writes: I am using stationary tubular boiler, 44 inches shell, 48 3-inch tubes, 12 feet long, fire passing underneath and returning through flues;

(4) G. H. S. asks if in the celebrated "Krupp one hundred ton steam hammer" the piston and hammer-head weigh together one hundred tons, and if so, is this the usual method of expressing the power of steam hammers?

(5) C. L. H. asks: Can you give me any further instruction for making ink to use on the copying pad, in your SCIENTIFIC AMERICAN, No. 21?

(6) W. A. M. writes: I am desirous of building a steam yacht after the model of the one in SUPPLEMENT, No. 179, but propose to make it larger, 45 feet long by 10 feet beam.

(7) W. T. R. asks: 1. How can I prepare cyanide of silver for making a plating bath to use with a battery? A. Dissolve the silver in a small quantity of warm nitric acid.

(8) W. S. B. asks: Is there any rule that will ascertain the pressure per square foot on a ship at different depths down its side? A. The pressure is 144 lb. per square foot for each 26 inches in depth, nearly.

(9) J. K. writes: A states that the pressure of air necessary to keep the water from entering a diving bell is no greater at a depth of 500 feet than it is when the bell is only at a depth of 50 feet in the water.

(10) W. E. K. asks how to take a large coal oil spot out of a carpet. A. Try benzole and woolen cloths.

(11) M. W. asks: 1. Is there any rotary engine equal in point of power to the best type of reciprocating engines? If so, who is the inventor and where is it manufactured? A. No. 2. Suppose a reciprocating engine turns 100 revolutions per minute, does it give any clearance? A. It must have some clearance to allow for the spring and play of the parts.

(12) H. D. writes: 1. I have an engraved copper plate which I wish to electroplate with steel. Can I do it, and how? A. Consult Gore's and Napier's Electro-metallogies.

(13) J. T. A. writes: There is a difference of opinion between a man and myself about a small steam boat as regards the government law.

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

M. F.—1. Mica schist with hornblende. 2. Syenite. 3. Zinc. 4. Red Jasper. 5. Quartz, feldspar, and chalcocopyrite. 6. Quartzose rock. 7. Sandstone. 8. Muscovite. 9. Sandstone. 10. Granite. 11. Quartz and trap. 12. Mica schist. 13. Limestone. 14. Chalcocopyrite in talcose slate. 15. Gneiss and mica schist.

COMMUNICATIONS RECEIVED.

How to File the Champion Saw. By J. A. H. On Limestone Built Cities. By J. S. Five Sundays in February. By H. G. A. On Inventors. By H. S. B.

[OFFICIAL.]

INDEX OF INVENTIONS

FOR WHICH Letters Patent of the United States Were Granted in the Week Ending

January 27, 1880,

AND EACH BEARING THAT DATE.

[Those marked (r) are reissued patents.]

A complete copy of any patent in the annexed list, including both the specifications and drawings, or any patent issued since 1867, will be furnished from this office for one dollar.

Table listing various inventions and their patent numbers, including items like Bedstead fastening, Beehive, Key, Belting machinery, etc.