

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.

Cheapest Portable Forges. H. Crumlish, Buffalo, N.Y.

Wanted—A Machine for Hackling Corn Husks for making Mattresses. For particulars, address M. Otterbourg, Wilmington, N. C.

The Porter-Allen High Speed Steam Engine. Southwork Foundry & Mach. Co., 430 Washington Av., Phil. Pa.

If your brain is overworked, relieve it by the use of Van Bell's "Rye and Rock."

Correspondence with parties wishing to invest in manufacturing business, now established and requiring more capital, is solicited. Address Box 186, Norwood, N.Y.

The city of Natchez is contemplating the erection of water works, and solicits communications and estimates from parties engaged in that line. Address Henry C. Griffin, Mayor, Natchez, Miss., Lock Box 258.

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

To Lease.—65 horse water power; unfailing; midway between N. Y. and Phila.; railroads, freights, and facilities unequalled. Address John Outcait, Spotswood, N.J.

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

The scientific principles involved in the manufacture of the Boomer & Boschert Cider Press will convince every one manufacturing cider that these presses are the best in the world. The prices are very reasonable. Send for illus. cata. to the New York Office, 15 Park Row.

Party owning Sash, Door, and Blind Factory, wishes to add to his manufacture some Specialty (a good patent preferred) which will meet with large and profitable sales. Address X. Y. Z., Box 672, New York city.

Agricultural Engines for sale cheap by S. J. Benedict, East Randolph, N. Y.

Peck's Patent Drop Press. See adv., page 76.

For Sale.—Turret Lathe, with Chaser Bar. No. 1 and 4 Root Blowers. B. & W., 261 N. 3d St., Phila., Pa.

Tarred Roof'g, Sheath'g Felts. Wiskeman, Paterson, N.J.

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.

Walrus Leather, Walrus Wheels, Pure Turkey Emery Star Glue for Polishers. Greene, Tweed & Co., N. Y.

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.

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.

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. Arny & 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.

Cope & Maxwell M'fg Co.'s Pump adv., page 45.

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. Yocum & Son's Shafting Works, Drinker St., Philadelphia, Pa.

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

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

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

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

For best Duplex Injector, see Jenks' adv., p. 60.

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.

4 to 40 H. P. Steam Engines. See adv. p. 61.

C. B. Rogers & Co., Norwich, Conn., Wood Working Machinery of every kind. See adv., page 78.

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.

Long & Allstatter Co.'s Power Punch. See adv., p. 77.

Steam Hammers, Improved Hydraulic Jacks, and Tube Expanders. R. Dudgeon, 34 Columbia St., New York.

For Mill Mach'y & Mill Furnishing, see illus. adv. p. 77.

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. 93.

For Pat. Safety Elevators, Hoisting Engines, Friction Clutch Pulleys, Cut-off Coupling, see Frisbie's ad. p. 94.

Safety Boilers. See Harrison Boiler Works adv., p. 83.

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

Saw Mill Machinery. Stearns Mfg. Co. See p. 78.

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

Gould & Eberhardt's Machinists' Tools. See adv., p. 93.

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

The Medart Pat. Wrought Rim Pulley. See adv., p. 93.

For Heavy Punches, etc., see illustrated advertisement of Hiles & Jones, on page 93.

Barrel, Key, Hoghead, Stave Mach'y. See adv. p. 93.

Steam Engines; Eclipse Safety Sectional Boiler. Lambertville Iron Works, Lambertville, N. J. See ad. p. 94.

See Bentel, Margedant & Co.'s adv., page 93.

Mineral Lands Prospected, Artesian Wells Bored, by Pa. Diamond Drill Co. Box 423, Pottsville, Pa. See p. 93.

Rollstone Mac. Co.'s Wood Working Mach'y ad. p. 94.

For Machinists' Tools, see Whitcomb's adv., p. 94.

Ore Breaker, Crusher, and Pulverizer. Smaller sizes run by horse power. See p. 93. Totten & Co., Pittsburg.

Silica Paints (not mixed); all shades. 40 Bleecker St., N. Y.

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

The None-such Turbine. See adv., p. 78.

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.

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

Sewing Machines and Gun Machinery in Variety. The Pratt & Whitney Co., Hartford, Conn.

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.

(1) W. Z. writes: I have a glass vase, 16 inches high, 6 inches in diameter, and an eighth of an inch thick. How can I cut this glass into hoops or rings, each measuring 1 1/4 inches in height? A. Paste a band of thick paper having a smooth edge around the vase so as to mark the line to be cut, and use a good glazier's diamond, the edge of the paper serving as a guide. When cut draw a hot piece of glass rod over the mark, and the ring will separate without breaking. Experiment on a bottle first.

(2) J. C. asks (1) for a recipe for making carbon paper for working the manifold process of copying letters, etc. A. Melt together ten parts of lard and one of wax, and mix with it a sufficient quantity fine lampblack, or lampblack and black lead (graphite). Saturate the paper (unglazed) with this composition, remove excess, and put in a press. 2. Also, how a stylus can be made or got? Will a lead pencil serve the purpose as well? A. A hard pencil will answer, but a stylus of ivory, bone, or steel is preferable.

(3) C. C. L. asks: What is the best machinery in use for manufacturing boneblack? A. A simple crusher, an upright retort furnace, and a variety of sieves constitute the principal part of the plant. See Knight's "New American Mechanical Dictionary," and Hints to Correspondents.

(4) H. E. D. writes: Wood engravers have long felt the want of a simple, reliable, and expeditious formula for photographing on wood for engraving. There are two or three parties that claim to have forms of doing it, but keep them secret. Now, if you could publish anything in the way of a new simple formula, with illustration of special style of printing frame that would be required, you would confer a favor on a number of your readers. A. The subject of photographs on wood for engraving has been treated most comprehensively in the paper by Edward Pocock, in SUPPLEMENT, No. 53.

(5) G. F. asks (1) for a simple method of testing white paints (water colors) to find if they have a lead basis. A. Dissolve a fragment of sodium or potassium in a small quantity of water, add a few drops of dilute sulphuric acid, and hold over the vessel containing the liquid a strip of paper on which is spread some of the moist pigment. If it contains lead it will blacken at once. 2. Will Chinese white (in cakes) turn black by exposure to atmosphere and light? A. If the air contains hydrogen sulphide, yes; not otherwise.

(6) W. K. writes: I want a soft and tough composition that would take the impression of grain from one board to another. A. Try gutta percha softened by hot water or steam; or use fusible metal.

(7) J. N. S. writes: I noticed your advice about using galvanized iron for culinary purposes. I had just purchased a small galvanized wine press, intending to use it also for plum jelly, etc., but never did, as your warning has often been repeated. As the season is now upon us for making up such things, my wife wishes to use the press. Will you please inform me by what simple method I can destroy the coating so as to be safe in using? A. The zinc coating may be removed by scouring with silicious sand well moistened with muriatic acid diluted with three volumes of soft water.

(8) S. G. M. writes: I want to know if there is not some chemical that will fix the lime in whitewash and keep it from washing off by rain and rubbing off by wear. I am aware that milk is used, but it is too expensive here. A. See "A Durable Whitewash," page 52, current volume. Water-glass has been used in this connection with fair results.

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

N. D. S.—Traprock and limestone.—S. & P.—Sulphide and arsenide of iron—pyrite and arsenopyrite.—J. W. M.—(Two samples). Feldspathic rock, hornblende, and mica schist, carrying a considerable quantity of graphite (plumbago, black-lead).—E. P.—Your letter contained no minerals, as stated, please send other samples.—L. G. C.—The red is jasper, the other quartz and chalcophyrite—iron-copper sulphide.—Several unlabeled packages of minerals have been received without letters by which we can identify the senders.

INDEX OF INVENTIONS FOR WHICH Letters Patent of the United States were Granted in the Week Ending July 12, 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 with patent numbers and names of inventors. Includes items like Air compressor valve, Alarm, Amalgamating metals, Amalgamator, Appliance for enabling persons to remain under water, Axle bearing, Axle lubricator, Bale tie, Baling tie, Battery, Bed bottom, Bed hospital, Bed lounge, Belt clasp, Belt replacing device, Belt shipper, Binder, Bird cage, Blacking box, Blast furnaces, Boiler, Boiler indicator, Boilers, Boot and shoe nailing jack, Boot and shoe sole edge trimmer, Boot and shoe sole edge, machine for burnishing and setting, Boot and shoe soles, machine for inserting screw-threaded wire in, Bottle wrapper, Bottles, regulator for nursing, Box, Brake, Broiler, Broiling by means of gas, Bronzing machine, Burglar alarm, Buttons, machine for making shoe, Calorification, process of and apparatus for dynamic, Cant dog, Capsule filler, Car brake, Car, cattle, J. Rex, Car coupler, Car coupling, Arter & Blocher, Car coupling, I. Caulk, Car coupling, G. Holforty, Car coupling, G. W. James, Car coupling, J. McCree, Car coupling, L. W. Stanley, Car heating apparatus, railway, W. C. Baker, Car moving device, Car, stock, J. Kitsee, Car, stock, C. J. Slaughter, Car wheels, flask for moulding, W. Fawcett, Carbonating apparatus, frame for supporting, J. Matthews, Carding machine, J. Tynning, Carding machines, mechanism for stripping the flats of, W. H. Rankin, Carriage curtain fastener, T. M. Paschal, Carriage running gear, M. J. McCue, Case, See Leather case, Casting belt hooks, pattern for, S. Budlong, Casting pipes and apparatus therefor, drying moulds for, J. K. Dimmick, Chair, See Folding chair, Railway chair, Nursery chair, Window cleaning chair, Check book, B. Greensted, Christmas tree candle holder, J. W. & A. Geddes, Churn, J. Gelbart, Cigar machine, W. M. Steidle, Clamp, See Saw clamp, Clasp, See Belt clasp, Corset clasp, Clock, electrical, D. F. Sweet, Clothes drier, T. G. Saint Jr., Clothes wringer, C. J. Shirreff, Clutch, friction, A. E. Tenney, Cock, lock, W. S. & A. D. Holden, Coffee and tea pot, J. G. Ewing, Coffin, H. Sander, Collar fastening, dog, J. M. Riley, Colters, hub for rotary, A. J. Manny, Concrete and artificial stone, apparatus for moulding, J. C. Sellars, Concrete, composition for moulds and composition mould for forming, J. C. Sellars, Cooking apparatus, steam, A. E. Campbell, Cooler, See Water cooler, Corn husking machine, E. A. Bourquin, Corn shock compressor, W. M. Baldwin, Jr., Corset, D. H. Fanning,

Table listing inventions with patent numbers and names of inventors. Includes items like Corset clasp, Corset fastening, Cotton gin attachment, Cotton press, Coupling, See Car coupling, Tube coupling, Cradle, folding, C. A. Fenner, Cutter, See Straw cutter, Decoy duck, J. Danz, Jr., Dental vulcanizing flask, J. S. Campbell, Disinfecting and renovating textile and other substances, apparatus for, F. H. Young, Diving apparatus, A. Khotinsky, Door check, S. A. Armstrong, Door spring, C. B. Clark, Drier, See Clothes drier, Fruit drier, Drilling machine, multiple, T. T. Prosser, Dust pan, E. L. & M. A. Dietz, Electric cables, machine for the manufacture of, E. J. Frost, Electric plaster, Hubbard & Ashley, Electrical conductor, C. E. Ball, Electro-magnetic apparatus, M. G. Crane, Elevator, See Hydraulic elevator, Washing machine elevator, Elevator, H. Baragwanath, Elevator bucket, J. S. Roberts, Engine, See Fire engine, Steam engine, Envelope machine, H. D. & O. W. Swift (r), Exhaust and ventilating apparatus, S. W. Hudson, Fan, S. Scheuer, Fare register and recorder, R. M. Rose, Faucets to barrels, device for attaching, P. Schofield, Feather renovator, H. E. Rowe, Feed water heater, I. B. Davis, Feed water heater, D. Sullivan, Fence post, N. Clute, Fence post, J. H. Helm, Fence wire, barbed, H. M. Rose (r), Fencing, barbed iron, C. K. Marshall, Filter, G. Land, Fire engine, B. J. C. Howe, Fire escape, L. D. B. Shaw, Fish and animal trap, combined, J. S. Simpson, Flask, See Dental vulcanizing flask, Flower pots, machine for making, G. W. Rathsam, Flue cleaning machine, F. W. Gordon, Folding chair, J. B. Fenby, Folding chair, E. S. Griffith, Folding table, E. J. Rawson, Framing machine, timber, I. Lepley, Fruit drier, J. Taylor, Fruit press, F. F. N. Marais, Furnace, See Boiler furnace, Hydrocarbon furnace, Furnace grate, W. Brown (r), Game apparatus for pool and billiards, portable, J. Sherman, Gas apparatus, J. Hanlon, Gas apparatus for making, Bell & Lipsey, Gas apparatus for manufacturing, Bell & Lipsey, Gas apparatus for manufacturing, A. B. Lipsey, Gas heater, C. E. Hequebourg, Gas producer, Narjes & Willmer, Gas tubing, manufacture of, S. Barr, Gases under pressure, receptacle for holding, W. M. Jackson, Gate, See Railway gate, Gear, T. T. Leacox, Generator, See Steam generator, Glass chimney globe, etc., F. M. James, Gold in ore, composition for dissolving the coating of, J. F. Sanders, Governor, steam engine, J. W. Peck, Grain drills, cleaner for the plow points of, J. Saurer, Graining machine, J. Hammerl, Grate, fire, A. C. Engert, Grinding mill, J. A. Moore, Hammer, lathing, H. G. Elliott, Hand guide for writing, L. M. Beebe, Harness pad plate, J. Thomas, Harrow, G. H. Johnson, Harrow, spring tooth, West & Chase, Hat bodies, machine for scalding and sticking fur to felt, E. A. Mallory, Hat, sunshade, G. W. Ross, Hats, machine for blocking and shaping, R. Etchemeyer, Hay press, J. March, Heater, See Feed water heater, Gas heater, Hinge, B. S. Atwood, Hinge, coach, F. P. Pfeiglar, Hinge, spring, Clark & Hart, Hinge, trunk, A. C. Frankel, Hog scraping machine, R. C. Tompkins (r), Hoisting and conveying apparatus, C. S. Kershaw, Holder, See Christmas tree candle holder, Thread holder, Hoop cutting machine, F. L. Wilson, Horse rake, W. J. Lane, Horseshoe nails, machine for making, J. A. Coleman, Hubs, machine for manufacturing carriage wheel, C. S. Tilton, Hydraulic elevator, E. Thayer, Hydrocarbon furnace, J. W. & J. R. Houchin, Hydrocarbon furnace, H. S. Saroni, Ice machine, T. L. Rankin, Indicator, See boiler indicator, Steam boiler indicator, Insects from plants, machine for removing, R. Bollerman, Iron, manufacture of copper-plated sheet, C. Haegle, Iron, manufacture of galvanized, W. B. Spear, Jack, See Boot and shoe nailing jack, Jail or prison, Brown & Haugh, Joint, See Rail joint, Journal box, C. D. Crandal, Journal box, anti-friction, C. W. Pierce, Knife, See Tobacco knife, Knitting machine cam, J. W. Rist, Knitting machine cam, A. Wrightson, Ladder, telescopic, F. W. Hoefe, Lamp, E. S. Piper, Lamp, F. A. Taber (r), Lamp, electric, H. S. Maxim, Lamp, electric, C. G. Perkins, Lamp globes, holder or socket for electric, O. Kartznrak, Lamps, circuit closer for incandescent, W. Stanley, Jr., Land roller and attachment, A. C. Dilday, Latch, locking, A. Rand, Leather case, A. & H. Hoff, Leather finishing machine, F. B. Batchelder (r), Leather splitting machine, C. Dancel, Letter box, C. Ginesi, Lever, straining, J. Corbit, Light, See Skylight, Lock, See Nut lock,