

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 advertise a circulation of not less than 50,000 copies every weekly issue.

Experimental Machinery, prices fair, at Anderson Bros, Peekskill, N. Y.

Wanted—A Second-hand Air Compressor that will supply 60 to 75 feet of cubic air per minute at 300 lb. pressure. Address L. S. C., 268 West St., New York.

Apply to J. H. Blaisdell for all kinds of Wood and Iron Working Machinery. 107 Liberty St., New York. Send for illustrated catalogue.

Steel Name Stamps, 15 cts. per letter; Steel Figures, \$1 per set. C. L. Alderson, Cleveland, Ohio.

C. J. Pitt & Co., Show Case Manufacturers, 226 Canal St., New York. Orders promptly attended to. Send for illustrated catalogue with prices.

H. W. Johns' Asbestos Liquid Paints are strictly first-class pure linseed oil paints, and contain no water. They are the best and most economical paints in the world for structural purposes. H. W. Johns Mfg Co., 87 Maiden Lane, sole manufacturers.

Sweetland & Co., 126 Union St., New Haven, Conn., manufacture the Sweetland Combination Chuck.

Burgess' Non-conductor for Heated Surfaces; easily applied, efficient, and inexpensive. Applicable to plain or curved surfaces, pipes, elbows, and valves. See adv. p. 284.

That conspicuous structure located at the southwest corner of Smith and Fulton streets, Brooklyn, one of the finest buildings in that city, has been bought by Baldwin the Clothier, and is now known as the "Baldwin Building."

Safety Linen Hose for hotels, factories, and stores, with or without couplings. Greele, Tweed & Co., 118 Chambers St., New York.

Lubricate, Gear Grease, Cylinder and Machinery Oils. R. J. Chard, 6 Burling Slip, New York.

G. W. Baker, Wil., Del., makes the Post Band Saw for hand, foot, and steam. Will cut 7 inches thick of hard wood.

Power, Foot, and Hand Presses for Metal Workers. Moderate prices. Peerless Punch and Shear Co., 52 Dey St., New York.

For Sale.—U. S. and Canadian Patent for a Blind Stitch Sewing Machine; a valuable invention. Address P. Hoffman, 197 East Genesee St., Buffalo, N. Y.

Penfield (Pulley) Block Works. See illus. adv. p. 285.

The Brown Automatic Cut-off Engine; unexcelled for workmanship, economy, and durability. Write for information. C. H. Brown & Co., sole manufacturers, Fitchburg, Mass.

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

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. John Fitz, Martinsburg, West Va.

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

For Middlings, Mill and Mill Furnishing, see adv. p. 385.

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. Palm & Fechteler, 408 Broadway, New York city.

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

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

For Wood-Working Machinery, see illus. adv. p. 286.

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

Removal.—Greene, Tweed & Co. have removed from 18 Park Place to 118 Chambers St., New York.

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

Solid Emery Vuleanite 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. Buy that only. The best is the cheapest. New York Belting and Packing Company, 37 and 38 Park Row, N. Y.

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

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

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. Bradley's cushioned helve hammers. See illus. adv. p. 269.

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.

For Standard Turbine, see last or next number.

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. For particulars, send for pamphlet.

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.

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

For Separators, Farm & Vertical Engines, see adv. p. 251.

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

Telephones repaired, parts of same for sale. Send stamp for circulars. P. O. Box 205, Jersey City, N. J.

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

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

For best Portable Forges and Blacksmiths' Hand Blowers, address Buffalo Forge Company, Buffalo, N. Y. For Power Paper, Lard, Cider Presses, see adv. p. 252.

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

For Alcott's Improved Turbine, see adv. p. 270.

Wanted—The address of 40,000 Sawyers and Lumbermen for a copy of Emerson's Hand Book of Saws. New edition 1880. Over 100 illustrations and pages of valuable information. Emerson, Smith & Co., Beaver Falls, Pa.

Eagle Anvils, 10 cents per pound. Fully warranted.

Tight and Slack Barrel machinery a specialty. John Greenwood & Co., Rochester, N. Y. See illus. adv. p. 284.

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

Eclipse Portable Engine. See illustrated adv., p. 284.

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

\$275 Horizontal Engine, 30 H. P. See page 284.

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

The 1880 Pennsylvania Lawn Mower.—Light draught and easily adjusted. Machines warranted. See illus. adv. last week. Lloyd, Supplee & Walton, Philadelphia, Pa.

Pat. Steam Hoisting Mach'y. See illus. adv., p. 284.

Nellis' Cast Tool Steel, Castings from which our specialty is Flow Shares. Also all kinds agricultural steels and ornamental fencings. Nellis, Shriver & Co., Pittsburg, Pa.

Improved Steel Castings; stiff and durable; as soft and easily worked as wrought iron; tensile strength not less than 65,000 lbs. to sq. in. Circulars free. Pittsburg Steel Casting Company, Pittsburg, Pa.

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

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

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

Elevators.—Stokes & Parrish, Phila., Pa. See p. 285.

Mackenzie Cupola and Blower. The very best apparatus for melting iron; and with water bosh for smelting lead, silver, or copper ores. Send for pamphlet. Smith & Sayre Manuf. Co., 21 Courtlandt St., New York.

4 to 40 H. P. Steam Engines. See adv. p. 285.

Combined Universal Concentric or Eccentric and Independent Jaw Chucks. Pratt & Whitney Co., H't'd, Ct.

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.

(1) E. D. writes: I have a lot of screws which by accident got rusty. I would like to know if there is any liquid bath I can give them which will give them a better appearance. A. Dip them for a few seconds in a mixture of sulphuric acid 1 part, water 10 parts. 2. Will you please give me directions for making a cheap electric machine for medical purposes? A. See p. 203 (14), Vol. 39, SCIENTIFIC AMERICAN.

(2) G. A. C. asks: Do telegraph wires attached to a house, or passing over one, have the tendency to attract the lightning to the house? A. No.

[OFFICIAL.]

INDEX OF INVENTIONS

FOR WHICH

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

April 6, 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. 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 names and dates, including: Arrows and bow strings, clutch for, J. David; Axle box, car, J. U. Sumpter; Ball forming machine, S. E. Smith; Bedstead, wardrobe, H. S. Hale; Belt tightener, V. H. Hallock; Billiard table, A. Van Bilber; Boiler furnace, self-feeding steam, W. S. Salisbury; Bolt cutter, H. K. Porter; Boot and shoe uppers, clamp for holding, E. S. Pratt; Boot and shoe welt, E. S. Pratt; Boots and shoes, machine for inserting screws in, J. H. Gardiner; Boots and shoes, manufacture of, E. S. Pratt; Brick drying apparatus, Pieper & Creager; Buoy, signal, E. E. Mann; Burglar alarm, I. J. Lister; Button hole cutter, A. Schaffer.

Table listing inventions with names and dates, including: Cane mill, W. S. Reeder; Car brake, Burge & Quinby; Car coupling, P. Farwell; Car coupling, W. Harkins; Car coupling, J. T. Haunson; Car coupling, F. M. Oliver; Car coupling instrument, G. Searl; Car, hand, T. G. Glover, Jr.; Car seats, adjustable foot rest for, F. S. Pratt; Car starter, J. R. Johns; Car stock, W. Martin; Card teeth, apparatus for making wire, G. & E. Ashworth; Carding machine, device for conveying, doubling, and folding the lap of a, R. & T. B. Wilde; Carpet linings, machine for making, H. Bogert; Cartridge, J. Gardner; Centrifugal machine, A. H. Blaisdell; Child's high chair, G. C. Paine; Chop separator and bran cleaner, J. Lampert; Chuck, drill, A. L. Sweet; Chuck, lathe, C. H. Reid; Cigar machine feeding device, Donath & Jasper; Closing and sealing device, J. H. Audouin; Clothes line and clamp, R. Larter; Clothesline holder for windows, G. F. Sievern; Clothes line stretcher and fastener, J. H. Steen; Clutch, friction, Galloway & Beckwith; Coffee pot, E. Robinson; Colter, plow, S. Huber; Comb and shield, combined, J. S. Upton; Combing machinery, Little & Eastwood; Commode, J. Finsterer; Cordage making machine, J. Hall; Corset, I. W. Birdseye; Corset, C. Daniels; Corsets, finishing, J. Waterman; Cream raising apparatus, A. V. Sanford; Cultivator, D. M. Johnston; Dental plugger, B. F. La Salle; Distillation of oils, W. Atwood; Dividing engines, compensating errors in screws of, S. Darling; Draught equalizer, S. Glassburg; Dredging machine, A. J. Cook; Dye stuff coloring matter, H. Caro; Eave troughs, machine for forming, Calvert & Blair; Egg carrier, D. Goodwillie; Envelope machine, D. M. Lester; Evaporating and distilling apparatus, cooling water for, T. Gannon; Eyelet, A. Delkescamp; Fan, N. Allen; Fan for forge fires, A. F. Reineohl; Fare box, L. C. Cary; Faucet, beer, Redmond & White; Faucet, milk, W. J. Van Patten; Fence post, W. C. Culbertson; Fence wire, spool for barbed, E. M. Craudal; File, bill, E. P. Donnell; File, bill and letter, L. L. Ferris; File case, bill, M. Posz; Filter, Scannell & Lipscombe; Fire extinguisher for railway cars, J. Berg; Floor, fireproof, J. Copcutt; Flour bolt, Gardner & Randall; Flour bolting and dressing machine, H. Seck; Fruit driers, air heater for, A. P. Meyler; Furnace shield, H. McDonald; Garter, W. S. Wardwell; Gas or fluid meters, price indicator for, F. Egner; Governor, R. B. Werotte; Governor, steam engine, W. H. Craig; Grain by steam, apparatus for cooking and drying, H. C. Howard; Grate, fireplace, J. B. Samuel; Grater, J. Chaumont; Grinders, hopper for feed, G. Metcalf; Grinding mill, Hobler & Good; Grinding mill, G. & A. Raymond; Grinding mill, feed, D. J. & E. J. Ames; Harness, P. S. Miller; Harness air pad, H. C. Marsh; Hat bodies, etc., machine for hardening and felting, J. G. Meeker; Hat pouncing machine, W. Keenan; Hat sweat leathers, machine for stretching, A. Pelisse; Heel trimming machine, J. J. Ross; Hinge, J. J. Gordon; Horseshoe nail, J. J. Mervesp; Horseshoe nail, C. M. Talcott et al.; Horseshoe nails, machine for punching, I. C. Tate; Hub, vehicle, J. P. Chambers; Hydrostatic press, J. H. McGowan; Indicator, T. W. Blades; Inkstand, J. Bauman; Inkstand, W. A. Hull; Ironing board, H. L. Rowell; Ironing table, S. Wells; King bolt, vehicle, A. J. & J. A. Rehkopf; Knob attachment, E. Parker; Knob rose attachment, E. Parker; Lamp, J. Trent; Lamp burner, kerosene, J. Trent; Lamp burners, wick tube for, D. W. Kissam; Lemon squeezer, J. Fanning; Life raft, M. E. Beasley; Lock nut, J. B. Atwood; Locomotive boiler, H. I. Hoyt; Locomotive engine, A. Donato; Locomotive, etc., driving mechanism for street, S. Geoghegan; Low water gauge and alarm, J. L. Hastings; Mask fastener, C. H. Dessart; Measuring device for sacking grain, S. W. Turner; Meat cutting machine, C. A. Murray; Milk setting apparatus, H. F. King; Mirror, J. P. Short; Moulding and compressing artificial blocks or bricks, machine for, A. Walker; Monkey wrench, J. Moffet; Motion, device for converting reciprocating into rotary, C. Schurmann; Mower, White & Calef; Musical instrument, mechan., Chinnock & Bennet; Musical instrument, mechanical, C. A. Needham; Nozzle, exhaust draught, W. S. Salisbury; Oil by electricity, apparatus for testing, F. S. Pease; Ore separator, J. B. Wilford; Paint, etc., can, S. Bergstreser; Paints, etc., metallic package for, J. W. Masury; Paints, vehicle for, F. Thies; Paper bag machine, E. Dangoise; Parer and slicer, apple, D. H. Whittemore; Passenger elevator, H. M. Lee; Petroleum distillate for lubricating purposes, W. Atwood; Pile, iron, I. W. Macley; Planter, corn, C. Brunner; Plow, A. Addams.

Table listing inventions with names and dates, including: Plow, J. J. Alley; Plowshares and points, machine for uniting, J. Killefer; Pressure gauge alarm, electric, G. D. Earll; Puddling and heating furnace, W. Stubblebine; Puddling furnace, Reynolds & Thomas; Pump, steam vacuum, O. R. Davis; Railway gate, S. L. P. Garrett; Railway switch, S. B. Nickum; Railways, permanent way for, A. Greig; Range, D. H. Nation; Refrigerating apparatus, J. J. Coleman; Refrigerating pump case, Hagmann & Sauer; Ruling machines, printing attachment for paper, J. E. Taylor; Sash fastener, M. Haneline; Sash lock and lifter, T. A. Ireland; Satchel clasp, A. Kaufmann; Saw filing and setting machine, G. W. Dudley; Saw filing machine, C. S. Stevens; Saw mill, reciprocating, D. C. Prescott; Scales and meter, combined grain, M. B. Cyphers; Scraper, road, A. N. Blackledge; Seed drill, G. Sommerfeldt; Seed drill and cultivator, circular, A. T. Linderman; Seeder and cultivator, combined, C. La Dow; Seeding machine, J. R. Rude; Sewing machine, John winding attachment, J. Kayser; Sewing machine embroidering attachment, H. F. Schlueter; Shoe shanks, machine for forming metallic, G. O. Jenkins; Shovel and scoop, W. A. Reddick; Show box, F. A. Merrell; Shrimps and other fish, canning, Pecor & Bartlett; Shutter, window, D. Huston; Shutter worker, J. B. Jewell; Slate frame, J. B. Jewell; Snow clearer for railway tracks, etc., J. W. Close; Soda fountain, A. D. Puffer, Jr.; Spark arrester, J. E. Wiggin; Spinning frame, ring, C. S. Peach; Spinning ring and holder, C. E. Morse; Standard jack post, cap box, and fastening, W. H. Rowley; Steam boiler, G. H. Pond; Steam boiler, W. S. Salisbury; Steam generator, J. M. Osborne; Steam trap, B. W. Feithousen; Stool, adjustable, W. A. & R. T. Smith; Stove, heating, J. Ryn; Stove leg fastener, T. H. Roberts; Stove, steam, J. L. Harley; Sugar cane juice, apparatus for concentrating, J. B. Thomas; Suspender end, J. Betts; Telegraph conductor, underground, H. Clay; Telephone signaling apparatus, H. G. Fiske; Telephonic transmitter, J. E. Watson; Thill coupling, E. Shafer; Thrashing machine dust arrester and conveyer, F. A. & C. W. Olds; Tire heating furnace, H. Duffey; Tobacco box, T. Balmer; Tobacco press, J. H. McGowan; Toe weight, J. H. Fenton; Tomb, artificial stone, H. Wilson; Tongue coupling, wagon, W. W. Gottier; Toy pistol, J. B. Secor; Traction wheel, C. Taylor; Transom lifter, F. A. Reisher; Truck, car, S. Keeler; Type composing machine, A. Fraser; Type rubbing machine, C. C. Webster; Upholstering material, P. Amick; Valve, steam, J. D. Wilson; Valve, stop, J. H. Strehli; Vehicle spring, W. B. Thomas; Ventilator and chimney, comb'd, A. T. Wheeler; Vulcanization of waterproof fabrics, W. Abbott; Wagon seat, L. Lowden; Wagon, side bar, J. Frison; Washing machine, L. Churchman; Washing machine, Stacy & Benjamin; Watch crown, H. Lefort; Water closet, Milne & Gants; Water closet valve, J. Demarest; Water heater, Burnett & Watkins; Watering trough for stock, J. F. Elliott; Well, tubular, Newell & Lucasse; Wheelbarrow, J. & F. L. Kincannon; Windmill, H. H. Bevil; Windmill, G. Saccone; Window chair, W. H. Blackler; Wire barbing machine, W. E. & J. C. Butler; Wire finishing and straightening machine, W. Kenerson; Wood polishing machine, Bridgman & Perry; Wrench, J. H. Alexander.

DESIGNS.

Table listing designs with names and dates, including: Brush holders, R. Skoog; Cards, visiting, P. P. McHugh; Carpet, T. J. Stearns; Clock case, W. D. Chase; Stall guard, M. Wiard.

TRADE MARKS.

Table listing trade marks with names and dates, including: Gloves, dress, F. W. Hellwig; Paint, white lead and zinc, J. Nichol & Co.; Pianos, Hazelton Brothers; Tobacco, plug chewing, Johnston, Fisher & Co.

English Patents Issued to Americans.

Table listing English patents issued to Americans, including: Bamboo, preparation of, W. O. Giles, New York; Blast for locomotives, J. E. Mart-in, United States; Clothes hooks, P. Miles, Brooklyn, N. Y.; Combustion of fuel, C. B. Gregory, Beverly, N. J.; Dynamo-electric machine, T. A. Edison, Menlo Park N. J.; Dynamo-electric machine, H. S. Maxim, Brooklyn, N. Y.; Forts, armor plating, etc., J. H. McLean et al., St. Louis, Mo.; Hose pipe attaching machine, J. A. Green, New York; Incubating apparatus, H. A. Axford, Chicago, Ill.; Insulating electrical conductors, A. A. Knudson et al., Brooklyn, N. Y.; Iron, manufacture of, R. H. Hamilton, Pittsburg, Pa.; Lubricators for valves of steam engines, A. H. Harrison, Bristol, Conn.; Telegraphic apparatus, E. Davis et al., Cambridge, Mass.; Ventilating apparatus, F. L. Norton, New York; Wire drawing machinery, C. D. Rogers, Providence, R. I.; Wire drawing, manufacture of plates for, C. D. Rogers, Providence, R. I.; Wood working machinery, F. Hanson, Hollis, Me.