

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.

Berryman Feed Water Heater. See illus. adv., p. 396. A Great Bargain in Guns is offered by C. Folsom, for thirty years a well known New York gun dealer.

Baxter Wrenches fit peculiar corners. Indispensable to first-class mechanics. Greene, Tweed & Co., N. Y.

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

Suffer no longer. Relief is always obtained by the German Corn Remover; certain and harmless. Druggists.

A simple means to keep disease away is to use Van Bell's "Eye and Rock."

R. J. W.—Froth or scum in your boilers caused by sediment in water from driven wells, entirely obviated without loss of water, by Hotchkiss' Mechanical Boiler Cleaner. Send for circular. 84 John St., New York.

Wanted.—Good Party to Manufacture and Sell New Store Seat, like that mentioned page 374 this paper. Wood or iron. S., P. O. Box 1973, Phila.

Wanted.—A party with capital and facilities to manufacture a line of standard, heavy machinery. Address, giving name and location of works, Earnest, Box 773, N. Y.

Wanted.—To manufacture and introduce to the hardware trade, articles principally or wholly of gray iron castings. Samson & Swett, Medina, N. Y.

Linen Hose, Rubber Hose, Cotton Belting, Rubber Belting, Leather Belting. Greene, Tweed & Co., 118 Chambers St., N. Y.

Before visiting your shoemaker get a bottle of German Corn Remover; you can secure a much nicer fit; 25 cents.

Wanted.—Some light article to manufacture as a specialty, in wood preferred. Van Cleve & Stilwell, 68 N. J. R. R. Ave., Newark, N. J.

Wanted.—A quantity of second-hand light T Rail, in good condition. S. L. Rockwell, Jordan, N. Y.

List 26.—Description of 2,500 new and second-hand Machines, now ready for distribution. Send stamp for the same. S. C. Forsyth & Co., Manchester, N. H.

Combination Roll and Rubber Co., 27 Barclay St., N. Y. Wringer Rolls and Moulded Goods Specialties.

Tarred Roofing and Sheathing Felts. A. Wiskeman, Paterson, N. J.

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.

"Rival" Steam Pumps for Hot or Cold Water; \$32 and upward. The John H. McGowan Co., Cincinnati, O.

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.

The Newell Universal Mill Co., Office 34 Cortlandt St., New York, are manufacturers of the Newell Universal Grinder for crushing ores and grinding phosphates, bone, plaster, dyewoods, and all gummy and sticky substances. Circulars and prices forwarded upon request.

Pure Oak Leather Belting. C. W. Arny & Son, Manufacturers. Philadelphia. Correspondence solicited.

Presses & Dies. Ferracuta Mach. Co., Bridgeton, N. J. Wood Working Machinery of Improved Design and Workmanship. Corliesman, Egan & Co., Cincinnati, O.

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. Yocom & 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 Traction 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.

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

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. Peck's Patent Drop Press. See adv., page 366.

Long & Allstatler Co.'s Power Punch. See adv., p. 365. For Mill Mach'y & Mill Furnishing, see illus. adv. p. 364.

Saw Mill Machinery. Stearns Mfg. Co. See p. 36. Saunders' Pipe Cutting Threading Mach. See p. 366.

For Sequiera Water Meter, see adv. on page 364. For Machinists' Tools, see Whitcomb's adv., p. 364.

Clark Rubber Wheels adv. See page 380.

For Pat. Safety Elevators, Hoisting Engines, Friction Cone Pulleys, Cut-off Coupling, see Frisbie's ad. p. 381.

Safety Boilers. See Harrison Boiler Works adv., p. 381.

Mineral Lands Prospected, Artesian Wells Bored, by Pa Diamond Drill Co. Box 423, Pottsville, Pa. See p. 381.

Rollstone Mac. Co.'s Wood Working Mach'y ad. p. 380.

Fire Brick, Tile, and Clay Retorts, all shapes. Borgner & O'Brien, M'f'rs, 22d St., above Race, Phila., Pa.

Turbine Wheels; Mill Mach'y. O. J. Bollinger, York, Pa.

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

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

Brass & Copper in sheets, wire & blanks. See ad. p. 398.

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.

Cope & Maxwell M'f'g Co.'s Pump adv., page 397.

The Improved Hydraulic Jacks, Punches, and Tube Expanders. R. Dudgeon, 24 Columbia St., New York.

Eagle Anvils, 10 cents per pound. Fully warranted. Geiser's Patent Grain Thrasher, Peerless, Portable, and Traction Engine. Geiser M'f'g Co., Waynesboro, Pa.

Houston's Sash Dovetailing Machine. See ad., p. 398.

Comb'd Punch & Shears; Universal Lathe (chucks. Lambertville Iron Works, Lambertville, N. J. See ad. p. 381.

Pat. Steam Hoisting Mach'y. See illus. adv., p. 398.

New Economizer Portable Engine. See illus. adv. p. 396.

Fine Taps and Dies in Cases for Jewelers, Dentists, Amateurs. The Pratt & Whitney Co., Hartford, Conn.

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

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

For Shafts, Pulleys, or Hangers, call and see stock kept at 79 Liberty St., N. Y. Wm. Sellers & Co.

Wm. Sellers & Co., Phila., have introduced a new Injector, worked by a single motion of a lever.

The Sweetland Chuck. See illus. adv., p. 396.

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

Skinner's Chuck. Universal, and Eccentric. See p. 397.

Don't buy a Steam Pump until you have written Valley Machine Co., Easthampton, Mass.

Wren's Patent Grate Bar. See adv. page 397.

Use the Vacuum Oils. The best car, lubricating, engine, and cylinder oils made. Address Vacuum Oil Co., No. 3 Rochester Savings Bank, Rochester, N. Y.

Lightning Screw Plates and Labor-saving Tools, p. 396.



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) F. M. E. asks for the composition of the inks used for stamp ribbons, such as are used on type writing machines. I have such a writer, but have not used it for two years, for the reason that I cannot re-ink the ribbons. A. Dissolve 1 oz. of best soluble nigrosine in 4 oz. of hot glycerine by triturating together in a hot mortar, and add 1/4 oz. of soap previously made into a thick paste by triturating and macerating it with a small quantity of hot water. Rub this well into the ribbon.

(2) S. W. asks: What ingredient can be mixed with lime whitewash to prevent it turning yellow in rainy or damp weather when used on outside work? A. See answer to O. E. C., page 375 (40), current volume.

(3) W. L. S. asks for what purpose lamp-black is used. Is it in demand, and what is the market value? A. It is extensively used in the preparation of various black paints, varnishes, japans, printing, marking, stenciling, and transfer inks. Address the dealer in paints and colors. See column of Business and Personal and Hints to Correspondents.

(4) B. W. B. asks how to make an ink that, when first written, cannot be seen, but when applied to heat it turns black. A. Use a dilute solution of chloride of cobalt (pure) in soft water. 2. Also an ink that after a certain time after it is written disappears. A. We cannot give you a receipt for such an ink. See Inks, in SUPPLEMENT, No. 158.

(5) H. G. F. asks for a remedy for mildew in sailcloth exposed to rain and sun. Something more potent than lime water, but not too expensive? A. Saturate the cloth with a strong hot solution of soap, press out excess of the liquid, and digest for six hours or more in a solution of alum 1 lb., in water 1 gallon. Rinse in plenty of clean water before drying. Acetate of lead is sometimes used instead of the alum.

(6) In answer to L. M. and others, C. M. says: The price of soap is regulated by the cost of materials employed, provided the manufacturer is fully competent in the art of soap making. My own experience is that a cotton seed oil soap costs 3 1/2 cents a pound for materials, and a pure tallow soap 4 1/2 cents a pound.

(7) L. B. writes: I wish to stencil some letters and figures around an ordinary white opaque glass globe (for gas). What kind of paint can I use that will not run and will not wash off? A. Try good black japan varnish, thinned with turpentine if necessary.

(8) A. B. asks: 1. How much sulphuric acid, chalk, and water, or sulphuric acid, marble, and water, or sulphuric acid, bicarbonates of soda, and water is necessary to make ten square feet of carbonic acid gas? A. Under ordinary conditions of temperature and pressure ten cubic feet of carbonic acid gas will require, in practice, 3 1/2 pounds of good chalk or marble, 4 pounds of sulphuric acid and 2 1/2 gallons of water; or 2 3/4 pounds of bicarbonate of soda, 1 1/2 pounds of sulphuric acid, and about 3 quarts of water. 2. Does strong

pressure hinder the development of the carbonic acid gas? A. The reaction by which the gas is produced takes place under pressure the same as when the materials are exposed in an open vessel. 3. What is the best elastic material to resist the action of the mineral acids? A. Vulcanized rubber.

(9) W. J. B. asks: Will the common type used in printing stand to be heated hot enough to print letters in gold on the leather covers of books without injury? A. With care, yes. 2. Will the recipe given to W. S. P., in No. 23, do for lettering cloth book backs? A. Yes.

(10) A. B. B. asks (1) for a receipt for making a cement for cementing stone to wood. A. Melt and mix together equal parts of pitch, gutta percha, and shellac. Use hot. See Cements in SUPPLEMENT, No. 157. 2. Of what is hydraulic cement made? A. It is prepared by strongly calcining an argillo-silicious limestone or by calcining an intimate mixture of finely-ground lime, or limestone, clay, and sand. See Gilmore's "Cements and Mortars." 3. What is used for making artificial marble for tops of stands, etc.? A. The materials used are lime, lime carbonate, barytes, zinc white, and water-glass. Some of the stone is hardened by immersing it in a strong solution of chloride of calcium. For minerals, see under appropriate heading.

[OFFICIAL.]

INDEX OF INVENTIONS

FOR WHICH

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

May 24, 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, including: Abdominal supporter, S. A. Richardson; Aging and purifying whisky, G. Goewey; Air compressing apparatus, S. W. Hudson; Air compressor and faucet, S. A. Livingston; Air compressor valve, J. Cla; ton; Air fountain and air cooling apparatus, W. V. Wallace; Animal trap, I. E. & G. W. Jolly; Annunciator, electric, W. H. Sawyer; Anti-freezing closet, J. B. Gordon; Automatic gate, H. W. Ludlow; Axle, vehicle, J. Howell; Barn frame, U. Sherman; Basin, wash, C. E. Robinson; Basket, Osborn & Post; Bed bottom, J. Kelso; Bed bottom, spring, L. C. Boyington; Bed bottom, spring, H. A. Dalrymple; Beer cooler, W. D. Barren; Belt, device for throwing on and off a, A. C. Mitchell; Belts, take-up for waist, E. D. Bean; Belting, machine for making laps on, C. H. Weston; Billiard table, J. Dockstaer; Billiard table, E. J. Sause; Bird cage perch, H. F. Dammon; Bit stock, J. W. Britton; Blacking compound, G. E. Millar; Boilers, apparatus for upright, G. Eichert; Bolt, W. H. King; Boot and shoe, E. L. Sprague; Boot and shoe edge trimming machine, C. H. Helms; Boot and shoe nail driving mechanism, G. McKay; Bottle washer, A. Von Schade; Bottles, attaching caps to, H. Brooke; Bowling alley, F. Sness; Bracelet fastening, G. H. Soule; Bridge, A. W. Brenner; Buckie, trace, P. Miller; Butter cutter, J. H. Humer; Butter jar for packing and preserving, A. L. Blair; Button, collar, N. Mudge; Button hook, W. Hakyard; Candles, composition of matter for the manufacture or illuminating, R. F. W. Loper; Car brake, A. F. Martel; Car coupling, W. E. Thompson; Car door fastening, grain, A. Burntrager; Car door, freight, J. Christiansen; Car, sleeping, F. W. Hunter; Car window, L. B. Scott; Carriage machine cleaning roller, Kershaw & Cunningham; Carpenter's gauge, W. A. James; Carpet cleaner, J. & F. Cook; Cartridge shells, machine for heading, J. H. Gill; Caster, furniture, J. D. Buckhout; Cain, drive, J. M. Dodge; Chain link, ornamental, B. S. Freeman; Chart rack, W. C. Caldwell; Chill, C. Anderson; Chimney, W. Raab; Chucks, jaw for lathe and drill, E. Chillingworth; Churn, E. A. Smyth; Churn washers, mechanism for giving a combined rotary and reciprocating motion to, W. L. Gordon; Cigar box, J. A. Smith; Cigar lighter, W. W. Batchelder; Clock dial, L. E. Jerome; Clothes pin, S. D. Fry; Cotton kanles, attaching, W. O. Heller; Collar and tie, combined, F. C. Marston; Condenser, exhaust injector, J. Wheelock; Condenser, injector, J. Wheelock; Conveyor, W. D. Ewart; Cooking vessel cover, C. M. Knight; Coop, poultry, J. W. Cooley; Cork extractor, automatic, C. C. Clark; Cornice pole angle piece, W. H. Edsall; Cotton press, L. G. Peel; Crutch top, J. S. Wigmore; Cuff, R. S. Norton; Cultivator and harrow, combined, J. W. Fleming;

Table listing inventions with patent numbers and names, including: Curd from buttermilk, preparing, W. Cooley; Curtain fixture, Nix & McClelland; Curtain fixture, F. E. Wagner; Distilling turpentine, process of and apparatus for, J. A. McCreary; Ditching machine, J. H. Omwake; Door check, J. J. Schleuter; Door hanger, H. E. Richards; Door spring, W. W. Robinson; Doubling machines, etc., drop wire for, C. E. Clark; Dyeing, H. W. Vaughan; Dyeing fibrous material, H. W. Vaughan; Ease, W. A. Shields; Egg beater, H. P. Brooks; Emery wheel dresser, C. E. Roberts; End gate, wagon, S. D. Fry; Exercising machine, C. A. Terry; Faucet, beer, E. J. Rubottom; Felt fabric to imitate seal skin, Waring & Brush; Fence barb, wire, C. Brinton; Fence, link, E. M. Cranall; Fence wire stretcher, W. H. Rugh; Fertilizers, treating phosphates for, G. A. Liebig; Fiber for spinning, etc., machine for the reduction of vegetable, H. B. Meech; Files or rasps, machine for cutting, J. J. White; Fire arm lock, F. W. Hood; Fire extinguisher, A. M. Burritt; Fire extinguisher sprinker, A. M. Granger; Fireplace heater, J. B. Oldershaw; Fire shovel and tongs, combined, G. W. Cottingham; Fish plate and joint, O. T. Bevell; Fish scaler, Schaal & Harbaugh; Fruit and vegetable evaporator, Bowen & Potter; Fruit picker, A. J. Ferris; Funnel for filling sacks or bags, R. B. Dula; Gas apparatus, hydrocarbon, P. J. Fitzgerald; Gas lighting device, W. W. Batchelder; Gear wheel cutter, E. L. Parsons; Gear wheel, mechanism for supporting a, W. C. Collyer; Glass conveyor and setter, plate, I. Lackey; Glass or chinaware utensils, connecting parts of, J. Story; Glassware while finishing, tool for holding, R. D. Haines; Glove exhibitor, F. B. Spooner; Glove, husking, J. F. Gladden; Grain binder, C. Jewel; Grain binder, J. P. Monroe; Grain binders, binding head for, S. D. Locke; Grain drill, A. Chesnut; Grain separator, magnetic, J. B. Martin; Guano and dropping cotton seed, attachment for distributing, R. A. Patterson; Gun accelerating, J. R. Haskell; Gun wads, machine for greasing, G. P. Salisbury; Harness shaft lug, W. V. Arrington; Harrow, T. J. Hubbell; Harrow and cultivator, wheel, Schuster & Schau; Harvester binder, W. R. Coats; Harvester sickle bar, V. R. Ostrom; Harvesting machine, S. D. Locke; Heating furnace, J. S. Gard; Heel, J. Tibbetts; Hog nose cutter, R. Pemble, Sr., et al.; Holdback, M. Miller; Hoofs, trimming animals', J. W. Denton; Hoop machine, C. M. Clancy; Horse hoof pad, A. J. Lockie; Horse rake, R. Ellwood; Horse toe weight, R. King; Horseshoe, N. P. Benson; Horseshoeing stand, J. & W. H. Van Houten; Hose reel, L. Gilbert; Insect trap, C. Blackwood; Jewelry, manuf. of cabinet, W. A. L. Miller; Journal bearing, anti-friction, J. H. Langley; Key fastener, A. F. S. Osterberg; King bolt, A. W. Tryon; Kitchen implement, J. W. Ross; Knife and scissors sharpener, C. L. L. Emery; Knob attachment, W. H. Gonne; Knock down box, W. O'Connor; Lacing stud, G. W. Prentice; Lacing stud, F. A. Smith; Lamp burner, C. Votri; Lamp, electric, F. Salathé; Lamp fixture, extension, N. L. Braley; Lantern, E. P. Follett; Lathe attachment, H. C. Barnes; Lathe tool for boring and reaming, S. Graves; Lawn rake, J. B. Morgan; Leather splitting machine, G. L. Tyler; Life saving apparatus, J. Wormley; Lifting jack, H. W. Goodwin; Lock case, H. L. Spiegel; Lubricating device, steam engine, A. Craft; Lubricating paste and pencil, T. Colgan; Mail bag, S. Smith; Mail bag, E. P. Teeters; Malting and apparatus employed therein, system of, N. J. Galland; Marble or stone, artificial, Thompson & Cunningham; Mash apparatus for producing distillers', L. Smith; Mash tub, C. Kaestner; Mat, MacLellan & Jones; Match, continuous, W. W. Batchelder; Matting, constructing, MacLellan & Jones; Mechanical motor, Kisinger & Dunham; Milk can, P. S. Smout; Milk feed regulator, W. Frederick, Jr.; Mill feeding device, F. W. Kepner; Millstone driver, F. Mayo; Mitten, iv. W. Whitaker; Mixer and sifter, H. W. Davis; Monkey wrench, A. K. Sheppard; Mosquito bar supporter, J. Steiner; Motion and power, etc., communicating, I. Holden; Motion, device for converting, J. S. Lamar; Musical instrument, mechanical, Kelly & Chase; Nailing machine, S. Shepherd; Nitro-glycerine compounds, preparing, G. S. Dean; Nut, adjustable, J. Theobald; Nut machine, J. Lowry; Oiler for the flat presses of rotary knitting machines, Philip & Arnold; Ordnance wad, J. R. Haskell; Ore washer, B. A. Peirce; Oven shelf, automatic, M. V. B. White; Overalls, Loewenstein & Van Baulen; Paint composition, H. Berg; Painting roofs, etc., compound for, A. F. & G. W. Hawthorn; Padlewheel, A. F. Rodgers; Padlock, permutation, I. P. Turner; Paper bag, A. F. Edson; Paper bag machine, E. B. Stocking; Paper gauge, R. Smith;