

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.

To Users of Steam.—No one using steam can afford the loss of fuel and power consequent upon the use of inferior non-conducting steam pipe and boiler coverings. Asbestos has proven the most effective and economical material for the purpose, and is employed in the form of a cement and a fireproof felt for a lining or insulator under half felts, etc.

The genuine Asbestos Cement Felting consists of fine long Asbestos fibers and a cementing compound which forms a light, porous, fireproof covering, partaking of the nature of a felt and a cement. It is prepared ready for use, can be easily applied by unskilled workmen, and forms the most effective, durable, and economical non-conducting covering in use for steam pipes, boilers, and other heated surfaces.

The genuine Asbestos Air Chamber Covering consists of an insulating lining or a sheathing made of pure Asbestos, combined with a thick felt or wadding of pure Asbestos, to be applied directly to heated surfaces and covered with one or more layers of hair felt and an outer layer of Asbestos sheathing, thus securing the advantages of hair felt without the liability of its being ignited or charred by fire. The great advantage of the genuine Asbestos coverings for steam pipes, boilers, etc., over any other forms of non-conducting coverings, aside from their economy, superior effectiveness, and fireproof qualities, is that they are manufactured in convenient form ready for use, and can be easily applied without the aid of skilled labor. The H. W. Johns M'fg Co., 87 Maiden Lane, N. Y., are the sole manufacturers.

Partner Wanted.—With small or large capital. In-close stamp to Box 36, Kent City, Mich.

For Sale.—1 Engine Lathe, Fitchburg, 7 1/2 ft. x 15 in.; price, \$30. 1 Iron Planer, planes 7 1/2 ft. x 24 in. x 30 in.; price, \$550. Address Concord Axle Co., Fisherville, N. H.

A. C. E., four years on the Midland Railway, England, and ten years constructing and working railways in British India, desires employment. Good draughtsman and surveyor. Address Assoc. M. I. C. E., Mount Athos, Campbell Co., Va.

Wanted.—Situation by a Gold, Silver, and Nickel Plater; 22 years' experience. Address Plater, Oakville, Ct.

Blake's Belt Studs. The strongest fastening for old and new belts. Greene, Tweed & Co., 118 Chambers St., N. Y.

Workshop Receipts.—A reliable Handbook for Manufacturers and Mechanics. \$2, mail free. Ornamental Penman and Signwriter's Pocketbook of Alphabets. 20 cents. E. & F. N. Spon, 446 Broome St., New York.

For Sale.—Patent on Ice Machines. W. J. Lyons, Decherd, Tenn.

Presses & Dies (fruit cans) Ayar Mach. Wks., Salem, N. J. Mailed free. Catalogue of Books for Engineers. Theoretical and Practical. E. & F. N. Spon, 446 Broome St., New York.

Latest Improved Diamond Drills. Send for circular to M. C. Bullock, 80 to 88 Market St., Chicago, Ill.

Telegraphic, Electrical, and Telephone Supplies, Telegraph Instruments, Electric Bells, Batteries, Magnets, Wires, Carbons, Zincs, and Electrical Materials of every description. Illustrated catalogue and price list, 72 pages, free to any address. J. H. Bunnell & Co., 112 Liberty St., N. Y.

Walrus Leather, Walrus Wheels, Emery, and Glue for Polishers. Greene, Tweed & Co., 118 Chambers St., N. Y.

Wood Working Machinery of Improved Design and Workmanship. Cordesman, Egan & Co., Cincinnati, O.

For Sale.—A complete set of Patterns, Flasks, and Core Arbors, for making Cast Iron Flanged Pipe, Elbows, Tees, and Greenhouse Fittings. Will be sold low to clean out a branch of a business. Address C., Box 1353, New York.

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

Foot Lathes, Fret Saws, 6c. 90 pp. E. Brown, Lowell, Mass. "How to Keep Boilers Clean," and other valuable information for steam users and engineers. Book of sixty-four pages, published by Jas. F. Hotchkiss, 84 John St., New York, mailed free to any address.

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.

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.

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

The Best constructed low priced Engines are built by E. E. Roberts, 107 Liberty St., New York. Communicate. Split Pulleys at low prices, and of same strength and appearance as Whole Pulleys. Yocom & Son's Shafting Works, Drinker St., Philadelphia, Pa.

Experts in Patent Causes and Mechanical Counsel. Park Benjamin & Bro. 234 Broadway, New York.

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

Presses & Dies, Ferracute Mach. Co., Bridgeton, N. J.

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.

Presses, Dies, Tools for working Sheet Metals, etc. Fruit and other Can Tools. E. W. Bliss, Brooklyn, N. Y.

Improved Skinner Portable Engines. Erie, Pa.

Peck's Patent Drop Press. See adv., page 333.

Learn Telegraphy. Outfit complete, \$4.50. Catalogue free. J. H. Bunnell & Co., 112 Liberty St., N. Y.

List 27.—Description of 3,000 new and second-hand Machines, now ready for distribution. Send stamp for same. S. C. Forsyth & Co., Manchester, N. H., and N. Y. city.

Saw Mill Machinery. Stearns Mfg. Co. See p. 333.

Cope & Maxwell M'fg Co.'s Pump adv., page 334.

For Mill Mach'y & Mill Furnishing, see illus. adv. p. 332.

Supplee Steam Engine. See adv. p. 270.

For Pat. Safety Elevators, Hoisting Engines, Friction Clutch Pulleys, Cut-off Coupling, see Frisbie's ad. p. 350. Safety Boilers. See Harrison Boiler Works adv., p. 349. Mineral Lands Prospected, Artesian Wells Bored, by Pa. Diamond Drill Co. Box 423, Pottsville, Pa. See p. 348. C. B. Rogers & Co., Norwich, Conn., Wood Working Machinery of every kind. See adv., page 348.

Common Sense Dry Kiln. Adapted to drying all of material where kiln, etc., drying houses are used. See p. 350. Fire Brick, Tile, and Clay Retorts, all shapes. Borgner & O'Brien, M'frs, 23d St., above Race, Phila., Pa.

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

Ball's Variable Cut-off Engine. See adv., page 364.

Paragon School Desk Extension Slides. See adv. p. 366.

Brass & Copper in sheets, wire & blanks. See adv. p. 364.

The None-such Turbine. See adv., p. 350.

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.

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

Berryman Feed Water Heater. See illus. adv., p. 366.

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

Ajax Metals for Locomotive Boxes, Journal Bearings, etc. Sold in ingots or castings. See adv., p. 365.

Eagle Anvils, 10 cents per pound. Fully warranted.

Geiser's Patent Grain Thrasher, Peerless, Portable, and Traction Engine. Geiser Mfg. Co., Waynesboro, Pa.

Tight and Slack Barrel machinery a specialty. John Greenwood & Co., Rochester, N. Y. See illus. adv. p. 365.

For the manufacture of metallic shells, cups, ferrules, blanks, and any and all kinds of small press and stamped work in copper, brass, zinc, iron, or tin, address C. J. Godfrey & Son, Union City, Conn. The manufacture of small wares, notions, and novelties in the above line, a specialty. See advertisement on page 366.

Magic Lanterns and Stereopticons of all kinds and prices. Views illustrating every subject for public exhibitions. Sunday schools, colleges, and home entertainment. 116 page illustrated catalogue free. McAllister, Manufacturing Optician, 49 Nassau St., New York.

Draughtsman's Sensitive Paper. T. H. McCollin, Phila., Pa.

New Economizer Portable Engine. See illus. adv. p. 366.

Combined Concentric and Eccentric Universal and Independent Jaw Chucks. The Pratt & Whitney Co., Hartford, Conn.

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. 366.

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. 365.

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

For Machinists' Tools, see Whitcomb's adv., p. 366.



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) I. P. F. writes: I have a four-foot drum beneath the floor. Can I belt to a twelve-inch pulley overhead at right angles to it, both horizontal, and have it work satisfactory? A. Yes.

(2) L. J. K. asks how lacquer is made, applied to brass, etc., so as to produce the smooth and permanent polish seen upon fine electrical and optical instruments. I have often tried various recipes, but have always failed in producing good results. A. For receipts for lacquers, see page 209, vol. xlv. Heat the articles to be lacquered, and lay on a thin even coat of the lacquer quickly. If it is small, so that the lacquer chills it, it is better to lay on a very thin lacquer, expose the piece in a japanner's oven at a moderate temperature until the varnish has dried and fused, and then apply another coat and heat again to produce the requisite gloss and finish.

(3) A. E. B. writes: In tracing out the connections in the switch used with the magneto machine, illustrated on your front page last week, I find that the plate 14 is connected with plate 4. Is this correct? Should not 14 be connected with 13? A. 14 should be connected with 13. The mistake is one easily made by the artist. It was noticed and corrected before the printing of the edition was far advanced.

INDEX OF INVENTIONS FOR WHICH Letters Patent of the United States were Granted in the Week Ending November 8, 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 25 cents. 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 page numbers. Includes: Adjustable seat, Alarm, Asbestos roof paint, Axle and hub attaching device, Axle bearing for vehicle wheels, Axle lubricator, Axles, washer for carriage, Bail ears to covered vessels, Banjo, Bedstead, Berth for passenger steamers, Berth, self-leveling, Blacking box, Blacking box, A. French, Blood, instrument for transfusion, Boot and shoe last, Boot and shoe pattern, Boot blacking apparatus, Box, Box nailing machine, Bracelet, Braid or ribbon holder, Brake, Brewing purposes, mixture or grist for, Buckle hook, Burglar alarm, Burner, Button or stud, Button, separable, Cable way, Can, Can case, Car brake, Car brake, P. M. Dalton, Car brake, J. K. Tremain, Car coupling, W. L. Fisher, Car coupling, L. King, Car coupling link, Car coupling pins, process of and machine for making, Car, railway, Car ventilator, railway, Cars, ventilating, Carburetor, metrical, Carburetor, rotary, Carpet stretcher, Carriage, child's, Carriage curtain fastening, Carriage seat, Carriage spring, Carriage wheel, Carrier, Cartridge, Case, Cash carrier and fare collector, Chain link, ornamental, Chair, Child's chair and carriage, Chimney, Churn, W. J. Dixon, Churn, Hutchison & Wiley, Cigarette mouth piece, Clamp, Clasp, Cleaner, Closet, Coffee cleaner and grader, Collar support, shirt, Cooking apparatus, Cooler, Corn cutter, Cornet, Corset, Corset, Cotton gin condensers, bearing for, Coupling, Cup, Current wheel, Cutlery handle, pocket, Cutter, Cuttle fish bone holder, Damper, stovepipe, Desk, cylinder, Door spring, Dough machine, soft, Earring fastener, Earring shield, Electric machine, dynamo, Electric signal apparatus, Elevator, Engine, Exhaust mechanism, variable relief, Fabrics, manufacture of ornamented, Fan and clothes rack, Faucet for shipping cans, Feather renovator, Fence, barbed, Fence wire, barbed, File, bill, Filter, Fire alarm, Firearms, side trigger for, Fire extinguisher, automatic, Fire extinguisher, chemical, Fire iron holder, Fire ladder, Flanges of angle bars, machinery for changing the angle of, Flower stand, Fulling mill, Garment clasp, U. R. Stanton, Garments, pressing and drying, Gas meter register, Gaseous fuel, apparatus for generating, Gearing, chain, Glove fastening, Gold and silver, wet process for the extraction of, Governor, pressure, Grain binder, Grain binder, S. S. Jackman, Grain binder, S. D. Locke, Grain binder, G. B. Shafer, Grate, W. C. Jennings, Guard, See Key hole guard, Gun, machine, Gun, magazine, C. W. Scharf, Gun, magazine spring, J. H. Randell, Hammock, self-leveling, J. Robertson, Handle, See Cutlery handle, Harness, J. Straus, Harness cleaning and polishing composition, H. N. Wheeler, Harrow, A. J. Puryear, Harvesting machine, R. Elckemeyer, Hay rack, J. L. Owens, Hay, straw, etc., apparatus for stacking, L. & T. Soseman, Jr., Hinge, lock, C. B. Clark, Hinge, reversible spring, G. M. Jewett, Hog scraping machine, adjustable traveling, M. Crawford, Holder, See Braid or ribbon holder, Cuttle fish bone holder, Fire iron holder, Pen holder, Hollow articles in which lightness, rigidity, and impermeability are required, manufacture of, F. Walton, Hook, See Buckle hook, Snap hook, Hub, J. A. Hudgens, Hub attaching device, J. R. Anderson, Ice cream freezer, H. Morris, Ice making machine, G. Wacker, Incandescent burner, W. M. Jackson, Insulating electrical conductors, A. T. Woodward, Iron, See Waffle iron, Jack, See Lifting jack, Joint, See Rail joint, Key hole guard, Grill & Hetz, Knife, See Veneer cutting knife, Knitting stockings, C. Winterbottom, Lamp, electric, H. J. Müller, Lamp, electrical, I. B. Sheridan, Lamp, mill, P. Wall, Lamps, flame regulator for burners of heating, J. Haight, Last, E. N. Higley, Lift or hoist or other elevator, D. Edwards, Lifting jack, H. R. Ferris, Lifting jack, A. T. Wilson, Lock, See Nut lock, Wagon seat lock, Loom picker staff, A. M. Wade, Lubricating cup, R. J. Hoffman, Lubricator, See Axle lubricator, Map and chart case, H. E. Moon, Mat, J. B. & C. Z. De Young, Measure bucket, etc., W. J. Smith, Meat by refrigeration, preservation of, J. A. Whitney, Meat chopping machine, J. Sander, Metal working machine, compound, D. C. Burdick, Metal rolls, machine for grooving, C. Moore, Metals, embossing and shaping, W. H. Mallory, Metallic wheel, fielding & Bryant, Meter, See Water meter, Milk can, H. T. Haight, Milk cooler, B. Müller, Mill, See Fulling mill, Windmill, Mineral and water elevator, V. P. Walling, Moulding machine, G. W. Landon, Mortising machine, F. S. Clarkson, Motor, See Water motor, Motor, I. L. Lanais, Motor worked by combustible gas or vapor, D. Clerk, Musical instrument, mechanical, M. Gally, Musical instrument, mechanical, H. B. Nickerson, Nailing machine, Bartlett & Kindall, Needle blanks, machine for swaging, R. Thompson, Nitrates, drying, T. Varney, Nut lock, W. M. Grisham, Nuts on bolts, washer for locking, G. H. Moore, Oatmeal making machine, S. P. Sawyer, Ore reducing apparatus, J. Bucac, Ore separator, magnetic, H. J. Müller, Organ, cabinet, E. P. Carpenter, Organs, whistle for cabinet and pipe, R. H. Downing, Oven, charring, J. Kidd, Overalls, F. Kivi, Packer, oil well, J. A. Dower, Packing box, Medbury & Fenner, Packing for steam engines, pumps, etc., self-lubricating, H. Morrison, Paint for ships' bottoms and other submerged structures, T. Trebell, Panels and mouldings, and apparatus employed in such manufacture, manufacture, embossing, and coloring of, F. Walton, Panels, slabs, and other articles from oxidized oil, manufacture of, F. Walton, Pants and overalls, F. Kivi, Pattern, See Boot and shoe pattern, Pen holder, J. Doyle, Perforating machine, C. E. Bentley, Phosphorescent substances, manufacturing, O. Thowless, Photographic apparatus for holding dry plates, J. H. Hubbard, Pick, J. C. Cramer, Pipe fitting, F. Grinnell, Pipe wrench, I. B. Potts, Planing machines, feeding device for wood, E. F. Gordon, Planter, corn, R. & S. T. Bruce, Plow, J. S. Feit, Plow, R. E. Rose, Plow, U. T. Stewart, Printer's cabinet, S. S. Hoe, Propeller, steering, W. H. Mallory, Pulley block, Moore & Head, Pulley loose, F. L. WALTER, Pulleys, moulding, D. N. Coading, Pulp, apparatus for filtering and compressing liquid-suspended colors into, H. R. Haven, Pump, J. Boyers, Pump, Tubbs & Alderdice, Rack, See Hay rack, Rag engine, A. C. Rice, Rail joint, H. Kimball, Railway cross tie, E. H. Tobey, Railway rail, H. A. Fletcher, Railway switch, D. Tracy, Railway tie and rail fastening, E. H. Tobey, Railway ties, wear plate for, D. Servis, Refrigerating apparatus, J. A. Whitney, Register, See Gas meter register, Regulator, See Watch regulator.

Rivet or eyeletting machine, C. M. Platt.....	249,255
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Rotary engine, W. H. Roach.....	249,402
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Wall pocket, S. Ball.....	12,566

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Cotton piece goods, Stark Mills.....	8,822
Cotton piece goods, Amory Manufacturing Company.....	8,825
Pianofortes, D. H. Dunham.....	8,820
Spirometers, M. Souville.....	8,824

English Patents Issued to Americans.

From November 4 to November 8, 1881, inclusive.

Bed, revolving, D. C. Otis et al., New York city.

Drill, rock, L. B. Stone, Marblehead, Mass.

Electric lamp, L. Daft, Brooklyn, N. Y.

Sewing apparatus for heavy work, E. H. Smith, N. Y. city.

Ship's berth, J. H. Porter, Boston, Mass.

Sizing paper, P. E. Minor, Schenectady, N. Y.

Telegraph cable, C. L. Gore, New York city.

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DR. SCOTT'S ELECTRIC BRUSHES.

EXTRAORDINARY OFFER.

During the next 30 days, any Drug or Fancy Store will let you have either the Hair or Flesh Brush on trial, and if they fail to Cure Headache, Neuralgia, Rheumatic Pains, etc., in a few minutes, or quickly Cure Dandruff, Falling Hair, and Baldness, take them back in good condition and the Price will be refunded. They are not Wire, but Pure Bristle Brushes. Sent on the same terms, postpaid, on receipt of three dollars, by GEO. A. SCOTT, 842 Broadway, New York.

'The Harp that once through Tara's Halls.'

THE HARP-ETTE,

\$1.50. — OR — \$2.50.

AMERICAN ZITHER.



The Best Low Priced String Instruments in the World. The easiest instrument to learn to play and as sweet and melodious as a fine harp or violin. By means of the instructor, anyone with an ear for music can learn to play several tunes in a few hours.

The Harp-ette is played with the thumb and forefinger, same as regular harp. You learn how to play IN FIVE MINUTES. It is tuned by pegs and a key, same as a piano, (a key goes free with the chime) and is as tunable as any which will play any tune splendidly both for solo music and accompaniment to voice, organ or flute. Also good for dance music. You can learn one at the easy walk in a few minutes. They are very handsome in appearance, being thoroughly made of hard woods, highly finished, and is an ornament to any room. It is a great favorite with the ladies, and thousands are learning to play it. Price, 10 strings and key, only \$1.50. 16 strings, only \$2.50. Instructor and 14 popular airs, set to music for the Zither, free with each.

N. B.—Do not forget this superior instrument with a cheap imitation, advertised at same low price. Address: **THE MASSACHUSETTS ORGAN CO.,** sole manufacturers, 57 Washington Street, Boston, Mass. Sent to any address on receipt of price.

INDUCED HYSTERICAL SOMNAMBULISM and Catalepsy. By William J. Morton, M. D. An interesting paper descriptive of several remarkable cases of somnambulism and induced delusions, and catalepsy and aphasia, observed by the author during a morning clinic of Prof. Charcot at the Salpêtrière. Contained in SCIENTIFIC AMERICAN SUPPLEMENT, No. 2561. Price 10 cents. To be had at this office and from all news-dealers.

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