

than any known substance, that it permeates the molecular spaces of all bodies, solid, liquid or gaseous, and fills the interplanetary regions.

I. F. H., of Md.—Solder for fruit cans is made of half tin and half lead. It is the common tin solder.

C. H. C., of Ill.—A mortise made in green wood will become smaller as the wood shrinks in drying.

S. P., of Wis.—We shall drop the subject of "Balancing Cylinders" for the present.

G. W. P., of L. I.—Your idea is not new. Fell's railroad over the Alps has a center rail with two friction wheels that grip its sides.

J. S., of N. Y.—In the absence of skill on your part, printed directions can be of no value. You had better go to a good watchmaker.

Sensible Holiday Presents.

No present can be more acceptable to a wife, mother, sister, or lady friend, than a DOTY WASHING MACHINE, price \$14, and a UNIVERSAL WRINGER, \$9, which are warranted to give entire satisfaction.

The American Newspaper Directory,

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Business and Personal

The Charge for Insertion under this head is One Dollar a Line. If the Notices exceed Four Lines, One Dollar and a Half per Line will be charged.

The paper that meets the eye of manufacturers throughout the United States—Boston Bulletin, \$4 00 a year. Advertisements 17c. a line.

"507 Mechanical Movements." This Illustrated Book, now in its 6th edition, embraces all departments of Mechanics, and is invaluable for reference and study.

Full information given of some valuable public land—just reached by railroad. A good investment, sure to double in value.

Self-Closing Telegraph Key, Frey Patent. Liberal terms to Agents. A. Hiling, 213 Church st., New York city.

For Sale—Lathe. Second-hand Engine Lathe, back-gearred, screw-cutting; swings 25 1/2 inches; 9 ft. 9 in. between centers.

Index Milling Machine, \$100. Thomas & Co., Worcester, Mass.

Fine Pede-speed Skating without ice. Order a pair with 16 inch wheels, \$16, or 17 inch \$17, at the works, C. O. D. T. L. Luders, Olney, Ill.

For Sale—A part or the entire right of my Weaning Bit, for the weaning of colts, calves, etc. Pat. June 21, 1870. Address Isaac L. Baker, Prairie City, Kansas.

Machinery Wanted.—Two Screw Presses and Paper Cutting Machine, second hand. Address, with terms, Wm. Pratt & Co., 93 Liberty st.

Soap Stone Packing, all sizes, in lots to suit. Greene, Tweed & Co., 10 Park Place, Manufacturers' Agents.

Walrus Leather, for Polishing Steel and Plated Ware. Greene, Tweed & Co., 10 Park Place, New York.

Baxter's Portable Steam Engine. For descriptive Pamphlet address Russell & Speer, 10 Park Place, New York.

Millers.—An experienced, practical miller wants a situation. Address W. J. Groves, 814 Washington avenue, St. Louis, Mo.

News for every Machinist, Apprentice Machinist, Gunsmith, and Blacksmith in the United States. Address, with stamp, Mechanical Association, Box 418, Marshall, Mich.

Dickinson's Patent Shaped Diamond Carbon Points and Adjustable Holder for dressing emery wheels, grindstones, etc. See Scientific American, July 24 and Nov. 20, 1869. 61 Nassau st., New York.

Peck's Patent Drop Press. For circulars address the sole manufacturers, Milo Peck & Co., New Haven, Ct.

Patent Elliptic-geared Punches and Shears.—The greatest economy of power, space, and labor. Can be seen in operation at our factory, in Trenton, N. J. Address American Saw Co., 1 Ferry st., New York.

Hand Screw Punches and Lever Punches. American Saw Co., New York.

For Sale—The entire Right of the best Adjustable Wrench. Price \$5,000. J. F. Ronan, at Chickering's Factory, Boston, Mass.

Corn-shuck Collars.—C. H. Leffler, of Montgomery, Ala., wants a machine that will receive the Corn Shucks and plait them into a collar.

Self-testing Steam Gage—Will tell you if it is tampered with, or out of order. The only reliable gage. Send for circular. E. H. Ashcroft, Boston, Mass.

Scientific American—Back Vols. and Nos. for sale. Volumes bound, \$3. Nos. 10c. each. Address Theo. Tusch, 37 Park Row, New York.

Peck's Patent Drop Press. Milo Peck & Co., New Haven, Ct.

House Planning.—Geo. J. Colby, Waterbury, Vt., offers information of value to all in planning a House. Send him your address!

The Merriman Bolt Cutter—the best made. Send for circulars. Brown and Barnes, Fair Haven, Conn.

Pictures for the Drawing Room.—Prang's "Lake George," "West Point," "Joy of Autumn," "Prairie Flowers," Just issued. Sold in all Art Stores. "Three Tom Boys." "Bethoven," large and small.

Manufacturers and Patentees.—Agencies for the Pacific Coast wanted by Nathan Joseph & Co., 619 Washington st., San Francisco, who are already acting for several firms in the United States and Europe, to whom they can give references.

To Cure a Cough, Cold, or Sore Throat, use Brown's Bronchial Troches.

Machinery for two 500-tun propellers, 60-Horse Locomotive Boiler, nearly new, for sale by Wm. D. Andrews & Bro., 414 Water st., N. Y.

Lighting Gas in Streets, Factories, etc., with Bartlett's Patent Torch saves great expense, all risks, etc. It is being adopted everywhere. Address J. W. Bartlett, 569, Broadway, New York.

Japanese Paper-ware Spittoons, Wash Basins, Bowls, Pails, Milk Pans, Slop Jars, Chamber Pails, Trays. Perfectly water-proof. Will not break or rust. Send for circulars. Jennings Brothers, 352 Pearl st., N. Y.

A very Valuable Patent for sale, the merits of which will be appreciated at sight. Apply to or address Jewell & Ehlen, 93 Liberty st., N. Y.

Improved Foot Lathes. Many a reader of this paper has one of them. Catalogue free. N. H. Baldwin, Laconia, N. H.

Belting that is Belting.—Always send for the Best Philadelphia Oak-Tanned, to C. W. Army, Manufacturer, 301 Cherry st., Phil'a.

For Fruit-Can Tools, Presses, Dies for all Metals, apply to Mays & Bliss, 118, 120, and 122 Plymouth st., Brooklyn, N. Y. Send for catalogue.

Parties in need of small Gray Iron Castings please address Enterprise Manufacturing Co., Philadelphia.

Best Boiler-tube Cleaner—A. H. & M. Morse, Franklin, Mass.

The Best Hand Shears and Punches for metal work, as well as the latest improved lathes, and other machinists' tools, from entirely new patterns, are manufactured by L. W. Pond, Worcester, Mass. Office 98 Liberty st., New York.

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

Keuffel & Esser 116 Fulton st., N. Y., the best place to get 1st-class Drawing Materials, Swiss instruments, and Rubber Triangles and Curves.

Cold Rolled-Shafting, piston rods, pump rods, Collins pat. double compression couplings, manufactured by Jones & Laughlins, Pittsburgh, Pa.

For mining, wrecking, pumping, drainage, and irrigating machine y, see advertisement of Andrews' Patents in another column.

Incrustations prevented by Winans' Boiler Powder, 11 Wall st., New York, 15 years in use. Beware of frauds.

Lynn's Anti-Incrustator for Steam Boilers—The only reliable preventive. No foaming, and does not attack metals of boilers. Price 25 cents per lb. C. D. Fredericks, 537 Broadway, New York.

To Ascertain where there will be a demand for new machinery or manufacturers' supplies read Boston Commercial Bulletin's Manufacturing News of the United States. Terms \$4 00 a year.

Recent American and Foreign Patents.

Under this heading we shall publish weekly notes of some of the more prominent home and foreign patents.

CAST-IRON PLOW.—John K. Odell and William S. Little, Deckertown, N. J. This invention has for its object to improve the construction of cast-iron plows, so as to make them simpler in construction, stronger and better in operation, and more convenient in manufacture than when made in the ordinary manner.

COMBINED HAND SEED-DRILL AND CULTIVATOR.—Samuel D. Lucas, Winterpock, Va.—This invention has for its object to furnish a simple and convenient hand machine, which shall be so constructed that it may be readily adjusted for planting various kinds of seeds, that require to be planted in drills or rows, and for cultivating the plants when required.

SHIFTING SHOVEL PLOW.—Adam Snyder, Packard, Ohio.—This invention has for its object to furnish an improved shovel plow, which shall be so constructed that the shovel may be set square with the line of draft, or inclined to one or the other side, as may be desired.

SCRUBBING BRUSH.—Ralph Rockwell and Z. B. Custer, Petroleum Center, Pa.—This invention relates to the manner of securing the bristle stock of a scrubbing brush to the base board bearing the rubber strip that operates as a dryer, and in the manner of pivoting the handle to said base board, whereby the stock is prevented from lateral movement or displacement, and the handle may be inclined in either direction, to enable the operator to work the brush with either the rubber or dryer in front.

BOILER FOR PREPARING PAPER PULP.—Lorenzo Dean, Fort Edward, N. Y.—This invention has for its object to improve the construction of the boilers ordinarily used for reducing paper stock, so as to make them more convenient and effective in operation, and enabling the stock, when reduced, to be washed and bleached without removing it from the boiler in which it has been reduced.

SAWING MACHINE.—Daniel Heller, Milton Center, Ohio.—This invention has for its object to furnish an improved machine for operating a "cross cut" or other wood saw, which shall be simple in construction and effective in operation, enabling one man to do more work than two with the ordinary saw, and with greater ease.

PREPARING STRAW, ETC., FOR THE MANUFACTURE OF PAPER.—Lorenzo Dean, Fort Edward, N. Y.—This invention has for its object to furnish an improvement in preparing straw and other fibrous material for the manufacture of paper, by means of which the labor and expense will be greatly diminished, and the material, when reduced, will produce a much better stock.

SETTING TIRES ON WHEELS.—A. O. Wheeler, St. Augustine, Ill.—This invention relates to a new and useful improvement in mode of setting or tightening and loosening the tires of carriage or other wheels, and consists in increasing the diameter of the wheel or expanding the felly by means of a tapering screw, operating in a divided nut.

LUBRICATOR.—Samuel S. Vollum and William H. Green, New York city.—This invention relates to a new and useful improvement in a device for conveying oil or other lubricating material to the arms of carriage axles, or to journals, boxes, or bearings.

BEVELING THE EDGES OF CIRCULAR PLATES OF METAL.—William H. Singer, Pittsburgh, Pa.—This invention is an improvement for which a patent was issued to the same party Nov. 30th, 1869, and consists in providing a mechanism for holding the circular blank on which a beveled edge is to be produced, without enlarging the central hole through which the stepped vertical holding pin passes, and whereby the whole of that part of the blank to be beveled is introduced between the rolls at once.

PACKING BOX FOR ROTARY STEAM CYLINDERS.—S. Deacon and J. Russell, Lawrence, Mass.—This invention relates to a new packing box for revolving steam cylinders, and consists in the arrangement of a nut that serves to clamp the packing between two cones, and which, instead of working on a screw thread is moved longitudinally by contact with a fixed cam.

HORSE POWER.—Lorenzo P. Teed, Mechanicsburgh, Pa.—This invention has for its object to furnish an improved horse power, which shall be so constructed and arranged that it may be firmly secured in place, and securely held while at work, being secured and adjusted conveniently and quickly, and without removing it from the wagon.

COFFEE STEAMER.—Louis Hildenbrand, Michigan City, Ind.—This invention relates to an apparatus for rapidly extracting the aromatic ingredients from coffee-beans by means of steam created by the heat of a stove or other heater, with an object of utilizing the full virtue of the beans, and consequently economizing coffee and producing a beverage superior to that made by the means heretofore in use.

PROCESS OF SACCHARIFYING MASH.—Charles H. Frings, Centreton, Mo.—The object of this invention is to produce a perfect saccharifying of mash without waste of malt. For this object a small quantity of muriatic acid and phosphoric acid is added to the water used for converting the grain into mash; corn, rye, barley, wheat, or other grain being used.

MACHINE FOR POLISHING COFFEE-BEANS.—Charles C. Warren and James B. Baldy, Toledo, Ohio.—The object of this invention is to construct a machine, whereby coffee can be rapidly cleaned and polished in bags; and the invention consists in the employment of two or more rollers, of which the outer surfaces are employed for revolving the filled bags.

STREET LETTER-BOX.—Albert Potts, Philadelphia, Pa.—The object of this invention is to so construct letter-boxes which are to be applied to lamp-posts, pillars, or other similar supports, that can be readily fitted on, firmly retained, safely closed, and conveniently used. See an illustrated description of this invention in another column.

DOOR SPRING.—William H. Stafford, New York city.—This invention relates to a new spring of very simple construction for holding doors shut, and is applicable to all kinds of doors, whether they are hinged to swing to one or both sides.

MACHINE FOR POINTING NAILS.—Harry A. Wills, Vergennes, Vt.—This invention relates to a new machine for pointing the ends of nails used for horse shoes and other purposes. The invention consists in a new spiral feeding apparatus for conveying the nail blanks to the pointing mechanism. The invention consists also in a new arrangement of gaging, clamping, and pointing mechanism.

Official List of Patents.

ISSUED BY THE U. S. PATENT OFFICE.

FOR THE WEEK ENDING DEC. 6, 1870.

Reported Officially for the Scientific American.

SCHEDULE OF PATENT FEES.

Table with 2 columns: Fee description and Amount. Includes: On each caveat, On each Trade-Mark, On filing each application for a Patent, On issuing each original Patent, On appeal to Examiners-in-Chief, On appeal to Commissioner of Patents, On application for Reissue of Patent, On application for Extension of Patent, On granting the Extension, On filing a Disclaimer, On an application for Design (three and a half years), On an application for Design (seven years), On an application for Design (fourteen years).

For Copy of Claim of any Patent issued within 30 years, \$1. A sketch from the model or drawing, relating to such portion of a machine as the Claim covers, from upward, but usually at the price above named.

The full Specification of any patent issued since Nov. 20, 1866, at which time the Patent Office commenced printing them, \$1.25. Official Copies of Drawings of any patent issued since 1836, we can supply at a reasonable cost, the price depending upon the amount of labor involved and the number of views.

Full information, as to price of drawings, in each case, may be had by addressing

MUNN & CO., Patent Solicitors, 37 Park Row, New York.

109,793.—KNITTING MACHINE AND NEEDLES.—A. W. Allen, Indianapolis, Ind.

109,794.—CLOTH-WINDING MECHANISM FOR LOOMS.—W. A. Arnold, Rockport, Mass.

109,795.—LUBRICATOR.—C. D. Austin, Newcastle-on-Tyne, England.

109,796.—VALVE COCK.—Robert Berryman, Boston, Mass.

109,797.—CAR COUPLING.—Henry Blanchard, Jr., Boston, Mass.

109,798.—BELT FASTENER.—S. S. Bolton, Big Rapids, Mich.

109,799.—BEDSTEAD JOINT.—L. G. Bradford (assignor to himself and N. H. Morton), Plymouth, Mass.

109,800.—CURTAIN FIXTURE.—J. G. Brothwell (assignor to Turner, Seymour & Judde), Wolcottville, Conn.

109,801.—SASH LOCK.—E. L. Brown, Norwich, N. Y.

109,802.—APPARATUS FOR EVAPORATING BRINE AND OTHER LIQUIDS.—James Buchanan, Detroit, Mich.

109,803.—BRICK MACHINE.—Cyrus Chambers, Jr., Philadelphia, Pa.

109,804.—COTTON BALE TIE.—William Chambers, New Orleans, La.

109,805.—TINSMITH'S FURNACE.—Michael Conner, Plymouth, Mich.

109,806.—CIRCULAR SAW JOINTER.—E. H. Corbin, Winchester, Ind.

109,807.—STEAM GENERATOR.—L. R. Cornell, Flatbush, N. Y.

109,808.—RAILWAY RECLINING CHAIR.—J. P. Curry, New York city.

109,809.—NUT LOCK.—M. A. Cushing and O. R. Glover, Ottawa, Ill. Antedated November 26, 1870.

109,810.—WASHING MACHINE.—Henry Dickinson, Marlborough, Conn.

109,811.—REFRIGERATOR.—H. F. Eberts, Detroit, Mich., assignor to himself, D. Y. Howell, Toledo, Ohio, and T. S. Sprague, Detroit, Mich.

109,812.—CULTIVATOR.—Abraham Eshleman, Martinsville, Pa.

109,813.—BARREL SAFETY VALVE OR VENT.—B. F. Evans, Newburyport, Mass.

109,814.—HAND STAMP.—D. W. Fish, Brooklyn, N. Y.

109,815.—PERPETUAL BRICK-BURNING KILN.—William Gilbert, Detroit, Mich.

109,816.—SEWING MACHINE FOR MAKING PUFFINGS.—E. D. Gird, Syracuse, N. Y. Antedated November 25, 1870.

109,817.—WAGON TONGUE SUPPORT.—A. F. Que, Eastmanville, Mich.

109,818.—SHUTTER FASTENER.—Theodore Hare and James Wood, Norristown, Pa.

109,819.—SNOW PLOW.—C. F. Hornbeck and W. J. Carns, Slaterville, N. Y.

109,820.—DEVICE FOR FREEZING FISH, MEATS, ETC.—D. Y. Howell, Toledo, Ohio, assignor to himself, T. S. Sprague, and H. F. Eberts, Detroit, Mich.

109,821.—BOX FOR PACKING FRUIT, PROVISIONS, ETC.—G. M. Huston, Putnam, Ohio.

109,822.—FEED CUTTER.—William Hutchins (assignor to himself and G. G. Hutchins), Paw Paw, Mich.

109,823.—HEAD REST FOR CAR SEATS.—E. M. Judd, New Haven, Conn.

109,824.—JELLY GLASS.—W. M. Kirchner, Pittsburgh, Pa.

109,825.—TOOL FOR FORMING SCREW THREADS ON GLASS JARS.—W. M. Kirchner, Pittsburgh, Pa.

109,826.—HAIR-SPRING OF WATCHES, ETC.—Calvin Kline, Brooklyn, N. Y., assignor to himself and G. E. Hart, Newark, N. J.

109,827.—POCKET BOOK.—Julius Lehman, New York city.

109,828.—SEWING MACHINE.—T. A. Macaulay, Northampton, Mass.

