

RECENTLY PATENTED INVENTIONS.

Engineering.

LOCOMOTIVE BOILER.—Charles S. Smith, Pocahontas, Ia. This is a boiler with an attachment whereby a portion of the exhaust steam may be utilized in the boiler furnace for completing the combustion of the fuel and preventing the escape of sparks and cinders, the exhaust being connected with the discharge end of some of the boiler flues.

AIR BRAKE.—George B. Williams, La Crosse, Wis. This brake is designed to reduce to a minimum the waste air from the train pipe when air from an auxiliary reservoir is used for applying the brakes, the invention covering novel details of construction and arrangement of parts, as improvements on Westinghouse brakes.

PULVERIZING MACHINE.—James W. Hilton, Brooklyn, N. Y. The machine has a cylindrical casing closed by end heads, each having axial tubular bearings connected with a hopper, there being feed screws in the tubular bearings, and the drum having outer curved pockets and screens, and a solid central portion provided with pulverizing surfaces or rings and pulverizing rollers, being adapted for pulverizing ores and for other uses.

FEED WATER HEATER.—J. Thomas Lee, Mattoon, Ill. A water jacket diaphragm, or heat deflector, is held in the smoke box of the boiler and connected with an injector or pump, while a water jacket surrounds the stand pipe and is connected with the water jacket diaphragm and the interior of the boiler, thus utilizing the heat of the escaping smoke and gases and of the exhaust steam.

Agricultural.

MOWING MACHINE.—George W. Maxwell, Homer, Neb. This invention covers novel features of construction and combinations of parts whereby an even movement of the cutter bars is secured and all complicated mechanism is avoided.

FERTILIZER DISTRIBUTER.—John M. Howell, Jr., Donaldsonville, La. It has a hopper through which passes the wheel axle carrying a toothed cylinder, a slide or valve being arranged in a chamber extended to and below the hopper, the chamber having on its under side a two-armed conductor, while the valve is operated by a lever having adjustable connection with the hopper, for distributing a given number of pounds of fertilizer to the acre.

OSCILLATING SULKY HARROW.—Calvin H. Weeks and William Sellers, Haverhill, Mass. The harrow is pivoted at its center of gravity, and so balanced that but little power is required to oscillate it, the worm-like passage of the harrow teeth through the ground being designed rather to lighten the draught of the machine, while doing the work with one passage of the machine, so that cross-harrowing is unnecessary.

POISON DISTRIBUTER FOR PLANTS.—James T. Gramling and Alfred A. Adler, Mayersville, Miss. The crank axle on which are the supporting wheels and frame is bent up in the middle high enough to pass over the tallest branches of cotton, and the frame carries powder-dusting devices for sifting Paris green or other powdered poison upon growing plants, such as cotton, potatoes, etc.

HARVESTERS.—Dennis H. Bennett, Allendale, Mich. This invention covers an improved cutting apparatus for harvesters, particularly providing convenient means for securing the knives to the cutter bar, while the cutters may be readily removed when desired by giving the button a quarter or a half turn, and when replaced be secured by reversing the movement.

CULTIVATOR.—Clinton Mendenhall, Martinsburg, West Va. It is made with a wheeled frame having a series of inclines at its forward end, upon which a shaft is supported to travel, the shaft having plows connected thereto, while there is a lever for operating the shaft, by means of which the plows may be lifted out of the ground, and means for regulating the depth of the plows, the machine being adapted for cultivating various kinds of grain, and for use on stony or swampy ground.

Miscellaneous.

RATCHET MINING DRILL.—William A. Gentry, Trenton, Ga. The tubular stock of the drill has a socket at one end to receive the drill and a socket at the other end to receive a nut through which the feed screw works, the feed screw being steadily guided within the tubular stock, and with its nut being conveniently reversible, saving time and promoting durability.

TAMPING TOOL.—Warren B. Waldron and George C. Boller, Folsom City, Cal. This invention provides a spear attachment which may be readily adjusted in place or removed from the socket of the tamping tool, the spear being of any desired shape, and preferably of plate steel.

LIFTING JACK.—J. Merritt Smith, Greenwich, Conn. The standard has a lateral vertical slot through it, and at one edge a series of downwardly inclining branch slots or pockets, forming rests for the fulcrum pin of a curved operating lever arm, with other novel features, making a jack more particularly designed for lifting carriages.

LEVELING INSTRUMENT.—Aaron T. Binker, Allegheny, Pa. This is a combination instrument mounted on a stock, from which swings a gravity pointer, a degree scale being on the stock, and an arm pivoted to the stock, on which arm a compass is mounted to turn provided with folding sights, the instrument being adapted for leveling, obtaining angles, and sighting distant points.

TANK VALVE.—James Cavanagh, New York City. This invention covers a novel construction, combination, and arrangement of parts producing a cheap and effective inlet cock for closet tanks.

CHISEL GAUGE.—Aaron T. Binker, Allegheny, Pa. This is a device adapted for attachment to an ordinary chisel to guide the latter while cutting hinge-receiving recesses in doors, sashes, etc., and is made with two plates, one adapted to rest on the wood to control the depth of cut, and the other forming a stop to limit the instroke of the chisel, fastening devices holding the plates to each other and to opposite faces of the chisel blade.

HAY SLING.—Jay Toney, Omaha, Neb. It is made with two ropes united at their ends in rings, in connection with a coupler formed with a bail, through which the elevator rope passes, and having pivoted jaws and a sliding block, whereby the pull on the elevator rope draws the sling firmly upon its load.

PULLEY.—Jay Toney, Omaha, Neb. This invention consists principally in combining with the frame of the pulley a detachable head or knob, so that the pulley may readily be provided with a head of any size required for any hay carrier, being designed more especially for use in connection with heavy forks or unloaders.

VEHICLE WRENCH.—Egbert W. Hemans and Eugene C. Thayer, Aurelius, Mich. This wrench is designed to provide a means whereby the axle nut may be removed or replaced by the motion of the wheel, and when the wheel is removed from the axle the nut will remain in the hub in position for replacement.

BRAKE FOR VEHICLES.—William R. Wilcox, Portland, Col. This is a lock brake, whereby the vehicle will be held secure in ascending and descending a steep grade, the axle of the vehicle having a rock shaft journaled thereon, with a lever attached to one end of the shaft, lugs projecting from the shaft, and fork-like brake bars pivoted to the lugs.

GRAIN WEIGHING SCALE.—Henry Cutler, North Wilbraham, Mass. This scale is automatic in operation, delivering the weighed grain to the bags, and is simple and durable in construction and not liable to get out of order, the invention being an improvement on a former patented invention of the same inventor.

MAKING PICKETS OR SHINGLES.—Noah A. Acuff, Hall's Cross Roads, Tenn. This is a machine for pointing pickets, shingles, or similar articles, providing therefor an apparatus that will occupy but little room, and wherein each article will be shaped upon a uniform slope and pointed to the center of the material.

WATER HEATER.—William M. Barber, Fitchburg, Mass. This heater is designed to be safely utilized for heating houses and other structures, providing therefor an effective circulation, and affording a large amount of water with a maximum area of heating surface.

WASHING MACHINE.—Samuel J. Smith, Truckee, Cal. This is a machine in which movable rubbers are operated in conjunction with a stationary wash board in a water-containing tank, the rubbers being operated in series, whereby the clothes are kept from wadding up while the water is kept in rapid circulation.

GAUGE CHISEL.—Aaron T. Binker, Allegheny, Pa. This is a tool adapted more particularly for scoring or cutting recesses to receive the leaves of hinges, by which hinges of any size may be quickly set into work without the aid of compass, try square, or ordinary marking gauges.

DISTILLING TURPENTINE.—Joseph B. Underwood, Fayetteville, N. C. This invention covers a process of distilling crude turpentine in the presence of refined petroleum having about the same specific gravity as spirits of turpentine, or less, designed to increase the yield from a given quantity of crude turpentine and to improve the character of the product.

MAKING BOOT HEELS.—Antoninus Farina, New York City. An apparatus for forming a heel-shaped leather shell, and filling the shell with a solid body, is covered by this patent, which embraces novel devices for stretching and pressing the leather into the approximate form of the finished shell preparatory to moulding it, and for moulding and working the leather into the final shape thereafter.

DESKS.—John Thompson, Chicago, Ill. This invention covers an improvement in desks whose cabinets or pigeon hole portions are adapted to be first drawn partly out and then turned or swung one-quarter way around, increasing the facility of reaching their contents, and giving increased capacity.

BICYCLE.—Hiram F. Henry, Gowanda, N. Y. An arm is connected with the swinging part of the steering standard, while a spring is held on the fixed frame, its ends pressing against the arm, causing the steering wheel to return automatically to its normal position when turned out of a straight line, and holding it in normal position when the rider has his hands off the steering arm.

PAPER HOLDER AND CUTTER.—John Zerr, Keokuk, Iowa. This invention relates to roll paper holders with cutters for parting the paper by pulling it out sideways, and covers special means for producing tension upon the roll of paper, which is cut after a sufficient length of paper has been drawn out from the roll for the purpose required.

PAPER FASTENING TOOL.—Thomas C. McCollom, Brooklyn, N. Y. This invention relates to an improvement in devices for applying the ordinary flexible T-shaped paper fasteners to the joining of paper sheets, and for removing them, the object being to secure greater simplicity, efficiency, and convenience in use than has heretofore been attained.

ALBUM CLASP.—Frederick Deck, Brooklyn, N. Y. A box, casing, or pocket is hinged to one cover of the album, and a plate enters the pocket having a threaded tongue engaging a milled nut in a through opening in the walls of the pocket, the plate having an aperture for engaging a stud on the other cover of the album, making a simple, convenient, and ornamental clasp.

PLUME.—Ralph W. E. Aldrich, Northampton, Mass. It consists of a central rigid core, to which strands of wool, hair, or similar material are secured at about the center of their length by the twist of the core, while a cap is attached to the upper end of the core, whereby a plume may be produced in an economical and expeditious manner.

EXHIBITING APPARATUS.—Bertrand Hamburg, Paul Ketterer, and Eduard Ketterer, Frankfurt-on-the-Main, Germany. It is an automatic device for displaying watches, jewelry, and other articles, causing them automatically to pass before the eyes of spectators intermittently, to allow of their convenient inspection.

PUZZLE.—Samuel P. Chandler, Ashton, S. C. It consists of two notched bars interlocked with three series of notched blocks, one series of which is arranged between the notched bars and the other two series of which are arranged on opposite sides of the notched bars at right angles to and interlocking with the first series of blocks.

MOTOR.—Cornelius C. Epp, Bradshaw, Neb. This invention covers the use of a drive weight in combination with a train of gears, the device embodying certain novel features of construction and combinations of parts, and being intended especially for operating pumps.

GROCER'S BIN.—Lysander Johnston, Tyler, Texas. This invention consists in a box or bin pivoted so that its upper open end may be conveniently tilted out for the purpose of replenishing or taking therefrom, and as conveniently pushed back into the casing, which has stops for limiting the opening and closing movements of the box.

BANJO.—James J. Doyle, Albany, N. Y. The strings are all secured at one end to one adjustably supported holder and at their opposite ends to independent individual keys, so that they may be independently tuned for playing, and thereafter all lowered and again raised simultaneously.

SCIENTIFIC AMERICAN
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1. Elegant plate in colors, showing three designs for small cottage dwellings, for twenty-five foot lots. Cost, fifteen hundred dollars each. Floor plans, details, etc.
2. Plate in colors, illustrating a village school house, to cost three thousand dollars. Details, floor plans, etc.
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4. Perspective view and floor plans of an attractive residence built at East Orange, N. J. Cost, eight thousand five hundred dollars.
5. A cottage recently erected on Sound View Hill, New Rochelle, N. Y. Plans and perspective. Cost, four thousand dollars.
6. Views of the Pratt Institute for Industrial Education, Brooklyn, N. Y.
7. A cottage for four thousand three hundred dollars, recently erected at Rochelle Park, N. Y. Plans and perspective.
8. Perspective and floor plans of an attractive cottage built recently at East Orange, N. J. Cost, six thousand dollars.
9. A suburban villa built lately at Richmond Hill, Long Island. Cost, seven thousand dollars. Plans and perspective.
10. Engraving of a country residence at East Orange, N. J., with plans and perspective. An excellent design.
11. A residence on Renolds Terrace, in Orange, N. J., lately built at a cost of eight thousand dollars. Perspective view and floor plans.
12. Design for the new court house and post office, Abingdon, Va.
13. Design for the new building for the United States post office, etc., at Dayton, Ohio.
14. An admirable design for a suburban residence of the Queen Anne type, recently built at East Orange, N. J. Cost, nine thousand dollars. Perspective and floor plans.
15. Perspective and plans of a barn and carriage house built at Richmond Hill, Long Island. Cost, eight hundred dollars.
16. The Villa Reiss, near Cronberg, Taunus Mountains, Germany. New residence of the Empress of Germany.
17. Miscellaneous contents: Publication of designs.—The Drexel building, Philadelphia.—Ancient sanitation.—Effect of adding sugar to cement.—The New York safety dumb waiter, illustrated.—The automatic regulation of the temperature in houses, illustrated.—The Aldine fireplace, illustrated.—The Howard combination heater, illustrated.

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NEW BOOKS AND PUBLICATIONS.

MANUAL OF CHEMISTRY. W. Simon. Philadelphia: Lea Brothers & Co. Pp. 479. Price \$3.

The author is a professor of chemistry in the Maryland College of Pharmacy, Baltimore, and has here presented a guide to lectures and laboratory work for beginners, a text book specially adapted for students of pharmacy and medicine. This is the second edition of the work, which has been revised and greatly enlarged, now having forty-four illustrations and seven colored plates, the latter representing fifty-six chemical reactions.

HYGIENE OF THE NURSERY. By Louis Starr. Philadelphia: P. Blakiston, Son & Co. Pp. 212. Price \$1.50.

The endeavor has been in this book to point out a series of hygienic rules which, if applied to the nursing, can hardly fail to maintain good health, give vigor to the frame, and lessen susceptibility to disease, little or no reference being made to drugs or methods of medical treatment. The author is a physician to the Children's Hospital, Philadelphia.

EATING FOR STRENGTH. By M. L. Holbrook. New York: M. L. Holbrook & Co. Pp. 236. Price \$1.

This is a dissertation on food and diet in relation to health and work, giving several hundred recipes for wholesome food and drinks, presenting much of the most recently attested data in a way to make them valuable for actual use in daily life.

POOR'S DIRECTORY OF RAILWAY OFFICIALS. Third annual number. New York: H. V. & H. W. Poor. Pp. 400. Price \$2.

This book is a supplement to Poor's Railroad Manual, containing lists of officers of all railroads in the United States, Canada, Mexico, and Central and South America; also of officers of auxiliary enterprises, as express, sleeping car, and equipment companies, of manufacturers of various kinds connected with railroad business, etc. The directory contains 30,000 names.

CURIOSITIES OF THE UNITED STATES PATENT OFFICE. By William Chandler Raymond. Syracuse, N. Y.: William C. Raymond. Pp. 168.

This book is perhaps more amusing and entertaining than instructive, for its principal features are those noting some of the curious, comical, and remarkable patents granted to inventors in past years, for the collating of which the author, who was formerly an attaché of the Patent Office, seems to have had a penchant.