

ENGINEERING INVENTIONS.

A triple valve for air brakes has been patented by Mr. George B. Williams, of La Crosse, Wis. This invention covers a novel combination and arrangement of parts whereby the brakes may be applied simultaneously at the front, rear, and middle of a train, or may be applied sooner and with greater force on special cars in the train.

A valve gear has been patented by Mr. Robert Mackay, of Warren, Pa. Combined with a link is an upwardly extending rod, an operating lever, a swivel eye, and stops carried by the upwardly extending rod upon either side of the swivel eye, with other novel features, the design being to steady the position of the link, and to provide for its quick and ready adjustment.

A rotary valve has been patented by Mr. James O'Donnell, of San Francisco, Cal. It is a cylindrical oscillating valve, with two ports connecting alternately the steam supply with the ports leading to the cylinder, the valve having also an external cavity in its rim connecting the exhaust port alternately with the ports leading to the cylinder, the valve being simple, perfectly balanced, and dispensing with the usual steam chest.

AGRICULTURAL INVENTION.

A cleaner and gauge attachment for grain drills has been patented by Mr. John T. West, of Bowling Green, Ky. It is a rotary and vertically adjustable attachment designed to prevent the accumulation of trash in the form of grass, weeds, stubble, etc., and regulate the depth of the furrows made by the teeth or flukes, and thus facilitate the work of grain drills.

MISCELLANEOUS INVENTIONS.

A folding cot has been patented by Mr. John C. Porter, of New York City. Its cross pieces support coiled springs which support slats, while folding legs are pivoted to the side pieces, the construction being cheap, strong and practical, and the cot occupying but little space when folded.

A machine for excavating has been patented by Mr. Charles S. Jones, of Yates Center, Kansas. This invention covers a novel construction and combination of parts for an improved scavenger by which privy vaults can be conveniently emptied of their contents and the latter transported to any desired place.

A grindstone hanger has been patented by Mr. Dennis O'Leary, of San Bernardino, Cal. The invention consists of a split shaft supporting the stone, washers held on the shaft, and a nut screwing against one of the washers, while a key presses against the other washer to hold the stone securely in place on the shaft.

A strap edging machine has been patented by Mr. James N. Farlow, of Lander, Wyoming Ter. Combined with a frame having fixed and movable cutters, and a sliding clamping having similar cutters, is a tilting presser bar or lever adapted to bear upon the movable cutters, the machine being designed for beveling the edges of leather straps.

A screw driver attachment has been patented by Mr. Lee Kiblinger, of Jackson, La. The blade is provided with a lateral catch or projection, and a slide is fitted to the blade carrying a point orawl to make a hole for the screw, the slide being adapted to be engaged by the catch while in the position of use.

A wire fence has been patented by Mr. Jesse J. Buchanan, of Bridgeport, Ill. It is made with horizontal fence wires in combination with a hollow metallic post, through perforations in which are passed wire fasteners, bent and twisted to hold the fence wires in position, the post having also a heavy tile base.

A bottle filler has been patented by Mr. William H. Comstock, of Oskaloosa, Iowa. This invention covers novel parts and details in a device whereby bottles may be filled so that the liquid will not come in contact with the outside air, and with which both light and heavy bottles will be evenly filled without waste of the liquid.

A shaft coupling has been patented by Mr. Simon H. Barnes, of Lanesborough, Pa. It is made with a longitudinally split sleeve whose parts act as clamps or compressors to grip the meeting end portions of shaft sections to couple and hold them in line, the sleeve being inclosed by a tightening and loosening band.

A commode has been patented by Messrs. Gayger D. Tolman and Lorenzo D. Roberts, of Shawano, Wis. It is designed to be simple in construction and very compact, while furnishing various conveniences used in dressing, the invention covering a novel construction, combination, and arrangement of parts.

A drapery hook has been patented by Messrs. Ralph Tilton, of New York City, and Martin Cowen, of Chicago, Ill. It is a suspension hook made of a piece of spring metal bent into a staple and hook-like form, to be used in combination with a sliding drapery or curtain ring having an eye adapted to receive the spring prongs of the hook.

A rack for exhibiting goods has been patented by Messrs. Adolph Neuville, of St. Louis, Mo., and Albert Back, of New York City. This invention covers a novel construction, combination, and arrangement of parts, providing a device designed to be used in dry goods stores, whereby lace curtains and other goods may be exhibited to customers to advantage.

A breaker and crusher has been patented by Mr. Frederick L. Preston, of Darien, Wis. It has a fixed corrugated jaw and fixed side plates, with an inclined pivoted vibrating jaw in combination with a pushing plate, and other novel features, making a

simple, durable, and effective machine for breaking and crushing rocks, ores, etc.

A track lifter has been patented by Mr. Gavin Rainnie, of Portland, New Brunswick, Canada. It has a lever and ratchet arrangement in connection with a cast iron frame about sixteen inches high, with an extended base plate, being designed to hold itself in position when the rails and sleepers are lifted, thus saving the time and labor of track repairers.

An anti-friction bearing has been patented by Frank Corbett, of New York City. It is of that class in which a nest of bearing rollers are mounted to revolve in a chambered box, and provides for the ready introduction and removal of the rollers, being particularly adapted for ironing machines where the rollers are hollow and heated by steam.

A broiling oven for ranges has been patented by Mr. James G. Lyon, of Brooklyn, N. Y. The fire pot in which a nest of bearing rollers are mounted grate set back from the front of the range, and the space between the fire pot and the range front is floored over, forming a space in which vlands may be exposed to the live coals behind the front grate.

A fire escape has been patented by Mr. John Grant, of Beverly, Mass. It is a portable device which may be readily secured to a window, the invention covering a novel construction by which the descent of an occupant may be controlled from the window or street, accommodations being also provided for lowering an infant or disabled person with safety.

A type writing machine has been patented by Mr. George L. Ferris, of St. Louis, Mo. This invention covers an improvement in that class of machines in which a vertically and laterally swinging hand lever operates a printing type wheel and paper feeding mechanism, being designed to simplify the construction and give increased ease and rapidity of operation.

A horse detacher has been patented by Messrs. Walter L. and Philip M. Mitzel and John Q. A. Haney, of Felton, Pa. The detaching devices are applied to the whiffletree, the ends of which are provided with spring-seated locking bolts that pass through the trace eyes and are operated from the vehicle to release the traces, whereby the horse may be detached from the vehicle.

A loading apparatus for ordnance cartridges has been patented by Mr. John T. Jefferson, of Annapolis, Md. It is for use with that form of cartridge which is built up from moulded blocks or cubes of powder having a central perforation, and is designed to enable such a cartridge to be built by one man in one-fourth the time required by two men in the old way, while a smaller bag may be used.

A Venetian blind has been patented by Mr. Samuel S. Patterson, of Wilkesbarre, Pa. This invention covers a novel construction and combination of parts, including the slats and side pieces, providing that when the rolling slats are closed the blind will effectually exclude the sun or rays of light, the slats having a closer joint and neater finish than heretofore employed in these blinds.

A hame has been patented by Mr. James N. Farlow, of Lander, Wyoming Ter. The invention consists in forming the hame with notches, and combining therewith a sliding clip with notches, a bolt or fastening for the hame tug, and a screw and nut to close the teeth of the clip into the teeth of the hame, to facilitate adjustment for raising and lowering the draught.

An artificial leg has been patented by Mr. Alexander Gault, of Medford, Minn. It has a socket for receiving the stump of an amputated leg, formed and suitably shaped of hard moulded India rubber or gutta percha, with other novel features, being especially adapted for use by one whose leg has been amputated between the knee and foot, and designed not to chafe the stump of the wearer.

A head block for saw mills has been patented by Mr. Irwin Swank, of Paris, Ill. This invention covers a novel construction, combination, and arrangement of parts to insure increased efficiency in machinery of this class, the improvement being applicable in the sawing of slab sides and tapering boards or planks, and the turning or rolling of logs on the knees therefor.

A drying attachment for tobacco barns has been patented by Mr. John M. Snidow, of Big Stony Creek, Va. It consists of a furnace with two dampers below the combustion chamber, and having a cold air pipe connected thereto between the dampers, whereby tobacco barns can be kept at the temperature at which tobacco is cured with the best results and in the least time.

A boom fastening has been patented by Mr. John H. Rushton, of Canton, N. Y. It is intended to take the place of the jaw on small craft, and for supporting sails extending past the mast, or from the mast aft, and consists of a ring to be received on the mast, with ears projecting from one side, a swiveled clamp for receiving the boom, and a spike to be driven into the boom where it extends from the mast aft.

A spokeshave has been patented by Messrs. James H. and Benjamin F. Polhemus, of Brooklyn, N. Y. This invention covers an improvement on a former patented invention of the same inventors, its object being to provide a tool capable of use as readily in curves of small radius as upon a flat surface, the invention also making a further improvement in the construction of the tool.

A tile machine has been patented by Messrs. Emil Puchtaand Robert Hoffmann, of Washington, Mo. This invention covers a mould press of novel form, combined with a movable former, for moulding and pressing bottles, jars, and other articles with closed bottoms, out of clay or analogous substances, and has for its object to facilitate the removal of the completed article from the press.

A receptacle and heater for tea, coffee, milk, etc., has been patented by Mr. Charles W. Hellen-

brand, of Salem, Oregon. It consists of three superposed tanks or jars, the lower one to contain hot water, and having a lamp or gas jet beneath it, the intermediate jar, resting thereon, to receive milk, and the top jar for coffee, etc., a pipe from this jar leading through a coil in the hot water jar or tank to a cock at the bottom.

A pool registering device has been patented by Mr. Charles S. Kraft, of Albany, N. Y. It is constructed with a lock for holding the triangle, the lock being connected with a mechanism arranged to register the detachment of the triangle upon a dial, strike a gong, and at the same time drop a check into a box, the register being adapted for connection with a distant bell by an electric circuit on the detachment of the triangle from the lock.

A wheel has been patented by Mr. Henry Q. Maurino, of Albuquerque, New Mexico. The hub block consists of a casting having grooves or slots for the inner bifurcated ends of the spoke, while the felly has a polygonal inner face, with angles corresponding to the number of spokes and their angular outer ends, with other novel features, the construction being designed to secure cheapness, lightness, and durability.

A school slate and ruler therefor has been patented by Maybury W. Fleming, of New Brighton, N. Y., and Charles R. Le Sauvage, of Brooklyn, N. Y. The slate frame has grooves in its inner edges above the surface of the slate, combined with a ruler having rabbeted ends adapted to slide in the grooves, with a centrally recessed under surface whereby a bearing surface is provided at the ends only, making a straight edge or ruler which may be moved over the surface of the slate.

SCIENTIFIC AMERICAN BUILDING EDITION.

JUNE NUMBER.—(No. 32.)

TABLE OF CONTENTS.

- Elegant plate in colors of a beautiful dwelling at Tuxedo Park, N. J., with floor plans, sheet of details, etc., James Brown Lord, architect.
- Plate in colors of two dwellings costing two thousand two hundred dollars and two thousand four hundred dollars each, with floor plans, sheet of details, etc.
- A cottage of field stone and wood, perspective and floor plans.
- Perspective and floor plans for a seaside cottage, cost about five thousand dollars.
- Sketch of a residence at Minneapolis, Minn.
- Perspective view of a small suburban or seaside cottage costing one thousand eight hundred dollars.
- Sketch of the residence of Ex-Gov. Hamilton at Kenwood, Ill.
- Plans and perspective view for a cottage costing, complete, one thousand and fifty dollars.
- A cottage on Prospect Ave. and 165th Street, New York. Perspective and floor plans. Cost, seven thousand dollars.
- Floor plans and perspective view for a residence of moderate cost.
- Grand Stairway of the St. Lazare Station, Paris. Half page engraving.
- Tomb in the cemetery of Beville, H. P. Nenot, architect. Half page engraving.
- Full page of illustrations of North St. Paul, Minnesota.
- Page engraving of the new City Hall, Holyoke, Mass.
- Design for a porter's lodge at North Andover, Mass. Hartwell & Richardson, architects.
- Villa. Penmaenmayr Building Estate, North Wales. Wm. Dawes, architect.
- Sketch of an English cottage. E. C. Poole, architect.
- Engraving of the new Consolidated Stock and Petroleum Exchange, Broadway and Exchange Place, New York.
- The Tower of Babel, according to Father Kircher. Two engravings.
- Miscellaneous contents: Moses as a sanitarian.—To tell the age of a horse.—The ventilation of theaters.—Ivory gloss on wood.—Bricklaying in frosty weather.—Originality in architecture.—Painting and varnishing floors.—The Architect and Builder.—Proceedings of the National Association of Builders.—Senator Stanford's \$100,000 tomb.—Italian marble.—Masonry and cement.—Temple of Jupiter Olympius.—House painting.—Sale of ready made plans.—The Tower of Babel, two engravings.—The Sturtevant system of heating and ventilating buildings, illustrated.—A new boiler for steam or hot water heating, illustrated.—The Paragon self-feed rip saw, illustrated.—Gypsum paint.—The Humphrey Pony hand elevator, illustrated. Electrical supplies.—Permanency of color in paint. Mineral wool.—A burglar proof sash lock and ventilator, illustrated.

The Scientific American Architects and Builders Edition is issued monthly. \$2.50 a year. Single copies, 25 cents. Forty large quarto pages, equal to about two hundred ordinary book pages; forming, practically, a large and splendid MAGAZINE OF ARCHITECTURE, richly adorned with elegant plates in colors and with fine engravings, illustrating the most interesting examples of Modern Architectural Construction and allied subjects.

The Fullness, Richness, Cheapness, and Convenience of this work have won for it the LARGEST CIRCULATION of any Architectural publication in the world. Sold by all newsdealers.

MUNN & CO., PUBLISHERS,
361 Broadway, New York.

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.

Zwicker's Instructor for Procuring Stationary and Steam Engineer's License. The only plain written book of the kind ever published. Price, \$2.00. G. A. Zeller, bookseller, St. Louis, Mo.

Stone Breaker Wanted—Second hand, good order, for railway ballast. Address, giving particulars, E. W. Rathbun & Co., Oswego, N. Y.

Wanted—A hydraulic power press. Address E. Rauh & Sons, Indianapolis, Ind.

John M. Horr, fret sawyer. North Dana, Mass.

Wanted—Competent machinists on lathes and planers. The Pond Machine Tool Co., Grant Ave., Plainfield, N. J.

The best Coffee roasters, coolers, stoners, separators, polishers, scourers, glossing apparatus, milling and peaberry machines; also rice and macaroni machinery, are built by The Hungerford Co., 69 Cortlandt Street, New York.

Safety water columns. Cheaper than explosions or burned boilers. For illustrated price list, Reliance Gauge Co., Cleveland, O.

Steam Pipe Covering, Sectional and Plastic. Write for Pamphlet. Jno. A. McConnell & Co., 69 Water St., Pittsburgh, Pa.

The Diamond Prospecting Co., 74 and 76 W. Lake St., Chicago, Ill., general agents for the Sullivan diamond prospecting drills.

For the specific purpose for which they are designed, the batteries manufactured by the Partz Electric Battery Co., 1723 Chestnut Street, Philadelphia, Pa., are the best in the world. Catalogue now ready.

For the latest improved diamond prospecting drills, address the M. C. Bullock Mfg. Co., 138 Jackson St., Chicago, Ill.

Nickel Plating.—Manufacturers of pure nickel anodes, pure nickel salts, polishing compositions, etc. \$100 "Little Wonder." A perfect Electro Plating Machine. Agents of the new Dip Lacquer Kristaline. Complete outfit for plating, etc. Hanson, Van Winkle & Co., Newark, N. J., and 92 and 94 Liberty St., New York.

Perforated metals of all kinds for all purposes. The Robert Aitchison Perforated Metal Co., Chicago, Ill.

The Railroad Gazette, handsomely illustrated, published weekly, at 73 Broadway, New York. Specimen copies free. Send for catalogue of railroad books.

The Knowles Steam Pump Works, 113 Federal St., Boston, and 98 Liberty St., New York, have just issued a new catalogue, in which are many new and improved forms of Pumping Machinery of the single and duplex, steam and power type. This catalogue will be mailed free of charge on application.

Link Belting and Wheels. Link Belt M. Co., Chicago.

Iron Planer, Lathe, Drill, and other machine tools of modern design. New Haven Mfg. Co., New Haven, Conn.

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

Supplement Catalogue.—Persons in pursuit of information of 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.

The Holly Manufacturing Co., of Lockport, N. Y., will send their pamphlet, describing water works machinery, and containing reports of tests, on application.

Improved fine tools for mechanics—Manufactured by L. S. Starrett, Athol, Mass. Send stamp for full list.

Lockwood's Dictionary of Terms used in the practice of Mechanical Engineering, embracing those current in the drawing office, pattern shop, foundry, fitting, turning, smith's and boiler shop, etc., comprising over 6,000 definitions. Edited by a foreman patternmaker. 1888. Price, \$3.00. For sale by Munn & Co., 361 Broadway, New York.

Pedestal tenoner. All kinds woodworking machinery. C. B. Rogers & Co., Norwich, Conn.

Duplex Steam Pumps. Volker & Felthousen Co., Buffalo, N. Y.

Billings' Drop Forged Machinists' Clamp and Steel Clamp. Billings & Spencer Co., Hartford, Conn.

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

60,000 Emerson's 1887 Book of superior saws, with Supplement, sent free to all Sawyers and Lumbermen. Address Emerson, Smith & Co., Limited, Beaver Falls, Pa., U. S. A.

Hoisting Engines, Friction Clutch Pulleys, Cut-off Couplings. The D. Frisbie Co., 112 Liberty St., N. Y.

Veneer machines, with latest improvements. Farrel Fdry. Mach. Co., Ansonia, Conn. Send for circular.

"How to Keep Boilers Clean." Send your address for free 88 page book. Jas. C. Hotchkiss, 120 Liberty St., N. Y.

For Steam Heating—the Dunning Patent Wrought Iron Boiler. Over 13,500 in use. Manufactured by New York Central Iron Works, Geneva, N. Y., U. S. A.

Hodges' universal angle union makes pipe connection at any angle. Rolletone Machine Co., Fitchburg, Mass.

"New Drill Chuck," holding straight taper or square shanks. Address Standard Tool Co., Cleveland, O., mfrs. of twist drills, reamers, and special tools.

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

Send for new and complete catalogue of Scientific and other Books for sale by Munn & Co., 361 Broadway, New York. Free on application.