

## ENGINEERING INVENTIONS.

A valve gear has been patented by Mr. James Des Brisay, of Kamloops, British Columbia, Canada. It is so constructed that one, two, or more cylinders of a steam engine may be controlled by a single rotating valve, being especially adapted for locomotive engines, while it may also be employed on nearly all classes of steam engines.

The heating of railway cars forms the subject of a patent issued to Mr. William M. Scott, of Cambridge, Vt. It is designed to use the exhaust steam from the locomotive, the invention covering a simple and inexpensive system and apparatus, in which there will be no danger of firing the cars in case of accident, and the apparatus can be easily controlled by the engineer.

An automatic switch and frog for railroads has been patented by Messrs. Lawrence W. Cromer and George Gavin, of Eureka, Nevada. The invention covers a novel construction, whereby it is designed that the engine and cars may be switched through the contact of the wheel flanges with the frog, and whereby the engineer may switch the train directly from the engine.

A car coupling has been patented by Mr. Bush F. Laird, of Ocean Springs, Miss. The drawhead has a link mortise, upper and lower pin openings, and lateral holes for bolts or pins which form pivots for pin-supporting devices, an anchor being so connected with the pin that it may fall in either of two opposite directions, and will properly engage the bearing in either case, with various other novel features.

## AGRICULTURAL INVENTION.

A fender for cultivators has been patented by Mr. John W. Kennedy, of Miltonvale, Kansas. It is applicable to both single and double plow cultivators, and consists of a flat blade rounded at its lower front corner, curved outward along its upper longitudinal edge, and with an apertured strap curved between its ends to fit the curve, being designed more particularly for use on growing check-rowed and listed corn.

## MISCELLANEOUS INVENTIONS.

A curry comb has been patented by Mr. Frank S. Neal, of Plainfield, N. J. This invention covers a light yet durable construction of a comb, which may be readily cleaned of dust without striking the comb against another object.

A hat wire has been patented by Mr. Alanson Cary, of New York City. It is of triangular shape in cross section, combining increased lightness with strength, for use in the brims of hats, to stiffen and hold them in shape, its form being designed to better adapt it for this purpose.

A metallic shingle has been patented by Mr. Edgar E. Barker, of Junction City, Kansas. This invention covers a novel form of roofing plate designed to be fitted and nailed to the sheathing, so as to interlock and form a water-tight roof, without soldering or crimping of seams.

A drag saw has been patented by Mr. Robert Doak, of Sidney, Ohio. It has an axle or shaft on wheels supporting one end of a frame section, a slotted section beam forming a guide for the saw blade, with handle levers and pitmen, being adapted for sawing logs or sawing horizontally.

A yoke for connecting animals has been patented by Mr. William Carmichael, of Baird, Texas. It is so made as to admit of automatic disconnection in case either of the animals gets a fore leg over the coupling, when grazing, thus preventing injury to the animals.

A drip can has been patented by Mr. Hedwig L. Kinports, of Annville, Pa. It has a concave cover with a central aperture and a pivoted self-opening lid, being specially adapted to catch the drippings of the spigots of barrels containing liquids, such as molasses, etc.

A fastener for meeting rails of sashes has been patented by Mr. John E. Brown, of Honolulu, Hawaii. It is designed to automatically lock the sashes when the windows are closed, in such way that they cannot be unlocked from without by a knife, wire, or similar instrument.

A line protector has been patented by Mr. Frank C. York, of Salina, Kansas. This invention covers an improvement on a former patented invention of the same inventor, in such supports where the straps extend between the forward ends of the thills, with a view to prevent the harness lines from being caught under the ends of the thills.

A windlass has been patented by Mr. Earle C. Bacon, of Brooklyn, N. Y. It is designed to carry several hoisting drums or winch heads actuated from one main shaft, and traveling independently of each other at a differential rate of speed, the invention covering various novel details in construction and arrangement of parts.

A garment stretcher has been patented by Mr. Fred E. Bailey, of Manchester, N. H. Combined with a pair of clamps is a sectional extension brace, readily permitting a varied adjustment of the two sections with respect to each other, with other features, making a convenient stretcher for trousers and other garments.

A trap has been patented by Emily A. Stears, of Brooklyn, N. Y. It is designed for application to wash bowls, bath tubs, wash tubs, and sinks, to permit the free escape of the water while effectually preventing the entrance of sewer gas through the wash bowl and sink connections, while the construction of the trap is such that it can be readily cleaned.

A mail bag catcher has been patented by Mr. Jarrett M. Keith, of Greenville, S. C. The invention is designed to facilitate the adjustment or reversal of the hook, according to the direction in which the

train may be moving, the hook being rendered movable bodily from side to side of the door opening, with other novel features.

A saw swage has been patented by Mr. James H. Miner, of Baton Rouge, La. Combined with the body portion is a steadying pin having a forked end, a screw threaded shank fitting in a screw-threaded socket of the body portion, providing means for swaging teeth of varied thickness, and operating upon the teeth at any point in their width.

A grape seed extractor has been patented by Sarah E. Toucey, of New York City. It has a flatpick with a sharpened point on its end in line with the handle and a groove in its top face, a cutting blade projecting laterally from the pick, and its point forking out therefrom a short distance within the point of the pick.

A composition for softening and renovating leather has been patented by Mr. Leopold C. Dewillers, of Brooklyn, N. Y. It is for preserving and softening all varieties of leather, especially black kids, and consists of soft water, salts of sorrel, castile soap free from potash, oil and ammonia, combined and applied in a manner described.

An elliptic spring has been patented by Mr. James R. Fletcher, of Clarksville, Iowa. It is for use in vehicles, and consists of inner and outer leaves, with means for connecting the ends of the inner leaves, and for spacing the leaves, whereby friction between the parts is reduced and liability to breakage is lessened.

A heater for cars and buildings has been patented by Mr. Thomas McCrossan, of Winnipeg, Manitoba, Canada. The fire box is of cast iron, inclosed by a shell of steel or wrought iron, making an air space, and the draught is supplied through a hollow door, the slides for controlling the draught serving also as a means for fastening the door.

An electric alarm for ships' compasses has been patented by Mr. Augustus Gross, of Newcastle, New South Wales. A bell or bells is so placed in electrical connection that upon any deviation of the vessel from its established course an alarm is sounded to give notice of such deviation, the invention covering a novel construction, combination, and arrangement of parts.

A running gear for vehicles has been patented by Mr. Elijah Hickman, of Red Bluff, Cal. It provides a means whereby the bed of the vehicle may readily move sideways without causing the weight to depress one side more than the other, while the bolster of the hind axle will have a yielding or vibrating action if the wheels come in contact with an obstacle.

A saw guide has been patented by Mr. John O. Morrow, of Thomas Mills, Tenn. The guiding arms are so arranged that they may be reversed to be used on right or left hand mills, while the outer arm may be turned to a position to permit of the removal of the saw from its arbor, a proper adjustment of the several parts of the guide being provided for.

A churn has been patented by Mr. William Bechtold, of New York City. A cream receptacle something like an ordinary glass jar is preferred, which is secured upon a carrier of peculiar construction, when a crank is rapidly manipulated, which reciprocates the carrier, and imparts a quick, churn-like motion to the cream, bringing butter in a few minutes.

A two wheeled vehicle has been patented by Mr. William Lawless, of Ottawa, Ill. The shaft bars carry a cross beam on which is held a spring supporting the outer ends of the seat bars, which are pivoted at their inner ends on the shaft bars, whereby the seat can be conveniently adjusted to suit the driver.

A dough kneading machine has been patented by Mr. Bryant H. Melendy, of Battle Creek, Mich. It has a roller journaled in a frame open at top and bottom, a partition held in the frame in front of the roller, and a plate adjustably secured to the partition and having its lower end projecting below it, for kneading dough for all kinds of bread, crackers, pastry, etc.

A feathering paddle wheel has been patented by Mr. Amos H. Carpenter, of West Waterford, Vt. This invention relates to feathering blade wheels in which transverse rock shafts on the main shaft each carry counter blades thrown alternately into and out of action by cams operating the blades in their rotation, to render wheels of this character peculiarly adaptable as propellers.

A slatted blind has been patented by Mr. John A. Sherington, of New York City. The frame has a recessed moulding in which is a fixed plate having a series of apertures, collars adapted to turn the slats having their bearings in the slots of the fixed plate, angle arms entering the recesses of the moulding and a rod being pivotally connected thereto, for conveniently opening and closing the blinds.

A filter has been patented by Mr. Marshall McDonald, of Washington, D. C. The invention proceeds on the plan of filtering only a portion of the water that enters its case, the rest of the water being used in connection with a body of sand for scouring or cleansing the filtering surface, the filter thus automatically cleaning itself, and eliminating from a portion of the water all sedimentary matter.

A detachable shelf and heat regulator for ovens has been patented by Mr. Oscar F. Frost, of Monmouth, Me. It consists of a horizontal rectangular frame to rest on the slide supports of a baking oven, in connection with counterbalanced shutters pivoted within the frame and a sliding bar placed edgewise under the shutters, with other novel features, whereby the heat may be regulated at will in the oven.

A wire cloth holder has been patented by Mr. William A. Tea, of Clyde, Ohio. A roller is journaled in brackets projecting from a supporting frame, there being a pivoted and spring pressed bar above the roller, outwardly projecting arms secured thereto, and a roller removably held in the outer ends of the arms, whereby rolls of wire cloth may be compactly arranged and any number of yards easily measured off.

## 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.

Good News—You can have your English, Swiss, or American key watch changed to a stem winder for \$3 to \$5. Climax Stem Winder Co., 632 Broadway, N. Y.

Steel name stamps, 15 cts. per letter. Steel figures, \$1 per set. F. A. Sackmann, Cleveland, O.

Portable grinding mills, Chas. Kaestner & Co., Chicago, Ill.

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 Parts 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.

Burnham's turbine wheel is sold at net price to mill owners. Catalogue free. Address York, Pa.

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.

Feed grinders. Chas. Kaestner & Co., Chicago, Ill.

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.

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

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.

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

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

Iron, Steel, and Copper Drop Forgings of every description. Billings & Spencer Co., Hartford, Conn.

Curtis Pressure Regulator and Steam Trap. See p. 77.

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.

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

Paint mills. Chas. Kaestner & Co., Chicago, Ill.

Practical working drawings of machinery made by A. K. Mansfield & Co., 230 Broadway, N. Y. Correspondence invited.

The sole builders of "The Improved Greene Engine" are the Providence, R. I. Steam Engine Co.

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

Engines and boilers. Chas. Kaestner & Co., Chicago, Ill.

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

## NEW BOOKS AND PUBLICATIONS.

THE ART OF MODERN CONJURING. By Professor Henri Garenne. With 162 illustrations. Ward, Locke & Co., London and New York. Pp. xii, 351.

This book is devoted to the more modern art of conjuring. Tricks requiring apparatus are treated of at some length. The methods of palming and passing coins and cards are well described. All the usual tricks are explained, including the more complicated stage illusions of the floating bust, decapitated head, etc. Spiritualism, including slate writing, thought reading, ventriloquism, and mesmerism, form individual sections of the book. The manual is designed for the amateur conjurer, but for any who have followed up the modern performances it will form very interesting reading. His descriptions of the illusions of mesmerism, with explanations, are so vividly described as really to be quite thrilling.

WHAT TO DO FIRST IN EMERGENCIES. A manual of the treatment of surgical and other injuries in the absence of a physician. By Charles W. Dulles, M.D. Third edition, revised and enlarged. P. Blakiston, Son & Co., Philadelphia, Pa.

Emergencies are always liable to arise when a little knowledge will be of much value in relieving suffering or preventing serious misfortune. The above titled handbook is intended as a guide to such knowledge, and in the absence of a better resort may serve as a

consulting surgeon. To such as have taken a course of "first aid to the injured" this little book will be a reminder with which to refresh the memory. To such as have not, the directions are concise and pointed, and may be found of infinite service. It contains about 125 pages. Price, cloth, 75 cents.

THE DESIGN AND CONSTRUCTION OF MASONRY DAMS. Giving the method employed in determining the profile of the Quaker Bridge dam. By Edward Wegmann, Jr., C.E. John Wiley & Sons, publishers.

The author, who is a division engineer on the new Croton aqueduct, discusses and reviews the problems that have been presented to engineers in building the principal dams in Europe and America. He states the work that has been done by Sazilly, Delocre, Rankine, Krantz, and others, and shows how far the results that have followed their efforts have been used to guide the present engineers in the work for the great Quaker Bridge dam, which far surpasses in height (270 feet) any of its rivals. The work states the mathematical problems that have had to be considered, and the book is embellished with a number of designs of the principal works of that character. Cloth, 4to, 54 plates, 106 pages. Price \$5.

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

## SCIENTIFIC AMERICAN

## BUILDING EDITION.

MAY NUMBER.—(No. 31.)

## TABLE OF CONTENTS.

- Elegant plate in colors of a double house for two thousand five hundred dollars, with floor plans, sheet of details, etc.
- Plate in colors of a cottage costing five thousand dollars, with floor plans and sheet of details, etc.
- Page of engravings giving a general view of the successful operations of moving the great Brighton Beach Hotel at Coney Island.
- Perspective elevation and floor plans of a house costing six thousand dollars.
- Design for a house to stand on a knoll or high ground. Perspective and floor plans.
- Perspective view and ground plan for the Orange Heights Hotel, now erecting on Orange Mountains—Arthur D. Pickering, architect.
- Half page engraving of the new United States Post Office at Springfield, Mass., and new United States Post Office and Court House at Los Angeles, Cal.
- Drawing in perspective of the elegant residence of Dr. S. F. Hanse at Minneapolis, Minn.
- Sketch of a dwelling in Rochester, N. Y., cost about six thousand five hundred dollars.
- Perspective and floor plans for a country house of moderate cost.
- Elevations and floor plans for a frame dwelling. Cost about five thousand dollars.
- Illustrations giving a perspective view and floor plans of a cottage for fifteen hundred dollars.
- Repairing the foundations of a large grain mill and elevator at Providence, R. I.—Half page engraving.
- Floor plans and perspective view of a substantial dwelling. Cost eight thousand dollars.
- A dwelling for two thousand five hundred dollars. Perspective and floor plans.
- Perspective and floor plans of two modern dwellings, costing eight thousand dollars and two thousand eight hundred dollars respectively.
- Plans and perspective elevation for a two thousand two hundred dollar house.
- Illustration showing the beautiful dwelling and grounds of Timothy Merrick, Esq., Elmwood, Holyoke, Mass.
- Elegant residence of Dr. J. S. Hurlbut, Esq., School Street, Springfield, Mass.
- Miscellaneous contents: Relative strength of stones and bricks.—Echoes and reverberations in rooms.—Dimensions of the most important of the great cathedrals.—Boston hot water distribution.—Roofs for mills.—Combined rain water cut-off and filter, illustrated.—The genesis of a tornado.—A millstone recipe.—Lumber trade notes.—Warming and ventilating.—Grant memorial competition.—The Arkansas dry kiln.—Paint for fresh cement.—Foreign made joinery.—Floor paints.—Large dams.—Preservation of timber.—How to ornament a vase.—Enemies to varnish.—Filling for floors.—Wooden water pipes.—Ready mixed paints.—The Ridgway refrigerator system, illustrated.—A sanitary heating apparatus, illustrated.—The Prentice patent metallic hip shingle.

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 newdealers.

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