

## ENGINEERING INVENTIONS.

A station indicator for cars has been patented by Mr. William W. Currie, of Smith's Falls, Ontario, Canada. In a box having a glass front are drums and rollers operated by a coiled spring, to draw into view the names of stations, distances, etc., properly arranged upon a ribbon, for the information of passengers, the machine being easily started by a conductor or brakeman.

A car coupling has been patented by Mr. George J. Ferguson, of Greenville, Texas. Combined with a vertical channel intersecting the link throat, and a hooked projection, is an inverted U-shaped coupling, having a hook on its rear side, and a lift arm for raising and sustaining the coupling device, with other novel features, designed to furnish a positive automatic coupling, for coupling cars without going between them.

## MISCELLANEOUS INVENTIONS.

A lamp burner has been patented by Mr. Charles E. Tucker, of Salida, Col. The lamp chimney is made to receive an internal auxiliary cone, and holes are made in the sides of this cone near its base, in order to concentrate upon the flame the air drawn into the burner.

An egg preserving crate has been patented by Mr. Nicholas A. Wierman, of Aspers, Pa. It is so made that a large number of eggs may be turned partly over by drawing out the bottoms of several series of compartments in which the eggs are arranged, thereby promoting the keeping of eggs for a long period.

A roller gate hinge has been patented by Mr. George N. Crichton, of Parsons, Kansas. It consists of a bar or plate having a central socket, and provided with a laterally projecting pin near each end, grooved rollers on the pins, and a bolt having an upright arm fitting in the socket of the bar or plate.

A wagon axle has been patented by Mr. John Lucksinger, of Beaufort, Mo. The skains and cap nut are so made that the axle may be oiled without removing the wheel, and the device is calculated to take up the wear of the skain, so the wheel may always be made to run true upon the axle and prevent chocking.

An automatic check for music boxes has been patented by Mr. Charles E. Juillerat, of New York city. Combined with the cylinder and comb of a musical box is a wheel on the cylinder, a cam wheel, projecting teeth, a pawl and lug, etc., to check the cylinder when the fier cylinder gets out of order or is removed.

A process of and apparatus for coating paper and other fabrics has been patented by Mr. Edward G. Sparks, of Brooklyn, N. Y. It consists in drawing the web of material through a bath of melted wax, paraffine, or other coating substance, the tank having an adjustable slit through which the web passes, carrying the required amount of coating substance.

A pen and pencil holder has been patented by Mr. Frederick P. Peiter, of Norwalk, Conn. It consists of a ring with a diagonal cross piece, on the ends of which loops are formed for receiving the pencil, whereby a pen or pencil may be held on one of the fingers, so as to be very handy for use and out of the way when not in use.

A holder for photographic paper negatives has been patented by Mr. Erastus B. Barker, of New York city. It is in the form of a slide with attached folding or hinged frame, capable of being entered within the ordinary plate holder of a camera, and serving to hold the sensitized paper in position behind the lenses, for taking the photographic picture.

A culm bar has been patented by Mr. Silas M. Hess, of Bloomsburg, Pa. It consists of parallel bars united by cross pieces and slotted sections, each having a V-shaped recess at one end and a V-shaped projection at the other end, and with bottom lugs fitting between the parallel bars, so that the culm may be perfectly burned, without loss.

A carpet stretcher has been patented by Mr. Enos B. Willis, of Dows, Iowa. It consists of two jaws connected by a hinge joint at their outer or front edges, with ribbed meeting faces and adjustably connected levers, with other novel features, the device being designed to subject the carpet to a high strain without injuring the texture of the fabric.

A sled brake has been patented by Mr. Samuel H. Anderson, of Madensville, Pa. The brake is operated by means of a lever, by operating which the ends of U-shaped dogs are projected to engage with the roadway in such manner as to check the advance of the sled, and also to hold it from running back when stopped on an up grade.

A gate has been patented by Mr. William Mason, of Puyallup, Wash. Ter. It is a sliding gate, with locking latches at its opposite ends, and sliding bars or rods on the top of the gate, an operating cord extending at opposite sides of the gate and connected to the sliding bars, so that a quick pull on either of its handles will unlatch and open or close the gate.

A bicycle shoe has been patented by Mr. Thomas J. Strickland, of Randolph, Mass. The invention consists in a shoe with a buckskin sole, and in a canvas shoe having the bottom parts of its upper made of leather, the shoe being so made as to be very flexible throughout, and so that it cannot slip on the pedal.

A slag cart has been patented by Mr. August Werner, of Leadville, Col. In the bottom of the bowl or ladle receiving the smelted metal, such bowl being suitably mounted in a frame on wheels, is a removable nozzle, so that a longer or shorter nozzle may be used as desired, to facilitate the separating of the matte from the slag.

A funnel has been patented by Mr. Harmannus Van Kammen, of Grandville, Mich. It is a measure, with a conical bottom, in the center of which is a screw-threaded nipple receiving a tube, a yielding valve seat being between the tube and nipple, and a ball valve communicating by a rod with a valve-closing spring attached to the handle of the measure.

A truss has been patented by Mr. John R. Jones, of Emporia, Kansas. The body spring made of flat spring metal, carries pad arms which may be adjusted with clamps to be set at any point in a circle described from the clamp as a center, so the truss may be used with equal facility for either direct, oblique, or femoral hernia.

A velocipede has been patented by Mr. David G. Biggs, of Louisville, Ky. This invention relates principally to a novel arrangement of the crank shaft and connections, whereby all the force or power exerted by the rider is utilized in driving the machine, and the movement is such as to decrease "wobbling" of the machine.

A door hanger has been patented by Mr. Le Grand Terry, of North Elmira, N. Y. This invention covers a novel construction and arrangement of parts to adapt a hanger for sliding doors to be adjustable to doors of different thicknesses, and to permit the door to be swung outward without derailing the hanger or its main wheel.

A nut lock has been patented by Mr. Louis Unger, of San Antonio, Texas. The nut has in its rear face a non-circular recess, whose walls are serrated, and from this recess notches extend to the side of the nut, the locking washer having its edge formed to fit those of the recess, so that when it is in such recess it will be held from turning.

A metallic ceiling has been patented by Mr. John D. Ottiwell, of New York city. Sheet metal mouldings are formed with side flanges, to be nailed to the beams or to furring strips, and the mouldings are made to receive and hold the edges of the panels, avoiding the necessity of nailing them, and facilitating the work of putting up the ceiling.

A sash fastener has been patented by Mr. George N. Clemson, of Madison, N. Y. It is a spring-acted latch pivoted to a sash plate, with a nib projecting beyond the edge, a roller carried by the latch projecting beyond the edge of the nib, to carry the latch past the rail of the upper sash, and a catch for receiving the nib of the latch when the sashes are closed.

A horse collar has been patented by Messrs. William L. Bailey, Leonard T. and Lenis D. Knight, of Calvert, Texas. It is made principally of what is known as "moss yarn," with its strands or fibers arranged, and the body of the collar subjected to pressure in a mould or press, making an easy fitting and self-adjusting collar for farm and other use.

A knockdown crate has been patented by Mr. Charles P. Lewis, of Sweet Springs, W. Va. The end and side pieces are dovetailed together with a square dovetail, and apertured for the insertion of rods to hold the box when set up, on the removal of which the box can be readily folded for shipping, it being adapted for carrying fruit or goods of various kinds.

An automatic check for music boxes has been patented by Mr. Alfred Sueur, of New York city. It is so connected with the music box mechanism that when the latter is rotated too fast a ratchet wheel is made to force a pawl into locking engagement and stop the mechanism, thus preventing the breaking of the pins and the teeth of the comb.

A circular-saw dresser has been patented by Mr. Hyman D. Wolcott, of Wright's, Pa. It consists of a pair of beveled and circular files, mounted in a frame secured to the guiding arms of a saw jointer, arranged to be adjusted to or from the saw and held in yielding connection therewith, and is an improvement on a former patented invention of the same inventor.

A snap hook has been patented by Mr. George R. B. Swanton, of New York city (the Bancroft House). It has a chambered shank, in which is fitted an obliquely sliding bolt, and a spring for projecting the bolt and retaining it in a projected position in the bow of the hook, making a simple and secure hook for use in connection with gate fastening chains, parts of harness, etc.

A churn has been patented by Messrs. Daniel Lines and Charles T. Long, of Milano, Texas. The body of the churn is of stone or earthenware, and preferably square in form, and it has dashers worked in opposite directions by rotating a handle connected with bevel driving gear, the construction being simple and effective, and the churn easily kept thoroughly clean and sweet.

An exhibiting device has been patented by Mr. Joseph P. Wilson, of Centralia, Kan. A clock train, with dial face and hand showing on the front of a case, is arranged to disengage detent mechanism, while a second train drives a carrier shaft carrying radially projecting arms, with various other novel features, constituting an improved device for exhibiting advertisements, photographs, etc.

A drier intended especially for drying tobacco has been patented by Messrs. Gilmer and Chas. N. Meriwether, of Guthrie, Ky. This invention consists of a specially devised sheet metal screen arranged to be suspended above an open fire, to protect tobacco from sparks thrown off during combustion.

A drier, more especially adapted for white lead and other pigments, has been patented by Mr. Arthur Buel, of New York city. Drying belts or aprons are employed, on which the pigments are deposited and heat applied, so the substance will be dried in small lumps or balls, which can be handled without waste, the belts being arranged in vertical series and the material discharged from one to the other while being dried.

A fruit drier has been patented by Mr. William S. Plummer, of San Jose, Cal. The heat conductors are constructed in a manner intended to form a vacuum above the trays, to draw the heated air up through them, thus expediting the evaporation of the juices, and preventing any dampening by the vapors from the lower trays, the invention being an improvement on a former patented invention of the same inventor.

A fishing reel has been patented by Mr. Julius vom Hofe, of Brooklyn, N. Y. The reel heads are made of hard rubber, with the inner metal plates of

open work finish, or in the form of braces embedded in the rubber before vulcanizing, with the plates afterward recessed on their inner faces in common with the rubber, to receive the rotating spool heads, making a cheap, light, and strong reel.

A fifth wheel has been patented by Mr. Joseph V. Alexander, of Taylor's Chapel, Tenn. This invention affords an improvement in ball and socket couplings, for connecting the front axles of wagons and carriages to the bolsters, the socket having end openings or slots and the ball a radial slot extending through it, while the axle and its attached block have a segmental form, adapting it to fit in and fill the slot.

An automatic dumping and discharging apparatus has been patented by Mr. John T. Evans, of Adamsville, Utah Ter. Combined with a supporting frame is a pivoted and counterbalanced dumping cage, having one end open and the other curved upwardly, an entry for guiding a bucket into the cage, and a stop for arresting the cage when tilted, to facilitate discharging ore, coal, etc., on cable railways.

A flour bolt has been patented by Mr. Kennedy Dougan, of Calwood, Mo. Within a cylindrical chest is a reel on which is a series of vertically yielding pivots, conveyer wings being mounted on the pivots, and the adjacent surfaces of the wings and reel having projections and recesses to hold the wings in position, the design being to simplify construction, lessen cost, and economize space.

A windmill has been patented by Mr. David B. Wood, of Sibley, Iowa. According to this invention, the floats are arranged in sets and carried by a hollow vertical shaft that is supported in a properly constructed tower, the construction being such as to make a cheap, efficient, and durable form of windmill, the fan arrangement also being applicable to ordinary forms of windmill.

An apparatus for facilitating the multiplication of numbers has been patented by Mr. Jules V. Charpentier, of New Orleans, La. This invention covers improvements on a former patented invention of the same inventor, intended to improve the construction and to better prevent the possibility of misreading the figures of several sheets, or reading from one row figures of one sheet when another should be considered.

A wagon bolster has been patented by Mr. John M. McNeese, of West Liberty, Pa. It has at its opposite ends sockets fitted to receive tenons on the lower end of the stakes, a bolt passage intersecting the socket, and the tenon having an edge notch, the fastening bolt entering such edge notch to secure the standard, the bolster being especially adapted for bob sleighs in the lumber regions.

A tailor's measure has been patented by Mr. Anton Schaal, of Louisville, Ky. It is a leather belt about an inch wide and fifty inches long, laid off in inches and parts of inches, and on one side is attached a steel band, set a little distance from the plane of the belt, upon which is adjusted a sliding back measure and sliding arms, the measure being intended to facilitate measuring and laying off garments with accuracy.

An instrument for measuring powders has been patented by Mr. Joseph J. Stevens, of Coalesburg, Mo. It consists of a tube on which is a graduated scale, a piston in the tube being adjustable to regulate the quantity of powder, and the powder being then readily forced out by the piston, the device being intended to facilitate the exact and rapid measuring of proper doses in medical practice.

A folding box has been patented by Mr. Jonah R. Cole, of New York city. The bottom is made in one piece with the end and side pieces, the surplus material at the corners being folded and lapped, and eyelets inserted, through which is passed a draw string or tape entirely around the box, so that by drawing upon the ends of the string the box may be drawn to folded position, and so tied.

A car starter has been patented by Messrs. Charles L. N. T. Hansen and Christian N. Fischer, of Plainfield, N. J. The invention consists of an endless chain and pulleys attached to the driving shafts, a clutching device operating on the chain and against springs, there being a brake and a device for throwing the clutch in and out of gear with the chain, the device accumulating power at the will of the operator while the car is in motion.

A bottle stopper forms the subject of two patents issued to Mr. Charles L. Morehouse, of Brooklyn, N. Y. The bottle head has an inner angular groove and triangular rabbet, and a rubber packing ring has a flange to fit in the groove and against the rabbet, while there is a hard rubber or other ball valve fitting against the bottom bevel of the packing ring, with other novel features, the devices making a simple and effective internal and external bottle stopper, adapted for use on bottles for receiving plain and effervescent liquids.

## NEW BOOKS AND PUBLICATIONS.

MODERN STEAM ENGINES. By Joshua Rose, M.E. Philadelphia: Henry Carey Baird & Co., 1886.

Though quite elementary in its character, and written almost entirely from the workshop point of view rather than the theoretical, Mr. Rose's latest volume covers almost the whole ground of steam engine construction. It is written in a plain, straightforward style that will commend it highly to those who search for information in its most available form. It is intended for beginners in the study of the steam engine, no less than for more advanced students, since care has been taken to omit nothing that is essential to a thorough understanding of the subject. Particular attention has been given to the various kinds of slide valve motions, as the distinguishing features of each class of engines depend largely upon these differences. Each subject has been treated so as to be complete in itself, and while this has necessitated repetition in several instances, it makes the work much more valuable for reference. Nor is the repetition a disadvantage for its own sake, as the essential features of an engine

cannot be learned too thoroughly. In addition to the consideration of the steam engine as a general motor, and its construction for particular classes of service, some little space is devoted to its application to pumps, drills, air compressors, and other mechanisms driven by the direct use of steam. The volume is one that can be cordially recommended, even in the face of the large competition to which all such works are now open.

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