

## ENGINEERING INVENTIONS.

A cable grip apparatus has been patented by Messrs. Henry Dods and Frank Hides, of Virginia City, Nev. It has a compensating spring device to relieve the shocks of gripping the cable, and prevent the slipping of the grip on the cable; also a specially devised frame, bed plate, and slide, enabling the clutch to be so worked as not to injure the cable.

A car coupling has been patented by Mr. Timothy C. O'Donovan, of Walker's Mills, Pa. It consists in a combination with a drawhead having a flattened cross rod of a coupling link with a transverse groove, and an enlargement for receiving the cross rod of the drawhead, which link can be swung so that its hook can catch on the cross rod of the opposite drawhead, whereby the cars will be coupled.

A mine railroad has been patented by Mr. John G. Thompson, of Cuba, Ill. In an inclined or sloping road for working cars in opposite directions at the same time by a rope doubled around a drum at the upper end of the road, the road being single track with a turnout, the rope is so arranged within the single track, and branching into and along the turnout, that the switches work automatically, and the cars cross the rope without obstruction or delay.

An improved gauge cock has been patented by Mr. Michael J. Fitzgerald, of Fort Wingate, N. M. In combination with the stock and main and transverse passage, the plug has a weighted lever, and both of its passages are so made as to be entirely shut off from the passages of the stock in its closed position; the weighted lever can always be relied upon for keeping the cock closed except when purposely opened to test the water in the boiler.

## MECHANICAL INVENTIONS.

An insertible saw tooth of improved form has been patented by Mr. William B. Risdon, of Trenton, N. J. The tooth is made with a toe, a perforation, and a slit at its heel to adapt it to be secured in a saw plate with a shoulder and a recess at the rear end by a rivet wholly within the tooth, thus putting no strain upon the plate, and in no way affecting its true-ness.

A bolt header has been patented by Mr. Benjamin McKillen, of Verona Mills, Mich. It is a tool with handled and pivoted die jaws, having rabbet grooves in the lower side to be secured between and on the jaws of a vise. The tool affords great facility for making well defined angles to square shanks, and may also serve as a holder for rods of different kinds of work for setting and truing the parts.

An improved mechanical movement has been patented by Mr. Francis W. Goodyear, of Springfield, Mass. It is intended to make reciprocating motion more readily convertible into rotary, and is applied in a simple manner to various hand and foot power machines. There is a ratchet action in which no springs are used, and the whole movement is practically noiseless.

An improved piano pedal stool has been patented by Mr. William Winter, of Albany, N. Y. The invention consists in a stool provided with foot levers connected by connecting rods and elbow levers pivoted on a bar of the stool and adapted to operate the pedal levers of a piano or like instrument. The stool is provided with devices for easy and rapid attachment to the instrument or pedal lyre. The angle levers are provided with pads to protect the pedal levers from being injured.

An apparatus for dyeing with hydrocarbons has been patented by Mr. Engen Rau, of Hartford, Conn. It is a dry dyeing machine with an apparatus for saturating the previously dried fabric in a color dissolved in benzine and oil; it has a wringer for taking out surplus color, and a drying chamber, from whence the fabric is conveyed through endless blankets through a highly heated finishing chamber where it is subjected to steam pressure, the whole in one continuous operation, and with no waste of color.

A gas valve for ice machines has been patented by Mr. Richard Thoens, of New Orleans, La. It is designed for the minute regulation of the flow of gas, being especially intended for use in connection with ice machines in which ammonia gas is used. The valve stem is packed by rubber washers, between which is a metal washer, and these washers are clamped between metal rings with beveled surfaces, the rubber washers spreading to close tightly against the stem and the inner surface of the valve body.

An improvement in saw mills has been patented by Mr. Walter P. Scofield, of Hawthorn, Fla. It consists in a contrivance of belt shifting devices, whereby a trip block on the log carriage will automatically shift the belt from the loose to the tight pulley of the feed shaft, to rotate the latter only when the log setting apparatus is to be operated; the driving shaft is supported steadily its whole length by pivoted bearings, and there is a locking device for the connecting rods of the oppositely acting friction wheels of the setting apparatus to lock the wheels out of contact with the set works drive wheel.

## AGRICULTURAL INVENTIONS.

A cultivator has been patented by Mr. Charles D. Reed, of Polo, Ill. According to this invention, as the standards and plows are moved laterally a bar keeps the couplings parallel, so that the shovels will always be held at the desired angle with the line of draught, thus always doing good work, however they may be moved laterally.

A corn planting attachment for plows has been patented by Mr. Philip Dougherty, of Fort Dodge, Iowa. A jointed spout can be so adjusted to the depth of the intended furrow and the width of the furrow slice that the seed may be dropped in the outer part of the previous furrow and will be covered by the furrow slice, the seed being dropped as the plow is drawn forward.

A corn planter has been patented by Mr. William P. Lanham, of Star, Mo. The seed dropping slides are operated by the revolution of the drive wheels, and are so arranged and held in place that they will drop more or less seed as required. A pawl carrying wheel

has adjustable slides and arms to engage with crank arms of markers, and held up by springs, so that markers are forced down to mark the soil by the revolution of the drive wheels.

A cotton, corn, and tobacco fender for raising the leaves of plants while soil is being thrown around the stalks by the plow, has been patented by Messrs. M. F. Duncan and R. E. Coyle, of May's Lick, Ky. The fender is constructed in combination with the plow beam, with its forward end pointed and curved slightly inward and its rear end curved outward and upward, so that as the plow is drawn forward the fender raises the leaves of the plants.

Mr. Obadiah Wilson, of Plainville, N. Y., has obtained a patent for an improved method of conveying tobacco from the field and depositing it in the drying house. The invention consists in a truck with four wheels and provided with a removable rack upon which the plants are placed after they have been cut. They are then transferred to the drying house and the rack is removed bodily from the truck, which obviates the necessity of rehandling the plants, saving time and labor, and lessening injury to the crop from handling.

## MISCELLANEOUS INVENTIONS.

An improved suspender end has been patented by Mr. Jacob Katzenberg, of New York city. It is composed of colored braid with a lining of chamois leather and an interposed piece of cloth, the ends being thus made more durable and less liable to stretch out of shape, while the braid is kept out of contact with the shirt of the wearer.

An improved fire escape has been patented by Mr. John Schmittknecht, of New York city. It provides for a shaft let into the wall of a building, or placed against the same, the shaft having ladder rounds, and being provided at its upper end with a skylight, so protected with bars or grating as to prevent clandestine entrance.

A combined register and ventilator has been patented by Mr. William H. Maxfield, of Maysville, Ind. It consists in a special construction and combination of parts whereby the whole is made to present an ornamental appearance, great facility is afforded for removing and cleaning the interior, and it may be readily operated from opposite ends of its air box.

An automatic vehicle brake has been patented by Mr. Richard R. Pace, of Lineville, Ala. The invention consists in levers pivoted on thills held to the front axle by shackles, the levers carrying brake shoes at the outer ends, and having the outer ends connected with the thills by extensible braces. The brake can be so locked as to be made inoperative when desired.

An improved window cornice, that is convenient and readily adjustable, has been patented by Mr. Michael Leuz, of New York city. The center piece has grooves and stop blocks, and there are sliding end pieces with end T-bars and set screws, the combination being such that the whole is strongly made and readily fitted to the place desired.

Letters patent have been granted to Mr. William A. Whitney, of Hudson, Mich., for an improved wheel barrow in which the legs and braces are, by a combination of bolts and metal devices, connected rigidly and closely to the handles, so that the wheel barrow frame will be very strong, and can easily be taken apart and put together again.

A vegetable grinder and slicer has been patented by Mr. Edward Schmitz, of Winsted, Conn. A grating cylinder, which may be changed for a cutting cylinder, is devised so as to be suitably revolved in a sort of hopper, whereby the grinding, grating, or cutting of cabbages, potatoes, and other vegetables may be readily accomplished, for domestic use or for feeding cattle.

An improved hot blast stove for blast furnaces has been patented by Mr. Charles Alger, of Hudson, N. Y. The invention consists in the peculiar construction of the air heating pipes, which can be made of wrought iron if desired, and are faced inside and outside with firebricks, those inside being made of different widths, so as to form a rough inner surface.

A washing machine or improved wash-board has been patented by Mr. A. E. Kiel, of Montrose, Iowa. The board has three roll sets, each set consisting of a ribbed, a smooth, and a corrugated roll, the rollers not to be in contact but as close as possible without touching, and the grooved rollers being of greater diameter than the plain ones, the whole to shorten the time and lessen the labor of washing.

An improved grain weigher and measure has been patented by Mr. James E. Kemble, of Vicksburg, Mich. By a combination of valves in a circular case, inside of which is another circular case, suitably pivoted and divided by partitions, one loaded side falls to discharge a weighed load, while the light side rises to be filled, the weigh bar being provided with a weight which can be secured in any position to adjust the measure to weighing regularly any desired quantity.

A razor guard has been patented by Mr. James P. Tryner, of Denver, Colo. It is formed of a strip with a forked arm at each end, in the ends of the prongs of which rollers are journaled, one being slightly above and the other slightly below the cutting edge of the blade; one of the prongs has a check plate, and on the upper surface of the strip is a spring for pressing the blade upward, the whole to prevent the razor from cutting the person using it.

An improved measure for measuring grain, vegetables, etc., has been patented by Mr. William A. Carpenter, of Bankers, Mich. In a metal cylinder having its top and bottom edges turned over wire rings, a wooden ring surrounds the upper part of the cylinder, and a wooden bottom rests upon a bottom flange made by turning the edge of the cylinder over a wire, the whole making a measure simple in construction yet strong and durable.

A combined vault cover and ventilator has been patented by Mr. T. W. Langill, of New York city. The casing has a grate at its upper end and a water receiving channel plate at the lower end, the cover resting upon the inner flange of the channel plate, and provided with a sliding rod, a connecting bar, and a

lever, whereby the water received upon the cover will flow into the channel plate, and the cover can be readily raised and lowered.

An improved bottling device has been patented by Mr. Alfred Rigny, of New York city. In a tube open at both ends, the upper part carries a lateral supply pipe, and there is a valve at the lower end, operated by a rod through the tube. The tube is calculated to occupy the exact space required to be left empty for corking the bottle, and it can be readily moved from one bottle to another without any waste of liquid.

An improved fifth wheel for wagons has been patented by Mr. Thomas Evans, of Gravesend, N. Y. It is formed of two circular channel plates with interlocking flanges and corresponding central depression and wearing surface, in combination with a circular skeleton frame with conical rollers journaled in its rims. By this means the friction between the upper and lower parts of the fifth wheel is greatly reduced, and the turning of the wagon is made much easier.

A bee hive of new and improved construction has been patented by Mr. Edward Meyer, of Halleetsville, Texas. The bees can, in this hive, be fed and watered very conveniently, a peculiarly made water tank being attached; the honey can be removed without permitting the bees to escape, and there is no danger of being injured by the bees while removing the combs, while the arrangement is such that none of the enemies of the bee can enter the hive.

A rotary leader link for fishing lines forms the subject of a patent which has been issued to Mr. Earl Ludwig Bollermann, of New York city. It is for hand lines, with a weight or sinker at the end which goes into the water, and is so arranged that, when the fisherman throws out his line, the snells with their hooks will not become tangled up with or wrapped about the line, but will fall in their proper places, no matter how much the line may be twisted.

Mr. Morris H. Marcus, of Edenburg, Pa., has patented an improved sample dummy. The invention consists in a dummy for cloth or rolled goods, made of wood or other suitable material, with its body of the required shape of the roll of goods to be represented, and having reduced ends, on which are secured and mounted pieces of selvaie till a bulk is obtained equal to that of the body of the dummy. This is covered by a piece of the goods, thus representing a solid roll of cloth which is specially adapted for window show.

A folding cot of improved construction for use in hotels and hospitals has been patented by Emily F. Vance, of Gallipolis, Ohio. Two pairs of legs are united at the upper ends by longitudinal rails, the legs being crossed and pivoted in the usual way. A quilted bottom or sheet is lined and partly stuffed with cotton batting, and a pillow is provided at each end, which can be removed very easily and readily. The cot requires no mattress, and can be folded compactly.

A cap for receiving the fulminate for firing explosives in blasting rock, etc., has been patented by Mr. George Freuns, of Durango, Colo. A metal tube is threaded internally and externally to within a short distance from the lower end, where a suitable fulminate is placed and the lower end closed by a cap. A threaded cap with a conducting wire is screwed on the upper end, or a fuse is then inserted. The tube can be screwed in a giant candle of explosive material, the flange fitting on the upper end of the candle.

A feed governor for cotton gins has been patented by Mr. Henry P. Schaefer, of Schulenberg, Tex. Most gin saws now suck or draw in the cotton fastest at the central part of the saw shaft, drawing the cotton from the edges of the feed board toward the center. By this improvement a thinner layer of cotton is fed at the center, the suction of the central saws drawing in from the thicker edges such portion as will make the whole supply to the gin saws even and regular and prevent all choking.

A new process of and apparatus for distillation has been patented by Mr. James G. Pontefract, of Pittsburg, Pa. The heat is applied from direct fire, steam jacket, or steam coil, and the fermented mash, beer, etc., are agitated during the distilling process in such manner as to prevent lees or solid particles from adhering to the side or bottom of the still and thus burning or scorching, this being accomplished by causing a stream of the liquid being distilled to be constantly withdrawn and forcibly injected back into the still while in operation.

A machine for wetting paper has been patented by Mr. John W. Morrison, of Omaha, Neb. The quires are fed to feed rollers, from whence they are taken by fingers so adjusted that only the under side of the paper may be wetted in a water tank, or the whole may be submerged, as desired, and thence the paper is conveyed out through other rolls to a receiving table, the whole being done as fast as the operator can feed the paper, and so each quire will receive just the same amount of water, according to the gauge at which the machine is set.

An improved washing machine has been patented by Mr. E. W. Bush, of Armstrong, Mo. The object of the invention is to produce such a combination of parts as will facilitate the application of rubbing devices to an ordinary wash tub. There is a false bottom, below which the dirty water collects, and the false bottom being provided with radial ribs, the clothes to be washed are spread on the false bottom, and a disk is rocked to and fro over them in a horizontal plane by means of a suitable handle. The machine can be readily adapted to or easily removed from any tub.

A tobacco moistening tray has been patented by Mr. Charles N. Swift, of New York city. A shallow tray with perforated cover carries a sheet of bibulous material in such a way that a single supply of water will last considerable time, and the tray requires but little attention, so being well adapted to place in show cases, etc., where the cigar boxes may be arranged upon it. The same inventor has also obtained a patent for a moistening pad of some bibulous substance covered by a perforated plate, and supported on a plate folded at the edges over both the bibulous substance and the perforated plate.

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