ENGINEERING INVENTIONS.

Messrs. Columbus B. Tucker, of Angerona, W. Va., and Josephus Tucker, of Coolville, O., have patented an improved car coupling, which possesses the feature of having neither springs nor levers. The parts are automatic in their action and very simple in arrangement.

Mr. Eberhardt Nicolaisen, of New York city, has patented an electric mail conveyer, the object of which is to construct an electrical railway for the conveyance of mail matter from station to station, and to provide for the automatic transfer of the cars from the main track to the side tracks of the several stations.

An improved nut locking device has been patented by Mr. George Cade, of Milan, Tenn. A fixed washer is so placed under the nut that in screwing the latter to the rail, the nut is permitted to turn readily on the bolt. When in position the nut is held fast by a tumbler, so that it cannot become loose by any jarring motion of the rail. By raising the tumbler it is possible to so disengage the washer as to permit the nut to be turned off as desired.

An improved automatic switch stand has been patented by Messrs. Oliver J. True, of Port Clinton, and Henry H. Houghton, of Elyria, O. The object of the invention is to provide for automatically replacing the tongues after they have been displaced by a train from the siding, or one coming in the same direction on the main line, so that the switch will be in proper order for the next train running in the reverse direction of the train that has displaced the tongues. The object of the invention is praiseworthy, and we hope it may be practically tested.

An improved packing, possessing flexibility, durability, and self-lubricating qualities, and designed to be applied to valve stems, stuffing boxes, etc., has been patented by Mr. William P. Woodruff, of New York city. The packing is composed of canvas or other cloth, asbestos paper, and sheet rubber, or India-rubber cloth wound in alternate sections around a core of fragmentary metal. Between the different materials used in making up the packing a thin layer of plumbago mixed with tallow is interposed to prevent the layers adhering and for rendering the packing flexible.

An improved car coupling has been patented by Mr. William T. Van Dorn, of Lincoln, Neb. The invention consists in a coupling bar having at its end a downwardly projecting catch, which engages with a bevel coupling pin located horizontally in the drawhead. The coupling bar is forced down on the pin by a pivoted bar situated in the top of the drawhead, which latter is furnished with a coil spring. The advantage claimed for this simple invention is, that the coupling bar may be readily applied to the pin and link coupling now in general use.

Mr. Benjamin Bennett, of Hyde Park, Pa., has patented an improved car brake. To the platform of the car is attached the permanent portion of a rose clutch, and the movable portion of the clutch is attached to a staff, so as to turn with it by a square or other form, but to slide freely up and down on the same. A pivoted foot lever is inserted through a slot in the fixed portion, so that by pressing the lever down with the foot the movable portion will be raised, disengaging the staff, so that the brakes will be disconnected from the wheels. When the foot is removed from the lever, the weight of the movable portion will bring it into engagement with the lower portion of the clutch, when the brake will be ready for operation.

MECHANICAL INVENTIONS.

An improved drag saw machine, in which the saw is suspended at its shank by a pendulum and has a handle attached for working it, has been patented by Mr. John C. Wygant, of Outville, O. The invention further consists in the manner of adjusting and controlling the pendulum.

A novel combination tool has been patented by Mr. Harry U. Kistner, of Bordentown, N. J. This implement is one of those useful articles which almost every person has occasion to use very often. The same handle accommodates a number of tools, among which are a cork screw, gimlet, skate sharpener, etc.

A means of communication between a railroad train and any station on the line or any telegraph office within the circuit through an electric wire, has recently been patented by Mr. W. T. Waters, of Atlanta, Ga. An insulated conductor is suspended along the side of the road, on which a conductor on rollers travels with the train. Connection between the rolling conductor and one of the cars by a rod propels the former. The improvement pertains particularly to the construction of the movable roller.

A machine for scrubbing floors is the recent invention of Mr. Patrick Gallagher, of New York city. A barrel-shaped tank for holding the soapsuds is mounted on rollers, and just outside this cylindrical tank and attached to it is run a vertical shaft, to the lower end of which are attached the scrubbing brushes. These brushes are made to revolve by turning a crank which is geared to the shaft. This machine both scrubs and dries the floor, and will be found specially useful for polishing waxed floors, and cleaning large halls, piazzas, etc.

An improved street sweeping machine has been patented by Mr. Patrick Ryan, of New York city. The invention relates to that class of street sweeping machines which carry the sweepings into a receiver forming part of the machine, from which the dirt is dumped at intervals into piles. The brush is supported in a frame and connected with the axle of the vehicle by a chain and cog wheel, by means of which it is rotated, and the dirt deposited in the lower portion of the dust pan or apron, from whence it will be raised into the dirt receiver by means of the buckets provided for this purpose.

A novel revolving hat blocking table has been patented by Mr. Marl A. Cuming, of Brooklyn, N. Y., which consists of a revolving steam box or vessel adapted to carry the hat dies or moulds, also in a stuffing box for preventing the escape of steam. Clips for holding the stuffing box on the supporting table are provided, and the same revolve on its longitudinal axis. The invention further consists in an enlargement formed in the lower part of the steam supply pipe for collecting the water of condensation.

An electric device for regulating the ventilation and heat of incubators is the subject of a patent recently granted to Mr. Frank Rosebrook, of Elmira, N. Y. By the use of the electric appliance of Mr. Rosebrook it is claimed that the destruction of eggs will be greatly diminished, and the hatching process accelerated. The invention of the incubator has proved a great boon to the hen; she has been relieved by it of a monotonous portion of her life, and now comes in an electric contrivance which, by mechanical means, still further facilitates the hatching process.

A novel device in the form of an auxiliary rifle barrel for guns has been patented by Mr. Harry T. Martin, of Fort Robinson, Neb. The invention relates to a bushing for the breech of the rifle barrel, said bushing extending a short distance along the barrel beyond the cartridge chamber, and having a flange at the base corresponding to the flange of the large cartridge, by which means a smaller cartridge may be used than the one for which the rifle was originally intended, and thus much expense saved in case the rifle is to be used in gallery practice. A spring or springs to secure the bushing in the barrel is also provided, and a shell extractor contrived to be worked by the rifle shell extractor.

An improved screen cleaning device has been patented by Mr. Thomas Holman, of Salem, Ore. A frame of any approved form is furnished with a reciprocating inclined screen sliding on ways. This screen is operated by a spur wheel that gears with a pinion actuating a crank, which crank is connected with the screen by a rod, or it may be reciprocated by any other suitable mechanism. A roller rubbing frame, arranged beneath the screen, may be stationary or may be reciprocated in direction of the screen by a shaft connecting it with a crank wheel. The sifting screen is cleaned by its contact with the rubbers, which are mounted transversely with the screen and in such relation thereto as to clean the screen without injuring it. These rubbers are in the form of rollers, and are alternately fixed and rotatable.

An improved rice beating machine, the object of which is to facilitate the treatment of rice, to remove the inner skin, and to clean and polish the kernel after the rice has been hulled has been patented by Mr. James Decker, of Surrency, Ga. To the central bar of the frame of the machine is journaled a crank shaft, to the middle portion of which is attached a pulley to receive a driving belt. To the cranks of the shaft are pivoted the upper ends of pitmen, the lower extremities being pivoted to bars which slide up and down along the central brace of the frame, and to which bars at their lower ends the beaters or pestles are attached. The mortar is cylindrical, and is pivoted at its center in such a way as to be revolved by means of worm wheels which are actuated by a rotating shaft. By this arrangement all the rice in the mortar is brought in contact with the pestle.

A new machine for beveling the edges of circular, oval, or similar shaped mirrors or plain glass with curved or partly curved edges, has been patented by Mr. Thomas F. Gilroy, of New York city. The invention consists in an abrading wheel mounted rigidly on a vertical shaft, so as to rotate in a horizontal plane. Its lower end rests upon a pivoted lever, the latter of which is provided with an adjustable balancing weight for regulating the pressure of the wheel on the glass. The abrading wheel is set in action by a belt which passes around a series of pulleys located on the supporting shaft. A sponge is fastened on a rod so as to press against the periphery of the abrading wheel, to prevent the water from being thrown off by centrifugal force. The glass to be beveled is held between clasping plates, and is pressed upon the revolving stone, the pressure and degree of bevel being regulated by a feeding screw.

An improved animal trap has been patented by Mr. Talton B. Turley, of La Mine, Mo. It consists in a cylindrical or other shaped vessel resting upon a tank filled with water, and provided with a tilting pivoted platform. At the further end of this platform, upon a sliding hook arranged above the platform, is fastened the bait. The bait hook is made to slide when the bait is pulled upon by the animal, as he sinks downward with the swinging platform, in order that he may not be startled and turn back before it is too late. A small tank of water is likewise placed near the platform as an additional bait, and for some kinds of animals a pin is inserted under the platform, which holds it to be withdrawn by the trapper when the animal is in a proper position to be caught. A spring is arranged above the platform which prevents it from turning too far on its pivot, and which throws it back into place when the animal has been precipitated into the tank below.

AGRICULTURAL INVENTIONS.

Messrs. Richard E. Caviness and George McCormick, of Beckwith, Iowa, have patented an improved trip wire for check row corn planters. The invention relates to a trip wire for check row corn planters, constructed with eyes at regular intervals, and having rings secured in them. The rings are grooved to prevent them from slipping in the eyes of the trip wire.

Mr. Arthur W. Cash, of Decatur, Ill., is the patentee of a new and ingenious check rower for corn planters, in which he provides for lengthening the stroke of the seed slide, and obtains a positive and direct action from the reel shaft to the seed slide. Owing to the simplicity of the arrangement of the several parts of the machine, it is not liable to get out of working order, and it possesses many advantages not found in other check rowers.

An improved straw stacking machine has been patented by Messrs. Henry S. Stone, of Orange, and James M. F. Shepler, of Lyon's Station, Ind. At one end of the thrashing machine is attached a short elevator or carrier which takes the straw from the thrasher, carrying it to the elevator of the thrasher. This elevator may be raised by a windlass attachment to any elevation that may be required, and further it may be swung to the right or left, when it is desired to distribute the straw in forming the stack.

Mr. William Sinclair Craig, of Courtney, Texas, is the inventor of a new cotton chopper which consists of two hoes secured to a pair of bars, which are separated and held in position by a spring. These pivoted bars are attached to the axle of the sulky, and are slotted so that they slide up and down to conform to the unevenness of the ground. The number of parts comprising the machine are very few and the arrangement of them very simple.

An improved straw stacker has been patented by Messrs. Lewis W. Berger, Edward A. Peters and Oliver P. Chaney, of Groveport, O. The invention consists in an elevator frame mounted upon a four wheeled vehicle, and so constructed that it may be raised to any inclination and held in any position. The machine is designed with the object of receiving the straw as it comes from the thrashing machine and forming it into a stack near by.

An improvement designed to promote the strength of the individual teeth of harrows has been patented by Mr. John L. McKay, of Franklin, Tenn. This invention consists in harrow teeth constructed in an approximately V-shaped form, one prong being perpendicular and the other arm being inclined. The forward arms of one row of teeth are connected to one beam of the harrow, and the rear arms of the same row connected to a second beam, and so on to the third, so that the teeth of one row alternate with the teeth of the adjacent row.

A novel bundle carrier for harvesters has been patented by Mr. James W. Reid, of Union City, Mich. The invention consists in a bundle carrier for harvesters, constructed with gear wheels connected with the harvester mechanism and carrying a swinging shaft having curved arms to carry the bundles, and provided at its inner end with a trip arm to turn the swinging shaft, to raise its arms to receive a bundle, and to depress the said arms to discharge the bundle. To the rear part of the harvester frame is hinged a table to receive the bundles singly, and drop them in groups at the rear of the harvester. To the end of the shaft that drives the carrier is attached a curved arm to push the bundles forward as they are deposited upon the receiving table, and make room for the bundles following.

An improved tobacco planter has been patented by Mr. Sidney S. Neblett, of Whittle's Mills, Va. The invention consists of a frame with a crosspiece at the top, provided with a central opening through which passes a spring-actuated perforator, designed to open a hole in the ground for the admission of the plant. At the lower extremity of another movable bar is pivoted a funnel-shaped device or holder, in which the plant is inserted. This holder is then slid down until the plant is deposited in the opening in the ground. The opening is then filled with earth by means of a scraper which is located at the extremity of a third rod or handled bar. The device is of a simple construction, and obviates the necessity of the operator stooping when setting out the plant.

MISCELLANEOUS INVENTIONS.

A novel toy pistol, adapted to explode caps and project marbles through the air by a compressed coiled spring in the barrel, has been patented by Mr. Otto C. Butterweck, of St. Louis, Mo.

An improved coffee or tea pot has been patented by Mr. Patrick H. O'Hara, of Philadelphia, Pa. The object of the invention is to extract from tea, coffee, or other material all their essential strength, retaining at the same time all the fragrance and aroma.

An improved earring fastener has been patented by Mr. George Krementz, of Newark, N. J., the object of which is to facilitate the opening, closing, and rendering secure the fastening.

Mr. William E. Goodenough, of Newark, N. J., has received a patent for an extension photograph frame, the object of which is to provide frames for photographs and other pictures, so constructed that they can be adjusted to receive pictures of different sizes.

An improved hand truck has been patented by Mr. James H. Strugnell, of Toronto, Ontario, Canada. The invention consists in cleats attached to the under sides of the side bars of the truck, and of a rope or belt which is attached to the cleats and is used to hold the load on the truck.

Mr. W. H. Murphy, of Brenham, Texas, has recently patented a shaker or knodler for the mixing of drinks or liquids. In form it is similar to those used in most bar rooms, but it has the advantage of a strainer attached to the vessel, through which the liquid is strained after shaking.

Mr. Marion E. Porter, of Leon, Iowa, has patented a cooking attachment for oil stoves, the object of which is to provide a new attachment for oil stoves, whereby an increased quantity of food can be cooked than heretofore on an oil stove. An ingeniously arranged transmitter of heat is provided, which diffuses the heated air evenly throughout the attachment on which the articles to be cooked are placed.

Mr. William J. Morand, of Passaic, N. J., has invented a machine for rolling buttons on whips, the object of which is to facilitate the rolling and finishing of the buttons on whips. The machine has two parallel rollers provided with a driving mechanism, and a short roller pivoted to a swinging lever, whereby the buttons are rolled and finished while the whips and buttons are revolved by the rollers.

Mr. Benjamin N. Shelley, of Anderson, Ind., is the patentee of a new wheel intended for any kind of road vehicles. On the main axle a steel sleeve is placed on the spindle of the axle, which receives the entire wear of the wheel boxes. These sleeves are made of the hardest steel, and will last probably as long as any vehicle body, but should they become worn they can be readily removed and replaced by others. The spindle of the axle is tapering, and is provided with a thread at its front end forming a close, oil tight joint, which facilitates the lubrication of the axle.

An improved harness loop has been patented by Mr. Henry A. Pott, of Cape Girardeau, Mo. The invention consists in a double loop for a harness, having an intermediate, a top, and a bottom plate, connected together by the side plates, and having the top and bottom plates located out of the plane of the rivet, whereby the strain upon the strap or trace is thrown upon the center of the rivet instead of one end, and being thus equalized, there is less danger of the parts separating under strain.

Mr. Mathias Pabst, of Washington, D. C., has patented a means for preventing overflow from back water. This invention, which takes advantage of the principle of equalizing the level of the high water by means of a stand pipe; consists in making this stand pipe detachable, with its lower end adapted to be fitted into the mouth of the sewer with a water tight joint by simply telescoping into the sewer. By this means, when the water rises in the sewer from whatever cause, it simply rises in this tube to its own level without flooding the cellar, and damaging any goods that may be stored therein.

A corset of improved make has been patented by Mr. Richard V. Cable, of Poughkeepsie, N. Y. The improvements consist in providing upward extensions of the breast swells to prevent the dress falling in above the upper edge of the corset, and in the construction and attachment of skirt supporters, to prevent the waist line being unnecessarily enlarged, and at the same time the weight of the skirts is mostly thrown upon the shoulders of the wearer.

An improved sewer and drain tile for surface or subsoil drainage or sewage, which is well adapted for different localities and under varying conditions of use, has been patented by Mr. George J. M. Porter, of Princeton, Ill. The invention consists in a pipe consisting of a series of tile sections, each open at the top, and provided with a half band at one end, made integral there with; these sections being adapted to receive a cover or top tile having its ends fitting under the half bands of two adjoining lower tile sections.

Messrs. E. B. Greene and C. J. Emerson, Jr., of Westfield, Mass., have recently patented an improved metronome, or an instrument for beating time, the object being to simulate by a beater or baton the ordinary movements given by hand, so as to indicate directly the length of each note in a bar of music. The invention consists in a shaft to which is attached a beater or baton which is operated by a cylinder that is rotated by spring power. The cylinder is provided with pins on its surface similar to the arrangement of a barrel in a music box. An escapement of novel construction regulates the rotation of the cylinder.

A patent has been obtained for the manufacture of anhydrous sulphide of zinc by Mr. Thomas Macfarlane, of Acton Vale, Quebec. The invention consists in producing zinc sulphide through the intervention of the ammoniacal liquors of gas works, which consists in treating the latter with sulphide of barium, then removing the precipitated carbonate of baryta, and decomposing the ammonia liquid filtrate with a salt of zinc, so as to obtain a precipitated zinc sulphide. This is rendered anhydrous by mixing it, when dried, with a salt of ammonia, and heating the mixture in a furnace, which removes the water of the sulphide without oxidating the compound.

A novel folding desk has been patented by Mr. Magnus J. Hafgar, of Chicago, Ill. A desk is provided with two hinged or pivoted swinging end wings which have their outer surfaces or sides ornamented to represent the front of a closed desk. The desk itself, as well as the wings, is furnished with pigeon holes, compartments, drawers, etc., to receive books and papers. When the wings are swung open they will rest transversely against the ends of the desk, and there meeting will be at the front of the desk. By this arrangement the desk when folded occupies but very little space, but when open presents a very imposing front.

Mr. Charles R. Groff, of St. Paul, Minn., has recently patented a process for preparing a coffee compound intended as an article of merchandise, similar to the essence of coffee now so extensively sold by grocers. The ingredients used are coffee roasted and ground, which is boiled in water to the proportion of two quarts to one pound coffee. After the coffee has boiled sufficiently, alcohol or cologne spirits are added, after which the liquid is again boiled for a short time, when glycerine and burnt sugar are added, which complete the process of manufacture and renders the article ready for bottling. Connected with the manufacture of the coffee compound, the inventor uses a novel vessel for boiling and treating the ingredients.

An improved padlock has been patented by Mr. Thomas Donahue, of Terryville, Conn. The invention consists in a padlock, the operation of which is somewhat as follows: To release the shackle the notched key is inserted and the key turning the tumblers, the notches are brought into line beneath the pawl, so that the pawl falls in the notches. By further movement of the key the tumblers engaging the pawl carry the bolt backward, thereby releasing the shackle, which is immediately thrown upward by the spring. Upon the shackle being pushed down to its place again, the block in which it fits, and which carries the spring, is moved down into its place, and the bolt springs forward and locks the shackle. The whole is of a simple construction, while at the same time the lock is not acted upon by the weather, and cannot be readily picked.

An improved cooper's bevel, to be used in the manufacture of tubs and tanks, has been patented by Mr. John F. Lonergan, of St. Louis, Mo. The object of the invention is to furnish an instrument by which the angles in a variety of sizes may be obtained, so as to avoid the necessity of a separate instrument for each size of tub or tank. The instrument consists of two blades, one of which is termed the "base" of the instrument, and the other the "adjustable arm." The base is furnished with two parallel and longitudinal slots, and the arm is made with two similar slots. The arm is attached to the base by screws passing through the slots, and held by clamping nuts, to allow of the adjustment of the arm upon the base at right angles or in any position as may be desired.