

## ENGINEERING INVENTIONS.

A piston and valve rod has been patented by Mr. Joseph McGrail, of Savanna, Ill. This invention consists in the use of a sleeve on the rod and stem, which can be quickly fitted to an old rod or replaced when worn, thus saving the time and labor required for repair or replacement of worn valve stems and piston rods.

A car coupling has been patented by Mr. Alexander C. Lubbert, H., of Guaymas, Mexico. It has pivoted hooks carried by the drawheads, and arranged to engage by gravity with bars in the heads when running the cars together, the bars being drawn out or removed to uncouple the cars, together with additional bars, one in each drawhead back of the aforesaid bars, to retain the hooks in coupling position.

A condenser for steam pumps has been patented by Mr. Henry T. Blackwell, of What Cheer, Iowa. It is especially intended for use in mines, where the pumps are placed at deep levels, and is so arranged that the steam used for operating the pump is got rid of without using a long line of exhaust pipe, and the vacuum obtained in the steam cylinder aids the operation of the pump.

A stock car has been patented by Mr. Jonathan E. Pierce, of Deming's Bridge, Texas. This invention covers novel features of construction to guard the cattle from injury by the sudden starting or stopping of a car when filled with cattle, and provides means for guiding the cattle into the proper compartment of the car, and so the device may be worked by a train hand on top of the car.

A railway switch has been patented by Mr. Abraham Ayres, of New York city. According to this invention, an oscillating plate is operated by the weight of an animal drawing a car, so that, if driven on a right or left hand plate, a pivot tongue will be moved toward or from the main rail, thus permitting the car to run on the main rails or be automatically switched to branch rails.

An automatic time signal for railways has been patented by Messrs. Francis H. Young and Frank I. Davis, of Port Morris, N. J. According to this invention, a magnet is rotated by a clock mechanism in connection with a pointer carrying spindle, and there are means for automatically making and breaking connection between the magnet and spindle, with other novel features, to constitute a device for use in railway stations to indicate to engineers the time at which preceding trains passed the signal.

A valve for steam radiators has been patented by Mr. Thomas S. Hewitt, of New York city. It is made with two plates having corresponding inlet and outlet openings, a valve seat, with spaces at its sides and ends, with corresponding ribs, and valve plug with recessed ends, operated by a stem and handle, the valve being so constructed that the inlet and outlet openings can be opened or closed by one movement, and a small quantity of steam can pass continuously from the inlet to the outlet pipe when the valve is closed.

An apparatus for laying submarine tunnels and tubes has been patented by Mr. Hayden H. Hall, of New Hamburg, N. Y. This invention consists in a movable caisson with a prow and means for attaching a draught chain or cable at one end, and at the opposite end a neck adapted to receive the end of a tunnel tube, the caisson having an air shaft or hatchway extending above the surface of the water, also a draught clevis, and there being besides numerous other novel details and combinations.

A bridge has been patented by Mr. Emmerich A. Werner, of New York city. This invention relates only to the chords of bow girders, and is independent of the system of bracing or its construction, introducing a plain tension or compression chord; the features of this girder are that measures of tendency to produce motion in any part of the girder are always positive, whatever the position of the load, and the absolute value of such measures is independent of the height of the crown joint above the abutments, for one and the same kind of loading.

## MECHANICAL INVENTIONS.

A mechanical movement has been patented by Mr. James H. Carrington, of New York city. This invention relates to certain improvements in mechanical movements heretofore patented, and consists principally in the employment of an axial shaft for the transmission of fast or slow motion.

A centering tool has been patented by Mr. George W. Varnum, of Montgomery City, Mo. This invention covers a special construction and arrangement of parts to provide a simple, inexpensive, and easily worked tool for center punching or marking the square or untrued ends of rods, bars, and the like, preparatory to turning or drilling them.

A die for making steel jars, such as used in oil wells between the auger stems and sinker bars, has been patented by Mr. James J. Davin, of Bradford, Pa. The die is of special construction for striking the jars up by successive operations from solid steel bars, instead of their being made in parts and welded together, as heretofore, with the frequent result of burning and imperfect welds.

## AGRICULTURAL INVENTIONS.

A corn cultivator has been patented by Mr. Andrew J. Sweeney, of Pana, Ill. This invention covers novel features of construction and arrangement to promote convenience in adjusting, guiding, and controlling cultivators, for use with corn and other crops, planted in hills or drills.

A cultivator has been patented by Messrs. Peter J. Hostetter, Oliver C. Bower, and Elijah M. Hopwood, of Bushton, Ill. It is for scraping the ground and cultivating plants grown in rows, and can be used in connection with the wheels and axle of ordinary two horse cultivators, to which it is easy of attachment; the scrapers clean the weeds and rubbish between the rows, and cutters shave the ground close up to the plants, while the plow can be regulated to any depth, or turned to heap up earth against the plants.

A combined harrow, clod crusher, and stalk cutter has been patented by Mr. David M. McElhane, of Buena Vista, Ohio. It is constructed with wheels, an axle with cutters, a stationary frame with cutters, and a hinged frame with curved harrow teeth; the stationary and hinged frames are further connected by hooks, so the harrow teeth can be readily secured in working position, and raised from the ground in passing from place to place. The construction is such that when the machine is drawn forward the harrow teeth stir up and loosen the soil and break in pieces loose clods and soil, while stalks and weeds and unbroken sods are carried by revolving cutters up the teeth and over the axle till they strike the stationary cutters, where they will be cut in pieces.

## MISCELLANEOUS INVENTIONS.

An elevator has been patented by Mr. Volney W. Mason, of Providence, R. I. This invention consists in mechanism for multiplying the power combined with hoisting chains and a balance weight for hand and power elevators.

A cock for water and gas fittings has been patented by Mr. Henry P. Drew, of New York city. This invention covers novel details in the construction and arrangement of parts, with the object of promoting security in the use of cocks in gas and water fittings.

A wash boiler has been patented by Mary R. Walpole, of Mayfield, Ky. This invention covers special features of construction for an improved steam clothes washer, to force a large quantity of steam and water through the clothes in a short time, whereby they may be washed without pounding or rubbing.

A trace holder has been patented by Mr. Joel Strong, of College Hill, Ohio. This invention covers improved means for holding the leathers of trace holders, in place of fastening them by screws or nails directly to the whiffletree, by which device the trace holder is made sound and reliable.

A steamer for cooking food has been patented by Mr. Charles A. Gibford, of Newton, Iowa. This invention covers a special construction of apparatus for cooking meats, vegetables, and other articles at the same time, but without risk of the odors of any of the articles affecting the others.

A hot air heating apparatus has been patented by Mr. John L. Hamilton, of St. Joseph, Mo. Its object is to utilize ordinary open grates for heating rooms above those in which the grates are placed, and to that end the invention consists in a special arrangement of flues and heating tubes.

A beehive has been patented by Mr. George L. Tinker, of New Philadelphia, Ohio. This invention covers various novel features in construction and the arrangement of parts of a hive to facilitate bee culture and also to increase the productive capacity of the swarms.

A scrubbing machine has been patented by Mr. John F. Cameron, of New York city. It is mounted on wheels, provides means for delivering water to point desired, means for reipating a brush or brushes to scrub a floor, means for taking surplus dirty water from the floor, and again applying lean water.

A pedal attachment for organs has been patented by Mr. John Swanson, of Mendota, Ill. This invention covers a special construction and arrangement of parts for an improved attachment to the pedals of cottage organs, for the purpose of reducing the power required to operate them, and to enable children to work the pedals.

A fire escape has been patented by Mr. Charles W. Joynt, of Makanda, Ill. It is of the folding ladder class, and consists in a ladder formed of a series of parallel side rods provided at their lower ends with right angled sockets for receiving the ladder rounds, and at their upper ends with eyes for receiving the round of the adjoining section of the ladder.

A tile kiln has been patented by Mr. Gregory Jennings, of West Cairo, Ohio. The construction of the flues and arches is such that a downward draught can be used and changed as necessary, in order to burn the tiles hard at the bottom and not too hard in the top part of the kiln, while the heat may be readily regulated.

The construction of buildings forms the subject of a patent issued to Mr. Elisha L. Randall, of Durand, Wis. The walls, ceilings, floors, roofs, and partitions are, according to this invention, built of solid plank, made impervious to the influence of the atmosphere by treatment with coal tar, the chimneys and foundations being also of the same material.

Scissors form the subject of a patent issued to Mr. Josephus T. Willis, of Cuba Station, Ala. The construction is such that they will not only be easy to manipulate, but they may be worn on the finger, ready for use at any time, a spring being combined with pivoted blades to throw them open, and there being a finger ring with rest on the handle end.

A bracelet has been patented by Mr. Shubael Cottle, of New York city. This invention relates to bracelets consisting of independent beads or boxes, and consists in connecting them permanently but loosely by means of short tubes with heads or flanged ends, which engage shoulders or returned flanges of the boxes or beads.

An axle skein and box has been patented by Mr. William B. Meacham, of Boydton, Va. The under side of the axle arm is recessed, and here is fitted a metal section, in which there is arranged in bearings a revolving skein, the object of the whole being to reduce friction and facilitate the lubrication of vehicle axle bearings and to improve and strengthen the same.

A stop motion for knitting machines has been patented by Mr. Oliver H. Edwards, of New York city. This invention provides an improved device for automatically stopping a knitting machine in case the thread breaks, and consists of a peculiar construction and arrangement of parts, so that it may be applied to any circular knitting machine.

A sawing machine has been patented by Mr. James W. Poff, of Harrisburg, Ark. This in-

vention consists of combinations of parts and their construction with the object of providing a simple and durable one man cross cut sawing machine, which may be worked by utilizing the weight of the operator, and with an easy, natural swing of the body, causing little fatigue.

An apparatus for feeding flour and other material has been patented by Mr. Anson D. Northrop, of Carbon, Iowa. This invention covers a peculiar construction and arrangement of parts for an apparatus intended more especially for use in feeding flour uniformly in large or small quantities, as in mills when the flour or stuff from the dust room is to be rebolted.

A water elevator has been patented by Mr. Eli McAllister, of Albia, Iowa. This invention relates to devices where two buckets counterbalance each other, and the construction is such as to impart to the rising bucket a differential motion which will raise the bottom thereof faster than the top after it has reached the trough of the well curb, so that the water will be poured from the bucket into the trough.

An insertible saw tooth has been patented by Mr. John C. Trullinger, of Astoria, Oregon. The removable tooth back or shank has a casehardened portion at the back of the inserted portion of the tooth, and there are other novel features, to prevent breakage and wear of the saw plate, and to obtain ample clearance in a more effectual way than has been possible heretofore.

A running gear for vehicles has been patented by Messrs. Sylvester Gesner, Jr., and James F. Stevens, of North Tarrytown, N. Y. This invention consists in the combination, with fifth wheel track plates having different diameters and secured to the under side of the wagon box, of a spring frame arying the front axle and pivoted to the under side of the box by a king bolt, with other novel features.

A demonstrative electrical apparatus has been patented by Mr. James D. Culp, of San Felipe, Cal. This invention covers devices for accumulating and discharging electricity, showing electrical phenomena, producing discharges visible to the eye, and which can be made to pass in plain view into and through that class of substances called dielectrics, such as glass, shellac, and vulcanized rubber.

A bronzing machine has been patented by Mr. Jacob Schneider, of New York city. It has an endless belt, with brushes for rubbing bronze powder on printed matter on sheets on the belt, a brush for sweeping off the surplus bronze from the sheets, the latter being carried off through a flue, and a brush for cleaning the outer surface of the belt, with drawers for catching the waste powder.

A ditching machine has been patented by Messrs. Samuel M. Murray and John C. Stryker, of Tipton, Iowa. In combination with a suitable rectangular frame is a U-shaped metal scoop, together with a chute or slide, formed by a metal plate, for raising up earth out of a ditch, and a mould board to receive the earth and discharge it each way from the center on the banks of the ditch, with other novel features.

An ice hook has been patented by Mr. John G. Bodenstern, of Staatsburg, N. Y. The construction of an ice hook is simplified by this invention, according to which the pushing and pulling points are made of a single piece, formed from a bar with triangular cross section and pointed at its ends, the bar being twisted at the middle of its length and bent at the twisted part.

A die for cutting rattan has been patented by Messrs. Henry Heywood and David F. Pratt, of Gardner, Mass. The die has a series of bores at one end, and a single larger bore at the other end, with two or more longitudinal splitting ridges, feed rollers carrying the rattan stick against the front end of the die, and the ridges splitting it at one operation into as many pieces as there are bores and ridges.

A button and button fastening has been patented by Mr. Wm. J. Allason, of Billings, Montana. The spring disk and headed shank are so formed as to serve as an ornamental front to the button, the head being made large, while the spring disk has a hemispherical bulge or swell which adds to the ornamental appearance of the button, and may be strongly secured and braced against strain.

A gate latch has been patented by Mr. Albert G. Rockefeller, of Ashland, Ore. This invention relates to a former patented invention of the same inventor, making improvements thereon, the present construction of catch differing from the former in providing a circular bead and upper and lower ends of the main notch, or groove with notches, for a vertically working latch to catch into.

A bird cage has been patented by Mr. John Putnam, of Philadelphia, Pa. The bottom plate is of glass, with the feed cups made integral therewith, and there are various other novel features, whereby the cleaning of the cage is facilitated and its appearance improved, the sand or gravel not adhering to the bottom, while it cannot be defaced by oxidation, as is the case with ordinary metal bottoms.

A fence and post lifter has been patented by Mr. Edmund B. Miller, of Dandridge, Tenn. This invention relates to means for raising posts and corners of fences which have sunk too low in the ground, and covers therefor special novel details of construction and combination of parts, making a machine that is simple, easy to manage, strongly constructed, and gives a powerful leverage.

A register for billiards has been patented by Mr. Robert Embrey, of North Lewisburg, Ohio. This invention covers a special combination and arrangement of parts, including a ratchet, pawl, and pointer, with other details, making a game counter intended to promote convenience and secure accuracy in registering the number of games of billiards, pool, and other games played.

A machine for mixing fertilizers has been patented by Mr. William B. Chisohn, of Charleston, S. C. A shaft is journaled longitudinally in a trough or box, with arms on the shaft, and blades or wings held adjustably on the arms, the blades or wings being inclined from the ends toward the middle

of the box, with other novel features, to facilitate the mixing of phosphates, cement, ores, clay, etc.

A pot and kettle cover has been patented by Mr. Willis L. Brown, of Lake Geneva, Wis. This invention covers a special construction for a simple, cheap, and durable cover for cooking and other vessels, one which may be readily clamped upon or removed from the vessel, and will allow the draining of boiling water from the vessel without danger of scalding the hands or spilling the solid contents of the vessel.

A tea or coffee pot has been patented by Mr. Fred Wisner, of Ridgway, Pa. This invention relates to such pots fitted with a strainer in their body, and consists in a novel construction of the pot and attachments for supporting and removing a detachable strainer provided with handle, and serving to pour freely and keep back all sediment, or to strain beneath the spout the beverage as it is poured from the spout.

A steam generator has been patented by Mr. Andrew Welte, of Atchison, Kan. This invention relates to generators used on farms for cooking feed for stock, and has for its object to produce a great amount of steam relatively to the amount of fuel consumed, and economy in the cost of the generator, and to this end covers a special construction and combination of parts.

An improvement in calipers has been patented by Mr. Stewart A. Jellett, of Philadelphia, Pa. The scale is marked upon the face of the one leg where or nearly where the same is usually made widest, and, not forming an objectionable protrusion, is prevented from getting out of order, while the other leg has indicating pointers so arranged that when the calipers are closed to array in the pocket the pointers are protected from being broken off or tearing the pocket.

A transcycle has been patented by Mr. John A. Enos, of Peabody, Mass. It consists of a single wheel mounted upon an elevated truck, with a seat and treadle or driving mechanism beneath the point of support and properly connected with the wheel, with gearing for transmitting the power from below to the wheel above for propelling the latter on the track, so the center of gravity will always be approximately beneath the point of support of the wheel on the track.

A collar button has been patented by Mr. Shubael Cottle, of New York city. This invention covers an improvement on a former patented invention of the same inventor, in which the back of the button, formed in one piece with a hollow post, may be made either with or without a small central aperture communicating with the post, making a button whose back is double and yet solid, or in one piece with the hollow post.

A baling press has been patented by Messrs. William F. Smith and William W. Adams, of Ozark, Ark. This invention covers a contrivance of feed and compressing mechanism with the press for compactly delivering the lint from the gin into the press; also an improved automatic tramping mechanism for beating down the lint compactly in the case prior to the action of the follower, with other novel details of construction.

A hame tug and trace fastening has been patented by Mr. William H. Tyler, of David City, Neb. The hame tug has an outer plate with oppositely arranged studs to take the draught of the trace, and with trace and back strap loops, longitudinal rib, and face plate along the rib facing the studs, with other novel features, to make a simple and durable tug and fastening, easily adjustable to alter the length of the trace.

A machine for shaping buttons has been patented by Mr. Emil Weyerbusch, of Elberfeld, Germany. This invention covers a novel arrangement and combination of parts constituting a machine for turning and boring buttons of ivory and bone and similar materials to finish the button out of the rough without taking from the machine, so the cutters will not wear rapidly, and will work exactly and without frequent stoppages, while the machine is so constructed as not to require skilled labor in its management.

A cotton gin has been patented by Mr. Eli C. Horne, of Jasper, Fla. It has a gulf adjustably secured to its holding plate by a screw with its edge near the ginning cylinder, so as to separate the reeds from the fibers as the latter are drawn between the cylinder and knife, and at the rear of the knife are a vibrating bar and plate to straighten the fibers and push back the seeds, with other novel features, to facilitate the ginning of cotton and prevent the fibers from being broken.

A becket clamp for steering wheels has been patented by Mr. Aladin Dole, of Penn's Grove, N. J. It is for holding the steering wheel of a vessel to any desired adjustment, and for stopping the sudden whirling of the wheel when it gets away from the steersman, and consists in combining with the wheel shaft an encompassing clamp, made in two parts hinged together, one of which may be adjusted by a crank screw, so the clamp may be made first to act as a brake, and then as a firm lock to prevent the rotation of the shaft.

A strap buckler and wrench combined has been patented by Mr. Thomas P. Evans, of Philadelphia, Pa. This invention has for its object the buckling or drawing together the ends of straps on the canvas of reaping and binding machines, also trunk and other straps, and in the device a lever has combined with it in a peculiar manner pivoted hooks that take into the buckle and engage with the strap, so that when the lever is raised or moved away from the straps the drawing power of the device is increased when most needed.

A tellurian, for showing the different relative positions of the sun, earth, and moon, in the different seasons, has been patented by Messrs. William G. Short and Henry L. Short, of Larue, Ohio. The base has an upright shaft, on the upper end of which is a ball representing the sun, and on the shaft an arm is held to turn, on the free end of which a vertical shaft is journaled, with other special features of construction to facilitate showing the position of the earth for each day of the year, and illustrate the movement of the moon and tides, etc.