RECENTLY PATENTED INVENTIONS.

Engineering.

TRACTION ENGINE. — Mr. John H. Crumb, of Burlingame, Kansas, has patented an improved traction engine in which all the wheels are used as traction wheels, and in which the steering may be effected in the usual way by the turning of the wheels which are pivoted; or, if desirable, the engine may be moved off bodily in any direction without turning. This construction affords peculiar advantages for many uses, such as ditching, plowing and other agricultural operations.

VALVE GEAR FOR STEAM ENGINE. — Mr. Wilber J. Cunningham, of Rapid City, South Dakota, has invented an improved valve gear for steam engines, which insures a quick opening and closing of the ports at the proper time in the stroke, thereby securing a more effective distribution of the steam than is obtained in engines of ordinary construction. The engine is provided with a cam on the main shaft, and rock shafts carrying arms having rollers which are engaged by opposite sides of the cam. The slide valves are arranged to move in a line at right angles to the axis of the engine.

HEATING APPARATUS. — Mr. Cyprien Dubé, of New York City, has patented an improved steam or hot water heater designed principally for warming buildings, and capable of being used to good advantage for generating steam for motive power, or for heating water for various purposes. The heater is provided with a double shell forming water chambers at opposite sides of the fire box, which are connected by transverse tubular water chambers at the front and rear of the fire box. The water grate is supported by transverse water tubes arranged alternately between the grate tubes. In the upper portion of the double casing is suspended a fire tube boiler which connects with the steam space in the top of the double-walled fire box.

RADIATOR.—Mr. Charles E. Marston, of Dover, New Hampshire, has patented an improved radiator consisting of hollow superimposed sections, each formed with inclined walls, and with upwardly and downwardly extending flanges around the central opening, the lower flanges of each section fitting within the upper one of the next section. A detachable open-ended tube seated upon the upper section is held by a nut screwed on the lower end of the tube and bearing against the lower section. The construction of this radiator is such as to convey the water of condensation downward without leakage.

RAILROAD SPIKES.—An improved railroad spike has been recently patented by Messrs. Walter J. Hammond and John Gordon, of Rio de Janeiro, Brazil. This spike is provided with a head having a beveled edge furnished with a series of steps adapted to successively engage the edge of the base of the rail when the spike is driven farther after it has become loose.

STEERING APPARATUS.—An improved steam steering apparatus has been patented by Mr. Joseph B. Brolaski, of St. Louis, Mo. This improvement is designed to be used on a class of steamboats propelled by independent side wheels worked by independent engines, the object being to steer the vessel independently of the rudder. In steering by a rudder, the point of pivot is at the bow, but by steering with independent paddle wheels the point of pivot is amidships, allowing of turning the vessel much quicker than is possible with the ordinary steering apparatus. The invention consists, in combination with the steam supply pipes of the two engines, of valves provided with weighted valve levers, and a beam pivoted on one of the posts of the steering gear and connected at opposite ends with the valve levers, the beam being arranged so that it may be raised or lowered to open or close both valves simultaneously, or tilted so as to open one valve and close the other as required in steering.

Railway Appliances.

RAILROAD TIE. — Bridges Smith, Macon, Ga. This tie is made of metal, rectangular in form and hollow, and has produced thereon depending points or teeth. A plate having upwardly turned edges fits in the body of the tie and constitutes its bottom, thus adapting the tie for use at points where water is liable to find outlet through the railroad, the water passing through the tie.

Mechanical.

SCREW CUTTING MACHINE. — An improvement in screw-cutting machines has been patented by Messrs. Henry Westbrook and Robert Burns, of Woodstock, Canada. This improvement relates to the chuck holding the cutters. The chuck is divided into two equal parts, each carrying a pair of adjustable cutters, the parts being mounted on a face plate in such a manner as to permit of their being separated when the screw is to be discharged by the dies or cutters. The two parts of the chuck are held in the position of use by levers which are operated by a cone on the mandrel of the machine, and the parts when released by the movement of the cone are separated by spiral springs.

PROCESS OF MAKING BRUSHES. — Mastin C. Paukey, Scranton, Miss. This is a process of forming brushes from blocks of wood having fiber embedded in a pulp, saw palmetto for instance, and consists in softening the pulp by means of moisture, loosening and detaching the pulp from the fiber by combing on both faces of the block, drying the combed block, and then sawing through the solid part of the block.

FEEDING ATTACHMENT FOR TAN PRESSES.—Albert F. Jones, Salem, Mass. The press crib has an opening in its bottom near its rear side, in which revolves about one-half of a feed roller, and in front of a front opening in the crib revolve a pair of pressure rolls. Rearwardly inclined shafts enter the crib at its rear, geared for rotation at their lower ends and carrying within the crib three-armed agitators, which prevent bunching of the shavings.

INSULATING SWING JOINT.—Henry P. Drew, New York City. This device is designed for use when gas and electric light fixtures are mounted together and supported by the swing joint. Electrical insulation is provided in the flexing joint so as to prevent escape of electricity, and the joint is otherwise so constructed as to afford means to freely conduct gas either in a straight line or at angles.

DRILL BIT.—Robert McKee, Meeker, Col. This drill has lengthwise grooves on opposite sides gradually decreasing in depth from the upper end to the point of the drill, and in the grooves slide broad-pointed, wedge-shaped arms pendent from an annular collar fitting on a threaded sleeve on the bit shank, the arms being held in place by a circular band. The bit is adapted to be enlarged by screwing down the drill tube, which expands the arms on the collar.

LOCK FOR VEHICLE DOORS. — Paul Sohege, Paris, France.—This device comprises an air-compressor located on or near the driver's seat, and operated by an oscillatable lever, the air passing by pipes to a dilatable reservoir. The latter as it expands depresses one end of a lever, the other end of which actuates a series of levers, which cause the release of a pawl from the cam-shaped locking bolt, which disengages from the door, allowing the door to open.

BEVEL GRINDING MACHINE.—Eugene Homan, New York City. This machine is for cutting and polishing bevel edges on plates of glass used for mirrors and other purposes. Standards are erected on a pair of elongated horizontal shears, and a platen swings on the standards near its center of height. The platen carries a pair of bracket arms each loosely supporting a pendent fork piece, the standards having flanged nuts and screws therein having radial collars embracing the fork pieces.

Electrical.

REGULATOR FOR ELECTRIC LAMPS.—Messrs. C. H. Balsley, Jr., and E. M. Porter, of Connellsville, Pa., have patented a current regulator for incandescent electric lamps, by means of which the light may be increased or diminished at will. The invention consists of a switch provided with a number of sections, each section being provided with resistance which is cut out or put in the circuit by turning the switch. By means of this invention an incandescent electric lamp may be turned up or down in much the same manner as gas.

ELECTRICAL RAILWAY POLE.—An electric railway pole has been recently patented by M. Foster Milliken, of New York City. The object of this invention is to furnish a simple and economical means of bracing the cross arms of the poles against lateral strain, so that the arms will be prevented from bending to too great an extent when the wires supported by the arms are drawn very tight. The invention consists in horizontal bars secured to a mast and located at right angles to the arms, and independent brace arms arranged in diamond form around the mast and secured to the side arms.

Optical.

TINTOMETER.—Mr. Joseph W. Lovibond, of Salisbury, England, has patented a "tintometer" for the examination of translucent matter for color intensity and of opaque matter for superficial color structure or texture. A patent was granted to the same inventor May 31, 1887, for a monocular instrument of this kind. The present improvement consists in making the instrument binocular, so as to afford a better view of the matter under examination and of the standard to which it is referred.

Agricultural.

CULTIVATOR AND FERTILIZER DISTRIBUTOR.—A combined cultivator and fertilizer distributor has been patented by Mr. Lehman B. Buzby, of Mauricetown, N. J. This machine is provided with shares or hoes, and is designed to act as a furrower, marker, and ridger, in addition to its regular uses. It is provided with an attachment whereby the team is used for lifting the plows out of the ground, thereby relieving the driver. The machine is compact and simple, and well adapted to the use for which it is intended.

FOOT FOR PLOW STOCKS.—William B. Brown, Headsville, Tex. Two forwardly-curved bars are clamped to the beam of the plow, and a heel is rigidly secured at its forward end between the lower ends of said bars, the rear end of the heel being bent upward and forward, and secured between the said bars above its forward end. The foot thus has few parts, and is strong and durable.

CULTIVATOR, PLANTER, AND FERTILIZER DISTRIBUTOR.—Edwin C. Worrell, Murfreesborough, N. C. A rectangular frame formed of sections of gas pipe is mounted on supporting wheels and a vertically adjustable supplementary frame is hung thereto and supports the cultivating, distributing, and planting devices. The pulverizing disks below the hopper are mounted on a shaft pivoted at one end in the supplementary frame, and said shaft may be swung diagonally to the line of draught and steer the machine.

Miscellaneous.

SCRIBER.—William Potter, New York City. On a base carrying an equalizing plate or turn table is a movable post, parallel rods being pivoted to the equalizing plate and to the post, while a scriber arm is attached to the post, and a socket adjustable upon the arm is adapted to receive a pencil or other marking implement. The device forms a tool of simple and durable construction, capable of use either right or left.

MAGAZINE GUN. — Charles J. Wahlquist, Assiniboine, Montana. This gun has an aperture extending through it from side to side at a downward incline in which a cartridge holder is adapted to slide in and out, with means for securing the holder in firing position in the aperture. The cartridge chambers act as firing chambers, and when the cartridges have been discharged, the holder may be quickly replaced by a filled holder. The arm may also be made for use as a single breech loader, and when used as a magazine gun is designed to facilitate very rapid firing without lowering the gun from the shoulder.

CHECK PUNCH.—Lloyd M. Mills, Grand Rapids, Mich. This is a device to cut or punch a desired numeral or figure out of a check, draft, etc., so that the several numerals or figures stand in perfect alignment. Die rods are adapted to slide toward and from a common center on a die wheel turning below the rods and actuated from the latter, so as to bring the corresponding die of the die wheel in line with the actuating rod having a corresponding die. The construction is simple and durable and the device is easily and quickly manipulated.

VEHICLE FIFTH WHEEL.—Alfred W. Johnson, New Brunswick, N. J. The attached fifth wheel section provided by this invention is mainly circular on its exterior margin, but eccentric on opposite sides in front, forming angular protruding shoulders, in combination with an outer section attached to the body of the vehicle having eccentric set-off spaces and shoulders, and adapted to receive the fifth wheel section attached to the running gear loosely within it, with freedom to turn and move backward and forward therein. With this construction the draught pole or thills cannot move laterally, or the truck axle be turned when being drawn ahead, without causing the load to be moved forward relatively to the running gear.

VELOCIPEDE. — William Blakely, Vernon, Bournemouth West, England. This is an improvement in foot rests for bicycles and tricycles, to diminish the shocks and jars transmitted to the legs of the rider when descending steep hills at high speeds with the feet on the rests. There are guides on the fork or frame permitting up and down motion of the foot rest, while a spring upholds the foot rest in the guides and affords an elastic support for the rider's feet.

HANDLE FOR BICYCLES. — This is another invention of the same inventor of a handle to absorb or neutralize the jarring or tremulous motion ordinarily transmitted to the hands and arms in operating a machine. In recesses in the ends of the hands are elastic bushings of conical form, interposed between the handle and its tang, the bushings being compressible by end pressure, while elastic washers are interposed between the ends of the handle and abutments on the tang by which the handle and the bushings are held in place.

CAST IRON SINK.—George H. Shattuck, Medina, N. Y. This sink has a top flange with thickened corners, the thickened portions being beveled downward from the miter line to the flange and toward the inner edge of the flange, the object being to make a sink which will bear rough handling in storing and shipping, and yet of lighter weight than is now customary, the metal being so disposed as to withstand shocks, while less metal than heretofore used is employed.

TONGUE FOR EARTH SCRAPERS. — Samuel E. Licklider, Everett, Mo. In the construction provided for by this invention, brace bars bolted to the tongue extend beneath the hound bars, to the inside of which they are bolted at their rear ends, so as to strengthen and stiffen the hounds, and co-operate with the scraper and other working parts, preventing the working mechanism from becoming jammed or accidentally locked. The device is also applicable to wagons and sleighs.

BIER — Wiltshire Sanders and John B. Rafferty, Reno, Nevada. This is an improvement in folding or collapsible biers provided with casters to adapt them to be easily moved. The frame has side bars with internal longitudinal grooves, in combination with a hinged and folding leg and brace therefor, while the rectangular ends of a transverse bar enter the grooves and are adapted to slide or lock therein as the bar is turned or adjusted.

FIRE ESCAPE.—Henry Vieregg, Grand Island, Neb. Brackets on the face of the building support a rod from which depends a movable hanger carrying a sheave pulley, over which passes an endless chain wound upon drums in the cage of the device, the cage being preferably of metal. Attached to one of the drum shafts in the cage are friction wheels, adapted for engagement by brakes pivoted in the cage. The device may be readily moved to any window from which a person desires to escape, and the speed of the descent is readily controlled.

BOTTLE CAPPING. — Louis Picard, Rheims, France. This is a bottle-wiring and capsule-removing device for champagne and similar bottles. A three-branched frame is made to embrace the bottle neck and cross the cork, a strand uniting the lower ends of the branches and having one end free, while two capsule-removing strands extend from the point where the end of the base strand opposite its free end joins the adjacent branch, with which it is integral. With this fastening the cork is released by a single pull, the cork then being removed by the gaseous pressure or otherwise.

INDICATOR AND ADVERTISING DEVICE. —Edward C. Smith, Oskaloosa, Iowa. This is designed especially as a convenience for barber shops, etc., the frame supporting spaces for advertising cards, and having near its bottom match and broom holding receptacles, while near the top is a space for a clock, and in the rear is a wheel and ratchet mechanism, operated by a pull cord, whereby successive numbers are displayed through suitable openings, a gong or bell ringing as the cord is pulled.

BILLIARD CUE. — William S. and Thomas Thompson, Townsend, Montana. This cue has an externally threaded sliding sleeve on its forward extremity, an outer sleeve rotating therein, in the forward end of which is an adjustable tip, whereby, when either the cue or the rotary sleeve is rotated in the proper direction, the sliding sleeve will bear on the inner end of the tip and force it outward. The construction is designed to largely extend the durability of the tip, so that it need be renewed only at long intervals.

TWINE HOLDER AND CUTTER.—Messrs. J. J. Quinn & F. C. Snebold, of Deming, New Mexico, have patented an improved twine holder and cutter, which is designed to conveniently hold spooled or bunched twine, and to give the twine the amount of tension required. The device is provided with a cutter of peculiar form fastened on the spindle of the spool. The cutter is formed so that it may be readily sharpened by grinding.

BANJO.—An improvement in banjos, designed to increase the resonance in the instruments, and give them a full, heavy, clear, distinct and bell-like tone, has been patented by Messrs. J. M. Smith & G. J. Fritz, of Butler, New Jersey. The banjo is provided with a split or sectional resonant ring supported by studs projecting from the edge of the rim. The resonant ring forms a bearing surface for the periphery of the head. The members of the ring are spaced and bolted or riveted together, and the head stretched tightly over the ring by the use of the usual hoop and hook screws, or in any other suitable way.

MARINE VESSEL.—A fireproof vessel has been patented by Joseph B. Brolaski, of St. Louis, Mo., in which the walls and ceiling are formed by metal sheets, and wooden parts wherever they are employed are covered with sheet metal. The metal sheets used for partitions are applied alternately to opposite sides of the wooden uprights, thus forming panels. The edges of the metal sheets are bent around the uprights.

The same inventor has patented a novel water-tight compartment for vessels, which is designed to provide against the sinking of a vessel should it spring a leak. The compartment when open will permit of the ready handling of the cargo and will not interfere with its safe stowage.

WASHING MACHINE.—Mr. John A. Van Winkle, of Denison, Iowa, has patented a washing machine consisting of a tub with a frame mounted therein and provided with a series of rollers, uprights being fixed to the corners of the frame so as to move vertically in ways in the sides of the tub. The uprights have series of holes for receiving wires for holding the uprights and rollers at any desired elevation. The machine is provided with a bent lever connected at one end with oscillating arms and having at the other end a handle. To the bend of the lever is pivoted a roller provided with a rubber adapted to move over the roller.