

RECENTLY PATENTED INVENTIONS.

Engineering.

**STEAM ENGINE VALVE.**—Winfield S. Patti, William M. Morse, and Douglas P. Patti, Marietta, Ohio. This improvement relates to valves on steam pumps and similar reciprocating engines where the main valve is moved by a secondary steam piston, itself moved in turn by an auxiliary valve, and the latter operated by knockers moved directly by the main steam piston. An improved arrangement of steam ports, valve seats, steam pockets, etc., is secured by means of a central plate, and a novel form and arrangement is provided for the auxiliary valve and knockers. The latter are entirely within the cylinder casing and covered by the central plate and auxiliary valve, and being two solid pieces of wrought iron or steel, are not liable to injury or to get out of order.

Railway Appliances.

**CAR COUPLING.**—Edgar A. Yeaton, Lyons, Neb. The drawbar, in this coupling, is provided with an improved form of spring, whereby it will have a cushion bearing in whatever direction the car may move, the cushions effectually preventing undue shock to the drawhead or the contents of the car. The coupling pin is pivoted, and has a semi-cylindrical rear portion fitting in a concave rear portion of the drawhead chamber, the forward end of the pin having an upwardly and rearwardly extending horn, while the rear end of the pin overbalances its forward end, normally holding it in a horizontal position. A yoke secured to the pin and connected to elbow levers fulcrumed on the end of the car affords means of manipulating the pin, through pull rods extending to the top and sides of the car, the device being adapted to couple with an opposing drawhead having any form of link.

**RAIL JOINT.**—George G. Stacy, New York City. According to this improvement, the base plate, secured on the sleepers and supporting the rail, has vertical side flanges widened at the middle, while angle plates fitting the rail have lower recesses to receive the spikes and central recesses to receive the widened flanges, the upper portion of the plates fitting against the upper and lower portions of the rail web, and the upper edges being bent outward to fit against the shoulders of the rail. The invention is an improvement on a former patented invention, and is designed to afford an extremely simple rail joint to hold the meeting ends of rails so that they cannot move laterally or longitudinally.

**RAILWAY FROG.**—James E. Shaw, Council Grove, Kansas. This invention provides a frog which may be thrown into line with the rails leading to a siding or with the rails of the main track. The invention consists essentially of a plate on which the frog is held to move, while a simple system of connections is arranged between the frog and the switching rails. The frog and its connections are designed to afford improved means of safely and readily operating a railway switch.

**TANK PUMP MECHANISM.**—Charnick W. McMullin and William C. De Graffenried, Jasper, Fla. This is a mechanism to be operated by a train of cars to pump water to a tank at the side of the track, pumping up as much water as may have been delivered from the tank into the locomotive. A frame is mounted under short rail sections, carrying a crosshead under which are plate springs, and connected to the crosshead by straps is pivoted a rocking lever the outer end of which is connected with a lever in connection with the plunger rod of a pump. The rail sections are each about three feet long, so that the rear truck of one car will clear them before the next car runs on, and the parts are so proportioned that a movement of two inches at the inner ends of the sections will give a two foot stroke to the pump, the cylinders throwing forty gallons each at a stroke.

Mechanical Appliances.

**SWING CUT-OFF SAW.**—George Luppert, Williamsport, Pa. This invention relates particularly to improved hanger bearings and bracing of the frame in swing cut-offs for saws, in which the usual pendent swinging frame is employed having the saw arbor journaled in its lower end with the saw upon the end of the arbor. The improvement provides an inexpensive, simple, and durable construction in which only two journal boxes are employed where four are usually needed, thus saving considerable power in driving the shaft, besides dispensing with the extra boxes.

**GUIDE FOR STAMP MILLS.**—Edmund Major, Terrville, South Dakota. This guide has the usual girt or rail secured in the usual manner to the battery posts of the mill, and a hollow keeper is provided for the guide blocks of the stamp stems, this keeper having bolt apertures through its inner wall and being provided with downwardly and outwardly inclined connected sides having oppositely projecting clamping flanges at their outer edges. The arrangement is such as to permit of readily and quickly adjusting the bearing or guide blocks for the stem to take up all wear, and also permit of removing a tappet from the stem without disturbing the entire guide.

**BOX NAILING MACHINE.**—Frank J. Hawley, Phelps, N. Y. The supporting frame in this machine has transversely arranged abutments provided with longitudinal channels in which slide plungers connected with spring-pressed bell crank levers, connected by adjustable links with treadles, an independent treadle being adapted to actuate the other treadles together or separately. The machine is specially designed for rapidly and conveniently nailing the sides and bottom or cover together to form a box. Its extension frame is arranged to be lengthened or shortened for different sized boxes to be nailed, and the table of the frame is made of two sections adapted to support at their joint the box to be operated on, the abutments being secured on top of these table sections.

**MOTOR.**—William H. Scheer, Frankfort Station, Ill. This is a device more especially designed to be actuated from a windmill, to drive a

churn, grinding wheel, or other similar small machines, and is simple and durable in construction, taking up very little room, and readily connected with a motor or with machines to be driven. There is a ratchet wheel on the main driving shaft, on which are loose pinions each carrying a pawl engaging the ratchet, a gear wheel in mesh with one of the pinions, and a second gear wheel in mesh with an intermediate pinion engaging the other loose pinion, while a swinging lever is connected at opposite ends of its fulcrum by links with the gear wheels. The swinging lever is pivotally connected with a rod or link having a reciprocating motion and driven by the windmill, a continuous rotary motion being imparted to the main shaft on both the up and down stroke of the lever.

Agricultural.

**CORN HARVESTER.**—Grant Pendleton and McClellan C. Pendleton, McComb, Ohio. This invention provides a machine of simple construction designed to cut two rows of corn fodder at a time and deliver it in bundles at the sides of the machine. As the machine is drawn lengthwise of the rows the stalks are severed by horizontally rotating cutters and fall backward upon shields, from which they slide upon leaves, and when a sufficient number of stalks has accumulated the driver presses down upon a treadle, whereby the leaves are swung upward and outward, depositing the stalks at the sides of the machine.

**FRUIT PICKER.**—John W. Cain, Rusk, West Va. This is a device to enable one standing on the ground to pick fruit from the tops of trees and deliver the fruit in a sack carried by the operator. It has a two-part handle long enough to reach well into the top of a tree, a movable part sliding in keepers on the fixed part, and two swinging jaws are connected by rods with a lever near the lower end of the handle. The jaws are placed to embrace the fruit, which is cut off when the jaws are provided with a knife, or may be pulled off if desired, when it rolls down an attached spout into a sack.

**SEED PLANTER AND FERTILIZER DISTRIBUTER.**—Thomas E. Schumpert, Spring Ridge, La. This device is adapted to be pushed forward by hand, and has a single drive wheel journaled in the front end of the frame, behind which is a furrow-opening plow, just in front of a seed hopper and a fertilizer box, both having chutes on their lower end for the passage of seed and fertilizer to the ground. Valves in the bottom of both boxes are operated by a lever extending forward, where it is engaged by lugs secured on the side face of the drive wheel, while crank arms on the drive shaft operate a pitman to give motion to agitators within both boxes. At the rear end of the frame are covering shovels to cover the furrow, seed and fertilizer.

Miscellaneous.

**BRICK KILN.**—Charles Klose, Doniphan, Neb. This kiln is an elongated structure with adjoining kiln sections having no permanent partitions, each section having a door opening in its side wall and a flat removable top supported by the green brick to be burned, while there are stoke holes with removable covers and a series of fire chambers at one end, a series of perforated transverse flues provided with dampers extending beneath the kiln sections and communicating with a draught stack. The kiln is designed to be constructed at a low cost, and afford means for the continuous operation of one or more sections, the burning being effected in one or more sections while the other sections are being emptied or filled.

**PLUMB LEVEL.**—Oscar B. Fuller, Pittsburg, Kansas. This is a measuring instrument with a stock on which is a degree scale, in the center of which is pivoted an arm having an indicating line, a tongue hung on centers in the arm having its lower end weighted and its upper end pointed, while a pointer is secured in the outer end of the pivoted arm and arranged in line with the indicating line, registering with the tongue. The instrument is of simple and durable construction, and adapted to conveniently and accurately indicate in degrees the position of a beam or similar object, while it can also be used as a level, plumb or theodolite.

**AIR COOLING AND PURIFYING APPARATUS.**—Israel F. Good, Allentown, Pa. Rotating centrally in a casing is a vertical shaft carrying a fan wheel at its lower end, above which is a tray containing an aromatic substance, and above the latter a gravel tray in which is rotated a water sprinkler, while still higher up are trays containing charcoal and lime. As the shaft revolves, the air is drawn downwardly through the machine, first having contact with the lime, then being filtered through the bed of charcoal, after which it is cooled and brought in contact with the aromatic substance, from which it is drawn through the fan wheel and discharged at the base of the apparatus, the movement of the wheel causing a lateral distribution of the cooled and purified air.

**REFRIGERATING COVER.**—James B. Mitchell, Burnet, Texas. This cover consists of a dished receptacle adapted to contain water and provided with a central covered ventilating tube. The cooling of the vessel to which the cover is applied is effected by capillary attraction, water being placed in the dished cover, and the bottom and sides of the vessel covered by an absorbent envelope, preferably strips of woven fabric, whose upper edges are immersed in the water in the cover. The entire vessel may thus be kept cool, while the interior is thoroughly ventilated and the entry of dust and insects prevented.

**BOOK REST AND WRITING SLAB.**—Charles K. Gaines, Canton, N. Y. This invention provides an improved adjustable attachment for the arm of a chair or other seat, the device being adapted for dual use as a book rest and book holder, and also to support writing paper, movably retaining either article in any desired position. The prop bar of the writing slab has an interlocking engagement with a ratchet-toothed rack for adjusting the slab at any desired inclination, and the attachment of the clamping bar to slide blocks is so arranged that the reader can instantly change the degree of inclination of the book ledge to raise or lower

one side edge of the book, to suit the incidence of light rays or the vision of the occupant of the chair.

**COMBINED CRADLE AND CHAIR.**—Calvin T. Freid, Allentown, Pa. This device is composed of end uprights from which a bed bottom or platform is suspended, a detachable articulated body section being adapted to receive the raised bottom, and the latter section, when detached from the platform or bed portion of the cradle, constituting a crate-like chair or inclosed seat within which the child may stand or sit, with freedom for exercise.

**PLAITING MACHINE.**—Alfred Olson, Galveston, Texas. This is a machine upon which a dress skirt or similar article may be readily placed to secure the plaits or folds in the skirt and hold them so that they may be conveniently ironed. It consists of a table on the top of which near the ends are arranged cross strips carrying a series of plait-holding clasps, each clasp comprising a swinging plate adapted to be pressed on the cross strip, while in arm supported above the plate is mounted a screw impinging on the plate. The strips may have gauge marks to assist in making plaits of equal width.

**INKSTAND.**—Liston B. Manley, Duluth, Minn. The novel form of inkstand provided by this patent is designed for attachment to a desk or other support in such way that it may be quickly and conveniently adjusted vertically or laterally, an attaching bracket being used in connection with a vertically and horizontally swinging arm, and the improvement being especially designed for use with a roll top desk. The ink bottles or wells are so hung in the stand that they may be turned as upon a universal joint, to carry them either to the right or to the left, or to tilt them upward or downward. Means are also provided whereby coverless ink bottles may be effectually closed when not in use.

**LADY'S WORK BOX.**—Thomas Harper, Redditch, England. This is a portable sewing cabinet composed of a series of folding panels inclosing a central chamber or box-like compartment, and being in the form when closed of a satchel or reticule. It may be made of leather, plush, silk, or similar suitable material, to form a neat and ornamental work box of great convenience for ladies in doing fancy and domestic needle work.

**HYDROCARBON BURNER.**—Lewis B. White and John V. Reitmayer, New York City. This is a burner of simple, durable and inexpensive construction, in which means are provided for quickly and easily cleaning the oil duct, while the arrangement is such that the air may be brought in contact with the oil, to spray it, at the upper portion of the burner. The amount of air supplied to the burner may also be regulated at will, or may readily be entirely cut off.

**OIL CAN AND LAMP FILLER.**—Henry C. Atkinson, Franklin, Ky. This can has air inlet and air-compressing devices, in combination with a discharge pipe to which a filling tube is detachably connected. Connected with the air inlet is a simple form of bellows, by working which the air is forced against the oil to cause the latter to flow out through the filling tube into the lamp. The can is also adapted for use as a shipping or storage can, when caps are placed over its openings to seal the can.

**BARREL RACK.**—John A. Browning, Iowa City, Iowa. This device is made with two side pieces or runners having casters and connected by girts or brace beams, and in connection with the rack thus formed a lever is employed, by means of which, with a chain and claw, a barrel may be readily brought to a vertical position upon the rack, for ready conveyance to any desired place. The device is very simple and inexpensive, and the rack is adapted to hold the barrel while its contents are being drawn off.

**WAGON RUNNING GEAR.**—Gustav W. Loeffler, Apopka, Fla. The standards of this wagon are preferably formed with side plates, and have an opening to receive the ends of the spring, the plates being lapped at their lower ends alongside the bolster or axle, the connection facilitating the easy application and removal of the springs, and permitting them to be set sufficiently high to bring their maximum elasticity into play. The perch also may be quickly applied and removed and the rear axle may be adjusted along the perch as desired.

**VEHICLE.**—Richard Rodgers, Cheyenne, Wyoming. This invention relates to an improvement in that class of vehicles known as carts or sulkeys, providing therefor a simple, durable and economic construction, and means whereby a tongue or pole and shafts may be used interchangeably, and adjusted to bring the horse as near the driver's seat as desired, or remove him as far away as may be wished, the vehicle being especially adapted for use in breaking horses to harness.

**CARRIER.**—William C. Hall, Pine Bluff, Ark. This carrier is more especially designed for transporting merchandise to and from warehouses, and unloading boats, railroad cars, drays, etc. It is constructed with a frame in the top of which are journaled parallel rows of friction rollers to support the load, which is engaged by arms extending from a carrier belt traveling in the frame. The carrier is made of any desired length by means of additional frames and sets of friction rollers, the last extension frame in the row being connected with an inclined frame.

**ELASTIC TIRE CLAMP.**—Jesse T. Morris, Jr., Portsmouth, Va. This improvement provides for securing elastic tires to bicycle wheels without cement. An elastic clamping ring of metal is embedded within the continuous hollow tire, when the latter is formed, or may be inserted in a slit in the tire, a stud bolt on the ring passing through slots in the tire and the wheel rim. This means for holding the tire in place on the wheel rim leaves the tread portion of the tire unstretched, so that a transverse cut in its outer surface will not cause a gaping fissure.

**ARTIFICIAL ARM.**—William Boardman, Chicago, Ill. This is an attachment for crippled or weak arms, to permit the wearer to use the arm for conveniently manipulating hammers, saws, and other tools. It consists of a clamp adapted to receive the

handle or other part of the tool, in connection with a frame to be secured to the arm and rigidly engaged with the clamp.

**ATOMIZER.**—Antoinette Howard, New York City. From the bottom of a small cup extends an upwardly curved suction pipe, terminating in a nozzle, and on the back side of the pipe is a brace to which is secured a blow-pipe arranged at right angles to the nozzle of the suction pipe, there being a handle on the under side of the blow-pipe. As the air from the contracted outer end of the blow-pipe passes over the open end of the nozzle of the suction pipe, the liquid is drawn upward from the cup and sprayed by the current of air.

**PHOTOSCOPIC ADVERTISER.**—Paulino Ortega, Mexico, Mexico. This is a device for attachment to electric lamps, for projecting upon the sidewalk or other surface words, figures, characters, etc., for advertising purposes. An adjustable mirror is attached to the frame of the lamp, an adjustable condensing lens placed between the source of light and the mirror, while a screen attached to the support of the lamp bears a device for casting a shadow, the mirror being arranged to receive light from the lamp condensed by the lens and project it onto and through the screen.

NOTE.—Copies of any of the above patents will be furnished by Munn & Co., for 25 cents each. Please send name of the patentee, title of invention and date of this paper.

NEW BOOKS AND PUBLICATIONS.

SEEGER & GUERNSEY'S CYCLOPEDIA OF THE MANUFACTURES AND PRODUCTS OF THE UNITED STATES. New York: The Seeger & Guernsey Company. 1892. Pp. cxc, 902. Price \$10.

This voluminous work contains a classified list of leading business and manufacturing firms of the United States. The first part, numbered in Roman numerals, is an index of articles of manufacture with reference to the parts of the work where the firms handling such articles are indexed. Nearly two hundred pages are occupied with this index alone. The main body of the work, over nine hundred pages in length, gives the firm names classified by their business. This section VI, *Chemicals, drugs and dyes*, fills about 18 pages. It is divided again into such headings as *acetalid*, *acetone*, *acids*, and others, and some of them are again subdivided, as *acids into acetic acid, arsenious acid, benzoic acid* and many other subdivisions. The utility of such a work is so manifest that it need not be dilated on. The system of division is especially dwelt on, as it gives the character of the work. The last part is devoted to advertisements of firms, which for reference are often as useful as any other part.

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