

RECENTLY PATENTED INVENTIONS.

Railway Appliances.

CAR COUPLING.—William D. Williams, Ogden, Utah Ter. In this coupling the drawhead has formed at its outer end three prongs, an upper, a lower, and an intermediate prong, the latter extending in an opposite direction from the other two, while in the drawhead is journaled a shaft to which is attached a link against which a locking device has a bearing. The coupling couples automatically, and when coupled with another of its kind the two drawheads are designed to ride together in a proper manner, not separating under exceedingly heavy lateral strain, while the drawhead may also be used to couple with the ordinary link and pin coupling when necessary.

RAILROAD TIE.—Edward S. Moffat and Theodore G. Wolf, Scranton, Pa. This tie is designed to be made of a section of ordinary track rail, having near its ends blocks fitting nicely around the rail, to which the blocks are bolted, the blocks having flat tops to which clips are bolted, the track rails being held in place by the clips. A plain flat bar may be substituted for the tie bar formed of a rail section, the tie bar being embedded in the usual way when the ties are laid, while the blocks project slightly above the surface to support the track rails at the right height.

CAR UNDER-TRUSSING.—Ferdinand E. Canda, New York City. This invention is designed to secure a depth of truss that will properly support the center of the car with a minimum of material, and at the same time secure the greatest carrying capacity, the improvement consisting in forming or upsetting a collar on the truss rod, integral with it, at a point adjoining the position occupied by the queen post. An anchorage is thus formed for the queen post, to hold it in place and prevent creeping, permitting an even tension on the truss rod.

Mechanical Appliances.

PHOSPHATE WASHING MACHINE.—George W. Roberts, Chisholm's Island, S. C. This machine has a revoluble washing cylinder, an elevator being arranged to deliver into the cylinder and a conveyor to supply the elevator, a motor driving the cylinder, the elevator, and the conveyor, and the whole apparatus being mounted upon a portable structure so that it may be conveniently moved from place to place. The machine is adapted to receive the crude rock or ore from adjacent cars and deliver the washed material into other cars, obviating the necessity of carrying away waste material, and it is also applicable to the washing of various kinds of ore.

LATHE.—Isaac C. Swisher, Coffeyville, Kansas. This is an automatic metal boring and mortising, shaping, turning and screw-cutting lathe, adapted as well for milling, planing and rifling. The bed has the usual parallel shears or ways, on which the tail stock, work holder and tool carriage are mounted, the tail stock being adjustable, and having means for clamping it in any position, while the tool carriage and work holder are reciprocated automatically by the feed screw. The invention covers various improvements connected with the tail stock, work holder, tool carriage, head stock and clutch gearing, enabling the machinist to operate on objects of greatly differing shapes and to do more accurate and varied work than is usual in this class of lathes.

WHIRL FOR FILLER FRAMES.—Herbert Allcroft, Paterson, N. J. This invention provides a simple form of whirl designed to afford an even bearing for the spindle and support it in such a manner that it cannot possibly stick. The lower end of the spindle (is flattened where it extends downward into the whirl, in bearings within which are journaled anti-friction rollers, the end of the spindle passing between these rollers. The spindle is thus held firmly to revolve with the whirl, neither the spindle nor the rollers being worn, while the spindle runs easily, so that as the silk or yarn is wound upon the quill, the winding will be very evenly and nicely done.

ORE ROASTING FURNACE.—George F. Bartlett and Augustus J. O'Neill, Butte City, Montana. This furnace is designed to be self-actuating and is arranged to permit of conveniently regulating the draught to insure complete combustion. Inclined endless carriers are geared together one above the other within the furnace, a funnel discharging upon the upper end of the upper carrier to impart motion thereto, while blast pipes crossing the spaces above the carriers are provided with depending apertured branches, having stirring points at their lower ends toward the upper ends of the carriers, a worm geared to the shaft of the lower carrier being operated thereby to regulate the speed of the carriers.

CYLINDER DRAIN COCK.—Roy P. Capwell, Linden, N. Y. This improved cock is designed for automatically draining the water of condensation from the ends of the steam engine cylinder without waste of steam and consequent loss of power. The valve body is connected with the ends of the cylinder and contains two valve seats adapted to be alternately engaged by two valves held on stems projecting from a lever between the valve seats. The engineer has ready control of the drain cock, being able to set it out of operation or put in into operation whenever desired.

SAWMILL CARRIAGE CANTING BLOCK.—Patrick C. Roche and Charles Colclough, Gertrude, Ga. A shaft is journaled on the carriage, and there is a link connection between it and blocks carrying canting dogs sliding in movable guides, the dogs being raised and lowered when the shaft is rocked. The device is capable of convenient attachment to any carriage, and may be expeditiously manipulated to throw the finished lumber from the carriage, while it is so constructed that the blocks may be fed to and from the saw with the head blocks, and the canting blocks are so located with respect to the head blocks that the head block setter can manipulate the canting blocks without interfering with the regular duties of the setter.

LUBRICATOR.—John Sandall, New York City. This is an improvement in the feed for oil cups and equivalent lubricators, being a siphon feed capable of use without a wick to convey the most viscous oil from the lubricating device to a bearing in an efficient manner. The siphon feed has a valve whereby the quantity of oil to be fed may be controlled, and the construction is such that the siphon may be removed from the lubricating device and laid to one side without danger of the oil oozing out or spilling, thus destroying the vacuum, the feed tube being always filled and ready to be placed back again when removed from the cup for purposes of cleaning or repair.

SHINGLING GAUGE.—Chancy Avery, Pleasant Lake, Ind. This is a simple and inexpensive tool designed to greatly expedite the work of affixing shingles to form a roof. The gauge comprises a bow spring, with limbs extended in the same direction, one limb wedge-shaped and the other perforated to receive screws which attach the gauge to an elongated strip, the limbs being oppositely apertured for a clamping screw. In service two of the devices are used, one affixed to each end of a strip of wood or metal forming a straight edge, made equal in breadth to the weather exposure to be given to the shingles, and of a length convenient to handle, which may be five or six feet.

Agricultural.

SHEAF CARRIER FOR HARVESTERS.—Augustus Jewell, Dowagiac, Mich. This is an attachment for self-binding harvesters for receiving the sheaves when bound and depositing them in bunches or windrows. It consists of an approximately horizontal rock shaft with suitable axial bearings for carrier arms journaled therein, and provided with cranks which have their ends removed from the axis of the rock shaft, there being a set of suitable stationary keepers and a corresponding set of anchorage bars connecting the keepers with the cranks. The beams and supports used for attaching the carrier to different kinds of harvesters will vary with different machines.

CHURN AND BUTTER WORKER.—Eric Silen, Kelso, Washington. This is a churn of the rotary dasher type, with a peculiarly constructed cream agitator, which will afford efficient means to gather and work the churned butter before removal from the churn. The dasher is formed of a spiral web upon a longitudinal shaft, the web of the spiral being pierced with many small apertures, and there being also on the shaft a series of radial beater blades. The dasher is located in the bottom of an elongated churn body, and on being rotated by a hand crank the contents of the churn are propelled toward one end, there being also a return upper current, effecting a constant circulation and efficiently disintegrating the butter globules.

POISON DISTRIBUTER.—Franz L. Richter, Schulenburg, Texas. This is a machine adapted for attachment to and to be drawn along with any form of cultivator, for distributing pulverized Paris green, arsenic, and other poisons in a dry state over cotton and other plants. The body of the machine has a fan section and a powder-receiving section, with means whereby the quantity of powder to be delivered may be regulated. As the machine is drawn along, the revolution of the drive shaft operates the fan and an agitator in the poison receptacle, and the material is blown through delivery spouts to an engagement with shields whence it will fall upon the plants, over which the shields are made to extend.

Miscellaneous.

AUTOMATIC GRAIN SCALE.—Thomas F. Gray, Monroeville, Ohio. This invention covers an improvement on a former patented invention of the same inventor, improving the construction to enable the machine to automatically cut off the supply at a point which will insure an even balance of the scales. Means are also provided for cutting off the supply independently of the operation of the discharge valve, thus enabling the operator to lock the latter valve and test the scales to see if they are accurate, the machine being susceptible of very nice adjustment, and the arrangement of parts being designed to insure its durability and efficiency.

TYPEWRITING MACHINE.—Eugene A. Ford, New York City. This is a machine in which a large number of characters may be printed with few keys, the type bars being made to register accurately. The invention also provides a simple and efficient quick acting carriage-feeding mechanism. The invention consists in the novel combination and arrangement of parts, the free end of the type bar carrying type for producing three letters or characters, either of which may be brought into position for printing by tilting a type bar guide by means of a lever.

RECORDER FOR CASH TILLS.—William W. Darbee, Oneonta, N. Y. This is a simple device arranged to take and keep a record of the amount of money received and placed in the till by different salesmen. It consists of a lever carrying a pawl and adapted to be actuated by the till, a drum carrying a ratchet wheel adapted to be engaged by the pawl, and a fixed bar over which passes the paper to the drum, the paper, as it is drawn over the drum each time the till is opened, being written upon by the operator on an uncovered portion of sufficient size for the record of each transaction.

CHECK, DRAFT, ETC.—William T. Doremus, Flatbush, N. Y. This invention covers an improvement on a former patented invention of the same inventor, to prevent the changing, altering or raising of a check, draft, or other money order or instrument without detection. It consists of a blank having spaces, numerals and words arranged thereon in a manner described, the form being also adapted for the making of bank receipts and requisitions and for the filling up of stock certificates, etc.

FIFTH WHEEL FOR VEHICLES.—James W. Taylor, Vermillion, South Dakota. A hinge connects the fifth wheel with the wagon body, and the

reach rod has one end secured in a bearing on the fifth wheel, its rear end turning in a bearing on the rear axle, while there is also a bearing on the reach rod near its forward end from which opposite draught rods extend to the rear axle. The construction relieves the fifth wheel of strain and permits the front wheel to pass over obstructions without seriously affecting the wagon body, insuring easy riding.

CONSTRUCTION OF VESSELS.—Osborn Congelton, Philadelphia, Pa. At each side of the bow, but a short distance back from the stem, a propeller is arranged upon a nearly vertical axis, according to the inclination of the side of the vessel, within suitable recesses provided therefor, suitable gearing being provided to rotate these propellers, with their outer sides moving rearwardly. These propellers are designed not only to propel the boat, but, being reversible and separately operated, are adapted to furnish steering power also.

LEAK STOPPER FOR VESSELS.—Francis F. Jones, Comber, Canada. This invention consists of a breach plate made in sections and hinged together, to pass in a folded position through the opening in the vessel, being more especially designed for rapidly and conveniently closing shot holes or breaches in the bottom or side of a warship or other vessel. Special devices are also provided for releasing the folded sections to permit them to swing into position against the outside of the vessel to close the leak.

WATCHMAN'S TIME RECORDER.—Henry May, Scranton, Pa. A time mechanism revolves a dial upon which are panels representing periods of time, cleats or clamps on the panels holding checks visible through an opening in the cover, which also carries a time lock. The mechanism provides for absolutely determining how long the watchman has remained at a central station and the time he has been absent therefrom, and at what stations he has called and the hour, the lock preventing the dial from being tampered with.

GATE.—Martin McDonough, Winchester, Ill. This invention provides means whereby a gate may be constructed upon a hillside as well as upon level ground, and be positively and conveniently operated from either side. Swinging levers are pivoted at their upper ends to the gate, one of the levers having an adjustable sleeve to which is secured a weighted cord or cable passing over an elevated guide, and the gate rides upon the levers in a horizontal position from its closed to its open position, and *vice versa*, snow or sleet not interfering with its proper manipulation.

FEED BAG SUPPORT.—John W. Pfeiffer, New York City. This support is made with a spiral spring at each side of the bag, through which extends a chain connected with the suspending rope, a fastening device limiting the extension of the spring, so that the support adjusts itself to the amount of feed in the bag, and the bag will be held in position for the horse to conveniently reach the feed, whether there be much or little in the bag.

HOPPLE.—George P. Cole, Saratoga Springs, N. Y. This is a simple and secure fetter adapted for application to two, three, or four feet of the quadruped, as may be desired. It has a self-closing loop at each end and keepers embracing loosely one side or ply of each loop, and secured to the opposite side or ply, whereby the loops may be expanded and contracted without the use of buckles or other fastenings.

HARNESS HOOK.—Quintis V. P. Day, Dinuba, Cal. This invention relates more particularly to an improved check rein hook which will safely hold the check rein and prevent the horse from disengaging it by any movement of his head. The hook has a base portion at the rear end of which is a guard post, a loop attached to the base straddling the hook intermediate of its ends.

MOSQUITO BAR FRAME.—Elbridge G. Holden, Fulton, Texas. According to this invention, vertical bars are secured to the rear side of the head board, sleeves having hinged connections with the upper ends of the bars, while a mosquito bar frame has its side bars sliding in the sleeves. An exceedingly simple frame is thus made which may be easily dropped into a horizontal position over the bed or as easily tipped up and made to slide behind the head board.

PHOTOGRAPHIC SHUTTER.—Frank R. Hoyt, Watkins, N. Y. This is a shutter for instantaneous work, operated by a spring and released by a pneumatic piston. The pivoted and spring-actuated shutter is carried by a support to which is secured a spring catch, its free end engaging a notch of the shutter, the beveled upper end of a piston in a pneumatic cylinder, operated by compressing a hand bulb, engaging a stud of the catch.

ANIMAL TRAP.—Samuel H. Burch, Russellville, Ark. This is a simple, inexpensive, and positively acting trap, especially adapted for catching small animals, such as moles, being very sure to kill them when sprung. The trap has an open base, on one end of which is pivoted a spring-pressed drop plate having spikes on its under side, a lever operating a trigger extending beneath the drop plate, and there being a catch connected with the outer end of the lever, the release of the catch allowing the lever to tip up and permit the drop plate to fall.

VETERINARY PARTURITION HOOK.—Ephraim H. Graves, Appleton, Wis. This hook is hinged to an elongated shank, and a sleeve is held to slide over the joint of the shank and the hook, which may be folded and easily inserted in an animal, and quickly opened and adjusted.

SUPPORT FOR CHAMBER VESSELS.—George R. Rudrof, St. Louis, Mo. This device comprises an extensible frame held to a support, legs being secured to the free end of the frame and a vessel-holding basket suspended from the frame. It may be secured in a commode or any suitable device and adjusted to suit people of different heights.

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.

ELEMENTARY LESSONS IN HEAT. By S. E. Tillman, Professor of Chemistry, U. S. Military Academy. Second edition, revised and enlarged. New York: John Wiley & Sons 1892. Pp. x, 162. Price \$1.50.

This work is prepared to meet the West Point curriculum, and presents in very good form the generalities of its subject. The experimental illustrations are generally such as can be reproduced in lectures, and a collection of forty-six problems is given at the end.

MANUEL PRATIQUE DE PHOTOTYPIC. By J. Voirin. 12mo. 90 pages. Plates and illustrations. Paris. 1892. Ch. Mendel publisher. Price 1 franc 25 centimes.

This little work on phototype illustrations gives a good *resumé* of the operations connected with this process, which is better expressed by the term photo-collography. Full directions are given for sensitizing the gelatine and stripping the film. The illustrations are excellent, exhibiting several entirely new forms of apparatus. The first plate, which is a landscape, brings out a remarkable amount of detail and shows conclusively that the process is capable of application to many subjects that are treated in half-tone.

ABROAD AND AT HOME. By Morris Phillips, editor of the *Home Journal*. New York: Brentano.

This pleasant little volume—a traveler's guide book—has a preface written by the well known Mr. A. Oakey Hall, a former mayor of New York, but who has been a resident of London for the past eight years, and it also has a chapter on the restaurants of Paris, by Theodore Child, thus giving additional variety. Mr. Phillips has something interesting to say on quite a range of topics, including especially the good hotels, the solid boarding houses, the means of traveling comfortably, and the best ways of seeing things which well informed people accustomed to living well most desire to see. The "At Home" portion of the volume includes sketches in Georgia, Florida, and California, pleasantly described by Mr. Phillips.

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