

## ENGINEERING INVENTIONS.

A method of operating trains on cable railroads has been patented by Mr. Paul H. Mayor, of Owego, N. Y. This invention covers a special combination of the cable and locomotive systems of propulsion, and is mainly designed to be applied to steep grades, but is also applicable to varying grades, where an incline is interrupted by levels, contrary grades, etc.

An alarm signal for hot journals has been patented by Messrs. Oliver H. P. Cornelius and George H. Turner, of Turner, Ore. A thermometer is suitably placed in contact with a journal bearing, with which is connected a wire from a battery, so that when the mercury reaches a certain point a circuit will be closed and an alarm signal sounded.

An improved pitman box has been patented by Mr. Fenner Darling, of Franklin, Mass. The invention consists principally of an inner sleeve placed upon the wrist pin, the sleeve being adapted to be revolved intermittently by the movement of the pitman, so the wrist pins of the pitman boxes are relieved of part of the wear and retain their cylindrical form.

An improved car door fastening has been patented by Mr. Jacob Rhule, of Pittsburg, Pa. A hasp with a hook end and a slot at the opposite end is held on the door by passing its hook end through an eye bolt in the door frame and passing a staple in the door through the slot in the opposite end of the hasp, whereupon a bolt or the hasp of a padlock is passed through the staple on the door.

An improved car coupling has been patented by Mr. Frank L. McQuiston, of Greenacastle, Iowa. The invention provides for a drawhead having attached a crossbar provided with bearings, in which slides a rod with stop pins and a spring, and carrying a coupling pin bent to pass horizontally through the drawhead, the device being applicable to a car with ordinary couplings by using a link made with a half twist.

A coking furnace has been patented by Mr. Arthur R. B. Hlawski, of Zaborze, Upper Silesia, Germany. Between a series of coking chambers are gas chambers, into which gas is passed from the coking chambers, the gas chambers having openings in their bottoms leading to transverse channels, connecting with longitudinal channels below the gas chambers, so the gases will circulate until exhausted, and thus all be consumed as the coal is converted into coke.

A roasting furnace has been patented by Messrs. Newman A. Foss and John M. Gray, of Clendenin, Montana. The object is to improve roasting and slagging furnaces, for which purpose a long tube of boiler iron, lined with fire brick, is arranged between the receiving chamber and the chimney, and a smaller diameter from the furnace to the chimney, with inside ledges, down which the ore falls in passing from one section to the other, having a more complete exposure to the heat.

## MECHANICAL INVENTIONS.

A circular sawing machine has been patented by Mr. George J. Kautz, of Emporium, Pa. This is an improved construction and arrangement of parts for that class of circular sawing machines in which the saw frame is automatically swung into position by a cam, and the feed roller is also automatically operated.

A skein lacing and tying attachment for reels has been patented by Mr. George Grimshaw, Jr., of Paterson, N. J. By this improvement time is economized, the skeins are less liable to become tangled in dyeing, the thread can be more readily wound, and will be freer from knots than when the skein has been laced in the ordinary manner after having been reeled.

A boring gauge has been patented by Mr. Thomas J. Bush, of Lexington, Ky. This invention relates to three former patents of the same patentee, and consists in adapting the gauge to be held and the means for holding it upon a railroad tie parallel with the rail, so the intersecting diagonal holes for receiving the bent bolts may be bored in the tie at the side of the rail instead of crossing under it.

A ratchet wrench has been patented by Mr. Charles Wechsler, of Minneapolis, Minn. The wrench head is provided with a system of concentrically arranged angular sleeves or slides, of decreasing size to the center, but which extend through the head to form a right hand wrench on one side and a left hand one on the other, these sleeves or slides having rectilinear slots, guided on pins, so they may telescope freely, and this head is combined with a ratchet handle.

A machine for washing, scouring, and burring wool has been patented by Mr. James E. Sinclair, of Baltimore, Md. This machine covers all three of these operations in preparing wool for carding, the fibers being first thoroughly separated and agitated in cold water, and from thence pumped into a scouring apparatus, where only a brief treatment with hot water is necessary, whence the wool is pumped into a burring and picking apparatus, where it is rinsed in cold water and burred and picked, and then discharged from the machine in condition to be dried and then carded.

## AGRICULTURAL INVENTIONS.

A horse hay rake has been patented by Mr. James M. Clark, of Greeley, Colo. This rake is adapted to be dumped by the rotation of the axle, and an improved means is provided for holding and operating the devices for controlling the action of the rake.

A hay stacker has been patented by Mr. James H. Johnson, of Greenacastle, Mo. The object of this invention is to facilitate the operation of stacking hay, which is effected by a movable apparatus, whereby, when a horse is attached to the hoisting rope, a loaded fork is raised into an upright position, and the hay discharged upon the stack.

An improved plow has been patented by Mr. J. T. Ellyson, of Pleasant Plain, Iowa. In combination with the mould board and a flanged bar secured thereto is a slotted forked plate carrying a roller, disk, and scraper at its forked end, and there is a bolt on the flanged bar for adjustingly fixing the slotted upper end of the plate.

An automatic register for grains, seeds, and other substances has been patented by Mr. John Wherry, Jr., of Putnam, Ill. There is a grain register in a two-compartment case, with an adjustable guide plate connected by levers and rods, with hinged bottoms having elastic bars engaging with weighted scale beams, so arranged as to measure grain, seeds, etc., as they come from the thrashing machine or bin.

A pea thrasher and cotton opener has been patented by Mr. Calvin H. Simmons, of Munford, Ala. There is a perforated sheet metal or woven wire concave, with spikes or teeth, and a revolving shaft with other teeth, preferably bent or curved reversely, to hold straw, lint, etc., away from the bottom and walls of the case, keeping the perforations open, through which the peas, grain, etc., escape.

A thrashing machine has been patented by Mr. Andrew T. Hawley, of Alton, Ill. It is intended to prevent waste of grain and thoroughly separate the latter from the straw. There is a heavy beater adjoining the thrashing cylinder and revolving in an opposite direction, with a light beater above and in rear of the heavy one, but revolving opposite thereto, so the straw will be received from the cylinder by the heavy beater and thrown upward, and as it falls be subjected to the light beater.

## MISCELLANEOUS INVENTIONS.

An improved button has been patented by Mr. William W. Beach, of New York city. This invention consists of a button with a transverse aperture in the shank, into which may be received or through which may be passed the point of a pin.

A horse detacher has been patented by Mr. William M. Walker, of Fulton, Ky. This is an improved device for detaching the trace and shaft of the carriage, with a foot lever arrangement for working the same and a brake.

A coin holder has been patented by Mr. Charles C. Johnston, of Jackson, Miss. It consists of two semi-cylindrical sections or casings hinged to each other at the adjoining ends, into which sections the coins are placed, and is simple in construction and cheap.

A hive cart or hand cart, specially adapted for shifting bees from place to place, has been patented by Mr. Charles R. Thompson, of Fort Omaha, Neb. The handles of the cart serve as levers for lifting the bee hive on low hung carriers, so a heavy hive may be lifted and moved without calling for much outlay of strength.

A ripping attachment for scissors has been patented by Mr. Francis S. Lockerman, of Manokin, Md. A casing is secured to the under side of one of the handles, and there is a ripping blade pivoted to and adapted to fold within said casing, in connection with which a spring may be used or not as desired.

A binding attachment for sewing machines has been patented by Mr. Robert Hignier, of New Orleans, La. This invention covers a special construction and combination of parts to make a sewing machine binder as an attachment for guiding a binding to be sewed upon the edge of a garment.

A fire escape has been patented by Mr. Robert P. Clark, of Philadelphia, Pa. A cage is suspended by operating ropes from a horizontal traveler, said ropes passing over guide pulleys and being attached to drums revolved in opposite directions by connecting gear wheels, and operated by a crank, so the cage may be moved either vertically or horizontally.

A clay pulverizer has been patented by Mr. Lorenzo D. Ferguson, of Nashville, Tenn. The pulverizing machine combines plain rollers and toothed cylinders running at different speeds, so that the clay will not form in cakes or sheets as passed through, but will be thoroughly pulverized, for making bricks or fine ware.

A huller, cleaner, and separator has been patented by Mr. William W. Jackson, of Bethany, La. This invention combines a fan, inclined sieve, rotary toothed hulling cylinder and stationary toothed case, so devised and constructed as to make a simple and effective machine for stripping or clearing the hulls or pods from peas, beans, etc., and separating the same.

A supporting rod for window and door curtains has been patented by Mr. John A. Browne, of Philadelphia, Pa. A socket is fixed to one side and a screw plug to the other side of the casing, in line with each other; then one end of the rod is inserted in the socket and on the other end is fixed a socket nut, which is screwed upon the screw plug.

An adjustable finger ring has been patented by Mr. Benjamin Lewkowitz, of New York city. In combination with a stone frame with inclined pockets on the sides is a removable shank, its ends passing into the pockets, the shank being held in place by screws passing through the edges of the pockets and adapted to bind on the edges of the shank.

An improved grain drier has been patented by Mr. William H. Applegate, of Atlantic, Iowa. There are special constructions of grain passages, discharge valves, and heating apparatus, with provision for the escape of moisture, and for the air heated from below to ascend about the grain passages, also for the escape of any dust, and for maintaining a free air inlet.

A fire escape bracket has been patented by Mr. Charles Murdock, of New Rochelle, N. Y. This is an improvement for use in connection with the fire escape patented by the same patentee last year, and covers a special construction of bracket to be attached to the window casing or wall of a building, to admit of its being folded down to or swung away therefrom.

An improved elevator has been patented by Mr. Riley L. Davis, of Mooresville, N. C. This is a novel arrangement and combination of parts for elevators with adjustable scaffolds on the lazy tongs principle, additional pairs of lazy tongs being used, their knees connected in a flexible manner, and the platform having slotted pendulum guides.

A lasting machine has been patented by Mr. Augustus W. Pearson, of Nyack, N. Y. In a suitable frame fronting the operator, jaws are made to seize the upper, as held up in proper connection with

the last, pull the upper over and hold it on the last, while an automatic tack feeding arrangement and hammer fix the upper under the desired strain to the last, in close imitation of hand lasting.

A fire escape has been patented by Mr. Thomas B. Peacock, of Topeka, Kansas. It is an inexpensive apparatus, consisting of a car suspended by a rope, combined with a ring and pulley adapted to bear against a suspension rope; and with a lever and pulley also adapted to bear against the rope, so that a number of persons can safely and rapidly escape from a burning building.

A scaffolding bracket has been patented by Mr. Mark N. Knight, of Skowhegan, Me. It is formed of two pieces of timber with notched edges, one having at its upper end a pivoted link through which the outer piece of timber can be passed, or which link passes through a slot in the other piece of timber, making a bracket simple and strong for staging and scaffolding in rooms and on buildings.

A pneumatic coal cleaner has been patented by Mr. Amour Sottiaux, of Strey-Bracqueguies, Belgium. In connection with a case having an open side and receptacles across its bottom, with means for introducing material at its upper part, is a contrivance admitting air at varying pressures, by which, as coal drops, it may be separated from dust, and from stones, schists, or slates.

A fertilizer distributor has been patented by Mr. Augustine Reger, of Somerville, N. J. The invention consists of a pail with a perforated bottom, on which is a cover with apertures in its lower edge, through which the fertilizer escapes to and drops through the perforated part of the bottom; a cone is also provided for, to be fixed to the under side of the bottom, with its apex at the bottom.

An improved glove has been patented by Mr. S. Oscar Parker, of Littleton, N. H. This invention provides for a peculiar cutting of parts and arrangement thereof, so there will be a double thickness of leather on the wrist over the pulse, and there is a button piece for the opening at the wrist which strengthens the glove and gives it a better appearance, with other advantages.

An improved book case has been patented by Mr. William A. Smith, of Wilmington, Del. This invention provides special devices for locking books in book cases, and may be fitted with equal facility to an open front case or to book cases having their fronts closed with either sliding or folding doors. The locking frame is of vertical bars or mouldings connected by horizontal cross bars or mouldings.

A steam cooker has been patented by Mr. Hudson Maxim, of Pittsfield, Mass. The steam from a generator is carried in a spiral or back and forward under the generator, to be highly superheated, whence its open end is passed into the bottom of the cooking vessel, the heat being thoroughly utilized therein, and the arrangement being adapted for cooking vegetables, meats, etc., very rapidly.

A telephone call bell switch has been patented by Mr. Louis Townsend, of Evansville, Ind. A peculiar torsional spring tube is combined with the telephone support; and this spring tube is embedded in the walls of which the box is composed; there is, also, a peculiar construction of the contact points, the telephone support always having a solid electrical connection with the circuit wire.

A fastener for fence wires and boards has been patented by Mr. Charles E. Griffith, of Storm Lake, Iowa. This invention is principally for providing an improved means of attaching wire or board fences to trees, and covers a device of slotted plate combined with screw bolt, head, and bit, for holding the members of the fence at a distance from the post or trees.

A clock pendulum has been patented by Mr. Levi Orser, of Mobile, Ala. This invention covers a rolling or rocking suspension device, made in such manner as to give two curved lines or points of contact, upon or between which the pendulum is held by its own gravity when the clock is in its proper position, and there is a guard to prevent the parts from misplacement when the clock is turned out of its normal position.

A spring bed bottom has been patented by Mr. Butler R. Platt, of Plainwell, Mich. The invention covers a special construction and combination of parts, in that the connecting portion of each pair of springs has two bends which serve as points of attachment for the hooks of the coupling, preventing them from slipping, and so the springs cannot be forced out of vertical position, also giving a large surface area for the support of the bedding.

A circuit closer for telegraph keys has been patented by Mr. Samuel J. Spurgeon, of Houstonia, Mo. This invention is an improvement on a circuit closer patented by the same inventor last year, and covers a circuit closing spring or lever pressed against the bottom of the key, the circuit closing lever being pressed downward to break the circuit when the key button is depressed by a button and stem held loosely on the button of the key.

A draught equalizer has been patented by Mr. David F. Robbins, of Berlin, Minn. The object is to provide means for attaching four horses abreast to a harvester, so that each horse will draw its proper proportion, and to this end a cross bar is attached to the tongue with pulleys at its ends, around which passes a chain, one end connected with a whiffleree, and the other with an ordinary 3-horse evener, the connections being made as for properly proportioned levers.

A sash cord fastener has been patented by Mr. William A. Sinsel, of Waukesha, Wis. It provides means for a cord being firmly held without being tied, independently of the means for securing the holding device to the sash, and the device has a body, a cap therefor, and a screw, forming a cord clamp and means for holding the same to a sash. The same inventor has also obtained a patent for a window sash, in which, according to one of the specified modes of construction, the sash may be removed from the window casing without removing the window stop.

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