

ENGINEERING INVENTIONS.

Messrs. A. Cameron, of Kalamazoo, and C. E. Russell, of Grand Rapids, Mich., have recently patented an improved car step, which can be lowered quickly to afford easy passage from the ground to the cars. The step can be readily raised or lowered by a person on the platform or from the ground.

A novel car coupler which works automatically is the subject of a patent recently granted to Mr. W. H. Lucan, of Hermon, Ill. The construction of this coupler is such that when the link enters the drawhead it sets the pin free, which drops into place through the link, coupling the cars together without any other attention being required from the brakeman.

An improvement in rotary engines has been recently patented by Mr. Moses Fay, of Townville, Pa. The general features of the engine are the same as those of other rotary motors, but by the arrangement of pockets on the steam wheel, and extending the full width of the spokes which support the wheel, the inventor claims less loss of power by friction than is customary in other rotary engines, and believes it to be specially adaptable for light work.

A car coupling possessing more than ordinary novelty has been patented by Mr. Charles A. Huth, of Maynard, O. The coupling pin is operated by a chain connected to a drum which is made fast to a shaft, the latter being operated by a crank. A spring rod fits into a notch in the drum, which supports the pin upright. When the bumper from the approaching car strikes the bumper of the car carrying the coupling pin, the spring rod is tripped and the pin drops into its place without any attention from the attendant.

Among the recent improvements in car couplings is the patent of Mr. Joseph F. Pryor, of Houghton, Mich. His invention relates to that class of couplings in which an arrow headed drawbar is employed. When the cars are brought together the drawbar enters the drawhead, and there is firmly retained by two pivoted hook jaws, which are forced together by suitable springs. The conical head of the drawbar is brought in contact in coupling with the head of a buffer which relieves the strain on the drawbar in coupling, but at the same time serves to force the head back in its position when coupled.

A revolving railroad car signal, designed more especially to be located on the roof of a caboose or the last car of a train as a safety signal to trains that may be following on the same track, has been patented by Messrs. L. W. Schoonover and J. Afflerbach, of Perth Amboy, N. J. This signal is provided with sides of many colored glass and is revolved by connection with the axle of the truck of the car, so that not only the situation and direction of the train may be determined, but the rate of speed will be indicated by the revolutions of the signal, for the guidance of the engineer of a following train.

MECHANICAL INVENTIONS.

Mr. H. W. Rose, of Westerly, R. I., is the patentee of an automatic feeding apparatus, by which animals are fed at stated intervals by the setting of a clockwork mechanism, the time being regulated at the will of the attendant.

An improved drilling machine has been patented by Mr. James C. Smith, of the Dalles, Oregon. This invention consists of an improved hand power drilling machine contrived for use as a bench or ratchet drill, and arranged for shifting the drill for boring in any position that may be desired.

An improved bottle filling machine has been patented by Mr. William Pearson, of Carson City, Nev. This machine is adapted especially for bottling soda and other gaseous liquids, and is so constructed that one or more bottles may be bottled at the same time with great facility, economizing time and labor.

A useful device for holding a door open in any position desired has been patented by Mr. Thomas B. McCurdy, of Lancaster, Texas. A sliding spring bolt is held in the upper edge of the door, with a curved notched frame projecting from the door frame. The bolt passes into the notches of the semicircular frame and holds the door in the desired position.

Letters patent have been granted to Mr. William F. Burditt, of St. John, New Brunswick, for an improved trip mechanism for harvester rakes. The object of the invention is to provide means by which the operator can cause every second, third, fourth, fifth, or sixth rake to sweep off the gavel, as the condition of the grain may require.

A very efficient screw jack has been patented by Mr. Joseph Heritage, of Warren, Mass. The invention consists in providing the screw of the lifting jack with a ratchet, having its teeth similarly arranged on both sides, so that the pivoted arm for rotating the screw may be reversed for turning the screw in both directions, whereby the jack may be either raised or lowered at the will of the operator.

An improved bran or flour packer has been patented by Mr. Henry G. Hall, of Fayetteville, N. C. The invention consists of plungers for forcing the bran or other ground material into the barrel, bag, or package. Means are provided for effecting the escape of the air from between the particles of the substance being packed, to enable it to pack more closely than is possible by the common methods of packing.

An improved fire escape has been patented by Mr. Paschal P. Ripley, of West Randolph, Vt. The fire escape is constructed with a carriage carrying a rotary shaft having wound around it straps attached to the wall of the building, and provided with a crank, a piston, and air cylinder for retarding the descent of the carriage. The carriage is provided with a windlass for raising the carriage again after its descent.

In making cider it is important that the seeds of the apple should be separated from the pomace before the pomace undergoes the pressing operation. Mr. Joseph Dix Camp, of East Randolph, Vt., has recently patented a simple apparatus for separating the seeds from the apple pomace, and cleansing at the same time the pomace of all impurities by permitting water to flow over it, and stirring the mass as the water flows.

Mr. Gustav F. Sievern, of Pittsburg, Pa., has recently obtained a patent on a new mode of propulsion by land or water, by an arrangement of pulleys and chains, the latter working in grooves on the pulleys or by meshing into cogs in the periphery of the pulleys, as the inventor may find by further experiment to be the best plan for transmitting power.

Mr. William W. Lemmon, of Portersville, Ind., has obtained a patent for an improvement in sewer traps, in which mercury is employed as a seal to prevent the gases from escaping. The trap is provided with a series of dams for preventing the waste of the mercury, these being raised at the center, so that should the mercury be washed over the lower dams it will flow down at the sides, back into the trap.

A fire escape consists of a rope supported by a crane alongside a window, to which rope is attached a sliding block having a friction core and brake. In case of fire alarm the inmate of the building places a strap around his body, under his arms, and around over his shoulders, hitches it to the friction block, swings himself out of the window, and commences to descend, regulating the speed by the brake block. Mr. William Newland, of Brooklyn, N. Y., is the patentee.

Mr. O. M. Allaben, of Margaretville, N. Y., has recently patented a ditching machine. To the middle part of the side bars of the machine frame are attached two bars carrying a roller provided with a pin to pivot the handle of the shovel. The shovel is made with a hinged door at its rear end, fastened by a bolt and catch, with a cord for drawing it up, the bolt to release the door and discharge the soil. The shovel is supported against the resistance of the soil by adjustable brace rods secured by a plate and wedges.

A patent has been granted to Mr. Joseph E. Tynan, of Paterson, N. J., for improved bobbin spindle and support, the object of which is to neutralize vibration of the spindles in spinning machinery, arising from irregularities in the weight and size of the bobbins, and also to provide for thoroughly lubricating the bearing of the spindle. The invention consists further in a spindle supported upon a spring wire and arranged to rock on a center at its mid-length, and having its supports provided with oil passages.

An apparatus for supplying water to farm stock, in which the supply will be regulated automatically, so that waste is prevented, and so that the supply of water will not be cut off in freezing weather, has been patented by Mr. A. G. Lyell, of Hunnewell, Mo. The water passes from the reservoir into a box which is provided with an inlet pipe, and with a valve, which when depressed stops the flow into the box. The water passes from thence into the drinking trough, which is provided with a float, which regulates automatically the flow.

A machine for making auger blanks by rolling in place of producing them by hammering has been patented by Mr. Charles O. Tinsler, of Ashtabula, O. The main dies, which are secured to rolls are provided with secondary dies which are removable from the main dies, so that others may be inserted. By this arrangement, together with peculiar clutch mechanism for operating the rolls and bringing the dies to the work, the machine is capable of fashioning rough blanks into finished ones ready for the final process of conversion into finished augers.

A seemingly practical machine for dredging oysters, clams, and other shell fish has been patented by Mr. Edwin Paterson, of Port Washington, N. Y. The dredge is provided with grappling shafts supplied with arms or teeth, and with suitable mechanism for operating the same, and further with a series of brushes for cleaning the oysters while they lie in the grappling irons. When the oysters have once been gathered in the dredge, a derrick on the attending vessel raises the oysters on the deck of the vessel, from whence they are transferred into small boats moored at the side of the vessel.

An electrical pilot car to be run in advance of regular railway trains has recently been patented by Messrs. S. H. Knapp and A. E. Adams, of Danbury, Conn. The object is to signal to the engineer on the approaching train any obstructions on the track, the signal being given by means of a gong operated by an electric motor or battery on the pilot car. The pilot car coming in contact with any obstacle on the track breaks the circuit of electricity, which warns the engineer by ringing the gong and gives him time to apply the brakes before reaching the obstruction.

Mr. Edgar H. Taylor, of Ash Valley, Kas., has obtained a patent for an improved stock gate for railroads. The gate is placed between upright guides which are located on each side of the track, the mechanism being so arranged that the gate will be lowered by the depression of the rail when the locomotive passes upon it, and will be raised again by weights when the engine passes off from the movable rail after passing the gate. It will be observed from this that the action is entirely automatic, and that the escape of stock and cattle from field to field by way of the track is thus prevented.

Mr. J. E. Fellers, of Burlington, Ind., has patented an improved grain tally, which consists of a small case adapted to hook on the end of the grain spout of a thrashing machine, or other spout through which grain is to run, the case having a passage through it that is divided into two branches, and contains a gate or valve for turning the grain into either branch at will. To the gate a recording device is connected, so that when a measure is filled under one branch and the operator shifts the valve to turn the grain into an empty measure under the other branch, a record will be made of the filled measure.

Mr. Thomas Watson, of Paisley, County of Renfrew, Scotland, is the inventor of an improved spinning machine, the object of which is to provide means whereby a spindle used for spinning yarn or thread may be given a limited degree of elasticity, in order that any tendency to eccentricity from oscillation under great or varying speed may be avoided. The same inventor has further patented a combined bolster and step for spindles, this step being so formed with radial

edges that it may serve as a scraper to clean from the lower end of the spindle the sediment of oil and the particles of grit which otherwise become embedded in the spindle or step, and cause so much friction and wear. Both of the above inventions have been assigned to Messrs. James and Peter Coats, of the celebrated Ferguslie Works, Paisley, Scotland.

An improved floor clamp for pressing together the boards when laying a floor has been patented by Mr. Squire Raymond, of East Venice, N. Y. This implement consists of two parallel bars provided with points and pivoted at one end to a crossbar, and connected at the other with a screw by means of which the parallel bar is clamped to the floor beams. A beam passes between these two bars, and is connected with them firmly, and the lever for pressing the boards together is attached to this beam. An immense amount of power may be given to the lever by applying weight or pressure to the upper end of the beam. A toothed arm provided with a spring is attached to the beam on the opposite side from the lever, for holding the lever to a constant pressure while the board is being nailed.

Mr. Fred C. Riley, of London, England, has obtained a patent for an improved corking machine in which the whole operation of filling and corking the bottle is performed automatically. All the motions necessary for working the different parts are obtained from a rotary disk, which is mounted upon a horizontal shaft, and is driven by either hand or other power. When a sirup pump is used, as is the case with aerated liquids, a device is provided for warning the attendant when the delivery valve is not working properly. This machine is adapted for use with bottles for non-aerated liquids closed by means of corks, and for bottles for aerated liquids closed with either corks or self-closing stoppers.

An improved steam and water heat radiating apparatus, which is designed for heating a room more rapidly than is possible with the ordinary radiator, has been patented by Mr. Ludwig Crusius, of Kaiserslautern, Bavaria, Germany. The new radiator has a partition which divides the radiator into two compartments, of which one is for steam and the other for water. These compartments have a common inlet cock and separate outlet cocks, whereby if all the cocks are open the apparatus will operate as an ordinary steam radiator; but if the cock of the water compartment is closed the water of condensation accumulates, and is heated by the steam in the adjoining compartment. The steam in one compartment heats the room very rapidly, and the heated water in the other compartment retains the heat and graduates the falling temperature.

AGRICULTURAL INVENTIONS.

Mr. Charles C. Coleman, of Honolulu, Hawaiian Islands, is the patentee of an improved cane planting machine, which is so constructed that when drawn over the ground to be cultivated, the furrow will be formed, the seed plant deposited in the furrow, and then properly covered, the whole being accomplished by one operation and in a very effective and satisfactory manner.

Mr. James Y. Payton, of Ipava, Ark., is the patentee of an improved harrow. The X-beams constitute the toothed part of the harrow, to which a tongue is attached front and rear, in such a manner that the harrow may be drawn either way, with an open angle to the front, in order that the wear of the teeth may be alike, and so that the open angle at the front of the harrow will gather in the clods to the center, and the rear side will spread them out again, making a double action, and thus increasing the pulverizing effect.

An improved trip gear for harvester rakes has been patented by Mr. Walter A. Osborn, of Owosso, Mich. The invention consists in an automatic trip device to be set for permitting any desired number of rakes to pass over and sweep off the gavel, while the rest are allowed to pass over the gavel without doing any work, by which device the due measure of grain will be accumulated upon the gavel. The machine is further provided with a device for disconnecting the trip gear to allow the gavel to be carried any distance before being discharged.

An improved grain thrasher and separator has been patented recently by Mr. William L. Muller, of Muscoda, Wis. The grain is first passed under the thrashing cylinder, which is made similar to but much heavier than those commonly in use, after which it is carried on to the separator, where it is brought under the action of the rotating beater, the straw being carried by the separator into a waste receiver, while the grain falls through on to an inclined apron, where it is subjected to a blast from the fan blower, by means of which it is thoroughly cleansed of all chaff and impurities. The machine is mounted on wheels, so that it may be transferred from place to place.

Mr. Robt. Griswold, of Woodey, Kas., has recently received two patents for important improvements in agricultural machinery. An elevator for unloading and stacking loose hay or grain is the subject of one patent, and as it is a marvel of simplicity and cheapness, it will recommend itself strongly to farmers in need of such an implement. The second patent is for a hay and grain rack with separable sides provided with a lining netting secured detachably to the sides by snap hooks and rings, so that the sides can be removed and the netting connected with an elevating mechanism, to enable the entire load to be taken off in a body. The rack can be mounted on the running gear of an ordinary farm wagon.

MISCELLANEOUS INVENTIONS.

Mr. John H. Burrage, of Concord, N. C., is the patentee of a beehive which is an improvement upon a patent granted to Mr. L. J. Diehl, in December, 1873. It is claimed that by this invention improved accommodation will be afforded to the bees, and that the brood chamber and comb frame are of a more convenient form than those of ordinary construction.

Mr. Geo. W. Bowers, of Somerville, Mass., has obtained a patent for a very simple necktie fastener which is not only inexpensive to manufacture, but is calculated to attach scarfs and neckties to the collar band in a secure manner.

Mr. Silvio E. Massari, of Columbus, O., has patented a very simple vegetable slicer. Near one end, a screw enters the vegetable to be sliced, which causes the knife, as it is revolved, to follow up the cut in a spiral and continuous manner.

Messrs. Amos T. Fox and Daniel T. Fox, of Mt. Pleasant, Pa., are the patentees of a device for turning music leaves. This consists in a wire frame pivoted to the music board and having cords connected with it, by means of which the fliers which hold the leaves are turned by working a foot treadle.

Messrs. R. Neumann & Co., of New York city, by assignment from Mr. Robert Flocke, have received a patent on a lock for satchels and hand bags. The invention relates to that class of satchel locks that hold the handle rings, suitable clips being employed for holding the rings upon the upper side of the lock plate.

Mr. Caesar Simis, of Brooklyn, N. Y., has patented a novel hat or cap lining, the object of which is to provide such a lining that a mirror or comb can be held in a hat lining in such a manner that they cannot ordinarily be seen when the hat or cap is removed from the head.

A clothes pounder operating on pneumatic principles has recently been patented by Mr. Gordon C. Dimock, of Madison, Neb. The pounder has a cone-shaped metal air chamber which collects and forces the air down into the water and through the clothes, cleansing them in a most satisfactory manner.

Mr. Albert R. Hancock, of Lincoln, Neb., has recently patented an improvement in metal lathing, which can be applied to either wood or metal joints, and is especially suitable for fire proof buildings. The lathing plates are slitted and bent back to form projections for holding the mortar in a manner, it is claimed, superior to metal laths now in use.

An improved rasp, designed for coarser and more effective work than the ordinary rasp, has been patented by Mr. Samuel T. Harrison, of San Francisco, Cal. The ridges of the rasp are reformed by being punched out from the back, and should they become worn or dulled by wear, they may be punched out again. The rasp is forged with the tang and body in one piece.

An improved scaffolding for use of painters, builders, etc., has been patented by Mr. Wm. A. Gillett, of Union City, Pa. This scaffolding may be attached to a ladder or other support, and its height regulated to meet the requirements of the workman. It is a useful appliance for all persons having to work on the outside walls of buildings.

Mr. William B. Lyon, of Pontiac, Ill., has obtained a patent for an implement for cutting the two main ligaments on the upper side of the snout of a hog to prevent the hog from rooting in the ground. This operation inflicts no permanent injury upon the hog and is quite effectual in its object. This invention is an improvement upon a patent already granted to same inventor in October, 1881.

An improved sand band designed to be applied to thimble skein axles has been patented by Messrs. Delos M. White and Jonathan Hitchcock, of St. Paul, Minn. This band or collar is made in two equal parts, and is so formed that four chambers will be provided into which the dust will collect and be retained instead of passing into the space between the journal and its bearing, where it would cause friction and wear.

An improved end gate for a wagon has been patented by Mr. Don Juan Arnold, of Brownville, Neb. This invention consists of an improved contrivance for securing the end gate, so that it may be readily let down to be used for a scoop board for shoveling out the contents of the box, this contrivance being so constructed that the end gate may be readily taken off and put on, and securely fastened when applied to the rest of the box.

An improvement in the method of manufacture of finger rings and other articles of jewelry has been patented by Mr. Henrich Heinrich, of New York city. This invention facilitates the ornamentation of finger rings by inserting separate side pieces having grooves on the inner side for receiving the shank of the ring, and grooves on the outer side for inserting ornamented strips, which are made separate from the shank of the ring.

Mr. John A. Moore, of Cambridgeport, Mass., is the patentee of a simple contrivance for holding the mustache from the mouth during meal time. The appliance consists of a small comb, to one side of which is attached a spring hook. The lower portion of the mustache rests upon the comb, and the spring hook engages with the upper portion, so that the mouth is free to receive food without its coming in contact with the mustache.

Mr. Frank R. Siltz, of Leon, Iowa, has obtained a patent on a ventilator for windows or doors consisting of a wind wheel confined in a case, one side of which is covered with wire netting, and the other with a hinged cap which is flung open by a spring when desired. Sliding plates on the cap allow the admission of more or less air, and the wire netting prevents the admission of dust.

Messrs. Gasper Renick and James A. Curtis, of Greencastle, Ind., have patented some improvements relating to two wheeled vehicles. The invention relates principally to the construction of the elliptic side springs for supporting the body, these being connected at the middle to the axle, and having an extension of the upper member beyond the front end of the lower member, these members being connected by a shackle allowing longitudinal motion of each with relation to the other, whereby the backward and forward swing of the body of the wagon from the action of the horse on the shafts will be avoided.