ENGINEERING INVENTIONS.

Mr. A. T. Schultz, of Zanesville, O., has patented a car coupling intended for the automatic coupling of the cars and the ready uncoupling of the same with perfect safety to the operator.

Mr. Henry Keller, of Corpus Christi, Tex., has patented an improved car coupling, the object of which is to provide a link of a peculiar construction, which automatically uncouples cars in case one or more of the cars run off the track.

Mr. John H. Blake, of Batavia, N. Y., has patented some improvements relating to rotary engines. These improvements pertain to the packing of the abutment and piston, to the method of adjusting the piston as it wears against the face of the cylinder, to a device for retaining the steam valve in place and for causing the abutments to move easily and noiselessly, and thus reduce the friction to a minimum.

An improvement in steam engines has been patented by Mr. John B. Shaffer, of Kearney, Neb. The invention consists in devices for avoiding dead centers in a compound engine. The cylinders are arranged one above the other, but not parallel. The low pressure cylinder is of double the length of stroke of the high pressure cylinder, and both are so connected with the rotary disk that when either one is at dead center the other one is at quarter-circle.

An improvement in removable partitions for stock cars is the subject of an invention by Mr. Watts Martin, of Pennsborough, W. Va. The invention consists of a detachable partition, which is fastened in place by a hinged joint on one side, which permits the partition to swing back like a gate, and for fastening the other edge when the partition is in place. The object of the detachable partition is to facilitate its easy removal without injury to the car.

An electric car brake is the subject of an invention for which letters patent have been granted to Mr. David J. Macpherson, of Sioux Falls, Dak. Ter. The invention consists in a magneto or dynamo electric machine placed on the locomotive and driven by steam furnished by the boiler, connection being made with electric motors under the cars, so arranged as to operate the brakes. By closing the circuit the brakes will be set, and by breaking the circuit the brakes will be released. In this way the brakes are entirely under the control of the engineer on the locomotive.

An improvement in car couplings has been patented by Mr. A. Wells Case, of South Manchester, Conn. The invention consists in drawheads provided with vertical slots, and with shoulders at the forward end of these slots to hold in engagement the crossheads of the swinging coupling bars. The coupling bars are mounted on binging rods, to which are attached levers having chains attached to their free ends, so that the cars may be coupled or uncoupled from the roof of the car. The drawbeads are supported from the frame of the car by links, the upper ends of which are hinged to the car frame, the lower ends passing around collars situated on both sides of the drawbead.

An invention designed to promote the durability of car axles and facilitate their repair has been patented by Messrs. Jeuleos Gamblee and John F. Haring, of Cresskill, N. J. The improvement consists of a car axle with its journal flattened on one side, and of separable bushings correspondingly flattened, whereby when these bushings become worn they may be readily removed and replaced by new ones. The bushings are prevented from turning on the axle by their flattened surface, and they are held upon the journals of the axle longitudinally by screws passing through the bushings and journals. The construction is very simple, and the use of the bushing is a great saving in the wear of car axles.

MECHANICAL INVENTIONS.

Mr. Frederick H. Dexter, of Wardsborough, Vt., has patented a novel mechanical movement, which is intended for transferring the driving power from one car to another of a train of cars, so as to utilize the traction of the different cars.

Dirt loading machine is the title given to a patent recently issued to Mr. J. J. Melville, of New York city. The machine is not confined in its use to the loading of dirt into carts, but is equally useful in harvesting potatoes and other root crops, they being scooped up and passed into a wagon over an endless apron, while the dirt falls to the ground.

An improved air compressor has been patented by Mr. W. A. P. Bicknell, of Riverdale, N. Y., which requires no adjustment for different degrees of compression, but is always self-acting, the valve closing rapidly when the piston reaches the end of the stroke, thus preventing any of the air finding its way back when the piston recedes.

Mr. G. H. Waring, of Indiantown, New Brunswick, Canada, has received a patent for a powerful but very simple machine for making spikes, bolts, rivets, etc. The dies, which are removable, fit in a revolving wheel, the bot metal being fed to the dies from the rear of the machine as the wheel revolves, performing its work in a most satisfactory manner.

Mr. Thomas Mayes, of Albany, N. Y., has received a patent for a wave power apparatus for the removal of sand bars and other accumulations from river or harbor beds. The machine is worked by means of a float which is put in motion by the action of the waves, and discharges, by aid of a pump, jets of water upon the accumulations with more or less force, loosening it so as to be carried off by the current.

Mr. John W. Brown, Jr., of Baltimore, Md., has patented some improvements upon a machine previously invented by the same party for cutting green corn from the cob. These changes consist in certain improvements in the construction of the knives, and of the manner of applying them to the slide, also in the construction of the plunger and plunger trough, and of the automatic feeding device for delivering the ears singly to the plunger.

A machine possessing the capability of both clothes washing and butter making is the subject of a patent recently granted to Mary J. Bridge, of Wimberly Mill, Texas. The specification asserts also that the same machine, when not in use for churning and washing, may be used as a sausage meat chopper, rice huller, and for various other purposes. Indeed, one seldom sees so simple a piece of mechanism put to so many different uses.

An improved washing machine, consisting of several arms or beaters attached to an axle, and suspended within the tub by an oscillating lever, is the subject of a patent granted a few weeks ago to Mr. A. Scheff, of Cleveland, O. The beaters are made to revolve by the swinging of the suspended lever back and forth over the soiled clothes, and by this double movement it is claimed that the clothes are thoroughly washed and but little worn by the operation.

A wire coiling machine, of that class in which the wire is passed around a spirally grooved former inclosed by a cylinder, has been patented by Mr. Edward W. Durkee, of Mason, Ill. The improvement consists in the combination with the wire feeding device and the former of a cap having the form of a segment of a hollow cylinder, which is securely fitted to the aforesaid former. Two wires may be coiled simultaneously by this machine, hence it does double the work of those ordinarily employed.

An improvement in furnaces for amalgamating metals has recently been patented by Mr. William E. Harris, of New York city. The furnace is supplied with several fire chambers, and the amalgamator, which is tubular, is placed horizontally within and near the top of the furnace. A revolving shaft with paddles attached extending through the amalgamating chamber keeps the quicksilver and pulverized ore constantly stirred, and a pump is employed to keep the amalgam constantly passing in contact with the quicksilver through the amalgamating chamber.

A novel method of winding clocks has been patented by Mr. Alfred Cupit, of Philadelphia, Pa. The invention is designed to provide means for winding clocks in such a manner that the springs will always be at full tension, thereby causing the clock to act always uniformly. This is accomplished by providing a mechanism to be operated by a lever which is connected with a door or some other object which is moved frequently. In this way the clock is always kept full wound, and the unequal action of the clock prevented. Devices which work automatically are likewise provided for preventing the overwinding of the clock.

A new and very ingenious machine for making sewing machine needles, has recently been patented by Mr. J. J. M. Chauvet, of New York city. The machine is composed of three different mechanisms—one for shaping the butt end of the needle and cutting off the wire, a second for tapering down the wire to form the needle, and a third for providing the needle with the side grooves—all the mechanisms being operated from one main longitudinal shaft. This needle making machine is very ingenious in construction, simple in its operation, and we should think likely to prove pecuniarily valuable to the patentee.

Mr. Oliver J. Mason, of Tallmadge, Ohio, has recently patented a novel machine for making clay smoking pipes. The machine consists essentially of an endless chain of pipe shaping moulds moving intermittently along and charged with the clay passing along where formers shape the bowl and perforate the stem of the pipes. Beyond the latter point the moulds open and discharge the pipes, and thence move back to the place to be recharged. By this ingenious machine the inventor alleges that a greater number of pipes can be moulded in a given time and at less cost than by any process before used.

Messrs. J. A. Hay and John Ralston, of Slippery Rock, Pa., have secured letters patent for an improved delivery roller for circular saw mills, the object of which is to enable the log to be supported a little in advance of the saw as well as in rear of the cutting edge, for sustaining the log against shifting by the thrust of the saw when it enters the end of the log. The roller also holds up the ends of the pieces cut off to prevent any changes of stress on the log at the moment when the separated pieces are detached, and thus enables the logs to be held more securely and the lumber to be delivered better than with the common delivery roller.

An automatic weighing apparatus for weighing any material that can flow in a stream from an orifice, such as grain, flour, liquids, etc., has been patented by Mr. George D. Hibbs, of Newark, N. J. The invention consists of a steelyard upon which is suspended a frame for holding a receptacle to receive the material to be weighed. The steelyard is provided with an arm, and when the long end of the yard is elevated by the weight of the material being weighed, the arm trips the toggle lever, which releases a vertical rod, thereby stopping the flow of material into the receptacle. The invention further comprises a device for attaching the bag or other receptacle to the frame of the steelyard.

An improved method of pressing hay and cotton has been patented by Mr. John A. Hampton, of Houston, Texas. The case of the machine, which is mounted on a truck, is provided with a follower which works backward and forward from the front end of the truck, and has a cover, the substances being pressed against a removable head at the other end of the truck, which is retained by a crossbar. The top, sides, and bottom of the case are furnished with retaining pawls, which hold the pressed bale, so that the follower may be withdrawn, in order that the case may be refilled while the pressed bale is being wired. The power is applied to the follower by a pinion wheel and toothed rack bar.

A novel fire escape has been patented by Mr. D. F. Black, of Brooklyn, N. Y. An extension ladder in three sections or more is mounted on a suitable truck upon pivots, so that when not in use it may assume a horizontal position. When the ladder is to be brought into use, it is thrown into a vertical position by an ingenious mechanism arranged for the purpose, and the sections are then elevated by means of windlasses and cables, and when raised to the proper height held in position by a pawl and ratchet combination which operates automatically. Bridges are pivoted to the upper portions of the sections, which may be swung up to the horizontal, to connect the ladders with the windows of the house. These are provided also with extension sections in case the bridges should not be long enough to reach the window as required.

An improved sugar mill, the object of which is to obtain greater durability and a more thorough maceration of the cane, has been patented by Mr. Christian D. Armstrong, of St. Bernard, La. Two pairs of rollers are placed in such relation to one another that the cane may readily pass from between one pair to the next, a fifth corrugated roller being located between these two pairs, which is driven by the frictional contact of the bagasse, performing the office of maceration upon the cane, and at the same time it conveys the cane mashed by the first set of rollers to the second set, thus obviating the necessity of a carrier between the two pairs of rollers. Perforated guide plates are arranged on each side of the middle roller between it and the two pairs of rollers, and these guides are kept moistened by a sprinkler suitably arranged above.

AGRICULTURAL INVENTIONS.

Mr. John William Jones, of Centropolis, Kan., has obtained a patent on a detachable point for cultivator plows, to enable new points to be applied when required. The invention also consists of an adjustable and detachable shovel connection with the plow stock.

A potato planter, claimed to be both a time and labor saving implement, has been patented by Mr. Thomas Lowe, of Wild Rose, Wis. This planter consists in a fork connected with the end of a staff for picking up the potatoes and a discharger for pushing them off in the ground, the latter being worked by a lever pivoted to the staff.

An adjustable holder for sickle bars of mowers and reapers has been patented by Mr. George W. Freeman, of Amherst, Nova Scotia. The invention consists in the combination with the finger bar and the sickle bar of sliding bolts having recesses in their beads for receiving and holding the sickle bar, and provided with springs to keep them in position, whereby the sickles will be made to operate with a drawcut.

Mr. Stephen H. Garst, of Greenville, O., has patented a sulky plow, which is so constructed that a tongue is dispensed with, whereby a great advantage is claimed to be had by relieving the plow from the strain which the tongue causes in turning at the end of the field, and at other times. By dispensing with the tongue the team is also relieved of considerable weight, and they are less hampered and are left free to move naturally.

A cultivator adapted to be used either on a side hill or the level ground, and so constructed that the teeth will enter the ground to a uniform depth, is the subject of a patent issued recently to Mr. Francis M. Allen, of Knoxville, Tenn. It is contended by the inventor that by his machine the corn will be less injured than by that kind of cultivators generally in use which work on a plane parallel with the surface of the ground.

An improved cotton chopper is among the latest inventions for southern planters which has been patented. Mr. Ephraim L. Mowrey, of Milton, Texas, is the inventor. The arrangement of the cotton chopper and the gearing for operating it, and the fender plates provided to prevent small plants from being injured by the soil, and limit the amount of soil left at the root of the plants, and at the same time to effectually cut the crust of the soil with the chopping hoe, without pulling the plants out of root, is the object of Mr. Mowrey's invention.

MISCELLANEOUS INVENTIONS.

Mr. Henry J. Frost, Jr., of Wooster, O., has patented a shaft loop, the frame of which is of metal faced inside with leather. A leather strap surrounds the metal loop, and is buckled to the belly band.

Mr. H. C. Reagan, of West Chester, Pa., has patented a car step which readily swings up out of the way when not in use, keeping it free from snow and ice in winter, and as it does not project from the car, it is safe from breakage.

Mr. William P. Husband, of Hartford, Conn., has patented an improved spinning ring, which consists in coating the ring with a vitrified material, whereby a smooth, glazed surface of extreme hardness and durability is obtained.

Mr. Benjamin Tryon, of Coxsackie, N. Y., has received a patent on an improved ice plow. The object of the invention is to lock the cutters at different points of adjustment and take the usual wear from the blades.

A convenient holder for gloves, bills, letters, etc., whereby one of the articles may be examined and withdrawn from the holder or file without disturbing the others, is the subject of a patent granted to Mr. E. A. Franklin, of Brenham, Texas.

Emily A. Stears, of Brooklyn, N. Y., has patented a culinary vessel for use on stoves and ranges for cooking various articles of food which is so constructed as to return to the fire by means of a flue all the gases and disagreeable odors arising from the cooking process.

Mr. L. D. Wright, of Carpentersville, Ill., has patented an improved clamp. This clamp consists of one of the jaws having pivotal connection with the bar, together with a lever extension on the opposite side of the bar, in which is an eccentric lever which swings and binds the jaw fast on the work.

A safety hammer for firearms has recently been patented by Mr. A. D. Hart, of North Garden, Va., which consists of a spring and cushion arranged inside of the hammer, which arrests the force of the blow if the hammer falls from less than the full cock, and prevents premature discharges.

Mr. W. H. Hackett, of New York city, has patented a novel and convenient cuff holder and sleeve button combined, which adjusts and holds the cuff in shape, and allows its being attached to or removed from the shirt sleeve much more readily than the method now generally in use.

An axle box having its inner end projected over the axle collar beyond the hub, and provided on its outer edge with one or more bevels, adapted to push mud from the axle bed and prevent its entering the axle box, is the subject of a patent recently issued to Mr. Robert Cartwright, of Rochester, N. Y.

A composition for suppositories has been patented by Mr. Anders Larsen, of Terrace, Utah Ter. This compound consists of tallow, camphor gum, alum, and bitter aloes of prescribed proportions, thoroughly intermixed. The composition is then poured into moulds of the desired form.

A improvement in a boot blacking apparatus has been patented by Mr. George Irving, Jr., of Bridgeport, Conn. The invention consists of a footrest, mounted upon a horizontal swinging bar, to which is likewise attached device for holding the brushes and the blacking box.

Mr. Jacob Stoody, of Ripley, O., has patented a simple and convenient device to assist carriage makers in securing the leather upon the bows of top vehicles. Clamp hooks are employed to hold the bow in proper position for covering. The clamps are made adjustable to fit any size top by the use of thumb screws passing through slots in the top setter.

Messrs. L. E. Fuller and J. H. Macauley, of Chicago, Ill., have patented a sheet metal can designed to be used for packing and transporting liquid paints, preserved fruits, meats, etc. No solder is used in closing the top, which is accomplished by rolling over the marginal portions of the open end, forming a round, scroll-like triple seam.

A patent has been granted to Mr. William Wilmington, of Toledo, O., for an improved method of casting car wheels. The invention more particularly relates to the intermingling with the molten metal at the time of casting of certain substances which are alleged to produce a chemical effect upon the casting and improve the quality of the wheel.

A combined chimney ventilator and heater is the subject of an invention recently granted to Mr. Frank E. Ormsby, of Naumburg, N. Y. A ventilator and heater comprising an inner and an outer pipe, and provided with a register for establishing communication between the room and the air space, embrace the principal novelties in the above patent.

Mr. Andre S. Haynes, of Rome, N. Y., has received letters patent for an improved spokeshave. The invention consists of the application of bevel gauge stops to a spokeshave to serve for gauging the shave suitably for chamfering the corners of the work. The stops are adjustable for setting them to stop the shave at any required point, according to the angle it is desired to chamfer the work.

Mr. George C. Humphries, of New York city, has patented a crimp protector for preventing the uncrimping of ladies' frizzes. The protector is made preferably of mica having holes through it for thread or cord to pass through. To the thread the hair pins are attached which fasten into the frizzes, the mica plate resting on the forehead, which prevents the perspiration taking the crimp out of the front hair.

Mr. Mortimer D. Lawrence, of Marshalltown, Iowa, is the patentee of an improved carriage pole, which he claims will prove more substantial and durable than the ordinary pole, which is made of wood, and ironed or braced by iron. By the new invention the extension or socket is divided longitudinally, each section thereof forming an integral part of a half of the circle and of one of the side braces.

Pliers of an improved form for watchmakers and manufacturers of fine instruments of all kinds have been recently patented by Mr. Charles G. Schellenberger, of Terre Haute, Ind. Attached to the bandles of the pliers is a punch for making holes in the main spring of watches. A recess is made in the inside of the jaws of the pliers for clasping the socket of watch hands, so that they may be readily expanded or contracted to fit the post.

An improved magic lantern, known as a wonder camera, has been patented by Mr. Edward B. Foote, Jr., of New York city. It consists in an ellipsoidal mirror having an aperture for the lens tube opposite the picture opening, whereby light can be reflected on the picture from all parts of the mirror, producing on the screen a large luminous view, more distinct in its lines than bas been heretofore produced by other cameras.

A new beehive has been patented by Mr. Erasmus H. Key, of Mayfield, Ky. The invention consists in providing the hive with an inclined bottom, upon which rest the comb frames, made of beveled cleats. Provision is made for inserting a knife between the cover and the comb, to separate the two without injuring the comb. The invention further provides a device for inducing the bees to begin work in the center of the hive. Taken altogether, the improvements are calculated to facilitate the care of bees, and to improve their products.

A patent was recently issued to Mr. T. A. Harris, of Callisburg, Texas, on an improvement in store shelving, which it is intended to so construct that the goods will be free from damage by fire or water while being removed during a conflagration. The shelving frame is substantially built, and covered with tin or sheet iron to render it partially fireproof. The frame holding the section of shelves and their contents is mounted on castors, so as to be readily rolled from the building.

Messrs. Joseph Miller and Daniel Howarth, of Olean, N. Y., have recently obtained a patent on a steam boiler which is intended to be very durable and to generate steam with a minimum amount of fuel. To that end the inventor provides a water chamber at the back or bridge wall of the furnace, which is supplied with circulation tubes. These tubes extend into the fire-box and combustion chamber. A safe, inexpensive, and durable boiler of compact form, not liable to become injured by expansion and contraction, is thus constructed. It is to be observed that each tube is independent, so that each one is free to expand and contract, according to the heat it may receive, without affecting the others. A continual circulation of the water through the tubes will cause the sediment to fall to the bottom of the water chamber, where hand holes are provided for its removal.