

ENGINEERING INVENTIONS.

A flue plugging device for mending the flues of locomotive and other engine boilers when they become ruptured, and which may be accomplished by this implement while the boiler is in use, has been patented by Mr. Frank Sharp, of Los Angeles, Cal.

Mr. Charles Weik, Jr., of Bristol, Pa., is the patentee of an improved car coupling. The drawhead is provided with a sliding block upon which the coupling pin rests before the coupling is effected. When the cars are brought together the sliding block is depressed by the action of the connecting link, and the pin drops into the link, when the cars become automatically coupled.

An improved steam brake for locomotives has been patented by Mr. W. B. Wallace, of Belleville, Ill. The mechanism by means of which power is applied to the brakes consists of a steam cylinder open at one end and closed at the other, and provided with a piston to which is attached one end of the chain which actuates the brake. Wherefore when steam is admitted to the cylinder through the steam ports at its closed end, the piston will be projected and the brake set.

Mr. W. P. Senour, of Pimento, Ind., is the patentee of an improved car door and fastening to be used on common freight cars in which grain is to be carried in bulk. In this improvement an inner car door is provided which effectually prevents the loss of the grain in case the outer one becomes loose or gets jarred open. A fastening is applied to it which is quite ingenious, and is so constructed that it cannot be worked loose by the jarring during transportation.

Mr. Wm. J. Carey, of Millvale, Pa., has recently patented a supplementary fastening for car doors to render them more secure against the jarring open of the door while the car is in transit. The invention, or provides a hinged brace which is made to prop the door fast and relieve the lock and hasp ordinarily used, while it does not take the place of the ordinary lock and hasp fastening, but acts as auxiliary thereto, rendering increased security to freight car doors.

One of the most simple car coupling devices that has recently been patented is that of Mr. A. Wells Case, of South Manchester, Conn. The invention consists in coupling heads having their sides beveled to adapt to overlap each other, and in unequal armed U-shaped coupling rods having curved bars attached to the ends of their long arms. The said rods couple the cars by the coupling head of an adjacent car when the cars are run together.

An improved governor for steam engines has been patented by Mr. William Knowles, of Bolton, County of Lancaster, England. Instead of employing the ordinary ball governor for controlling the action of the throttle valves and cut-offs of the engine, Mr. Knowles has interposed between the main governor and the valve a regulating governor which operates automatically, and serves to accelerate the action of the governor on the cut-off, and reduce to a minimum the variation in the speed of the engine.

A novel car truck has been patented by Mr. Austin A. Brooks, of Eau Claire, Wis. The object of the invention is to prevent serious accidents when car or locomotive trucks run off the track, by providing bevel guard wheels which are secured to the same axle with the tread wheels for retaining the latter in line with the rails in case the tread wheels jump the track. An axle bearing is also provided for preventing the axle from dropping in case of breakage. The liability of cars being overturned by derailment, or smashed up in case of the breakage of an axle, is prevented.

In sinking driven wells where the water-bearing stratum is more than twenty feet below the surface, it is customary to excavate the earth down to that distance, and then to drive the pipe from the bottom of this excavation. Mr. Jehyleman Shaw, of Bridgeport, Conn., has obtained a patent for an improvement upon this method which avoids the necessity of excavating. In some cases a large pipe is driven the whole distance to the water bearing stratum, while in others both a large and small pipe suitably coupled together are employed, as well as a pump valve or plunger that is adapted to work both upon the suction and lift principles.

Mr. Jacob Ruhle, of Pittsburg, Pa., has recently patented some new improvements in draught and drawhead attachments for railway cars, by which much timber is saved in the construction of the draught, a stronger draught attachment is obtained, labor is economized in making the attachment, and the whole draught connection is cheaper and more durable. The inventor also claims that much advantage is obtained and expense saved by dispensing with the follower plates for the springs, and likewise a large number of bolts. Cars may be coupled while standing without risk of injury to life or limb, and the same coupling pin, if broken, may be utilized by reversing it.

A balanced rotary valve is the subject of a patent granted to Mr. Abiel E. Wilson, of Worcester, Mass. The invention consists in a double valve carried by a single stem and formed with ports combined with a body or case for use with regulators for either steam, water, or air, and is applicable for any situation where a frictionless valve is necessary. The two valves are balanced by the pressure of water or other fluid, and consequently there is little or no friction even under heavy pressure. The valves may be rocked by slight variations in pressure in the regulator. The valve case is to be connected in a water supply pipe for regulating the discharge and pressure, and having the stem connected to a pressure diaphragm in any suitable manner.

A simple and seemingly practicable automatic car coupling for either passenger or freight cars has been patented by Mr. Charles H. Schaaff, of Alexandria, Va. The drawhead is provided with a sliding hook over which the connecting link passes in coupling the cars, dispensing thereby with the ordinary coupling pin. A pivoted lever is placed at the top and end of the car, and connects with the sliding hook in the drawhead, whereby when the lever is elevated the hook will be projected from the drawhead, and will thereupon assume a pendent position and the cars will be uncoupled. Although the uncoupling cannot be effected by any jar the car can receive, nevertheless the mechanism is so complete that it may be readily accomplished by one hand, by simply raising the lever.

MECHANICAL INVENTIONS.

A stop motion mechanism for knitting machines is the subject of a patent granted to Mr. William Diebel, of Philadelphia, Pa., the object of which is to stop knitting machines automatically should a hole occur in the fabric while the machine is in operation.

Mr. Lewis E. Williams, of Peekskill, N. Y., is the patentee of an improved burglar alarm and door bell, in which a gong is attached to the lock spindle inside of the house, so that the turning of the knob to open the doors at the same time operates the hammer and sounds the alarm.

An ingenious device for maintaining power for clock springs has been patented by Mr. Francis T. Marchand, of Annapolis, Md. This invention consists in an improved gearing for the springs of clockwork and all spring actuated mechanism, and is designed to prevent the retardation of the mechanism while being wound, and insure uniformity in the action of the spring, whether fully or partially wound.

Mr. John Strachan, of New York city, has obtained a patent for an improved method of bushing the flue openings of steam boiler heads, which consists in an unflared ring of soft metal, and driving this ring into the flue opening of the boiler head, and finally expanding the ring in the opening, whereby the inner walls of the ring will always be in the form of a true circle, insuring always a perfect fit with the ends of the boiler flues.

Mr. Joseph Marion, of Brooklyn, N. Y., has patented an improvement in oil stoves for family use consisting of an open bottom or tray upon which is placed asbestos fiber or similar material, to which the oil is supplied for burning. The supply of oil to the asbestos is regulated by the weight of the oil on the tray. A valve and counter balanced weight regulate and effectually seal the pipe and prevent any flow of gas to the tray.

A machine for starting and sizing hats has been patented by Mr. William Simmonds, of Yonkers, N. Y., consisting of a machine provided with three rollers, which are driven by gear wheels. The movable roller is held back by springs and drawn forward by cords and a treadle connected with the bearings. To the vat beneath the frame is attached a table provided with an edge flange to receive the hat rolls from the rollers, and prevent them from falling into the vat.

A superior automatic safety brake for elevators has been patented by Mr. Wright J. Seaton, of Wyandotte, Kas. This brake is arranged to act automatically should any accident cause the carriage to fall, and provision is likewise made whereby in case the brake should fail to act automatically, it may be set by a person in the carriage. The brake may also be used for regulating the descent of the carriage independently of the machinery for operating the carriage.

A machine for trimming lumber has been patented by Mr. W. B. Swartwout, of Three Rivers, Mich. This invention is an improvement upon a machine patented November 29, 1881, by same inventor, which was designed for cutting lumber or boards into standard lengths, certain of the saws being thrown automatically out of action according to the length of the lumber. The object, however, of the present improvement is to provide for throwing the automatic mechanism into or out of action by hand or foot.

An improved rotary filing machine, the object of which is to make a uniformly smooth surface on metal articles especially applicable for making rules has been patented by Mr. De Loss H. Stephens, of River-ton, Conn. The slide upon which the rule is placed, and the frame which carries the slide, are located at the outer edge of the wheel, and the joint to be filed is carried against the wheel, where the cut will be made in lines nearly parallel with the sides of the rule. The slide is actuated by a foot treadle.

An improved apparatus for the disintegration of bagasse or other vegetable substances has recently been patented by Mr. Theophile Harang, of New Orleans, La. The object of the invention is to so treat the fibers of cane leaves, sorghum, or other plants as to render them useful for any of the purposes to which other non-saccharine fibrous materials are used. After the crushing and compressing operations to which the fibrous materials are subjected, lime water, caustic soda in solution, and steam are brought into use to complete the operation.

A magnetic separator, intended for separating iron sand from common sand, the object being to obtain as large a percentage as possible of the ore free from other sands, has been patented by Mr. Joseph La B. Viger, of Montreal, Canada. The invention consists in an endless traveling apron combined with a series of magnets placed at an inclination, so that as the sand is fed to the side of the apron the magnetic particles will be retained thereon and carried forward to the discharge end, while the common sand will fall through into a waste receiver below.

An improvement in an attachment termed a "beamer," used in connection with weaving, has been patented by Mr. Edward Cadigou, of Adams, Mass. A comb of metal or wood, with an equal number of teeth to the vertical rows of threads in the beamer, and operating in connection therewith, is the nature of this improvement. By this arrangement the strips are located close to the side of the copper, so that the copper and the strips can be threaded at once, and thus save the second operation of threading the harness, as in the common arrangement.

Messrs. Anton Prier, Charles Doherty, and Pierce E. Everett, of Kansas City, Mo., are the patentees of a self-closing faucet which consists of a stem passing through the apertured seat of an elastic cushion, and supporting the upper end of the valve stem, with a lever resting upon the end of the valve stem, so that when the lever is moved so as to force the valve downward, the water will be allowed to pass from the pipe and be discharged, and when the lever is released, the expansive action of the spring will cause the lifting of the valve and its stem, and thus automatically stop the flow of water.

An improved surgeon's operating chair, which is so constructed that the patient may be brought into any desired position, has been patented by Mr. F.

Adon Krill, of Burton, O. This chair is of simple construction, and the position of the various parts may be readily changed to suit the requirements of the case. In fact it is capable of about as many adjustments as a chair one of our contemporaries mentioned the other day, in which it said: "Aman has invented a chair that can be adjusted to 800 different positions. It is designed," the wag adds, "for a boy to sit in when he goes to church".

An improved mode of protecting super-heating pipes has been patented by Mr. Magnus Gross, of New York city. The invention consists in coating the pipes inside and outside with dry plumbago, covering the pipes singly with strips of hair felt coated upon the inner side with plumbago paste, covering the felt with strips of asbestos paper coated upon the inner side with plumbago paste and washed upon the outer side with a mixture of plumbago, pulverized fire clay, and water. The hair felt and asbestos paper is secured in place with wire. It is claimed that a pipe so prepared is practically indestructible, as it cannot be injured by fire, gases, or steam vapor.

An improved apparatus for regulating the feed water supply of steam boilers, whereby the level of the water may be constantly maintained at the same point, has been patented by Mr. George C. Pyle, of Dayton, O. This contrivance is so constructed that when the water in the regulator reaches the level required, the float will automatically open the valve of the escape pipe, and the water instead of flowing from the pump into the regulator, will pass off by the escape valve, but if the water falls below the proper level the escape valve will be closed, and the water will flow into the regulator again until the water has acquired the desired level.

A machine for dampening or wetting grain, to prevent pulverization during the grinding process has been patented by Mr. John Miller, of Milton, Oregon. This invention provides for the accurate regulating of the degree of wetting, and also of regulating the supply to the grinding mill, according to its capacity, so that there shall be no accumulation of the wetted grain, beyond what is necessary to moisten the hulls. To insure the even moistening of the grain, so that the hulls will come off so clean as not to require a regrinding, after the grain has passed direct from the dampening machine through the grinding mill a revolving table with raking attachment is provided for stirring the grain after the water has been applied.

The fact of a new ice creamer having been invented is in itself a refreshing announcement these hot days. But more than that, Messrs. William Rogers and Thomas A. Maher, of New Orleans, La., have patented what seems to be an excellent improvement in this useful article, by which the old and tiresome method of rotating the can is avoided. The ice freezing vessel in the new invention is provided with a central ice chamber open throughout its full diameter at both ends. Experience has satisfied the inventors that, from the large amount of freezing surface to which the cream is exposed, by simply charging the freezer with ice and salt and placing the cream therein, the latter will become frozen without any manipulation of the machine, thus avoiding much labor.

AGRICULTURAL INVENTIONS.

Mr. John T. McIntire, of Purdy, Tenn., is the patentee of an improved cultivator in which the plows are so set in the beam that they may be adjusted to the elevation and inclination desired, the handles being likewise so arranged as to be shifted, so as to enable the plowman to walk either in or out of the furrow.

Letters patent have been granted to Mr. Laurens S. Wheeler, of Independence, Kan., for an improved harrow which is made in two sections connected together side by side by chains, so that it may better accommodate itself to the uneven surface of the ground.

A binding attachment for harvesters has been patented by Mr. Edward Ebi, of Cedar Rapids, Iowa, which consists of an apparatus to be used in connection with self-raking harvesters to receive the gavels as they are discharged from the platform of the harvester and deliver them to the binder arm of binding machines.

A simple cultivator, adjustable according to the work to be done, has been patented by Mr. G. W. Hammond, of Earl Park, Ind. It is so constructed that the machine is drawn over every other row and cultivates the entire space between that row and the adjacent one upon each side, so that the machine will cultivate four rows at each round. The machine may also be adjusted to cultivate wide or narrow rows, and to hill the plants more or less as may be desired.

The patent of Mr. William S. Prosser, of Auburn, Cal., relates to an improved method of feeding straw as fuel to the furnaces of traction engines. The invention consists in a device to be applied to combined "headers" and "thrashers" that are moved over the field and which cut and thrash the grain at one operation. A straw feed box is provided with reciprocating flexible bars, which connect the straw direct from the thrasher into the furnace, where its consumption creates the power for driving the machines.

An improvement in steam plowing machines has recently been patented by Messrs. J. D. Malone and J. F. Hamel, of Pittsburg, Pa., which is intended to simplify the process of plowing on a large scale. The engine and boiler, which are mounted in the usual way on a truck frame, are provided with a crank shaft and pulley, so that when the machine is not in use for plowing, it may be used for a variety of other purposes. A very ingenious arrangement of what the patentees term "pushers" is employed for lifting or buoying up the machine and preventing the wheels from becoming embedded in the soft ground.

MISCELLANEOUS INVENTIONS.

Mr. W. H. Stuckey, of Covington, Ky., has patented a fire escape adapted to be secured to the wall of a building, and provided with an electric appliance by which a latch is raised and the fire escape released, and put in position for use.

Mr. T. H. Chubb, of Post Mills, Vt., is the patentee of an improved fishing rod tip, the end of which is funnel shaped and provided with an opening at the side for the line to run through. Provision is made for tightening the tip in case it should become loose.

Mr. Edward P. Waters, of Roseville, Ill., is the patentee of an improved hame tug which consists of two plates having their ends bent around the cross bar of the buckle, and riveted together for holding the hame clip or eye and the trace keepers, whereby the tug is made very strong, without increasing the cost over ordinary hame tugs.

A very simple and inexpensive bulletin board has been patented by Mr. Charles H. Tessa, of Leadville, Colo. This invention consists of frames covered with cloth which is coated over with shellac or varnish, for making the fabric translucent. These frames are hinged together at the top, making a box of the shape of an ordinary hen coop.

Mr. S. S. Ward, of Greenfield, Mass., is the patentee of an improved carving fork guard consisting in a bar or tongue which lies alongside the prongs when not in use, but is extended and held by a spring at right angles to the prongs when in use, thus protecting the hand of the carver in case the knife held in the other hand should slip.

Mr. Thomas Sturgin, of Fairview Township, Mercer County, Pa., has obtained a patent for an improved balance gate which is so constructed that it may be raised vertically or may be swung open in the ordinary way. This gate is adapted especially for use in cold regions where the ground is liable to be covered with snow during a good portion of the year.

Mr. George Maris, of New York city, has obtained a patent for an improved pestle handle. The pestle, which is made of Wedgwood or porcelain, etc., is provided with a hard rubber handle which is screwed and cemented on the pestle. The advantages of this handle are that it is light, is not affected by acids, and presents a hard and smooth surface which will endure as long as the pestle or mortar.

Mr. Peter E. Crist, of Brighton, Ill., has patented a new surgical apparatus for fractures, consisting of a device for supporting the shoulder in proper position in cases of fracture of the clavicle or collar bone, so as to hasten the reuniting of the broken bone. It consists in a forked crutch-like support for supporting the shoulder and a belt connection for the waist, so constructed as to permit an adjustment of the crutch.

Mr. John Curtin, of Marion, Vt., has secured a patent for an improved hub attaching device which relates to that class of skeins for vehicles which are made of iron to cover the wooden axle. The skein has a cylindrical stud and a half circular flange attached to it with a spiral ended conical nut, and two or more conical edges for holding the parts together in a substantial manner.

A practical time signal for signaling standard time simultaneously over a series of telephone circuits has been patented by Mr. John M. Oram, of Dallas, Texas. This time signaling instrument is provided with several sets of contacts and with two or more conductors of electricity upon the same actuating arbor, each of which is insulated from the other and connected with an independent generator.

Mr. Horace E. Henwood, of New York city, is the patentee of an improved thill coupling. A ball is formed upon the neck iron of the thill, and connects with the axle of the vehicle by concave shaped clamp irons. By this ball and socket arrangement the coupling allows the thills to be readily detached, but while in use they securely hold the thills to the axle, and do not rattle.

To prevent injury to the interior fittings of horse stables by the common practice among hostlers of rapping the curry comb upon the wood work while cleaning horses, Messrs. G. C. Bunce and Lewis W. Sammis, of Brooklyn, N. Y., have patented the attachment of elastic cushions to the sides of curry combs, which not only prevents injury to the stable, but facilitates the removal of the dust from the comb.

Mr. Henry Roth, of New York city, is the patentee of an improved reflector and signal frame for car lamps, the object of which is to provide reflectors and signal frames for car lamps constructed in such a manner as to be more effective in lighting the ends and platforms of railroad cars than heretofore. A series of reflecting glasses are so arranged within the frame that when the lamp is placed in position inside of the car, it illuminates both the interior and platform.

Mr. Daniel F. Beatty, the enterprising organ and pianoforte manufacturer of Washington, N. J., has, by assignment from Charles H. Davis, the inventor, obtained a new patent for swells for reed organs. The intention of the inventor by his improvement is to produce a full volume of sound and regulate the swell at the will of the operator. The swell is so combined with the action of the instrument and under such control of the organist that he may obtain the most perfect gradations and effects.

Mr. Theodore P. Case, of Powell, O., has obtained a patent for an improved vehicle tongue for sleds which is so constructed that it may be secured in a rigid position, or adapted to oscillate to either side, the object being to facilitate the loosening of the runners in case they have become frozen in the ground. This may be accomplished by securing the tongue rigidly to the sled, when a lateral pressure may be applied to the runners for their dislodgment. When this has been accomplished the tongue is rendered flexible, so that the sled may be controlled in going down hill.

Mr. Tobias Hamilton, of Centerfield, O., is the patentee of an improved life boat which consists in an approximately spherical shell segmentally cut away at its two sides, walled in at the chord of each segment by a vertical plane, and each of the segmental spaces floored over, forming a tight hull. The boat is provided with propelling wheels journaled in the vertical walls. The inventor claims that a boat of this style twenty feet in diameter is capable of holding one hundred and twenty-five persons with enough water and provisions for several days, and may be propelled by four men at the rate of six miles an hour.