

ENGINEERING INVENTIONS.

A snow plow provided with means for melting snow, and a tank for receiving the water resulting therefrom, has been patented by Mr. John Flindall, of Chicago, Ill.

An improved car coupling has been patented by Mr. Edmund T. Leonard, of Baltimore, Md. This car coupling is automatic, composed of very few parts, is exceedingly simple in its construction and cheap, and can be applied to passenger or freight or coupled to any car now in use.

Mr. Robert Anderson, of West New Annan, Nova Scotia, has patented an improved car coupling. To a U-shaped hanger suspended from the drawhead is pivoted a hook that is provided with a pivoted latch, against which a spring rests for holding it in position. A ring is hung loosely in the outer end of the hook, and is passed into a similar hook on the opposite drawhead.

Mr. Abraham O. Frick, of Waynesborough, Pa., has patented improvements in traction engines, by which such flexible and elastic connections are provided between the running or traction wheels and the body of the engine and its driving gear as will adapt the engine to pass over rough walls, without producing undue strain upon the working parts.

Messrs. John H. Filcer and James Gilduff, of Mattoon, Ill., have patented an improved spark arrester, applied in connection with the smoke stack of a locomotive. It consists in an arrangement of tubes and deflectors surrounding the smoke stack and calculated to pulverize and extinguish the cinders before they are allowed to escape.

Mr. Frank Sweetland, of Edwardsburg, Mich., has patented an improved device for holding car coupling links to guide them into the drawheads in such a manner that the hands of the operator will not be in danger of being crushed. The invention consists in a plate provided with an aperture and an ordinary coupling link, with its side bars brought together at about the center and held in the aperture of the plate.

An improved snow plow has been patented by Mr. Eric M. Hesselbom, of Rushford, Minn. Knives for separating the snow into two streams are set at the front of the plow. The plates on which the bottom cutters are formed rise by an easy curve and form chutes for conveying the snow upward and outward, and discharging it at the sides of the track. The chutes are jointed and provided with adjusting braces to adapt them to narrow and wide places.

An improved car coupling has been patented by Mr. Charles J. Edwards, of Fairville, Mo. The invention consists of the combination with a drawhead having vertical loops or staples, and properly chambered and slotted, of a T-shaped coupling pin pivoted in the said staples or loops upon the drawhead in such manner that it will be capable of vertical movement, and automatically drop through the coupling link as the link enters the drawhead, and thus couple the cars without the necessity of incurring the danger of going between the cars.

A reversing gear for engines that furnishes a simple substitute for the usual link motion has been patented by Mr. Thomas Moore, of O'Fallon, Ill. Two arms fixed on the crank shaft support the ends of a spiral shaft by which the eccentric is carried, and on one end of which it is fixed and held eccentric to the crank shaft. On the crank shaft is a circular sliding disk that has a threaded aperture for the spiral shaft. The disk is moved to slide on the crank shaft by a lever, and turns the spiral shaft on its own axis, throwing the eccentric as desired.

Messrs. Josiah Austin and Rossco C. Chamberlain, of East Liberty, O., have patented improvements in car couplings. A screw head, consisting of a rectangular plate, twisted spirally, has its shaft connected with the drawhead of a car, and is adapted to be screwed into the contracted mouth of the opposite drawhead. The revolution of the shaft by the action of the screw is effected against the action of a spring, which, as soon as the head has passed into the opposite drawhead, brings it back to its normal condition, coupling the car. Devices are provided for turning the shaft to uncouple the cars.

Mr. Peter N. Aggergaard, of Danville, D. T., has patented an improved apparatus for drilling wells. The drill is hollow in the upper end and has orifices in its side, and is attached to the lower end of a hollow drill rod. In an opening on one side of the drill is pivoted an auxiliary cutting bit that reams out the drill hole large enough to allow the tubing to settle of its own weight. To the top of the drill rod is attached a flexible hose connected with a force pump that forces water through the drill and rod to wash out the drill cuttings through the tubing. Suitable devices are provided for working the drill.

Improvements in speed regulators for machinery have been patented by Mr. Herbert Cruttenden, of Smeltzer, Pa. To the outer end of the governing lever that controls the centrifugal governor, is attached a pivoted lever having a weight at its outer end. Above this lever is the belt tightener of the main belt, and on the under side of the arm of the tightener is a projection that, when the tightener falls, presses down the pivoted lever and operates the steam valve to let on more steam. The tightener is so arranged as to fall with increased strain of work on the belt and operates to let on the steam as soon as the work is increased.

An improved device for coupling cars has been patented by Mr. Jacob King, of Geneva, Ind. The drawhead of the car is recessed in its top end, and in this recess is pivoted an L-shaped coupling hoop, in such a manner that its short arm projects downward, forming the coupling pin. When the cars are run together, the link strikes the pin, swinging it back until the link passes it, when it drops forward and the car is coupled. The device is locked by means of a fork attached to a transverse shaft in the drawhead. The hook is raised to uncouple by a lever projecting from the side of the chain.

MECHANICAL INVENTIONS.

An improvement in presses for bending or folding blanks of sheet metal into form has been pa-

tented by Mr. John Wagner, of Boston, Mass. The plunger is made of any desired form, and is operated in the usual manner. The die is composed of a base plate, and side and end sections. The base plate is formed with an under cut flange, and the sections are formed at their outer edges with lips that fit under the flange, forming a strong hinge joint, the sections being adapted to a rocking motion to and from the plunger, and when the plunger is pressed down the sections are automatically pressed to it.

An improvement in windmills has been patented by Mr. Edward Stickler, of Neosho Falls, Kan. This invention consists in springs connected with the vanes of a windmill for holding the vanes in position for the wind to act upon them, the arrangement being such that the area of the vanes subject to the wind-pressure will vary according as the wind varies in force, so that power and motion of the wheel will be uniform, although the force of the wind may vary, the power being more or less, according as the power of the spring is greater or less.

Messrs. Andrew Wickey and Albert A. Gehrt, of Quincy, Ill., have patented a hay and cotton press, which is an improvement in hay and cotton presses patented by the same inventors, October 4, 1881. In the former application was described a horizontal press having a follower adapted to be operated by means of a sweep, and an intermediate gearing consisting of a toothed segment and double rack bar, and provided with a sliding head which was adapted to be revolved about a pivot for ejecting the completed bale. The present invention relates to improvements which render the press more complete.

An improved wind engine has been patented by Mr. James E. Jones, of Abilene, Kan. Windmills which are constructed with vertically-rotating wheels have heretofore been provided with broad heavy towers, which are objectionable on account of the great surface they present to the wind in a storm. This inventor constructs the tower of two flat pieces of lumber secured together at the ends by bands and held apart from the center to the ends by intervening blocks. The tower is provided with pivots at the ends, and is to be supported in a vertical position by guys in such manner that the tower may be rotated upon its pivots.

AGRICULTURAL INVENTIONS.

An improved cotton seed planter, constructed so that it will plant the seed uniformly and in any desired quantity, has been patented by Mr. William C. Hudson, of Yellville, Ark.

Mr. Hugh L. T. Overbey, of Subigna, Ga., has patented an improved fruit gatherer, which consists of an inverted cup-shaped picker device located over the top of the bosc chute, on a rod, by which it may be pulled down from over the fruit to press it into the top of the hose and separate it from the branches.

Mr. Edwin S. Frost, of Watkins, N. Y., has patented a grain binding attachment for reapers which may be attached to self-raking reapers to take the grain from behind the knives, and may be put on or off without interfering with the working of the reaper. It may also be used with an endless apron running behind the knives to carry the grain to the binder. The machine has many points of novelty which cannot be clearly described without engravings.

Mr. Emanuel Fleck, of La Grange, Ind., has patented an improved hay rack having the main stay pieces arranged at the inner sides of the bed pieces, to which they are held by loops formed of angle irons or straps attached to the bed pieces and to the cross pieces uniting the bed pieces, so that the sections of the hay rack can slide on the main stay rods, and the racks can thus be shortened or lengthened.

An improved sickle bar for mowing machines, has been patented by Mr. John Laib, of King's Station, Ind. The invention consists of the combination of the cutter-bar provided with the undercut lugs, and cutting blades provided with rectangular openings having lips to fit into the openings of the cutter-bar, and an eye-block fitting on the end of the cutter-bar, and provided with means for adjusting and securing it upon the cutter-bar, thereby fastening the whole series of knives.

A novel machine for assorting cranberries has been patented by Mr. Laurin Leland, of Holliston, Mass. This machine is provided with an endless carrier-belt under the hopper, and with an inclined carrier-belt which carries the flat and imperfect berries upward, the sound berries rolling down this inclined belt upon an inclined platform, at the lower end of which a step or jumping board is provided, upon which the berries drop. The soft berries drop into a receptacle below the jumping-board, and the hard berries jump over a vertical strip into another receptacle.

Mr. Andrew R. Peterson and Frank Wiccox, of Hancock, Minn., have patented an improved machine for shocking bound grain as it is delivered from the harvester. The grain shocker is made with a receiver-frame attached to a pivoted inclined bar kept in place by a pivoted crank arm, and operated from a cam wheel by a slide and connecting rod. The receiver frame is provided with a hinged curved plate operated by a pin and a bent guide rod, and held in place, when closed, by a spring-pressed latch, which is tripped at the proper time by a bent rod. The receiver frame is also provided with a curved hinged arm for holding the bundles in place in the receiver, and is connected with the frame by a connecting rod and pivoted spring pressed crank, so that the hinged arm will be operated by the movements of the receiver frame.

MISCELLANEOUS INVENTIONS.

Mr. Thomas Penn, of New York City, has patented an improved fire escape of the class in which a flexible chute or conveyer is used for passing persons from the window of a building to the street, the chute being of a close or tubular construction, so that the person passing down through it is under cover, while the flexibility of the device provides for its being bent or inclined to ease the descent of the person through it.

A device to improve the draught in flues of stoves or furnaces has been patented by Mr. Donald M. Bliss, of Westmoreland Point, Can. In a section of

pipe is placed a fan, suitably supported in a horizontal position by a frame, and adapted to be turned in a vertical position in the pipe when not in use. The fan is driven by a shaft that projects through the pipe into a case, and is connected with clockwork of a suitable character for rotating the shaft contained in the case.

A water closet that will retain the water in the bowl to the desired height without a plug valve or pan has been patented by Mr. Thomas H. Walker, of Kansas City, Mo. A side extension is connected with the bowl by an elbow, on the inner end of which a tilting valve is mounted, that is so connected as to be tilted by raising the pull on the seat, permitting the water to flow through the elbow into the bowl and the waste pipe. When the valve is closed the water in the bowl cannot flow out.

Mr. Thomas J. Brough, of Baltimore, Md., has patented an improved vapor gas apparatus. Hydrocarbon oil passes from a reservoir to the retort of a vaporizer, and after being vaporized and mixed with air, supplied by a pump or bellows, the vapor passes to a gasometer. Suitable devices are provided for regulating the flow of oil to the vaporizer, and for preventing any explosions at the gasometer. This device is especially adapted to supplying gas for steamboats.

A device to attract attention to advertisements in show-windows has been patented by Mr. Orlando S. Trussell, of Rockland, Me. A series of frames carrying advertising cards are moved up and down by bent levers moved by cams operated by clockwork. From a wire agitated by prongs on the fan shaft of the clock are suspended dancing figures. The advertising cards are successively displayed and withdrawn, leaving the dancing figures exposed during the periods of withdrawal.

A button made of two separable parts, and provided with simple and efficient means for attaching the parts, has been patented by Mr. Gabe Felsenthal, of Brownsville, Tenn. The bottom of the button is formed with a sleeve having at its upper end a grooved head in which spring jaws engage that are pivoted on the under side of the top of the button, and on opposite sides of a stud or post that project from the top in the sleeve of the lower part. The ends of the levers extend to the outside of the button, to be operated for detaching the parts.

A portfolio for holding and carrying pictures, and that also serves as an easel for displaying them, has been patented by Mr. Henry T. Thomas, of New Rochelle, N. Y. Three stiff boards are connected to each other by flexible hinges. Two of the boards form a portfolio for holding the pictures, and the third one is hinged to the back of one of the others in such a manner that it serves as a support to hold it in a nearly upright position. When the opposite board is dropped down the device serves as an easel.

An apparatus for reclaiming soda from the spent liquor of pulp mill digesters has been patented by Mr. William L. Longley, of Westbrook, Me. The spent liquor is drawn into trays to a suitable depth and evaporated to a proper consistency, when it is run into a rotating cylinder having axial openings and located immediately behind the fire box of a furnace. The great heat of the furnace passing through the cylinder causes the liquor to be quickly evaporated, and all the inflammable substances are burned out.

A device for removing the hair spring collet from the balance staff of a watch has been patented by Mr. Frank M. Willo, of Springfield, Ill. The device consists of a pair of tweezers having jaws at the outer ends of their prongs, one of which is slotted and made extensible against a spring, and rides over the opposite jaw when the tweezers are closed beneath the collet, and forces the collet off from the balance staff without throwing the hair spring out of truth.

Mr. William W. Bard, of Elizabethtown, Ky., has patented improvements in hay and cotton presses, which permits them to be constructed in a simple and cheap form, and without the cost of expensive fittings. The side pieces and posts of the press are secured together by keys or pins that may be readily detached, and in the ends of the press are followers that are moved back and forth by screws that work in the end pieces of the box, the end pieces being hinged to the sides of the box and retained by cross bars and hooks.

Mr. Joseph B. Warner, of Dighton, Mass., has patented an improved teakettle, in which the bail can be locked in its raised or lowered position. The front bail-ear of the teakettle has an aperture and a downward projecting slot, and the rear ear has an aperture and upward projecting slot. The hooked ends of the bail are squared to correspond with the slots in the ears. When the bail is up the square part passes into the slot of the front ear, and when it is down it is in the slot of the rear ear, locking the bail in either position.

An apparatus for shaping and curling the brims of felt hats has been patented by Mr. Thomas Rowbotham, of Hazel Grove, England. A press is fitted with side-forming plates or blocks, which advance toward the edge, and act in conjunction with an expanding former to impart the required curl to the brim. The former also acts vertically to give to the brim its required set or curvature. While the pressure is on the hat a knife is passed over the brim to remove the superfluous felt.

Messrs. Newell N. and Frank J. Fairchild, of Trenton, Mich., have patented a device for cutting the upper edge of cheese boxes flush with the top of the cheese, so that the cover can rest flat on the cheese. A board has one edge rounded about the same as the sides of the cheese box, and on the rounded edge is secured a device provided with knives that are adapted to cut through the cheese box from each side, the board serving to gauge the knives and carry them around the box.

An ironing board that can be folded compactly and is convenient for use has been patented by Messrs. August O. Tannenberg and John R. Barnum, of Newton, Kan. At the corresponding ends of two boards are longitudinal tongues and recesses, the tongues on one board fitting into the recesses of the other, and the boards are hinged to each other at ends of the recesses. The boards are grooved transversely near the outer end of their recessed ends, and when the

boards are separated the edge of a table is passed between the recessed ends, the grooves grasping and holding the edge, the upper board being horizontal and the other inclined as a support. The board is suitably braced, and side pieces are provided for ironing sleeves, etc.

An improved apparatus for inking blocks for hand-block printing has been patented by Mr. James Hutchinson, of Newark, N. J. In a rectangular box are as many separate color boxes as there are separate patterns on the printing block. In each of these boxes rollers dip that are mounted on shafts provided at their ends with friction rollers, on which a frame rests for carrying the printing block. By moving the block over the rollers the distance of one pattern field, each pattern will be provided with its colors.

A box for putting up matches for the trade that can be easily converted into a match-safe has been patented by Mr. Charles W. Chamberlain, of Lanark, Ill. The back of the blank for the box is extended above the box in any desired plain or ornamental shape. The cover of the box is pasted to the back and folded over the ends of the box and secured at the front by the revenue stamps. The matches are placed upright in the box and held by partitions so that they cannot fall. The top of the back has an aperture for suspending the box as a match-safe.

A spinning top, fitted with an explosive cap in such manner that when the top is thrown for spinning the cap shall explode, has been patented by Mr. John O. Beneke, of New Orleans, La. The body of the top is of the usual construction, and a metal pin extending through its center and out at the lower end forms the peg. A head recessed to receive a percussion disk is screwed in the top of the body, and the metal pin held against the disk by means of spiral spring.

An improved meal bolt has been patented by Mr. Robert Wilson, of Greennp, Ky. The case of the bolt is an upright hollow cylinder, the cover of the cylinder having an opening at its center for feeding the meal into the bolt. A disk of bolting material is mounted in the upper part of the cylinder on a horizontal wheel frame attached to a vertical shaft, the bolting disk being oscillated for sifting by a crank and connecting rod, the wheel of the disk striking against buffer springs to prevent the meal from clogging on the bolt.

Mr. George W. Warren, of Bristol, Ind., has patented an improved side spring for vehicles. The spring is formed of two main leaves, placed together like an elliptical spring. One of the leaves is longer than the other, and is bent back over its ends, and the two are held together by a bolt and nut. On the inner sides of these leaves are placed lap leaves. The spring is secured on the under side of the side bar, and the body is suspended from the spring, the weight of the load opening the spring, instead of closing it is the common elliptical spring.

An improvement in the manner of attaching neck yokes to poles by which all rattling is prevented and the yoke is held from twisting on the pole has been patented by Mr. August Kanzler, of Princeton, Ky. The outer end of the pole has a ferrule of such form that a tug of similar shape fitted on it cannot turn on the tip. On the upper side of the tug is an eye through which a staple passes, the shanks of which pass through the neck yoke, and in the staple between the eye and the yoke is placed a block of rubber against which the eye is drawn to prevent rattling.

A cheap and efficient envelope for bottles to protect them from breaking has been patented by Mr. Henry Bell, of Baltimore, Md. Strips of flag as long as the bottle to be covered, are laid side by side, and are sewed to a cross strip near their lower ends, a part of the strips being cut longer than the others to form a bottom. The upper ends of the strips are tied, and the cap thus formed is placed over the bottle from the top, and the long strips are bent across the bottom and cover and protect it. The strips are supported at their center by a band of the flag secured around them.

A railroad rail especially adapted for use in street railroads has been patented by Mr. Jacob Elmer, of Biloxi, Miss. The rail is tubular, the upper part being in the form of a half circle, and the lower part wedge-shaped to fit into a V-shaped groove on the tie, the wedge-shaped part of the opening being divided into two parts by a slit extending the length of the rail. The rails are connected to each other by a sliding bolt that moves in the tubular opening in the rails, one of the rails being slotted to allow a pin by which the bolt is moved to project through the rail.

A new device for exploding torpedoes in oil wells has been patented by Mr. James S. Schoonover, of Titusville, Pa. The exploder consists of a center web having wings leading from it which fit the diameter of the well or casing, all made in one piece. The lower end is made pointed, and the exploder is used by letting it drop into the well, the shape of it being such that the water will not resist its descent, and it drops rapidly and delivers a heavy blow on the torpedo, the wings keeping the point always in the center of the well.

A spring bedstead that can be folded for storage and transportation has been patented by Mr. Edward J. Johnson, of Twinsburg, O. On the lower side rails of the bed are hinged legs that are braced by locking bars, by which they are locked in place and released to be folded. The upper side rails have near their ends longitudinal slots, and the upper ends of hinged end pieces that connect the upper and lower rails have pins that work in the slots, adapting the rails and end pieces to be folded down to compress the springs and hold the bedding in place.

A bucket for wooden pumps, that is adapted to be expanded for fitting the plunger to the pump tube, and for taking up the wear, has been patented by Messrs. Phillip H. and Tobias A. Sprague, of Cornell, Ill. The plunger consists of a metal bottom plate which carries the valve, having an upward circular projection, screw threaded to receive an adjustable flaring ring, to which the pump rod is attached. Between the flaring ring and an inwardly inclined flange on the bottom plate is placed a flexible ring, that is forced outward to fit the pump tube by screwing the adjustable ring and the bottom plate together.