ENGINEERING INVENTIONS.

A very ingenious car coupling is the subject of an invention recently patented by Mr. John C. Look, of Yuba City, Cal. The coupling is automatic in its operation, and is intended to prevent accidents which frequently occur to brakemen while coupling and uncoupling cars.

An improved cut-off mechanism for steam engines has been patented by Mr. James Thomas, of Catasauqua, Pa. This invention consists of a cylindrical valve combined with a slide valve, and operated by a governor which regulates the amount of steam passing through the slide valve to the engine. The means adopted for accomplishing the cut-off are very simple, and would appear to be effective.

An improved railroad switch, designed to prevent trains of cars from running off the track at misplaced switches, has been patented by Mr. William Spielman, of Oneonta, N. Y. The invention consists in connecting a lever attachment with the guard rails of a switch in such a manner that the wheels of the locomotive, in case the switch is misplaced, will actuate the lever mechanism so as to change the switch automatically, and enable the train to pass on without accident.

A novel hydropneumatic engine has been patented by Mr. Levi G. Cook, of Mapleville, R. I. This invention relates to a method of utilizing atmospheric air or gas under pressure, subject to percolation or passage up through a column of still water or quicksilver, to the driving of a series of submerged wheels, from which the power obtained may be transferred as required by any of the well known methods—gearing, belts, etc.

Letters patent have been granted to Mr. Baylus Cade, of Scott's Depot, W. Va., for an improved car coupling—an automatic car coupling, in which the pin is sustained by a tilting catch, which is removed from beneath the pin by the entrance of the link. The pin is made in the shape of a bifurcated bar sliding in vertical guides in the drawbar. This coupling is very simple in its construction, and appears to have less objectionable features than many patent car couplers and many more advantages.

A novel chair for railroad rails, designed to provide a rail chair that shall hold the rails firmly and solidly at the joints, and also allow the expansion and contraction of the rails, has been patented by Messrs. Charles Armstrong and George Abbott, of Galveston, Tex. The invention consists in the chair body and in straps of wrought iron which fit therein, for receiving the webs of the rail. One of the straps is fixed to the chair body, while the other is received in a recess in the chair, so that it may be inserted after the rail is set. A key passing through the two straps and chair body serves to keep the sliding strap in place.

An improved railroad signal of the following construction has been patented by Mr. Norman Allen, of Rockaway Beach, N. Y. The inventor proposes to pivot a number of signals upon posts at proper distances apart, and connecting these signals by a wire or rope, so that they may be set from one point for some distance to indicate danger. The signals are constructed with drums to which the actuating wire is attached, and likewise with reflectors and with projecting arms. When the rope or wire is drawn, the drums will be rotated on their pivots and the danger signals set, so that the reflectors will reflect the locomotive light by night, and the arms will be set at right angles to the track, by which means in foggy weather a torpedo placed on the extremity of the arm will be exploded by the passing locomotive.

MECHANICAL INVENTIONS.

An improved millstone driver has been patented by Mr. James F. Callahan, of Knoxville, Tenn. The object of the invention is to insure a steady and uniform rotation of the millstone and prevent any irregularities in the motor from affecting the movements of the millstone.

A new knob spindle fastening for mortise locks has been patented by Mr. Francis Lattimer, of Richmond, Nova Scotia. The special object of the invention is to facilitate the attachment of the knob to the spindle of mortise locks in a more secure manner than heretofore.

Messrs. E. L. Young and L. Dyer, of Millbridge, Me., have patented an axle lubricator which can be adapted to any kind of a vehicle. In using this device it is not necessary to remove the wheel in oiling, and it is arranged so as to retain the lubricant much longer than the common way.

Mr. W. P. Harmony, of Sidney, O., has recently patented a simple and convenient compositor's type case stand, so arranged as to enable its adjustment at any angle or height to suit the compositor, and when not in use can be so inclosed as to protect the type from dirt and dust.

A mechanism for converting reciprocating into rotary motion, designed especially for use in wind mills, has been patented by Mr. James D. Clarke, of Harvard, Ill. A swinging frame, carrying dogs or pawls, engages by the reciprocation of the frame with a recessed wheel, giving it a continuous rotary motion in a very simple manner.

Mr. J. A. Stephens, of Brockville, Ontario, Canada, has patented a novel and improved knife edging machine. It is intended for use in sharpening paper cutting and similar knives, requiring frequent, rapid, and very accurate edging. The machine is adjustable, so the angle of the blade can be altered at will, to accommodate itself to the grinding stone.

Mr. Conrad Muller, of Columbus, O., has patented a tool holder for lathes which seems to possess some advantages over the many lathe holders now in use. The adjusting screw and nuts, in their relation to the tool holding block, enable the tool to be accurately fed to the work. The nuts have a graduated scale collar, which insures the utmost accuracy in the adjustment.

A novel method of detaching life boats and buoys when lowered at sea has recently been patented by Messrs. Edward J. Hill and J. L. Clark, of Westminster, England. A float, preferably of cork, is lowered with the boat, and as soon as it reaches the water it automatically disengages the hooks, to which the line is attached which connects the life boat to the ship.

Mr. William A. Bradley, of Oshkosh, Wis., is the patentee of a new shingle sawing machine which embraces a number of changes and improvements over the old style of machine. A change in the driving gear, and in the bolt dogging and bolt setting apparatus, are the most important features of the improvement. The bolts in this machine are automatically shifted in a very simple manner, and reset for the successive cut.

A novel device for converting rotary into reciprocating motion, designed more especially for operating lift pumps by windmills, is the subject of a patent recently granted to Mr. C. M. Ford, of Bellevue, O. A novel arrangement of springs is attached to the vertical connecting rod, which counterbalances the action of the mill, and is intended to produce uniformity of its movement.

An improved derrick of simple and cheap construction has been patented by Mr. Patrick Kelly, of Poughkeepsie, N. Y. The derrick foot consists of a plate having upon its lower side a hollow pivot, and upon its upper side seats for the lower ends of the post and boom to rest in, whereby the post and boom will be securely held. The derrick post is secured to the foot by an eyebolt secured to the foot, and fastened to the post by a bolt.

An improved air separator and feeder for bolters, etc., has been patented by Mr. Robert Wilson, of Greenup, Ky. The invention consists in a tube through which the meal passes down and drops upon scattering wings by which it is scattered in the larger tube. The flour is carried upward and out through the outlet, by the current of air, and the meal drops into the bolter. The fan also draws all the hot air produced by the grinding stones from the bolter, so that the air in the same will be fresh and cool.

A very simple cotton press has been patented by Mr. William B. Ingram, of Lilesville, N. C. This press is worked by hand or other power. A pair of rock levers are located at the sides of the case to work the follower, the power being applied to them from a windlass by ropes working on segmental rims on the levers, maintaining uniformity of leverage, while the connection between the levers and the follower is such as to increase the leverage as the resistance increases.

A railroad switch lock has been patented by Messrs. Dan. P. Driscoll, of Pittsburg, Pa., and Joseph H. Dugan, of Dennison, O. In combination with a bolt is a rotary device which is rigidly mounted upon and actuated by a hollow spindle. An arm for locking the bolt is mounted upon a spindle arranged inside of the hollow spindle. The key is furnished with an outer and an inner part for engaging the spindles respectively and for imparting motion to the inner spindle an instant before the outer one is rotated, so as to disengage the locking arm before the bolt is withdrawn. In connection with this locking device, the ordinary switch lever may be employed.

A novel ore amalgamator has been patented by Mr. W. E. Harris, of New York city. The invention consists in the combination with a trough faced with amalgamated plates, and provided with inlet and outlet spouts and a slotted partition, of a longitudinal shaft revolving in the trough, and provided with amalgamated plates arranged at right angles to one another. A trough faced with amalgamated plates is provided with a shaft running the full length of the trough. To this shaft amalgamated stirring plates are attached as above, the same distance apart as the width of the plates. The revolving of the shaft stirs up and separates the contents.

An improved washing machine has been patented by Mr. August Scharnweber, of Davenport, Iowa. The invention consists in a tub of semi-cylindrical shape, provided with faucets, and of an upper and lower washboard or rubber. The clothes to be washed are placed between the lower and upper rubbers, and so connected that when the upper portion is oscillated by the handle in one direction, the other portion is oscillated in the opposite direction, and the clothes are thus thoroughly rubbed between the two rollers, and quickly cleaned without being worn or damaged. The upper rubber may be elevated to any height, according to the quantity of clothes to be washed, by means of a rod extending upward from it, and which operates telescopically within the handle which drives the rubbing devices.

An improved combined instrument for leveling, surveying, etc., has been patented by Mr. Rudolph Peter Gallis, of Hartford, Conn. The invention consists in devices for facilitating the determination of the direction, the setting, and erection of horizontal, vertical, and inclined lines of shafting, and of lines of shafting at right angles, or of geometrical lines in any of the above directions in general; also, for setting bases of machinery, parts of bridges, roofs, etc., in any of the above positions; also, for use in the work shop and other places as a common spirit level, as a right angled positive and negative square, as a straight edge, and as a face plate, and for similar purposes. This is an instrument designed especially for use in machine shops for determining in a more simple and accurate manner than heretofore the setting of bases of machinery, erection of lines of shafting, etc. It may be used also advantageously by bridge builders, and can be used as a right-angled positive and negative square; also as a spirit level, and for other purposes about machine shops and manufacturing establishments.

An improved cockle seed separator has been patented by Messrs. George Adams and Morgan M. Jenkins, of Sherburne, Minn. The invention consists of a machine furnished with an endless apron formed of a series of metal plates hinged one to the other, and furnished with numerous indentations. The grain is fed through a spout upon these plates between a brush having a rotary motion and the upper end of the frame, and which is thus spread out and rubbed during its passage by other brushes, having a motion contrary to the movement of the endless apron. This operation rubs and polishes the kernels of grain, and forces the cockle seed and other small seeds into the indentations of the plates, so that, while the grain falls from the lower end of the machine into a receiver, the cockle and other small seeds will be carried up by the plates, and will fall from the upper end of the machine. As the plates pass to the upper end of the machine, the rotary brush brushes back any kernels of grain that may be carried up by the plates, so that none of the grain will be carried up to the upper end of the machine, where the small seeds pass.

AGRICULTURAL INVENTIONS.

An improved method of irrigating agricultural and other lands has been patented by Mr. Moses A. Martindale, of Georgetown, Colo. A main pipe provided with valves at suitable intervals conducts the water from an elevated reservoir. Connected to the main pipe are smaller branch pipes, which distribute the water in small quantity over large surfaces. Upright pipes with sprinklers are also provided, so that lawns and gardens may be kept constantly showered where water is available. The principal object of this invention is, however, the irrigation of agricultural lands in regions where water is scarce, but can be obtained from adjacent mountains.

A wheel harrow of novel construction has been patented by Mr. C. F. Hornbeck, of Owego, N. Y. The machine has a rectangular frame with intermediate crossbars fitted for carrying the harrow teeth. The frame and its attachments may be swung up and down on pivots by means of arms which are attached to the frame, and operated by an adjusting lever. The teeth are constructed of flat bar iron or steel, which is left flat at the place where it is attached to the frame of the machine, but is twisted at its lower curved extremity, to form suitable teeth for the harrowing process. Teeth of this kind are very effective and may be made at small cost. Each of the teeth has a spring arranged to regulate its action in the ground.

A combined seed planter and cultivator of improved form has been patented by Mr. John J. Birdsong, of Medina, Tenn. A combined seed planter and cultivator is provided with plows. To the frame is attached a seed box, which is divided into two compartments by a slotted partition, and is provided with a discharge tube. To the sides of the seed box is journaled a seed dropping wheel, which is provided with inclined recesses to take seed from one compartment of the seed box and transfer it to the other compartment. A smoothing roller is connected with the frame by bars, which can be readily adjusted to regulate the tension of the driving belts and the depth to which the plows enter the ground.

MISCELLANEOUS INVENTIONS.

Mr. Alonzo H. Savage, of Ashtabula, O., has patented an improved button, to the back of which is affixed a wire shank provided with eyes, by which they are fastened to the garment.

An improved compass frame has been patented by Mr. R. A. Kipling, of Roselle, N. J., intended especially to be worn as a charm on a watch chain. By the construction of the compass frame, the needle pivot can be readily adjusted by unskilled hands.

A ditching spade of peculiar shape has been patented by Messrs. Elijah Kirkpatrick and Samuel Copron, of Gilbert's Mills, O. The spade is provided with two blades set at right angles to each other, or of a single blade bent in that form.

Mr. C. W. Hellenbrand, of Salem, Oregon, has patented a very simple improvement in the manufacture of candy, whereby he is enabled in a very simple and inexpensive manner to cut the molten candy into any fancy and ornamental forms desired.

Mr. George E. Stedman, of New York city, has patented a novel buckle, which is notable for its strength and simplicity of construction. It is intended principally for use in the interior of trunks and valises, where it is inconvenient to pass the straps through the frame of an ordinary buckle.

An improved paper box has been recently patented by Mr. W. H. H. Rogers, of Brooklyn, N. Y. The improvement relates to that description of paper boxes which is made by cutting a blank from paste board or any other suitable paper, so that when they are folded together, the flaps overlap the ends and sides of the box, giving it additional strength.

Mr. C. S. Barnard, of New York city, has recently patented a novelty in the way of a toy savings bank which is in the form of an elephant. The coin is placed on the end of the elephant's trunk, and by pressing a rod on his back or by raising the tail of the animal, the trunk is raised up and deposits the coin within the elephant, through a slot in its forehead.

Mr. Josiah P. Whitman, of Ithaca, Mich., has obtained a patent for an improved carriage top bow support. The invention consists in attaching to the back bow of carriage tops, at the points where they come upon lower joints of the frame, a protector or support at the middle, with a cushioned knob for supporting the top when lowered.

An ingenious blotter tablet has been patented by Mr. William Bancroft, of Wilmington, Del. The blotter tablet is made with guides at the upper corners of the tablet, and stop arms at the four corners of the blotter, to engage with the guides, and prevent the blotter from being separated from the tablet while allowing it to be readily slipped off and on.

Mrs. B. G. Borgesen, of Chicago, Ill., has recently patented a very neat and conveniently arranged work table for the use of ladies. It is fitted up with a number of trays and compartments for holding needles, embroideries, scissors, spools, and such other articles as ladies use in sewing, knitting, etc. The box makes a very compact and ornamental piece of furniture.

Mr. W. C. Seaton, of Quebec, Canada, has recently obtained a patent for a wick trimmer of simple construction. A spiral brush is revolved in a box into which the wick enters through a slot, and as the brush is revolved it removes the carbonized end of the wick in a very rapid manner without the hands of the operator coming in contact with either the lamp or the wick.

A cartridge implement has been patented by Mr. Edmund R. Darling, of Woonsocket, R. I. The instrument is adapted for capping, loading, and extracting cartridge shells, also for removing the caps from the shells; the whole thing being compact in form and adapted to be easily packed in the gun case or carried in the pocket, and will prove a very convenient tool for sportsmen.

An improved device for roughening grindstones is the subject of a patent recently granted to Mr. George Andrews, of Bellows Falls, Vt. The invention is especially intended for roughening the periphery of grindstones used in treating wood for making paper pulp. The implement is so set to the face of the grindstone as to peck it as the stone revolves, giving it a sharp, rough surface.

Mr. C. J. B. Gaume, of Brooklyn, N. Y., has received letters patent on an improvement in fishing tackle, which consists of a rod with a bell on the tip, which rings when a fish by a nibble causes the slightest tension of the line. There is also a spring attachment so contrived that when the fish takes a firm hold a lever is pulled, which relieves the spring to which the line is attached, thus automatically jerking the hook into the fish's mouth.

An improvement in the construction of jails, etc., designed to prevent the escape of prisoners, has been patented by Mr. Samuel M. McLean, of Modesto, Cal. It consists in lining the walls with a net work of pipes supplied by water under pressure, by which arrangement any attempt at cutting through the pipes to reach the wall would result in the flooding of the building, which would warn the guard of the attempt at escape of prisoners.

A flavoring extract for sirup and sugars, by which a maple sugar flavor is imparted, is the subject of a patent granted recently to Mr. Josiah Daily, of Madison, Ind. The inventor prepares a decoction from hickory bark or wood, which he mixes in small quantity with the saccharine matter. the decoction is strong, about three tablespoonfuls of it are required to a gallon of boiling sirup, to give it a fresh maple sirup flavor.

The ornamental piece of furniture called an ottoman has been improved, and a patent taken on the improvement, by Mr. William S. Wright, of Dover, N. J. The seat is mounted on a standard with ratchet, so that the height may be regulated to the will of the occupant. Underneath the seat, pockets are provided for holding sheet music, newspapers, etc. The construction of this ottoman is such as to render it adapted for a piano stool.

A very cheap, simple, and compact folding chair has been patented by Mr. George A. Leavitt, Jr., of New York city. The chair is made with a back having a hinged seat in front and a hinged prop to support the back, the seat and prop both folding up against opposite sides of the back when the chair is closed. By this construction, a very cheap chair is furnished, which is likewise portable, and occupies but little space when not in use.

An improvement in wooden horse collars for draught purposes is the subject of a patent granted to Mr. L. E. Woodard, of Owosso, Mich. The principal novelty of the invention lies in an arrangement for uniting the two sections of the collar, so that the coupling device is rendered interchangeable. The metallic couplings uniting the side pieces are provided with means for lengthening or shortening the strap for regulating the size of the collar.

Mr. G. W. Blake, of Port Townsend, Wash. Ter., has recently patented an improvement in buckles for belts and harness straps, which promises to be as useful as it is ingenious, being applied to straps without sewing or stitching, by the use of teeth in the socket of the buckle clamped by the jaws of a wedge. These buckles can be readily transferred from one strap to another, and their use saves much leather as well as expense in the construction of a harness.

A simple and inexpensive fire escape is the subject of a patent recently issued to Mr. John A. Edmonds, of Dover, Del. To the end of a wire or rope a hook is attached to be made fast to a window sill when required. Attached to the rope is a windlass, by which a person controls the speed of his descent from a building. The same appliance may be used equally well as an elevator for ascending to the upper story of buildings to rescue persons or property.

A dressmaker's measure for cutting dresses and articles of clothing has been patented by Mr. F. E. Buddington, of Stillwater, Minn. The invention consists in a measure for cutting dresses and other articles of clothing, constructed with cutters formed of bars, sheaths, and slides for drawing outlines of the back and front patterns, and a dart rule for drawing straight and curved lines. With this device the inventor claims that by taking the body measures carefully and adjusting the various parts of the measure accurately, a perfectly fitting dress will be produced.

A simple and cheap fire escape has been patented by Mr. Ray Howland, of Brooklyn, N. Y. A rope is connected with the window sill. With an eye formed in the shank of the friction hook is connected a rope or strap to be secured to the person escaping, and a cord to be passed around the hanging rope and through the shank eye of the hook for controlling the rapidity of descent. Upon the rope a friction hook of very simple construction is applied. Another rope is fastened to the eye of the hook, by which the person lowers himself, controlling the rapidity of his descent at will.

An improved gas light reflector has been patented by Mr. James S. Havens, of Ogdensburg, N. Y. The invention consists in arranging underneath the gas jet a cone made of polished metal, and having an open top and a convex glass bottom, by means of which the light is reflected downward in the room. Above the burner is arranged a large reflecting cone, which likewise reflects the light down into the room. This reflector being made of opal glass allows the light to pass through it and illuminate a stenciled band which is arranged around the rim of the reflector. This band, which supports the reflector, is suspended from a metal plate at the ceiling, and the lower reflector is hung upon chains which are suspended from the band mentioned.