

## ENGINEERING INVENTIONS.

A speed changing mechanism of improved device has been patented by Mr. B. B. Powell, of Potoskey, Mich. This invention has for its object the changing of the number of revolutions of a shaft within a given time, this shaft being driven by another shaft having a fixed number of revolutions within the same time. This machine is more particularly intended as a thread cutting and feed gear for lathes, but may also be employed for other purposes.

An improvement in sawing machines, which is designed to facilitate the controlling of the machine and economize power in driving it, has been patented by Mr. William E. Hill, of Kalamazoo, Mich. The machine is designed especially for sawing logs into bolts and blocks, and may be operated by any style of reciprocating engine, but the inventor has devised a new plan of engine, on which he is about to secure a patent, and which is specially adapted to the newly patented sawing machine.

A novel device for breaking up snow drifts to clear the track for the passage of a train has been patented by Mr. G. A. Gunther, of New Utrecht, N. Y. This is accomplished by successively exploding torpedoes on the front of the snow plow. The torpedoes are deposited on a receiver on the top of the locomotive boiler, from whence they are permitted to pass down a tube by gravity to an anvil located at the front of the plow, where they are exploded by the falling of a weight. The weight and the gate of the receiver are both operated by a chain which passes to the caboose.

Messrs. David Clark and T. G. Blatch, of Hazleton, Pa., have patented an improved mechanism by means of which the steam can be controlled by the engineer while the engine is in motion, and without shortening the stroke of the side valve, and thus without obstructing the free entrance and exit of the steam. A slide block is so connected with the cut-off valve by a vibrating link that it will be operated by the latter, and with the slide block are connected rock arms and connecting rods for adjusting the slide to regulate the movements of the cut-off valve.

Mr. Daniel Kunkel, Sr., of Oregon, Mo., obtained a patent in November, 1880, for a car coupling, and he has now patented additional improvements. The latter consists in a drawhead provided with an inclined way, up which the coupling hook slides to catch on a cross bar at the upper end of the same, and with a stirrup for raising the hook to uncouple the cars. A shaft extending to the top of the car is provided at its lower end with an arm upon which a stirrup is attached, so that by simply elevating the shaft the stirrup will be raised. A horizontal shaft with a similar arm for the same object extends to the side of the car for uncoupling from that point.

## MECHANICAL INVENTIONS.

Mr. A. C. Calderwood, of Johnstown, N. Y., has patented some improvements relating to the hand bored, thumb stick, and table employed for steam heating the thumbs and fingers of gloves while in process of manufacture, greatly facilitating the finishing process.

Mr. Henry Staib, of New York city, has patented a paper hanging machine and rack which is an improvement upon a patent granted to the same inventor in October, 1881. This improvement is designed to render the handling of the paper and the rolling of the paper between the successive printings entirely automatic.

An improved combination lock and latch for right and left hand doors has been patented by Mr. G. H. Van Winkle, of Hornellsville, N. Y. The latching mechanism is inclosed in tubular casings for insertion into the free edges of the doors, while the lock proper is a permutation lock, and is capable of almost infinite variation.

Mr. Pleasant R. Houpe, of Oak Forest, N. C., has recently patented an improved method of adjusting the head block or reel bar on to the carriage of a shingle sawing machine. The invention is designed to greatly simplify the mechanical construction of the machines, and at the same time increase the effective working.

A very simple but efficient washing machine has been patented by Mr. G. D. Ferris, of Mexico, Mo. The clothes are placed in a hollow cylinder which is revolved inside of the boiler in which it is suspended. The cylinder is provided with a series of holes and with perforated tubes at the four quarters thereof, by means of which the clothes will be agitated and thoroughly cleaned.

Mr. E. C. Merryman, of New Freedom, Pa., is the patentee of a bit brace, which is an improvement upon the bit brace patented by Mr. Merryman in October, 1878. The jaws of the bit have semi-pyramidal grooves in their faces, one of which is provided with a raised part near the center which is designed to bind the shank in close contact with the opposite groove.

A shoe soling machine of ingenious construction has recently been patented. The object of the invention is to provide a machine for fastening the sole to the shoe by means of nails. The machine moulds the sole, lays it, holds the nails, drives all the nails at once, guides the nail drivers straight, and beats out the shoe to a uniform edge and smooth bottom, all in one operation. Mr. John Westwood, of Lynn, Mass., is the patentee.

An improved roller dredge has been patented by Mr. Andrew J. Burr, of Olympia, Wash. Ter. This dredge is designed to be used under water in leveling and removing ridges and bars from river and harbor beds, by being towed to the ridge or bar to be removed and then dragged over it, by which means the earth or whatever constitutes the ridge or bar is loosened, so that the current of water will carry it away.

An improved combination of chair and bed has been patented by Mr. S. A. D. Clark, of St. Joseph, Mo. This chair is so constructed that if necessary the back of the chair may be depressed and the foot rest

elevated, whereby a very comfortable bed will be provided. Dentists' and barbers' chairs may be constructed in the same manner if desired. When used as a chair, the back may be declined and held at any desired angle.

An improved machine for compressing dry and plastic materials, has been patented by Mr. Charles Killgore, of Utica, N. Y., and assigned to Ida W. Killgore, of the same place. The machine is provided with dies and moulds, and the material to be compressed is fed into the moulds, when it is compressed and discharged into a receiver provided for the purpose. The material may be moulded into any form or shape desired.

Mr. Alexander D. Clarke, of New York city, is the patentee of an ore concentrator which consists of a screen upon which the sand containing the ore is conducted, a series of settling boxes into which the water passes after having passed through the screen, and a flume arranged below the screen for carrying off the water after it has passed through the settling boxes, by which device the particles of sand will be washed off and the ore concentrated.

A machine for washing bagasse and extracting the saccharine matter therefrom has been patented by Mr. A. S. Wheeler, of New Orleans, La. The process consists in passing the bagasse between compressing rolls, these being arranged within a hot watervat for saturating the bagasse and dissolving the saccharine matter exuding from the bagasse while passed through the rolls. An ebullition tank is likewise provided, as well as telescopic tubes for injecting liquid and steam upon the bagasse.

An improved machine for painting wire fences has been patented by Messrs. W. E. Brown and H. J. Durgin, of Irving, Kan. Two rotary brushes are mounted upon a frame in such position as to be constantly supplied with paint from a tubular reservoir located above them. The wire of the fence is inserted between these two brushes and the latter are then moved along the wire, while at the same time they are being revolved in their bearings by a crank provided for the purpose.

Some improvements in the method of operating velocipedes have been patented by Mr. Thomas A. Davies, of New York city. In the slotted rear ends of the treadles are pivoted gear wheels to engage with the endless chains, and which are held from turning, when the treadles are moving downward, by latches hinged to the treadles, and arranged to allow the gear wheels to turn freely when the treadles are moving upward. The treadles are raised automatically, after being forced down, by springs pressing against their lower sides.

An improved automatic guard for protecting the hatchway of elevators has been patented by Messrs. Joseph Byers, of Newtonville, and George Taylor, of Everett, Mass. This guard is pivoted to a post, and it is raised or lowered automatically by the movement of the platform when lowered. The free end of the rod rests in a receiving jaw or loop, one part of which is free and is actuated by a spring while the other part is fixed. Both parts are provided with elastic cushions which receive and prevent the guard from rebounding.

Mr. S. K. Todd, of Eugene, Ind., is the patentee of an improved machine for hulling and cleaning wheat and other grains, and removing the skin and brush from the same. A perforated cylinder is located inside of an outer closed cylinder, the former being provided with a shaft carrying arms with knives at their ends. These knives traverse every portion of the grain, cutting off the fuzz and cleaning the berry of its impurities. The refuse particles are drawn out of the cylinder by a current of air caused by a fan blower located without the inner cylinder, but within the outer one.

An improved sectional inking roller, to be used in printing presses where several different colors are printed at one impression, is the subject of a patent granted to Mr. W. F. Jones, of Baltimore, Md. Between the ink fountain and the main cylinder the rollers, which are composed of a series of disk-like sections, are placed on a shaft, a separate roller for each color, which colors are transferred to the main cylinder. The novelty of this invention relates to the construction of the shaft and to the manner of applying power to the rollers.

An improved method of dry pressing bricks has been patented by Messrs. H. B. Morrison and G. Willett, of Motley, Minn. The press consists of upper and lower press followers worked by eccentrics upon the same shaft so arranged that one of the eccentrics opens the mould properly for receiving the clay from an automatic feeder, then causes the followers to converge on the clay while it is soft, then to act more powerfully by differential speeds while both followers are moving in the same direction to complete the pressing, and then separate for delivering the pressed bricks from the mould by an automatic feeder and discharger.

An improved safety apparatus to be applied to elevator platforms has been patented by Mr. Volney W. Mason, of Providence, R. I. The improvement consists in vibrating safety catches provided with rolls on their further ends which travel in zigzag ways, by which the thrusts of the rolls from the elevation of the ways will fail to swing the catches far enough to engage the racks at the ordinary speed, but should the elevator become uncontrollable or the speed be materially increased, the thrusts of the rolls will be greater and the catches will engage with the rack and lock the platform fast.

A wind gauge for thrashing and cleaning machines has been recently invented, Mr. J. E. Curry, of Lawrence, Kas., being the patentee. A ball governor is attached to the fan blower of the thrashing machine, the object being to provide an automatic regulating apparatus, so that whenever the speed of the machine is increased too much by reason of irregularity in the feeding or other causes, the force of the blast will be regulated so as to prevent the grain from being wasted by being blown over the back of the elevator, and when the speed of the machine decreases, more wind will be admitted and the grain thus uniformly cleaned.

## AGRICULTURAL INVENTIONS.

Mr. William Rath, of Sutton, Nebr., has patented a combined thrashing machine and separator, the object of which is to facilitate the separation of the grain from the straw and from chaff and foul seeds as they come from the thrashing cylinder, which the inventor claims it will do in a very efficient and rapid manner.

Mr. Charles Lee, of Dadeville, Mo., has patented an improved seed planter. This invention provides a planter which the inventor claims is lighter of draught and more durable than those in use, and may be easily adjusted for seeds of different sizes. It plants rows of any desired width, and it may be easily arranged for planting with equal facility on wet or dry ground.

Mr. John H. Hicks, of Gadsden, Ala., has patented an improved cotton planter and cultivator having for its object, first, the feeding of the seed centrally from the hopper in a thin continuous stream from the furrow; secondly, to enable the teeth of the coverer or harrow to conform to the slope of the seed bed, and thus more effectually clean it; and further, to adapt the machine to be used either as a planter or cultivator.

An improved contrivance for drying sand for use on locomotives has been patented by Mr. J. G. McPherson, of Mattoon, Ill. This drier is formed with a central fire chamber having suitable pipes or flues leading from the top, and a surrounding wall forming a sand receiving chamber around the fire chamber, the drier being adapted to receive the sand at the top and to discharge it at the bottom of the drier when it is required.

An improved method of attaching plows to wagon gearing is the subject of a patent granted to Mr. W. H. Kremser, of Omaha, Nebr. Two upright bars are secured to the axle of the wagon gearing, and blocks are arranged to slide upon these bars having the bail hinged to them, which is connected with the plow beam by clamping plates. These sliding blocks are connected with bent levers, by means of which the plows may be adjusted and controlled at will.

An improvement in cotton seed planters has been patented by Mr. L. M. Alexander, of Cavins, S. C. A U-shaped foot for opening the furrow into which the seed is to be dropped is located in front of the wheel of the planter. A spout is connected with an opening in the bottom of the hopper for carrying the seeds to the furrow, so that they may not be blown away by the wind, while a pair of scrapers are located behind the spout to cover the seed as it lies in the furrow. The inside of the hopper is provided with a rake head which is oscillated by the action of the wheel to agitate the seed and prevent clogging.

Mr. A. L. Griffith, of Beallsville, O., has obtained a patent for improvements in a machine for scraping roads and for ditching and leveling ground. The form of the scraper is wedge-shaped, and the draught attachment is made in such a way with the scraper that both sides of the scraper may be made to incline alike to the line of draught, or else it may be caused to run along the furrow to throw up the earth to one side only. The point of the share is curved, so as to level the uneven places left in the bottom of the ditch by the plow, and at the same time to shear off strips of the bank and pass deeper into the earth.

A very ingenious machine for harvesting corn and sugar cane has been patented by Messrs. O. H. Judd and C. T. Rawalt, of Fairfield, Nebr. The stalks are guided between two rotary cutters by a frame suitably constructed for the purpose, and after being severed the stalk falls upon an endless apron, which is driven by the revolution of the wheels of the vehicle, and carried to the dropper, when they are deposited in rows on the ground. The machine presents many advantages not heretofore obtained in this class of harvesters.

## MISCELLANEOUS INVENTIONS.

Mr. Charles Gerber, of York, Pa., has patented a combined shirt collar and necktie which is so constructed that the collar may be reversed so as to be worn either side out, and the tie still conceal the ends of the collar band.

To obviate the use of handles upon coffins, Mr. M. L. Johnson, of Galena, Ill., has patented a basket or rack of any light material into which the coffin or casket is placed, enabling the latter to be more easily handled.

An improvement in the form of an incidence window has been patented by Mr. F. Bredehorst, of Bremen, Germany. This window is provided with lenses arranged horizontally in a frame with the deflecting faces upward, for the purpose of deflecting the light into the apartment.

A device for arresting fumes in the flues of chimneys in metallurgical works has been patented by Mr. Max Freudenberg, of Ems, Germany. The flue is provided with a series of parallel plates, whereby the superficial area of the walls of the flue is increased and more surface is exposed upon which the particles of metallic dust are deposited.

A bottle stopper useful for druggists and others has been patented by Mr. F. F. Jewett, of Oberlin, O. The stopper is provided with a shield which extends over the neck widthwise of the bottle to cover the entire mouth. A flange at the outer edge fits the outer rim of the neck, and effectually prevents all dust from collecting at the mouth of the bottle.

Mr. A. A. Trowbridge, of Danbury, Conn., has patented an optometer, which is an improvement upon a patent granted to the same inventor in August, 1882. This improvement is designed to provide a means for ascertaining the proper remedy for those defects of sight which can be remedied by convex or concave spherical lenses.

Mr. Robert Dugan, of New York city, has patented an improved umbrella fixture. In this improvement the ribs of the umbrella and the braces which support the ribs are provided at their ends with balls which fit into the socket on the stick of the umbrella, thus allowing greater freedom of movement at the joints than the old method.

Mr. John G. Keller, of Monticello, Ill., has patented a chimney protector which consists in a metal strip attached to the roof; around the base of the chimney, projecting above the roof between the strip and the chimney, a packing of rubber is introduced, which prevents water from running down the sides of the chimney into the building.

Mr. Andrew J. Harper, of Unionville Center, O., is the patentee of an improvement in wagon hounds for which he obtained a patent in 1882. This improvement consists in hounds formed of iron braces bolted to the axle and bolster, so as to avoid cutting the wood of the latter, and in the connection of the iron braces to the tongue, and in the connection of said braces in the rear of the axle.

A very simple device for clamping saws to be breast down, set, or filed has been patented by Mr. Lewis Davis, of Jackson, O. The advantages of this clamp is that it may be quickly set up for use, that the clamp extends the whole length of the blade of the saw, so that it is not necessary to change the clamp during the process of filing, and further the clamp serves as a guide in breast down the old teeth.

An improved furnace designed to facilitate and cheapen the operation of oxidizing ores has been patented by Mr. W. E. Harris, of New York city. The hot air and the gaseous products of combustion are forced from the ore chamber, underneath the ore grate, whereupon they are passed up through the grate on which the ore is placed, a continuous circulation being thus maintained until the ore is completely oxidized.

Mr. Alfred H. Oliver, of Poughkeepsie, N. Y., is the patentee of an improved cover for sewing machines. This cloth cover is eminently adapted for the use of traveling agents of sewing machine companies to put over the machines to protect them from dust, sun, rain, etc. The cover is equally useful for protecting sewing machines in salesrooms or whenever they are not in constant use.

Mr. Edwin Bennett, of Baltimore, Md., has patented a novel earthenware tea pot which is so made that the spout is firmly connected with the body of the pot in a manner rendering it not liable to be broken off. The spout is connected throughout its entire length with the body of the pot, and the lower half projects inside of the pot, and is provided with the usual strainer.

A draught equalizer, which is an improvement upon a patent granted to Mr. Thompson in October, 1876, is the subject of an invention of which Mr. Andrew Wickey, of Quincy, Ill., is the patentee. This device is so constructed that a strong horse has no advantage over a weak horse, but the draught is so distributed that the stronger animal is made to do a greater amount of work than the other.

An improved corkscrew has been patented by Mr. Monroe Green, of Brooklyn, N. Y. The corkscrew proper is fastened to the lower end of a rod which passes through a screw tube, which is supported by a frame. When the screw tube is turned downward, the corkscrew will be forced into the cork; but the screw tube may be turned in such a way that it will no longer turn the corkscrew, but will force it up with the cork from the bottle.

A device to be applied to reed organs for the purpose of giving an increased resonance has been patented by Mr. W. E. Leighton, of West Pembroke, Me. The main wind chest is extended upward and provided with a partition, so that the air is made to circulate up and down the wind chest extension. A chamber is arranged in front of this extension to give a better resonance and a more full and ringing tone to the organ.

An improvement in cams for stamp mills has been patented by Messrs. R. H. Butler and W. C. Mount, of Gainesville, and J. W. Alexander, of Atlanta, Ga. This relates to cams for operating gold and silver stamping mills, and consists in a certain construction of a clamp cam, whereby, in case one of the cams should become broken or worn out, a new cam may be put in its place without taking down the shaft or removing any of the other cams therefrom.

A bagasse furnace of improved form has been patented by Mr. John Hill, of Independence, Kas. The object of this invention is to construct a furnace in which green bagasse may be used for fuel in the manufacture of sugar and molasses in localities where fuel is expensive. The furnace is provided with a chute through which the green fuel is passed, and where it will be exposed to the heat of the furnace, so that by the time the fuel reaches the fire grate, it will be thoroughly dried and ready to burn.

An improved cable stopper for handling anchors on board ships has been patented by Mr. J. B. Lynch, of Leadville, Colo., administrator of the estate Mr. Owen Lynch, deceased. A frame having an opening at the center is provided with a door formed of two pieces hinged together, one being secured to a shaft having a lever for operating the same, and the other having a slot so constructed that when the door is shut the slot closes on to the link of the chain and holds it fast.

A hand stamp printing press is the subject of an invention of which Mr. T. B. Cosley, of New York city, is the patentee. This device is designed to facilitate the printing of cards, bill heads, etc. The stamp is mounted on a spring with the ink pad placed underneath. The paper to be stamped is placed on a sheet carrier, which is then slid beneath the stamp, while the ink pad is supplied with fresh ink by a piece of felt cloth, which is attached to the bottom of the sliding carrier.

A portable ice freezing house is the subject of a patent granted to Mr. A. Von Krause, of West New Brighton, N. Y. This house is provided with removable ends to facilitate the removal of the blocks of ice after they have been formed. The house is provided likewise with a series of pendent wires upon which water is sprinkled, and this becoming congealed forms partitions of ice surrounding the wires. The ice gradually forms between these partitions, whereby a solid block is formed, when the wire may be withdrawn, and the ice cut in blocks for removal from the house.