

ENGINEERING INVENTIONS.

Mr. Orlando Wetmore, of Nevada, Mo., has patented an improvement to locomotives and tenders, intended to increase the traction power of locomotives to the rails by additional weight. The device is to lift the forward end of the tender, so as to give its weight to the after driving wheels of the locomotive.

Mr. W. Livingston Fisher, of Bay City, Mich., has received a patent on improvements in automatically acting car couplings employing the ordinary link and pin for connecting the cars. This improvement is so very simple, and may be so readily applied to cars already provided with the old style of coupling, that it recommends itself.

Mr. C. R. Sweet, of Portsmouth, Ohio, has recently received a patent for a very efficient road engine for use in the streets of cities, on farms, and on country roads, and also as a stationary power for farm work. The principal improvements in this traction engine are the improved construction in the brake wheel and brake mechanism, and to facilitate the steering of the guide wheel.

An improved balanced slide valve is patented by Mr. John J. De Lancey, of Binghamton, N. Y., the object of which is the balancing the steam pressure and the conducting of the steam that may leak past the outer edges of the balance plate; to the exhaust countersinks and grooves are provided for the admission of oil and steam between the face plate and balance plate, insuring thorough lubrication.

Mr. Riley Doty, of Leonardsburg, O., has patented an improvement in steam engine valves, by which he claims to allow provision for cutting off the inlet steam at any point of the stroke, and opening the exhaust until the piston in the cylinder has reached the end of the cylinder. The device allows the cut-off at any point of the stroke, and the adjustment of the exhaust at any point independent of the inlet.

A machine for removing the interlying clay from between seams of coal in a coal mine, to enable the coal to be more readily broken down than it could be by the present slow process of hand labor, is the invention of Mr. Richard Johnson, of Belleville, Ill. The machine is mounted on rollers for easy movement into position, and carries augers which are fed by screws, but which may be instantly withdrawn by means of releasing a half nut with which the feed screws engage.

Mr. Orlando H. Jadwin, of New York city, has patented a device for the improvement of railways driven by continuous cables, in which the supporting grooved guide wheels are seated on spring boards, so that their top surface may automatically adjust themselves to the variations of the weight of the conveying rope or cable upon them, thus preventing unnecessary tension. He also claims the construction of a rail forming the top of the cable tunnel that is hollowed to receive asphalt, cement, or other material to give horses on the surface roadway a firm footing.

MECHANICAL INVENTIONS.

Mr. James Lamont, of Sag Harbor, N. Y., has patented an automatic expanding and contracting die for forming the cases of watches and lockets of metal which are fastened with a snap, the die permitting the complete formation of the article without change of dies and without taking a composite die apart to release it from the completed shell.

Mr. W. J. Tait, of Jersey City, N. J., has patented an improvement on machinery for producing twists and spirals on wood. It is adapted especially to cutting spirals on baluster rods for stairways, and uses a rotary cutter instead of a fixed chisel, and the employment of a spiral blade for feed, the revolutions of which are adjustable.

Mr. Seth W. Lowell, of Fillmore, N. Y., is the patentee of an improvement in fruit evaporators in which he employs a heater at the bottom of the evaporator, a fan blower in the upper part, and a condenser of the vapor laden air at the top, the result of which is to cause the hot air to circulate through the fruit and to pass down at the sides after being deprived of its aqueous contents at the top.

An automatic oiler for carriage axles has been patented by Messrs. Sebastian Comstock and Edwin M. Comstock, of Cascade Valley, N. Y., by which the revolutions of the carriage wheels determine the amount of lubricant admitted to the axle, and this amount may be governed by an adaptation that can be changed according as much or less lubricating material is required.

Mr. Gilman Jaquith, of Maysville, Ky., has patented a whirl for bobbin spindles, whereby the cup is made to receive the bobbin freely upon the outside of it, and the bottom is caused to rest on a flange which forms a portion of the whirl, and by the introduction of a friction washer interposed between it and the bottom of the bobbin assists in driving the bobbin by friction.

Mr. L. F. Longmore, of Lowell, Mass., has patented an adjustable guide rest and holder for holding drills between the tail center and face plate, head stock, or chuck of a lathe to bore pieces revolving in the lathe. The drill is held by the holder, which is also a guide by which to enable the drill to center itself. This holder may be adjusted for holding drills of all sizes, enabling it to take the place of the numerous slot rests of different sizes now used for the purpose.

Mr. H. C. McIlwain, of Null's Mills, Ind., has patented an improvement on a domestic clothes washer, based on the forcing of the washing water through the clothes. He contrives a cone like tub with flaring projections, and fitted with a plunger that compresses the clothes by its downward plunge, and raises them with the compressed air, allowing the air to escape through side apertures near the top of the tub and go to the bottom.

Messrs. O. H. P. Cornelius and G. H. Turner, of Turner, Oregon, have invented a dredging device intended to remove deposits of silt and sand in rivers by forcing against them a strong current of water, loosening them and driving them into the force of the natural current. The apparatus is attached to a suitable

boat having a cavity in its bottom in which is a trunk containing a turbine wheel, and having a hinged discharge pipe that may be moved vertically and laterally to discharge the water at any angle desired.

Mr. Sanford C. Meddick, of Ovid, N. Y., has patented an arrangement for distributing pulverized fertilizers which he proposes to use as an attachment to field rollers. By extending the roller frame to the rear he attaches a V-shaped receptacle, the bottom aperture of which may be contracted or enlarged, and the contained fertilizer be comminuted by a longitudinal shaft carrying arms to stir up the fertilizer in the hopper by rotation, which is insured by suitable connections by bevel gears with the rotating rollers.

Mr. Milton Dainard, of West Exeter, N. Y., has obtained a patent for a device which consists of the arbor of a sawing machine provided with means whereby the saw may be removed and a boring tool may be attached and be rotated and shifted lengthwise for boring holes. This is likewise connected with the table in such a way that it may be readily converted either into a sawing machine table or a boring machine table. The arbor is also adapted for the application of a grooving tool in the place of the saw when required.

Mr. William H. Snyder, of Waynesborough, Pa., has invented and patented an improvement in the set blocks of saw mills by which the attendant can move the knees forward or backward without releasing his hold upon the handle rod, and without changing his position. This device may also be used in connection with a simultaneously working head block in which all the knees are adjusted equally from one shaft, or independent ratchets may be combined to act, so that one end of the log may be moved independent of the other.

Mr. Charles Johnson, of St. George, New Brunswick, Canada, has recently received a patent for an improved and simple fire escape. The invention consists in a bar adapted to slide on a rope, and to be retained thereon by means of an arm and eyes, which bar is provided with a brake lever for checking the downward movement. The brake lever can be locked in position by means of a locking ring adapted to slide on the bar and brake lever. A hook is pivoted to the bar, and is provided with a pivoted latch extending into the recess in which the hook is pivoted, whereby the latch will be held closed by the downward draught on the hook.

A patent has recently been granted to Mr. J. J. Towle, of Dixfield, Me., for an improved fruit drier, which consists of a vertical cylindrical case, between which and an inside vertical hollow cylindrical drum there is a spiral flue, in which the fruit to be dried is caused to pass from bottom to top several times around the case by pushing the trays containing the fruit forward successively from an opening at the bottom, where they are put in one after another, to an opening in the top, where they issue from the flue, the flue being also a passage for hot air from a furnace at the base of the case, and the central drum being a chamber in which the products of combustion from the furnace circulate for drying the fruit.

Mr. Ami Le Coultre, of Geneva, Switzerland, has patented an improvement on chronographic watches intended to make their movements more reliable and to obviate the dangers of sudden breakage of the stop spring, by the use of the stop. He reduces the increasing tension of the spring produced by the heart wheel, and softens the recoil when the hand is released, by mechanism that does not interfere with the regular work of the watch, using for this purpose a flexible connection between the heart wheel and the hammer of the fly back mechanism and the spring. The flexure is a long spring linked to the acting spring of the stop, and preventing the shock of a sudden release.

Mr. Burchard Thoens, of New Orleans, La., has received a patent for an ammonia ice machine constructed with a retort for distilling aqua ammonia. The distilled aqua ammonia passes into a rectifier, and is then liquefied and collected in a vessel, from which it is liberated at suitable times and permitted to evaporate, cooling the uncondensable liquid surrounding the pipes through which the gases of ammonia are permitted to pass. These gases of ammonia are then collected and conducted into a vessel, in which the poor or weak ammonia liquor is converted into drops or sprays, thus absorbing the ammonia gas. This is then condensed into rich ammonia liquor, and is sent back to the retort after having been heated to the boiling point of the poor ammonia liquor. In this way the water contained in the water chamber will be absorbed and the ice will be formed.

AGRICULTURAL INVENTIONS.

Mr. J. J. Hussey, of Bordeaux, S. C., has patented an improved sulky plow so constructed that any form of plow or harrow may be used in connection with it, the plow, harrow, and cultivator attachments being all contrived for like application to the sulky.

Mr. Joshua C. Center, of Haynesville, Kas., is the patentee of an improved seed drill in which the feed shafts are made in two parts, placed in line with each other, and independently connected with the driving mechanism, so as to obviate side draught and so that both sides of the drill will work at the same depth in the soil on uneven ground.

Mr. R. M. Pattillo, of Cartersville, Ga., has received a patent for improvements in cotton planters, specially designed for use in connection with the "Law Cotton Planter," for the purpose of adapting the same to plant peas, corn, and other seeds. Its novelty consists in improved mechanism for delivering the seed, whereby the seed, instead of being planted in continuous rows, is deposited in the earth at intervals.

MISCELLANEOUS INVENTIONS.

Mr. Orson O. Newberry, of Vincennes, Ia., has obtained a patent for a sulky which he claims is stronger, more durable, and in other respects an improvement over sulkies heretofore in use. This inven-

tion relates to the manner of locating the seat on the axle, and improvements in arrangement of the supports and the means of attaching the traces.

Mr. S. R. Brick, of Stapleton, N. Y., has recently patented a safety gas tank for vessels. This invention relates to gasometers used for storing compressed gas in vessels, and is intended to prevent accidents by explosion of the gas escaping from the tank, and it is also contrived so that in case of collision the tank is immediately emptied by the opening of a gate.

Mr. Frank Harrison, of Loveland, Colo., has patented a saw guide for circular saws, using glass studs set up by set screws in a yoke which may be adjusted laterally as well as longitudinally. The guide may be swung out of the way when the saw is to be removed, and can be accurately adjusted to the varying thickness of the saw.

Mr. R. B. Lanum, of Circleville, O., has recently patented a receiving and burial vault. The invention consists in a mould for forming the chambers, which mould consists of two wedge-shaped pieces and a semi-cylindrical top piece, which pieces are all surrounded by a layer of paper for the purpose of rendering the surfaces of the chambers entirely smooth.

An adjustable book lock, which can be fitted to a book of any thickness, has recently been patented by Mr. M. C. Ogden, of Brooklyn, N. Y. The invention consists in a lock casing held adjustably between two longitudinally slotted angle pieces pivoted to a plate adapted to be fastened to a cover of the book, to permit swinging the lock casing down when the book is to be opened.

An improvement in the construction of cornets has recently been patented by Mr. G. W. L. Schweich, of Richmond, Mo., whereby a full, clear bore wind passage with shorter action than those now in use is secured. Plenty of room is nevertheless left to secure perfect curves in the wind passages. The invention promises to prove of interest and importance to musical persons.

Mr. Stephen H. Chilcote, of Sego, O., has patented an ingenious and convenient combined can opener and corkscrew. The invention consists in a rotary can opener having its knife adjustable to suit the size of can, and with its handle portion formed to receive a corkscrew, the arrangement being such that the handle is an essential portion of both the can opener and the corkscrew.

A cheap and convenient leveling instrument for the use of planters and others who do not require the professional services of a surveyor, has been patented by Mr. William C. Holmes, of Atlanta, Ga. It is inexpensive and may be constructed by any mechanically inclined farmer, and is useful in leveling for ditches, laying drains, and many other purposes. It may be set to any incline from the horizontal as well as for a dead level.

A breast strap, slide, and hook has recently been patented by Mr. C. R. Furey, of Logansport, Ind. This snap device consists of a hook snap pivoted in a groove, and working through a guide in the end of the hook. The hook snap is worked by a thumb lever located in a chamber of the shank, from which the thumb bit protrudes in such a manner as to be effectually guarded against being accidentally shifted so as to open the snap.

Mr. Alexander M. Dye, of Minneapolis, Minn., has patented a personal fire escape that may be carried in the valise or trunk, and afford means of escape from hotel or any other building, by means of a window. It is a rope of manila, cotton, or hemp, furnished with a saddle strap and stirrup, and a grooved attachment through which the rope passes in curves, the passage being governed by the weight of the descending passenger or his or her action of the feet.

An effective and durable oyster dredge has been patented by Mr. J. N. Woodruff, of Fairton, N. J. The rake head of this dredge is provided with a series of rake teeth, so arranged as to enter the river bottom their entire projecting length, while a runner is provided which prevents the dredge from sinking further into the soft bottom. A trailing basket is connected with the rake head for receiving the oysters removed from the bottom by the rake teeth.

Mr. Charles Huck, of New Orleans, La., has invented and patented an improved telegraphic and telephonic cable in which provision is made for carrying off induced currents. The cable consists of a central wire of straight parallel wires, and is overlapped by spirally wound insulated wires, these by spirally wound bare wires wound in the reverse direction, and covered by another coating of insulated wires, the whole suitably protected, the bare wires being connected with the earth.

A door brake to prevent the noise arising from the slamming of a door, and to hold it closed without a latch, is the subject of letters patent recently issued to Mr. W. S. Barlow, of Paterson, N. J. A holder having an elastic plate, its outer extremity forming an inclined wedge, is the device which is attached to the door casing in such a manner that in closing the door it will strike the heel of the inclined wedge, which will resist the pressure of the door, gradually brake and stop it, and hold the door closed.

A non-explosive lamp is the subject of a patent recently issued to Messrs. L. Baer, T. F. Miner, and Theo. Taylor, of La Grande, Oregon. A receptacle for holding water or any preparation for cooling the oil and preventing the formation of gas or for extinguishing fire is interposed between the oil receptacle and the burner. By the use of the water or other cooling substance in the receptacle, the temperature of the air between the burner and the oil is lowered, and the accumulation of explosive gas is prevented.

Mr. John W. Eastwood, of Denver, Colo., has patented an improved portfolio for the use of students, which is a convenient receptacle for books, pens, and pencils in a compact combination that makes an elegant parcel, can be easily carried on the person, preserves the contents from contact, and prevents rattling of the contents. A copy holder of thin metallic plate transforms the portfolio into a writing, copying, or drawing desk, and may be securely folded into the portfolio when not so used.

Mr. Gustav H. Moll, of St. Louis, Mo., has patented an umbrella that may be attached to its owner without trouble, as it will be useless to any one but the owner. The invention consists in a detachable handle which may be carried in the pocket, the withdrawal of which locks the ribs of the umbrella and the insertion of which unlocks the ribs. Changes may be made in the construction of the inserted handles to correspond with the combinations of the Yale lock keys, so that two fits to handles may reach near an impossibility.

A wrench for wagon axle nuts has recently been patented by Mr. T. L. Whitacre, of East Rochester, O. The object of this invention is to so construct a wrench for turning the axle nut of a vehicle that it may be hung by a hook in such a manner as to throw the nut holder out of a perpendicular plane, and thus prevent the nut from dropping out. This is effected by placing a hook and hand piece on opposite sides of the handle end, so that the weight of the hand piece will throw the nut holding end forward out of a perpendicular line.

Mr. Daniel Brobst, of Portland, Mich., has patented a roofing compound which consists of the following ingredients, viz., coal tar, broken asphalt, gum shellac, glue, salt, alum, gypsum, Roman cement, sulphur, resin, and benzine, all mixed together in certain proportions. The roof is first covered with three layers of felt, each layer being coated with a layer of the compound applied with a brush. The outer layer is then covered with a heavy coating of the compound, and dry sharp sand is spread over the mixture and pressed into it with an iron roller.

A cream can which is less liable to be dented or bruised by rough handling than those now in use and which is also intended to prevent the formation of cream into butter during transportation, has recently been patented by Mr. C. H. Blossom, of Algona, Iowa. The invention consists in a cream can constructed with a rectangular exterior wooden box having interior cleats, into which is fitted a rectangular tin can having tin covered top frame, and provided with a tin faced wooden cover having downwardly projecting tin flange, and a rectangular tin float having central opening and a hopper shaped upper side.

An improved coal scuttle for facilitating the insertion of coal in the fire boxes of cooking stoves has been patented by Mr. Rhys F. Lewis, of Wilkesbarre, Pa. This scuttle is made of such a shape that it may be inserted into a boiler hole in the stove top, and it is retained from slipping through by a suitable flange. The bottom of the scuttle is provided with a large opening which is closed by a sliding valve, so that when once the scuttle is placed in position on the stove, the valve is opened and the desired amount of coal is permitted to pass through into the stove, when the valve is again closed and the scuttle removed.

A self-watering flower vase has recently been patented. The stand of this vase is made of such a form as to hold water and support the basin or vase for the plant, which basin has a tubular arm at the bottom extending down into the base of the stand, so as to permit the water in the base to percolate through the small apertures in the tubular arm. In this way the earth in the vase will be kept constantly watered, and the vase with the stand may serve as an excellent fence post, so that if a series of these are employed, a very ornamental fence will be provided with flowers automatically watered, growing from the vases on the tops of the posts. The patentee is Mr. E. B. Chappell, of Bradford, Pa.

An improved grain drier has been patented by Mr. Albert E. Clutter, of Lima, O. This consists in a vertical smoke stack separated by brick partitions into grain passages and smoke flues, the grain passages being provided with openings at the top for the insertion of the grain and with like openings at the bottom through which the grain is discharged by gravitation. The smoke flues receive the smoke and heat of a furnace provided for the purpose, or the waste products of combustion from some other boiler or furnace. The grain is dried by the heat from the flues, the brick partition serving on the one hand to communicate the heat to the grain, and to absorb at the same time the moisture from the grain and deliver it up to the hot gases. Besides these advantages this drier enables different batches or different kinds of grain to be dried at the same time without being mixed.

Mr. F. F. Terramorse, of East Portland, Oregon, has patented an improved waterproof fabric (either silk or fine cloth may be used) for making gossamer clothing. The fabric to be made waterproof is immersed while hot in a compound of boiled linseed

oil mixed together in suitable proportions. After a thorough drying the article is placed on a mould and a coating of the mixture is applied with a brush or sponge, and rubbed smooth by the hand. After drying, the fabric is again placed on the mould and rubbed down with pumice stone, till perfectly smooth. A third coating of the mixture should be applied in the same manner as the second. The inventor claims that fabrics treated in this way look as well as rubber, are thoroughly waterproof, will not crack or break when exposed to heat or cold, are very light and have no disagreeable odor.

An ingenious and useful contrivance for cloakmakers has recently been patented in the United States, France, England, Germany, Austria, Italy, Denmark, Sweden, and Hungary. It consists of a nickel plated chain, the links of which are hard soldered, to take the place of the ordinary loops on garments, by which they are usually suspended. It is rather ornamental and is readily attached by simply puncturing two small holes for the reception of the screw shanks of two buttons, and securing the ends of the chain to the screws by means of a small key which accompanies each hanger. They are made in three different sizes, No. 1 for ladies' and gentlemen's light garments, No. 2 for light cloaks, No. 3 for heavy sealskin and fur garments. These clothes hangers recommend themselves to the public for their cheapness as well as utility, and are now being manufactured by the Patent Clothes Hanger Company, whose office is at 60 William Street, New York city.