

But in the Donnelly well the double casing was found so to contract its caliber as to greatly diminish the supply of salt water, and for that reason it was abandoned after a brief period of use, and the single tubing was restored. It is therefore claimed to have been an unsuccessful and abandoned experiment.

It was said before that the combination in both cases consisted of the same elements, and that they were arranged and operated in substantially the same way. But was the purpose for which the patentee's invention is intended to be used effectuated by the devices employed in the Donnelly well? There is no doubt about this. The useful result contemplated by the invention in question is the avoidance of the effect of the gas upon the pump valves by supplying an avenue of escape for it between the pump shaft and the casing. The Donnelly devices furnish the same means for the escape of the gas and the relief of the pump valves, and they were used sufficiently to illustrate and test their complete efficiency in that direction. What more was required to demonstrate the completeness of the device as a means of accomplishing the result contemplated by the patentee? No change in mechanism was needed, and it was successful in operation. This is all that is required to take it out of the category of abandoned experiments. Its use might be altogether discontinued; but this would only leave it open to the public to use it. Certainly no subsequent inventor could take it up and appropriate it exclusively. What was said by the Chief Justice in *Galor vs. Wilder*, 10 How., 477, is decisive on this point.

We do not understand the circuit court to have said that the omission of Conner to try the value of his safe by proper tests would deprive it of its priority, nor his omission to bring it into public use. He might have omitted both, and also abandoned its use and been ignorant of its value; yet, if it was the same as Fitzgerald's, the latter would not, upon such ground, be entitled to a patent, provided Conner's safe and its mode of construction were still in the memory of Conner before they were recalled by Fitzgerald's patent.

The bill must be dismissed with costs.  
George Harding and Weir & Gibson, for complainants.  
Henry Baldwin, Jr., and C. S. Fetterman for defendants.

## Recent American and Foreign Patents.

### NEW MECHANICAL AND ENGINEERING INVENTIONS.

#### IMPROVED COMBINED TIME AND COMBINATION LOCK.

Franklin McDuffee, Rochester, N. H.—By the chronometer locks now in general use, no entrance can be made to the safe except at certain hours, however imperative the necessity, as, for instance, an approaching fire. This objection is completely obviated, as, by this invention, the proper persons arriving can open the lock at any time without waiting for the action of the clockwork to release the bolt. The objects of the invention are secured by the following method: The tumblers, all on the same spindle and operated by one dial, are so arranged that they can be locked on two separate combinations set by two individuals, each person being ignorant of the combinations, except his own. For instance, suppose the president and cashier of a bank are the persons intrusted with these combinations, the cashier can set his own part of the lock without the presence of the president, and he can always unlock the lock at such hours as the clockwork permits, and at no other, and can do so without the presence of the president. He cannot be compelled to open the safe, as he cannot open it alone until the proper hour arrives, yet after that hour he can open without help. This may be done for years without calling on the president. But should the clockwork stop at any time, or should it become necessary to enter the safe at any unseasonable hour, the cashier has only to summon the president, who, using his combination in conjunction with that of the cashier, can open the lock. Neither can open at such time alone.

#### IMPROVED ROTARY PUMP.

Robert Burns Reynolds, Stockport, N. Y.—This consists of two rotary pistons on parallel axes, both turning in the same direction, so that they have a wiping action on each other instead of the rolling development of one on the other, as has always been the case in pumps of this character.

#### IMPROVED RAKE TOOTH LATHE.

Sylvester Bisbee, Sumner, Me.—Sliding on the main frame, in guides, is a reciprocating carriage. Mounted on one end of the carriage is a long cylinder, at the other end a short cylinder, each of which contains eight grooves. These cylinders receive, in addition to the reciprocating motion, a rotary turn of one eighth of a revolution, so as to present the empty grooves to the feeding devices, and those containing the rods and blanks to the devices for forming the teeth in proper order, said feeding and forming devices consisting, essentially, of a feed plate, setting knife, cutter head, set-back, saw, ejector, projection, and feed hook, together with the devices for turning the tenon.

#### IMPROVED SCALE BEAM.

Hiram L. Grisell, Pennville, Ind.—This is a contrivance of tables with the beams and weight of a scale, for the computation of the values of fractional quantities. Example: If fifteen cents' worth of an article worth twenty cents a pound is required, the weight is moved along the beam until it arrives at fifteen on the line marked twenty at the end, when it will show twelve ounces as the required quantity.

#### IMPROVED PORTABLE RAILROAD TRACK.

Manuel De M. C. Y. Martinez, Havana, Cuba.—This is an arrangement of railway track in short sections, that can be easily handled to put down and take up. The parts are adapted to be laid on the natural surface of the ground, and to be kept in position with but little labor and expense.

#### IMPROVED RAILWAY CAR TRUCK.

Georg O. Eaton, Warren, Me.—Cars frequently require to be used upon and run from a narrow to a broad gage track, and vice versa. To enable this to be done, it has been heretofore requisite for railway companies to construct and keep on hand, at the junction of the different lines, two sets of trucks, one adapted for a narrow gage, and the other for a broad gage, so that, when a car was required to be changed from one track to the other, it was jacked up, the trucks removed, and others substituted. The expense and loss of time incident to this method constitute serious objections to it, and to obviate them is chiefly the purpose of this invention. To this end, it consists, broadly stated, in making the wheels of the truck adjustable laterally or towards and from each other. The truck is therefore an improvement in that class in which the several wheels are mounted on short independent axles. For particular construction and arrangement of parts, see patent.

#### IMPROVED COMBINATION LOCK.

Thomas McClanahan Seaton, Parsons, Kan., assignor to himself and John Adams, same place.—This invention consists in making the tumblers of a lock with points that work in the slot of the bolt, and causing the disk knob to slide in a slot of the plate.

#### IMPROVED MECHANICAL MOVEMENT.

Charles Sandermann, Elizabethport, N. J.—This is for changing reciprocating rectilinear into continuous rotary motion, and is applicable to revolve the shaft of screw propellers, and for other purposes. A reciprocating carriage has hinged stops at both sides, that act on movable cam rollers, traversing on the shaft sections, with spiral twists or grooves in opposite direction, so as to produce continuous rotary motion of the shaft by the reciprocating motion of the cam rollers.

#### IMPROVED ROTARY ENGINE.

Bruno Brauer, Bremerhaven, Germany, assignor to himself, Friedrich A. Schilling, Sr., and Friedrich A. Schilling, Jr., same place.—This is an improved rotary engine, in which the steam acts directly on the piston shaft, allowing the use of the same with variable expansion, and the ready reversion of the engine. It is not possible to afford a clear idea of the mechanism, which embraces several new and ingenious devices, without the aid of drawings.

#### IMPROVED LIFTING MACHINE.

August Ficht, Bellaslyva, Pa.—This consists of a lifting bar, toothed on opposite sides, between guide ribs, for keeping it in gear with a couple of toothed wheels on a pair of shafts mounted on the top of a frame. Said shafts have cranks or levers to work them, and ratchet wheels provided with pawls to retain the weight at any height. The invention also consists of the supporting frame for the rollers, for working the lifting bar, contrived in two readily detachable parts, to facilitate the application of the machine to a stump or other object to be lifted.

#### IMPROVED DEVICE FOR DECOMPOSING WATER FOR FUEL.

Milton W. Hazleton, Chicago, Ill.—This consists of a tight pan under the fire grate, into which an air pipe from a fan blower and a water pipe enter below holes of conical form for driving water spray through the holes into the fire above. The inventor supposes that, by the heat of the fire, the steam will be desiccated, and that the hydrogen can be burned as fuel. The invention may prove useful for increasing the draft of furnaces.

#### IMPROVED DEVICE FOR CLOSING GATES.

John D. Reed, Greencastle, Ind.—This consists simply of a horizontal shaft, journaled to the gate post and rotated by a descending weight attached by a cord to a drum on the shaft. On one end of the latter is bevel gearing communicating with the gate, which is thus shut when the weight descends.

#### IMPROVED SPEED REGULATOR.

Nathaniel U. Metz, Norritonville, Pa.—This consists of a disk on the driving shaft to be regulated, carrying a pair of centrifugal weights, which are thrown out against the flange of a stationary disk. The friction of the latter is made to move out brake shoes with great force against the flange, to arrest the motion of the shaft in case the belt runs off, or the engine or other power runs too fast.

#### IMPROVED PAPER-CUTTING MACHINE.

John P. Dunwald, New York city.—This consists mainly of a combination of the swinging and balanced cutting knife with the clamping mechanism of an adjustable cutting gage and of a sliding feed or set gage of special construction. The set gage may be detached entirely, as well as the side guide piece, when the same is not required, or when the paper is to be cut at different angles.

#### IMPROVED EXCAVATOR.

John P. Bonnell, Elizabeth, N. J.—This is a machine which is movable on wheels along the ground, and contains an endless chain of buckets, which dig the earth and carry it up to a laterally working endless discharger. The buckets are fed up to the work by the power which moves the machine along the ground. The essential part consists of a machine arranged on feeding or propelling wheels as a fulcrum, with a contrivance for elevating and lowering the buckets in advance of the fulcrum to gage the machine for grading ascending and descending inclines, also for running it into and out of the ground in using it for ditching purposes. The buckets are extended outward, at each side, beyond the ends of the drum, over which the said chains work to cut their way in advance of the carrying wheels sufficiently wider than the latter and their housings to enable the apparatus to run freely.

#### IMPROVED PROPELLER WHEEL.

William S. Wootton, Scottsburg, Va.—This wheel is designed more particularly for the shallow rivers of the West, and is intended to operate either as a paddle wheel, or by grappling the bottom of the river, being provided with flukes for this latter purpose, which catch in the river bed and urge the boat along. It is automatically adjustable to the irregularities of the river bed; and instead of having a central axis, is provided with internally projecting teeth upon its periphery, which engage with and receive motion from one of the pinions of two supporting shafts, of which shafts, the one that transmits the power is stationary, and the other is movable to regulate the elevation of the wheel when employed as a paddle wheel.

#### IMPROVED MACHINE FOR MAKING BARRELS.

Samuel P. Hodgen and John W. Yelton, Neosho, Mo.—This consists of a circular vertically adjusting follower, arranged over a platform, on which the lower head of the barrel is placed to nail the staves on. The follower is hooped with a band of iron for clinching the nails driven against it, and is employed as a gage, around which to set the staves, and for clinching the nails used in nailing on the hoops. The follower also has a box securely attached in its centers, so that the rod or shaft will pass through it without binding, and at the same time hold said follower perfectly true as it is raised or lowered.

#### IMPROVED PACKING FOR BALANCED PISTON VALVES.

David Dale, Millerstown, Pa.—This is a contrivance of radial plugs in the pistons, on which steam is caused to act to push out the packing ring, one of the said plugs acting by a wedge between the ends of the ring to expand it, and another, or more if desired, acting by a stiff spring, which bears at its ends on the packing ring and distributes the pressure upon two points.

#### IMPROVED FEED WATER HEATER AND FILTER.

Georg F. Jasper, Freeburg, Ill.—The purpose of this invention is to still further improve and simplify the feed water heater and filter for which letters patent were granted to the same inventor heretofore, under date of December 1, 1874, and June 8, 1875; and the invention consists in the arrangement of a double water box in the heating tank, in connection with the filtering receptacle below. The exhaust steam is allowed to act at the bottom and top sides, while acting only on the bottom of the upper box, so as to impart a higher temperature to the water in the lower box than in the upper.

#### IMPROVED RAILROAD GATE.

Harmon Graybill, Cassville, Wis.—This is an improved railroad, farm, or other gate that extends across the track and is automatically opened and closed by the trains. It consists of swinging lateral gate sections, that are thrown up to the outside of the track by the depression of the bearing rails.

#### IMPROVED HOSE COUPLING.

Calvin L. Martin, Portland, Me.—This consists of two or more spring catches on one section to spring over a flange on the other. The said catches have a lever and a cam rocker, by which to detach them from the flange readily when the hose is to be uncoupled.

### NEW CHEMICAL AND MISCELLANEOUS INVENTIONS.

#### IMPROVED SOLDERING IRON FURNACE.

Edward G. Adams, Cohoes, N. Y.—This consists of a vertical fire box with a center flue and a hood, so arranged over the fire bed that an open space is provided in the coal for the irons. The heat is thus made to pass directly against the irons, so as to warm them quickly.

#### IMPROVED CARBURETER.

James T. Stewart, Los Angeles, assignor to himself and James Wilson, same place.—This consists of an air drum moving in a water tank, and forcing the air through a connecting pipe into a float filled with gasoline. The gasoline pan is placed into a gas holder filled with water, that raises the pan to keep the air pipe always in the gasoline.

#### COMPOSITION OR CEMENT FOR PRESERVING FRUIT, ETC.

Charles A. Dards, New York city.—This is a composition employed for the purpose of sealing a soft wrapping paper that has been rendered airtight by a mixture of oil and alum around the fruit, vegetable, or other perishable article. The articles are then packed into boxes, filled with sawdust, and kept in a fresh state for any length of time. The composition consists of starch, a suitable fat, salt, carbonate of ammonia, a suitable vermifuge, alum, citric acid, and water.

#### IMPROVED MECHANICAL LEDGER.

Otto Sallbach, Pittsburgh, Pa., assignor to himself and Charles Ruhe, of same place.—This invention consists of a series of revolving strips, with numerals indicating dollars and cents, which strips are moved by an adjustable friction roller and shaft, the whole being enclosed in suitable manner. The amount is kept for each customer by entering his name to a certain number on an inside slate, and setting the printed strips to the exact number of dollars and cents by setting, first, a friction wheel to move the lower strip, and then to the upper. The amount due will then be visible through the corner glass plate and indicate to the customer the state of his account, his number and date of last purchase only being placed on the outside. When the account strips have been adjusted, the friction wheel is released from contact with the strips, so that no accidental changing of the same is possible.

#### IMPROVED BAG HOLDER.

Lealand H. Bristol, Lawrenceville, N. Y.—This invention consists in combining a sliding spout with a bench strap and screw, and also with a wedge-shaped rest, the latter serving to graduate the bag from the spout down to the bench.

#### IMPROVED BOOT LACE FASTENER.

James McDonald, Campbelltown, Province of New Brunswick, Canada, and F. A. McDonald, Durham, Province of Nova Scotia, Canada.—This invention relates to the ready, secure, and convenient fastening of lace boot strings by means of two plates, one being on each side, and the string being passed through as well as between the plates, before being clamped, so that escape is almost impossible.

#### IMPROVED WIRE FENCE BARB TOOL.

Homer W. Prindle, Fort Dodge, Iowa.—This is a tool for forming barbs on fence wires, having its lower end bent over to one side to form a hook, and having a slot or notch formed in its edge, close to its lower end, to adapt it for use.

#### IMPROVED FOUNTAIN PEN.

Robert Douglass, Buctouche, Canada.—This invention consists of a spoon-shaped termination of the back portion of the fountain holder, in the cavity of which is the opening for the issue of the ink, and over which the pen is attached, so as to receive the ink at suitable distance above the point. There is a cock in the ink passage from the bottom of the fountain to this issue, to regulate and shut off the flow of ink at will, and at the top of the fountain is a vent to admit air, for allowing the ink to flow out properly.

#### IMPROVED HORSESHOE.

Charles D. Rattray and Alexander Robertson, New York city.—This is an improved ice shoe attachment for horses, which may be readily and firmly applied over the common shoe and to the hoof, so as to be used whenever required, and taken off without difficulty. It consists of an ice shoe with sharp calks that is fitted over the common shoe, and attached to the hoof and shoe by curved outer pieces passing through the attachment, and by interior binding pieces and screw nuts screwed on the inner threaded ends of the curved binding pieces.

#### IMPROVED RUBBER BOOT.

James A. Bates, South Abington, Mass.—This invention consists of a rubber boot provided with a leather counter, applied over the lining of the same.

#### IMPROVED METHOD OF LABELING MINERAL SPECIMENS.

Charles W. Cannon, Helena, Montana Ter.—Plaster of Paris is mixed with water to the consistence of thick cream, and applied to the specimens in sufficient quantity to form a space large enough to receive the desired inscription. The specimens are then jarred to cause the cement to set with a smooth surface. After the cement has set and become sufficiently dry, a small pointed brush is used for putting on the inscription with India ink.

### NEW WOODWORKING AND HOUSE AND CARRIAGE BUILDING INVENTIONS.

#### IMPROVED STATION INDICATOR.

Charles M. Sexton, Aurora, Ill., assignor to himself and Orlando O. Wormwood, of same place.—This consists of a polygonal roller, that carries the slotted name boards on raised ribs or lugs near the end. The lugs and slots of the boards are alternately set at greater or less distance from the ends of the roller to take up the boards in regular manner. The roller is revolved by a loose pulley and pawl, actuated by a connecting band and spring.

### NEW HOUSEHOLD INVENTIONS.

#### IMPROVED DEVICE FOR HEATING AIR FOR FURNACES.

Charles Thonger, Courtright, Canada.—The object of this invention is to utilize some of the waste heat of a boiler furnace for heating the air supplied to the furnace for the support of combustion. As applied to a locomotive boiler, the smoke passes through the boiler flues to the smoke box, as usual, thence back in a casing, covering and surrounding the upper part of the boiler. The tubes terminate in a breeching, from which the smoke escapes in vertical tubes, which form the smoke pipe, and are surrounded by a casing, down which the air for feeding the furnace passes to the casing on the boiler containing the smoke pipes, and to a jacket at the rear. Thence it passes along the boiler to the ash pit.

#### IMPROVED GAS BURNER.

Victor Zeis, New York city.—This consists of a carbonizing and pressure-regulating attachment for gas burners, made of a hollow vessel of copper, with a socket to attach to the fixture. A gas tube extends from the socket up to the upper part of the interior; and there is a burner at the top, and a tube extending from it nearly to the bottom. A bell-mouthed tube extends from a point near the top of the burner down through the cap into the carbonizing chamber, for the purpose of deflecting the gas, and causing it to descend and mix with the hydrocarbon vapor before passing through the perforations of the pipe leading to the burner.

#### IMPROVED AIR COOLER.

William E. Richardson, Buffalo, N. Y.—This consists of a pan or tube to contain ice, arranged in a surrounding case of non-conducting material. There is a space between the two, into which cold air from within the pan may pass through openings in the sides in the bottom of the latter, and also from a coil of pipe entering the pan from outside, and discharging into said space. From the space it may be conducted to cellars or other rooms or places for cooling. It is adapted to many purposes for which low temperature is required, effecting a great saving of ice. The inventor claims that he can cool a room 40x40 feet and 10 feet high, with about 1,500 lbs. ice per twenty-four hours.

IMPROVED IRONING APPARATUS.

James Ashton and Rheuben H. Metz, Kent, Ill.—This consists of rollers, on which the cloths to be ironed are rolled, together with a table, on which the rollers are laid, and a heavy plate lying on the rollers, and having a forward and backward motion lengthwise, for rolling and pressing the clothes smooth.

IMPROVED DROP CHANDELIER.

Henry Prescott, Keystone, O.—This chandelier may be readily raised and lowered, and set to any height. There is a grooved extension rod sliding in an inclosing tube of a stationary pipe, and connected with the connecting pipe section of the chandelier by a spiral coil of rubber hose, and a spiral spring.

IMPROVED DOOR CHECK.

James H. Swift, Evansville, Ind.—This consists in attaching to the door frame an arc bar having a series of bolt holes, and so arranged as to pass through a slot of the bolt case. The spring bolt is connected, by bell cranks and wires, to a knob, so that, by turning the knob, the bolt will be pulled out of the bar, to allow the door to swing.

IMPROVED BURGLAR ALARM.

John S. Mace, Chillicothe, O.—This invention belongs to that class of burglar alarms in which an alarm is sounded upon a bell by a hammer, set in motion by a clock spring and spur gear by the opening of the door or window to which it may be applied.

IMPROVED COOKING APPARATUS.

Mrs. John M. Goldsmith, Great Mills, Md.—This invention consists of a rectangular frame to be inserted in the oven of a cooking stove. In the frame are pivoted several spits, below which, on the bottom of the oven and within the base of the frame, rests a large pan. Above the spits the frame is arranged to hold one or more dripping pans, provided with small tubes in their bottoms for the purpose of causing the gravy to fall, drop by drop, upon the food cooking below.

IMPROVED WARDROBE HOOK.

James E. Bryan, Humboldt, Kan.—This invention consists of a wardrobe hook so constructed that it will neither stretch nor tear the garments suspended from it, and will also permit them to be readily detached, without the necessity of raising them vertically, as required in the ordinary construction, in order to free the projecting end of the hook.

IMPROVED THUMB LATCH FOR DOORS.

Henry C. Hill, Norristown, Pa.—The thumb lever is pivoted to lugs on the fulcrum plate, which is attached to the door, and the lower part of which is so formed as to fit over the upper end of the upper lug piece of the handle, so that they both may be secured by the same screw.

IMPROVED WASHING MACHINE.

Thomas McC. Wilson, Venice, Pa.—This washing machine is so constructed that the space between the stationary rubber and the movable rubber may be regulated as desired, and that the movable rubber can be conveniently raised out of the way, when desired, to give convenient access to the interior of the sud box.

IMPROVED SMOKE HELL FOR GASALIER.

John Fox, New York city.—This invention consists of a bell-shaped body, with exit tubes radiating from the upper part, the stem of the smoke bell being insulated from the part of the gasalier from which it is suspended by being cemented into a socket with a non-conductor of heat.

IMPROVED MUSIC REPOSITORY.

Jerome C. Ward, Hillsdale, Mich.—This is a stand in which sheet music and music books may be conveniently stored away below the piano, and readily be taken out for use. Vertical rods extend from the lower to the upper shelves, and prevent the books in the swinging leaves from sliding down and interfering with the music on the shelves.

IMPROVED WEATHER STRIP.

S. Adam Rankin, Mulberry, Mo.—This strip is so constructed as to be raised by its own weight to a level with the lower edge of the door when the door is opened, and to shut down closely upon the threshold when the door is closed.

IMPROVED SASH HOLDER.

Joseph R. Payson, Chicago, Ill.—This device is claimed to lock window sashes securely in position when closed, or, when opened to any desired extent, to tighten them so that they will not rattle in the wind; to support them when not balanced by weights or otherwise; to be applicable without notching or defacing the casing or sash; double acting, to prevent the sash from being raised or lowered; reversible, so that it can be applied to either the upper or lower sash, or to either the right or left hand; adjustable, so that it will act upon the sash whether loosely or closely fitted to the frame, and when not in use can be withdrawn entirely within the edge of the sash, so that it will not impede its movements, or rub against the casing.

IMPROVED HEATING DRUM.

Joseph R. Wieand, Allentown, Pa.—This consists of a heater, made of one or more sections connected by pipes that admit either direct or circuitous passage of the fire gases. Each section has a horseshoe-shaped partition forming flues.

IMPROVED SASH BALANCE.

William Cooper, Strathroy, Canada.—This is an improved device for attachment to a window, to enable the sashes to be raised or lowered together or separately, as may be desired. The upper sash descends by its own weight, and may be secured in any desired position. It is raised by turning a crank to wind up cords. The two sashes may also be raised and lowered together.

IMPROVED STAIR ROD.

George W. Hill, Brooklyn, N. Y.—In applying the device, the rod is placed in the angle between the projecting edge of the step and the upright board, with the points of the pieces entering the lower side of said projecting edge. There is a second rod which fits into the angle between the top of one step and the upright board of the other. The two rods are then held apart by spring devices.

IMPROVED WASHING MACHINE.

Joseph Gramelspacher, Jasper, Ind.—This consists of elastic rubbing fingers, of cotton or other like fibrous material, fitted so as to project from the surface, in combination with a stationary concave rubbing bed, which is extended along up an incline to the top of the tub, to afford an auxiliary hand rubbing bed, for convenience in rubbing out things which cannot be as well treated by the cylinder.

IMPROVED KNOB FOR VESSEL LID.

Charles Goldthwait, South Weymouth, Mass.—This serves to insulate the heat, and admit the ready handling of the cover without burning the fingers. The knob of wood is applied to the lid by a shank encircling tube, of suitable sheet metal, that is soldered by an exterior base flange to the lid. The shank of the knob is made somewhat shorter than the tube to produce a small insulating air space between the lid and knob.

IMPROVED LAMP BURNER.

Jacob Engle, Jr., Sharon Springs, N. Y.—The wick tube and the gas tube is extended sufficiently above the base of the burner to enable the outside case to be elongated downward from the flame to serve the function of a chimney, to regulate the air current, so that when it comes up to the flame it will be steady and strong, increasing the combustion and the illuminating powers.

IMPROVED SASH FASTENER.

Peter Meyer, Iowa City, Iowa.—This relates to such improvements in the sash fastener, for which letters patent have been granted to same inventor under date of June 22, 1875, that the same may be more strongly and reliably attached to the sash, and retain it at any desired height. The device consists of a curved and perforated latch, that swings on a suitable pin of a metal case attached to the sash, and is automatically forced by a spring against the locking pins of the window frame, so that the hole of the spring latch locks the sash at any desired height.

IMPROVED COFFEE POT.

Christian Vanderbeek, Rock Falls, Ill.—This is an improvement in the class of coffee pots or machines composed of two parts or receptacles, and adapted to be connected in such manner that the ground coffee will be subjected to the action of hot water as it passes from one pot or receptacle into the other. The invention relates particularly to providing the inner cylinder or receptacle with strainers of different degrees of fineness.

IMPROVED FASTENER FOR THE MEETING RAILS OF SASHES.

Joseph R. Payson, Chicago, Ill.—This improves the construction of the window sash lock for which letters patent were granted to same inventor January 4, 1876, to make it more secure against being opened from the outside of the window, and to draw the sashes together more firmly. The locking arm is pivoted at or nearly at an angle of 45° with the length of the meeting rails of the sash, and secured by suitable fastening devices.

IMPROVED LAMP BURNER.

James Curzon, Darien, Conn.—This invention relates to lamps having four wicks in a circle; and it consists of the wick tubes arranged radially to the center of the circle from top to bottom, with two ratchets at right angles to and crossing each other for working them, instead of the parallel arrangement of the tubes at the lower end and parallel ratchets heretofore employed. The invention also consists of a secondary bottom to the burner for screwing into the lamp top. Between these two bottoms is applied a packing of non-conducting material to protect the lamp from the heat.

IMPROVED ASH SIFTER.

Numa J. Felix, New York city.—This consists of a hinged and locked screen arranged in the upper part of a sliding box, from which the ashes are carried along a hinged gate into a bottom drawer, while the coal is dropped by swinging the gate over to the other side into an adjoining drawer, on the release of the screen, which is locked again to the box by the swinging back of the gate.

IMPROVED TABLE LEAF SUPPORT.

James Pleukhar and Samuel M. Shilling, Columbus, O.—This is an improved table leaf support that holds the leaf firmly in place, and raises it always to the same level without straining the hinges so as to render repairs necessary. When the leaf is folded, it is also held in rigid position. The invention consists of a forked spring arm with side notches, hinged to the leaf, and locking to a recessed guide hasp attached to the table.

IMPROVED CHRISTMAS TREE BRACKET.

August Dahler, New York city.—This is an improved bracket for Christmas trees, by which two candles may be supported on the same bracket, so as to balance each other. The device consists of a symmetrically bent band with central spring part, and with candle holders at both ends.

IMPROVED WINDOW SHADE FIXTURE.

John E. Dohen, Brooklyn, N. Y.—In the lower end of the shade is placed a bar of sufficient weight to hold it straight and to unroll it when released. The upper end of the shade is placed in a longitudinal groove in the roller, where it is secured by a key fitted into the said groove. The key has a longitudinal groove formed in its under side to fit upon a tongue of the roller in the bottom of its groove. It is held in place, clamping the end of the shade, by two tubular caps placed upon the ends of the roller, and in the sides of which, opposite the edges of the key, are formed slots for the edge of the shade to pass through. To the caps are attached pivots, which work in brackets attached to the window casing.

IMPROVED DOOR CHECK.

Thomas Hill, Portland, Me.—This invention has for its object to provide an adjustable fastener for both hinged and sliding doors, which shall be adapted to allow the same to be opened more or less and at the same time secure them against the ingress of parties from without. To this end, the inventor employs a notched and slotted bar, which is pivoted to the door jamb, and a sliding bolt, which is attached to the door, the arrangement being such that the head of the bolt works in the slot of the bar.

IMPROVED BED LOUNGE.

Ferdinand Braun, New York city.—This consists of a lounge with folding seat section, provided with a swinging sideboard, that is extended at the ends to form the supporting legs. The sideboard is hooked by a pivoted rod to the hinged head section, that locks, when folded back, securely to the back of the lounge. The lounge is readily changed to a bed, and vice versa, in an easy and convenient manner, by swinging out or folding the parts described.

IMPROVED COFFEE POT.

George W. Hubbard, Windsor, Vt.—This consists of an inverted funnel, in combination with a filtering cup, to cause the water to flow up and filter down through the coffee. The said funnel has a curb extending upward from its base around and above the bottom of the filter in order that the water, after passing down through the coffee, and on its way to the bottom of the pot, shall be made to flow upward at this place, leaving its sediment on the top of the funnel at its junction with the curb. The tube by which the water is conducted up into the filtering cup is perforated so as to deliver the water upon the coffee in jets.

IMPROVED WEATHER STRIP.

Theodore G. Plate, Hackettstown, N. J.—This is a weather strip in a groove in the bottom of a door, to be closed down on the threshold automatically when the door closes by contact with the door jamb, and having springs to raise it. It consists of a strip suspended from a striking rod by toggle-jointed bars, which are made to thrust the strip down by endwise movement of the rod, which is caused by contact of the end of the rod with the jamb. It also consists of an adjustable screw stud in the jamb, to be screwed out and in to regulate the movement of the strip, so as to insure its closing properly. It also consists of a novel arrangement of the springs, and also of the manner of supporting and grinding the striking rod.

IMPROVED ASH SIFTER.

John H. Raymond, Syracuse, N. Y.—This invention consists in an outer receptacle having circular guide grooves in connection with a swinging cover of arch form, and having lateral end flanges. When the cover is closed over the drum the same is revolved, so that the ashes are separated from the coal particles and dropped to the bottom of the receptacle.

IMPROVED BABY TENDER.

Thomas Shaw, Morris, Ill.—This is a device to hold a baby and allow him to jump, swing, and walk, without danger of falling. It is a kind of swing or seat for the child, suspended at the extremity of a horizontal bar. The child's feet rest upon the floor, so that he may jump or swing himself about as he may wish.

NEW AGRICULTURAL INVENTIONS.

IMPROVED FENCE.

Ambrose E. Balliet, Limestoneville, Pa.—This invention consists in a portable fence, formed of the horizontal boards, halved at their ends, the cross bars and pins arranged so that the pins pass through holes in the ends of the boards of the one panel across the outer side of the cross bar, and are attached to the ends of the boards of the other panel.

IMPROVED HARVESTER.

Joseph Miller, South Bend, Ind.—This invention is an improvement in the class of reapers which are provided with a traveling rake for conveying the cut grain up an elevator and delivering it on to a binder's table or into a receptacle from which it may be removed by hand or discharged by any suitable mechanical means. The improvement relates to mounting the reel upon a sleeve which revolves upon the rod or shaft by which the reel is adjusted with relation to the cutter bar; to the arrangement whereby the reel is adapted to be adjusted while revolving; to the arrangement of an endless traveling rake carrying chains; to providing certain links of said chain with lateral flanges to adapt them for attachment of the toothed rake bars; to the arrangement of the driving wheel shaft and the tubular shaft of the crosshead carrying the gears which mesh with and thus communicate motion from the driving wheel to the pinion of the supplementary driving shaft; to the manner of stringing the beveled and shouldered cutter plates upon a wire cable, and to the construction of the driving pulley.

IMPROVED BAG HOLDER.

Isaac E. Shumaker and John S. Moorhead, Kellersburg, Pa.—This consists of a sliding bag-holding frame, that is adjustable to different widths and lengths of sacks, and raised and dropped during filling by a hoisting double lever mechanism.

IMPROVED SULKY PLOW.

John W. Grimes, Appleton City, Mo.—This invention is an improvement in the class of sulky plows in which the plow proper is suspended from the wheeled frame in such manner as adapts it to be raised and lowered at will, for the purpose of changing the depth of furrow, or for holding the plow entirely off the ground while being transported from one point to another. The improvement relates particularly to the construction and arrangement of parts whereby the plow beam is held steady while in use, adapted to be raised and lowered bodily, by means of a single lever, while in operation, and also without changing the horizontal position or angle of the plow beam, and whereby the draft is applied in a direct line with the plow beam whatever be its adjustment.

IMPROVED PLOW.

Joseph Shickel, Bridgewater, Va.—This invention consists in connecting a moldboard and plow point by a projection on the former, and a countersink on opposite sides of the latter, in addition to the ordinary clamping bolt, thus enabling the point to be fastened, after reversal, with equal security and facility as before.

IMPROVED TILE-LAYING MOLE PLOW.

Stephen H. Reynolds, Hillsborough, Ind.—This relates to the construction and arrangement of a lever for laying and adjusting the drain tiles or tile sections, and the means for adjusting the pitch of the furrow tube and regulating the depth of the furrow. The implement lays the tiles without opening a permanent ditch.

IMPROVED SULKY PLOW AND CULTIVATOR.

Eli W. Russell and John N. Russell, Ashley, Mo.—This machine may be readily adjusted for use as a plow or as a cultivator. The plow is free to turn upon the axle, while a collar keeps it from lateral movement upon said axle. By adjusting the collar, the plow may be adjusted to cut a wider or a narrower furrow, as may be desired.

IMPROVED PLOW.

Francis R. Bell, Marshall, Texas.—This improves the construction of a moldboard for which letters patent were granted to the same inventor May 13, 1875, to make it more effective in preventing the black lands of Texas, and other sticky and waxy soils, from adhering to it. The invention consists in a wooden moldboard faced upon its rear side with metal, having a recess between it and said metallic facing, and perforated with numerous small holes.

IMPROVED PORTABLE FENCE.

Tilmon A. H. Cameron, Petra, Mo.—This invention is a portable fence, designed to form a yard or enclosure for stock. It is composed of sections or panels, which are hinged together, mounted on casters, wheels, and provided with braces for holding the panels in the desired relative position. The fence is thus adapted to be readily shifted from one part of a field to another, and to be adjusted in a hollow square or other form, according to the nature of the field or configuration of the grazing surface. The invention further relates to providing supports for an awning, the same being self-adjusting and folded together with the panels.

IMPROVED SELF-DISCHARGING MANURE SPREADER.

Thos. A. McDonald, Durham, Nova Scotia, Canada.—This consists of a wagon for transporting manure and spreading it broadcast or in drills. The bottom of the wagon is in the nature of an endless traveling belt, or apron, supported upon polygonal shafts, one of which is geared with, and derives motion from, the rear axle. The latter is provided with a spring clutch mechanism, by which it may be thrown into and out of gear with the endless apron at the will of the driver, in order to thus regulate the discharge of the manure. The means immediately employed to throw the clutch out of engagement are pivoted levers, operated by connecting rods and a lever under control of the driver. The manure is discharged from the end of the wagon by the endless apron, and broken up or pulverized by a toothed roller.