



**Improved Machine for Soldering Cans.**

William D. Brooks, Baltimore, Md.—This invention consists in several improvements which have been tested by many practical experiments, and which greatly lessen the average expense of soldering the tops, caps, and sides of cans and have made it possible for unskilled hands to do the work rapidly and well.

**Machine for Marking Letters and Canceling Stamps.**

Chas. J. Goff and Elmer B. Hurey, Clarksburgh, W. Va.—This invention relates to mechanical means whereby stamped letter envelopes in the Post Office Department may be conveniently and rapidly canceled. The invention consists in a series of improvements by which a single person can, in a comparatively short space of time, do all the canceling required at any post office, thereby not only securing uniformity and thoroughness in the work, but great economy of time and cost.

**Base Burning Stove for Anthracite Screenings.**

Henry R. Robbins, Baltimore, Md.—This invention relates to an improved magazine stove, especially adapted for burning anthracite coal screenings, and thereby utilizing what has been generally regarded as a waste product of the coal yard. The magazine, or cylinder for holding the coal, has a conical terminus formed of a narrow ring and vertical bars, the latter arranged at such distance apart as to prevent escape of the bulk of screenings between them, while allowing free access of flame and heat from the body of incandescent coal in the fire pot immediately below. Thus a degree or extent of combustion which would be difficult or impossible to produce and maintain, by means of the ordinary form of cylinder in magazine stoves is assured, while the area or surface of burning coal is largely increased and thereby a correspondingly greater degree of heat produced. The gas formed in the cylinder is fed down into the flame or burning coal by tubes, which are arranged directly over the fire pot so that the gas becomes highly heated before reaching the coal, and thus has its inflammable and combustible property increased. The invention also includes an arrangement of two annular registering slides with a fire pot open on the sides, whereby the combustion may be increased at the base or top, or both, of the body of screenings contained in the pot, as occasion or necessity requires.

**Improved Transplanter.**

Ara Race, Cheraw, S. C.—This invention relates generally to transplanters, but particularly to those which are used for the removal and transportation of cotton plants. The invention consists in combining a concave plate with a reciprocating spade; in the construction of the spade with a convexity on the inner side and opposite the convexity of plate; and in combining a crooked slotted rod with the spade handle.

**Improved Watch.**

Louis Evans, Pittsburgh, Pa.—This invention consists in combining the winder post with the wheels and barrel, and also in the application of levers in connection with the wheel post and the dial wheel.

**Water Heater, Warming Closet, etc., for Cook Stoves.**

John O. Shrlner and John Taylor, New Castle, Ind.—The object of this invention is to provide for household use an attachment for the ordinary cook stove which is adapted for heating a large or small quantity of water by means of a reservoir and a hollow cylinder placed in the stove pipe or drum, the two being connected by branched circulating pipes arranged in a peculiar manner. The invention also includes a warming closet which is arranged to slide on the cover and slide of reservoir.

**Improved Fire and Water Proof Roof.**

Tobias New, New York city—This invention relates to a peculiar construction of the roofs of buildings so that they may be always preserved in a waterproof condition, and yet allow the same to serve as a walkover which families or servants may travel in order to utilize the same for drying clothes and other useful purposes.

**Improved Binding Attachment for Harvesters.**

William M. and George H. Howe, Lansing, Minn.—This invention consists in combining a straw rope twister, a binding arm, a tucker and a cutter so that the rope is made and delivered automatically; also in certain subsidiary features of improvement which greatly add to the efficiency and utility of the binding attachment.

**Improved Water and Gas Cut Off.**

Eugene M. Morris, Baltimore, Md.—This invention relates to means for locking and operating the valve of a gas or water cock. It consists in combining with a valve rod connection a ratchet-flanged drum, a thumb-pieced detent slide, and a spring.

**Improved Perspectograph.**

Anderson R. East, Selma, Ind.—The object of this invention is to provide a simple and efficient mechanical apparatus by which to take the points or boundary lines of all visible stationary objects accurately and transfer them to paper on a sketch board. Two perpendicular bars extend from a bed piece. On one bar are two sleeves, the lower of which carries a horizontal arm, the further extremity of which is slotted to receive the second perpendicular bar. On the horizontal arm slides a vertical rod through which, at its upper end, passes another horizontal arm, which is attached to the upper sliding piece on the bar first mentioned. Pivoted to either sliding piece at will is a converging arm which carries one eye plate on a vertical staff. On all these portions except the swinging arm are marked scales. A single example of the mode of using the instrument will suffice to show its application. To operate by the use of the perpendicular scale and the horizontal scale on the upper sliding piece, or, in other words, to take field notes by latitude and departure, using the sliding scales, slide the horizontal scale to the top of the meridian, and move the scale of latitude (the vertical rod on the lower horizontal arm) to the extreme right. An object in the foreground to the extreme left and nearest to the observer is selected and regarded through the eye plate. The scale of latitude on the base is next moved till it comes in direct line with the eye and the said point. Then the horizontal scale at the top of the meridian is loosened and moved down till it also comes in direct line from the eye to the object, and the angle of incidence or the latitude and departure of the said point of the object is found at the intersection of the two scales. A horizontal scale on the plate board is moved until it cuts the degree of latitude of said point in the object, and a dotter is fixed to the angle of longitude or departure. By a gentle pressure on the dotter the point is carried on the paper. In this way the operation is carried on from object to object, and from point to point, until the entire field is gone over.

**Improved Breast Pad.**

Frederick Cox, Brooklyn, N. Y.—This invention consists of inflatable india rubber breast pads so constructed as to fit over the breast and not bear directly upon it. There is an annular cushion to bear around the base of the natural breast, and also a ventilating opening from the cavity. The device improves the form of the natural breasts by keeping them in the natural shape, instead of flattening and depressing them, as the common pads do; and they are more healthful, and retain their own proper shape better.

**Improved Lard Cooler.**

William J. Wilcox, Paterson, N. J.—To make a strictly prime article of lard, it is necessary to stir or agitate it to a certain extent while it is cooling after having been rendered or melted by heat. To this end it is proposed to employ two revolving agitators, turning on their own axes, while at the same time rotating around the axis of the tank. The agitators being on opposite sides of the axis of the tank, their action is rendered very nearly equal throughout all parts of the latter. Four of said agitators may be used as well, two being in a line at right angles to the line of the other two; but generally two only will be sufficient.

**Improved Medicinal Capsule.**

Peter Cauhape, New York city.—This method of making the capsules consists of dipping a ball in the gelatin in a liquid state, of such low temperature that a thin film will adhere to and solidify on the ball when lifted out, sufficiently to form an elastic envelope. This is pulled off the ball by the fingers, and placed in a mold, with the mouth upward, to be filled with the medicine, after which it is sealed up. By flattening the ball to a certain extent at the bottom, the accumulation of the material thereat will make the sack round, forming an article which is much better in respect of appearance, and is more acceptable to the public than the old elongated form.

**Improved Medical Compound.**

Edmund C. Lippincott, Eastontown, N. J., and Thomas R. C. West and James West, Brooklyn, N. Y.—This improved compound is for the cure of cancers, and is made of the juice of sheep sorrel, turpentine, and muriatic acid. The whole mass is reduced by evaporation to a thick, pasty state, when it is complete, and ready for use. It is applied to the parts affected in the ordinary way of using such remedies.

**Improved Iron Pavement.**

John Vandercar, Brooklyn, assignor to Martin Van Buren, New York city.—On the bottom of each section which is placed on the roadway is a flange, which is embedded in the foundation and prevents the section from getting displaced by the wear upon it. The sections, each with a tight bottom, have a broad surface, and may be made to lock together so as to support each other. The intermediate chambers are filled with concrete, which will harden by exposure to the air, or may be filled with sand or gravel so as to give a good foothold for horses. The chambers are eight or ten inches in depth. A pavement thus formed of sections, it is claimed, may be readily taken up for putting down water or gas pipes without injury.

**Improved Kitchen Safe.**

John B. Harrison and Josiah M. Harrison, St. Joseph, Mo.—This invention is an improvement in kitchen safes of the class in which spice drawers, dough kneading boards, and flour sifters are arranged conveniently for use. There are spice drawers, and a space provided with shelves, closed by a hinged door. A bracket supports a kneading roller and other articles. The hinged dough-kneading board may be adjusted at various angles to the front of the safe, thereby adapting it for convenient use. The top of the safe has a hinged lid which forms the cover of the conical hopper. The latter is designed to be a permanent receptacle for flour or meal, and has a sieve applied to its apex in such a manner as to be readily detached for cleaning, etc. Within the sifter is a rotary stirrer, the shaft of which is provided with a crank handle outside the safe. To control the descent of flour or meal into the sifter, a slide which forms the true bottom of the hopper is employed.

**Improved Locomotive Drawbridge.**

George Sicklesteel, Lapeer, Mich.—This invention consists of a strong frame, about as long as two spaces and two abutments of an ordinary bridge, mounted on wheels. The latter are so arranged and connected together that the locomotive being run on the bridge and rested with each of its driving wheels on two wheels of the bridge and set in motion, its wheels will actuate the wheels of the bridge, and cause it to cross on the abutments. The bridge is always supported by two of the abutments, or more if made longer, so as to prevent it from tilting down between them. A movable bridge is thus provided which itself crosses with the cars, and leaves the spaces between the abutments free for the passage of vessels. The invention is intended to take the place of the drawbridges now used for navigable streams, and is calculated to save much time, both to the cars and vessels.

**Improved Gang Plow.**

Allison G. Cummins and John R. Cummins, McKinney, Tex.—The king bolt is extended upward and curved forward, and to its upper end is pivoted a lever, to which, at a little distance from its pivoted end, is pivoted the end of a connecting rod, the other end of which is pivoted to the tongue. By this construction, by moving the free end of the lever to the rearward, so as to lie along the curved upper part of the king bolt, the plows will be raised and locked away from the ground. When breaking up, or when bedding or ridging cotton or other land, or when doing other plowing that requires a rigid plow beam, a brace is used, the forward end of which is connected with the forward bolster, and its rear end is hooked into the hinged plow.

**Improved Car Coupling.**

George D. Spielman, Lancaster, Ohio.—This invention consists of a horizontal bar, arranged transversely to the car in a horizontal slot in the end of the drawhead, and pivoted at its middle to the latter. A hook on one end engages the end of a similar car on the drawhead of the other car to be coupled. The second bar similarly engages the end of the first mentioned bar. The slots in the drawhead are shaped so that the coupling bars can be raised at the ends having the hooks, and depressed at the other ends to allow the hook ends to rise up over the other ends for coupling. The hook ends of the bars are provided with chains to lift them up. The drawheads are also chambered out above and below the slots, for the coupling bars to receive the ordinary coupling links, and pin holes are provided for the ordinary coupling pins, so that cars with this improved coupling can be attached to others having the ordinary couplings. The hook of one bar encounters the end of the other bar not provided with a hook, and rises up on it because of its curved end, while, at the same time, the said end swings down in consequence of the hook at the other end rising on the end of the other bar. The bars extend into the slots far enough to receive the pivots behind the ordinary coupling pins, and they are slotted sufficiently for both of said pivots to allow them to swing upward and down, as needed for engaging and disengaging with each other. The coupling is very strong and durable, and will couple self-actingly, as well on curves as on straight lines, and will uncouple in case the cars run off or shift.

**Improved Bag Fastener.**

Scott Wellington, East Saginaw, Mich.—A strap of leather is made of such a length as to allow the gathered mouth of the bag to be readily passed through it, and its ends are riveted to a small metallic plate. Upon the side, edge, and center of the middle part of the plate, are formed lugs connected by two rods. To the outer rod are pivoted two pointed plates, of such a length that they cannot pass the inner rod, and which are designed to press the fastening strap down against the said inner rod. A narrow strap has its middle part sewed to the middle part of the strap first mentioned. The end parts of this strap are passed through staples attached to the main strap, and their ends are passed through the spaces between the lugs and rods. In using the tie, it is extended, and is passed over the gathered mouth of the bag to be fastened. The narrow strap is then drawn tight, and is held securely by the tongues.

**Improved Window Screen.**

John H. Thompson, Flemington, N. J.—This invention relates to the construction of screens for windows, and consists in an adjustable frame by means of which the screen is adapted to windows of different sizes. The frame is made in two parts, the sides being constructed so that the parts lap past and slide on each other, so as to keep the edges of the screen cloth tightly inclosed when the frame is extended. Strips are inclosed by the sides, forming a part thereof, to which the screen cloth is attached. Each piece consists of two parts, which are fastened together with the screen cloth between them, the end pieces only being grooved. The depth of the grooves in the ends of the frame determines the extent to which the frame may be extended without leaving an opening. The screen cloth is preferably made of wire, but ordinary mosquito netting may be used.

**Improved Bridge.**

Richard Long, Stelapolls, Iowa.—This invention relates to improvement in railroad and other bridges of shorter spans, with wooden arches, and consists in the use of stirrups suspended from the arches which carry the cross beams, together with longitudinal stay rods, which connect the ends of the arches.

**Improved Reversing Valve for Steam Engines.**

Philip T. Brownell, Elmira, N. Y.—Steam is admitted through an aperture, in a cup which fits on the receiving chamber. Pipes connected with this chamber convey the steam to the several cylinders. The valve receives a rotating motion from the crank shaft, and the latter is supported by a spider, which is fitted to the upper edge of the chamber. Upon the lower end of the shaft is a cross bar, with a toe at the end, which takes hold of lugs on the top of the valve for revolving the same. The valve is a hollow shell, having partitions and a hollow tubular center. The cylinder slides in the center, and has a horizontal partition which separates the live from the exhaust steam. The center has two long slot ports, and the sliding cylinder has two corresponding therewith in size and position. The cylinder is given a slight sliding motion, which allows either pair of these ports to register for admitting steam and exhausting it. The sliding cylinder revolves with the valve. When one pair of ports are admitting steam, the opposite pair are exhausting it; and this action is instantly reversed by a slight movement of the sliding cylinder.

**Improved Folding Satchel or Box.**

Lorenzo M. Gillet, New York city.—This invention is a small satchel or box for travelers that can be folded up in a small, compact package when empty. The bottom, sides, ends and top, may be cut in one piece from pasteboard, leather, or other suitable material, or said parts may be made separately with joints to bend at the angles of the box for adjusting it or setting it up for use. The sides and top fold against the edges of the ends and project a little beyond them, so that staples on said ends will project through slots to fasten the ends and sides together by pins through them, or any other equivalent arrangement. The top will overlap one of the sides and form a lid for opening and closing the box or satchel. Any ordinary trunk or satchel handle may be attached, or a shawl strap may be buckled around the box for carrying it.

**Improved Combined Ash Box and Sifter.**

John D. Helms, New York city.—This invention consists in the arrangement of a sieve and close ash box in a large inclosing box, whereby wood may be conveniently removed, and also ashes may be sifted without allowing any portion to escape. The wood and coal are supplied to chambers by raising the hinged cover, and the former may be removed without disturbing said cover by turning down a door which is hinged at the front and is of a width less than the depth of the box. The sieve is worked by a detachable handle, to be introduced through the holes in the case. After the ashes have been sifted out, the sieve can be taken out when the handle has been detached, and emptied into the coal chamber, and the ash box can be withdrawn from time to time to carry the ashes away.

**Improved Ditching Machine.**

John M. Dunn and Murdoch M. Dunn, Erlin, Miss.—This invention has for its object to improve the construction of the machine for which letters patent No. 119,334 were granted to John M. Dunn. The frame may be slid to adjust the machine laterally to work in any desired part of the excavation. The wheels and axle may be swung forward to lower the machine into working position, or swung back to raise the machine for passing from place to place. The device may be readily secured in place when adjusted, and is raised or lowered by suitable mechanism connected with the wheels. The plow may also be raised and lowered and adjusted. A wheel made with a wide tread projects upon one side of its body. In the angle between the body and rim of the wheel are secured small plates, arranged radially, and which serve as buckets to carry up the soil thrown into the cavity of the wheel by the plow. A guard plate keeps the earth from falling from the ascending buckets. As the buckets reach the upper part of the wheel, the soil falls from them into an inclined spout attached to the frame, where it is received upon the wings of a wheel, by which it is projected upward and outward to fall upon the ground at the side of the ditch. The earth from the wheel is caused to fall at the desired distance from the wide wheel by a shield against which it strikes. The winged wheel is so arranged that it may be driven by the advance of the machine.

**Improved Pantaloons.**

William O. Lathicum, New York city.—The object of this invention is to render pantaloons more elastic, and the fastening more durable than they have hitherto been; and it consists in an adjustable elastic strap attached to the waistband or top of the pantaloons behind, and in a plate fastening in front. By means of this elastic strap, the pants are made self-adjusting to the waist or abdomen, and are rendered easy and comfortable to the wearer.

**Improved Heating Stove.**

Edwin A. Osborne, Charlotte, N. C.—The ash pit is deeper at the back than at the front part, to prevent the ashes rolling forward, and there is an opening in the bottom at the front, with a collar cast around it for receiving the pipe through which the air is admitted to support combustion in the stove. The supply of air is regulated by a damper, which has an elevation, to prevent the falling of ashes into its vent, and a thin narrow handle, which extends from the inside of the ash pit through a narrow opening in the front. This is all cast in one piece. The pipe extends through an opening in the floor corresponding with the position of the front of the stove, and at the lower end below the floor is a wicker work of wire, with a tin or sheet iron bottom, as a spark arrester. The covering for the ash pit is a common movable cover. The object of the invention is to obtain the supply of air outside the room to be heated, thus preventing currents, preserving the uniformity of the temperature, and requiring less fuel.

**Improved Middlings Purifier.**

Morris Sower, Princeton, Ill., assignor to Sower Brothers, same place.—An inclined frame is placed within the main frame, and is made a little shorter than the latter, so that it may have a longitudinal movement. It is actuated by an eccentric in one or both directions, supporting springs always bringing it back promptly when released. The frame to which the bolt cloth is attached is suspended within the vibrating frame by flexible straps. By this arrangement each movement gives a sudden jar to the cloth frame, which keeps the cloth clean without the use of brushes. The middlings are fed to the cloth frame by a roller or other suitable feed from a hopper, which is placed above the upper end of the frame. Below the discharge opening of the hopper a spout leads into an expansion chamber, from the lower part of which a short spout leads out through the rear end of the box, which is provided with a trap door. From the expansion chamber an opening is formed into the fan chamber. The air is so directed that it passes up through as well as along above the bolt cloth, while a third current goes through the middlings as they fall from the hopper. By this construction the air drawn through the machine by the fan carries the light impurities with it. Any of the middlings that may pass through the spout with the air settles in the expansion chamber, and may be drawn off when desired.

**Improved Plow.**

Isaac M. Fork, Belton, Tex.—This invention has for its object to furnish an improved plow, so constructed that it will scour and keep bright in the stiffest and most sticky prairie soil, and will thus work without clogging where ordinary plows cannot work. The invention consists in an improved plow plate, formed of a single piece of iron or steel, with its point in the form of an isosceles triangle with a rearwardly inclined land side flange. The angular line between the land side flange and the mold board is concaved upon the arc of a circle about six feet in diameter. The mold board is convex, so that a line drawn from its rear corner to the point of intersection of the said angular line and the point may be upon the arc of a circle of about twelve feet in diameter.

**Improved Sash Holder.**

John X. Miller, Chester, Pa.—This invention consists in providing the window sash at both sides with triangular recesses, into which strong band springs are placed, with forward projecting rollers attached thereto. These rollers bear against one guide strip of the window frame, so as to hold the sash by its friction on the other guide strip in any position in which it is placed. For locking the sash in closed position, so as to prevent its opening from the outside, small catches are attached to the lower parts of the outer guide strips, which catches engage a corresponding recess of the sash, while the necessary play of the sash for engaging and disengaging it from the catches is obtained by recesses at both sides.

**Improved Gear Button for Flour Packers.**

Lewis Creveling, Akron, O.—The object of this invention is to supply, in the place of the button at present in use, one which controls more exactly the throwing out of gear of the machine, and packing the barrels and sacks more evenly as to weight. This invention consists in the application of a T rail to the upright frame piece of the platform on which the barrels and sacks are placed, with a button slotted to correspond, which may be set firmly thereon by means of a thumb screw in the position required to pack the barrels or sacks, and then throw the machine out of gear.

**Improved Corn Husking Implement.**

Jacob F. Schmeitzer, Manteno, Ill.—The object of this invention is to furnish to farmers an improved corn husker, which is made easily adjustable, to be used in cold weather with or without mittens or gloves, and be adapted for different sizes of hands. The invention consists in making the handle plates sliding in each other, and fastening them rigidly, by a set screw, in the position desired to fit the hand.