

UNITED STATES PATENT OFFICE.

JESSE WARREN, OF GLENS FALLS, NEW YORK.

IMPROVEMENT IN PLOWS.

Specification forming part of Letters Patent No. 6,620, dated July 31, 1849.

To all whom it may concern:

Be it known that I, JESSE WARREN, of Glens Falls, in the county of Warren and State of New York, have invented certain new and useful Improvements in Plows, which I denominate "Warren's Changeable Butterfly Plow," of which the following is a full and exact description, reference being had to the drawings hereunto subjoined, which delineate the connection and form of the several parts, and making part of this specification.

Figure 1 is an elevation of the left or land side of the plow. Fig. 2 is an elevation of the right or furrow side of the same. Fig. 3 is a rear elevation of the plow. Fig. 4 is a sectional elevation of the landside, the land-bar and combined bed-point being removed. Fig. 5 is a sectional perspective view of the front part of the plow, the share and combined cutter and bed-point being removed. Fig. 6 is a perspective view of the combined cutter and bed-point detached. Fig. 7 is a perspective and inverted view of the share detached. Fig. 8 is an elevation of the landside of the bed-point, also detached. Fig. 9 is a view of the inner and lower edge of cutter or clearer. Fig. 10 is a view of the inside of the land-bar, and section showing its attachment to the landside. Fig. 11 is an inside view of the mold-board detached. Fig. 12 is an elevation and top edge view of the adjustable mold-board detached. Fig. 13 is a plan or top view of the shield and cutter and a section of the landside, showing the notched mortise F^3 , in which the shield is secured. Fig. 14 is an elevation of the inside of the landside, showing the bed or extension on which the front end of the mold-board, combined cutter, and bed-point are secured, the trapezoidal plate being in its proper position. Fig. 15 is a plan of the trapezoidal connecting-plate. Fig. 16 is a sectional view of the pendent arm E' and adjustable wheel E .

The references used in the specification designate the same parts in the several figures.

The character of my invention and improvements in the plow consists in the construction and combination of the combined cutter and bed-point with the mold-board; also, in constructing the mold-board in two pieces or sections, the upper half of which being movable and made adjustable by means of a hook-bar

to give more or less turn to the sward in plowing, and also adapting the mold-board for various kinds of soil; and in combining with the plow next to its landside a sustaining and gaging wheel for gaging the depth of the furrow and relieving the plow; likewise, in placing a horizontal adjustable leveler and weed-cutter in front of the sustaining-wheel, fixed to a shield projecting up in front and over the wheel to protect it from accident; also, the manner of attaching and securing the rear end of the mold-board permanently to the inside of the landside of the plow by means of a trapezoidal-shaped connecting-plate bolted to the landside; and likewise the manner of securing the land-bar to the landside of the plow, a particular description of the construction, connection, and use of the several features above mentioned being as follows:

The material of which my improved plow is constructed is chiefly cast-iron. The beam A , the landside B , and the standard or sheth C are cast in a single piece, and are of the form represented in the drawings, the standard or sheth C being extended at C' to form a support for the handles D , to which they are attached by screw-bolts.

E is the gaging and sustaining wheel, secured next to the landside to the lower end of a pendent bar, E' , by means of a horizontal stud, h , on the neck of which it turns, the shank being square and provided with triangular-shaped cogs h' on its vertical sides, which fit into corresponding-shaped notches in the sides of the mortise E^2 , Figs. 2 and 16, in which it is secured by means of a bolt, e , passed through it and screwed fast by a nut, e' , said pendent bar E' being firmly bolted to the upper end of the standard or sheth at C' . This wheel can be raised or lowered in the mortise E^2 by unscrewing the nut e' and moving the cogged shank of the stud h from one notch to the other, and made fast by the nut e' , in order that a greater or less depth of furrow may be cut, said wheel being designed especially for that purpose.

Immediately in front of the gaging and sustaining wheel E is secured a horizontal adjustable leveler and weed-cutter, F , arranged at an acute angle to the landside B , projecting outward and backward, and is attached to the lower edge of a curved shield, F' , Figs. 1 and

UNITED STATES PATENT OFFICE.

JUSTIN MULHERN, OF ST. LOUIS, MISSOURI.

APPARATUS FOR FILTERING WATER, &c.

Specification of Letters Patent No. 6,621, dated July 31, 1849.

To all whom it may concern:

Be it known that I, JUSTIN MULHERN, of the city of St. Louis and State of Missouri, have invented a new and Improved Apparatus for Purifying and Cooling the Mississippi River Water, or other Impure Water, by the Combined Action of Settling and Upward Filtration; and I do hereby declare the following to be a full, clear, and exact description thereof, reference being had to the accompanying drawings, making a part of this specification, Figure 1, being a vertical longitudinal section, and Fig. 2, a horizontal section in the line x, x , of Fig. 1. My water purifying apparatus consists of an oblong rectangular box, in which is arranged series of settling chambers and filtering compartments, in the manner represented in the drawings; in which similar letters indicate like parts in both figures.

A, is a large settling chamber, or reservoir, located at one end of the oblong box, into which the impure water is first admitted to the apparatus. $B^1, B^2, B^3, B^4, B^5, B^6$, and B^7 , are filtering compartments; and C, is a pure water chamber, located at the opposite end of the box from A.

Perforated plates h and k , form the top and bottom of each filtering compartment; the side l , of each filtering compartment descends from the top, or cover of the oblong box, to the bottom perforated plate k ; and the side m , of each filtering compartment, is connected by a water tight joint to the bottom of the box, and rises to the top perforated plate h as represented in Fig. 1. Between each of the filtering compartments, are the wells or spaces p , which descend into the settling chambers n , located below each filtering compartment.

Water is admitted into the chamber A, in which it should be allowed to rise to within an inch or two of the top of the box, or a short distance above the tops of the series of filtering compartments; at which height it may be kept by a ball cork, or other suitable device.

The water will filtrate from the chamber A, by the force of its gravity, up through the filtering compartment B^1 , from which it will flow into and descend in the space p , to the settling chamber n , under the filtering compartment B^2 , from which it will filtrate up through the compartment B^2 , and

flow into and descend in the space p , between the compartments B^2 , and B^3 , to the settling chamber n , under B^3 ; and so on through the entire series of filtering compartments, and settling chambers to the pure water reservoir C, at the opposite end of the box.

A portion of the muddy impurity in the water will be deposited in the chamber A; another portion will be separated by the filtering material in the compartment B^1 , and another portion will be deposited in the settling chamber n , under the compartment B^2 ; and thus the operation will be continued through the entire series of filtering compartments and settling chambers, till the water reaches the chamber, or reservoir C; when it will be found to be perfectly translucent, and considerably cooler than when it left the chamber A, at the opposite end of the box.

By an apparatus composed of seven filtering compartments, with a cover on the box to keep them from the air, I find that in very warm weather, water in the pure water reservoir C, is fifteen degrees colder than it is in the chamber A.

A waste pipe D, passes longitudinally under the oblong box (composing the external portion of the water purifying apparatus), and which is connected with the settling chambers n, n , under the filtering compartments, by the series of stop cocks F, F.

E, is a pipe placed at the side of the apparatus, which is connected with each of the filtering compartments by tubes closed by the plugs g, g .

When a filtering compartment requires cleansing the cock F, beneath it, is opened, and water is poured into the top of the compartment, which flows through and removes the impurity from the filtering material and passes into the waste pipe D; the space p , and settling chamber n , is at the same time cleansed by inserting a brush of suitable shape, (as represented in Fig. 3), and pouring in the requisite quantity of water from above.

To prevent the stoppage of the filtering operation in the apparatus while a filtering compartment is being cleansed; the filtering compartment undergoing the cleansing operation, may be disconnected from the side pipe E, by the insertion of the plug g , and the filtering compartments immediately in

