(No Model.)

J. W. HUMPHREYS.

DITCHING PLOW.

No. 321,898. Patented July 7, 1885.

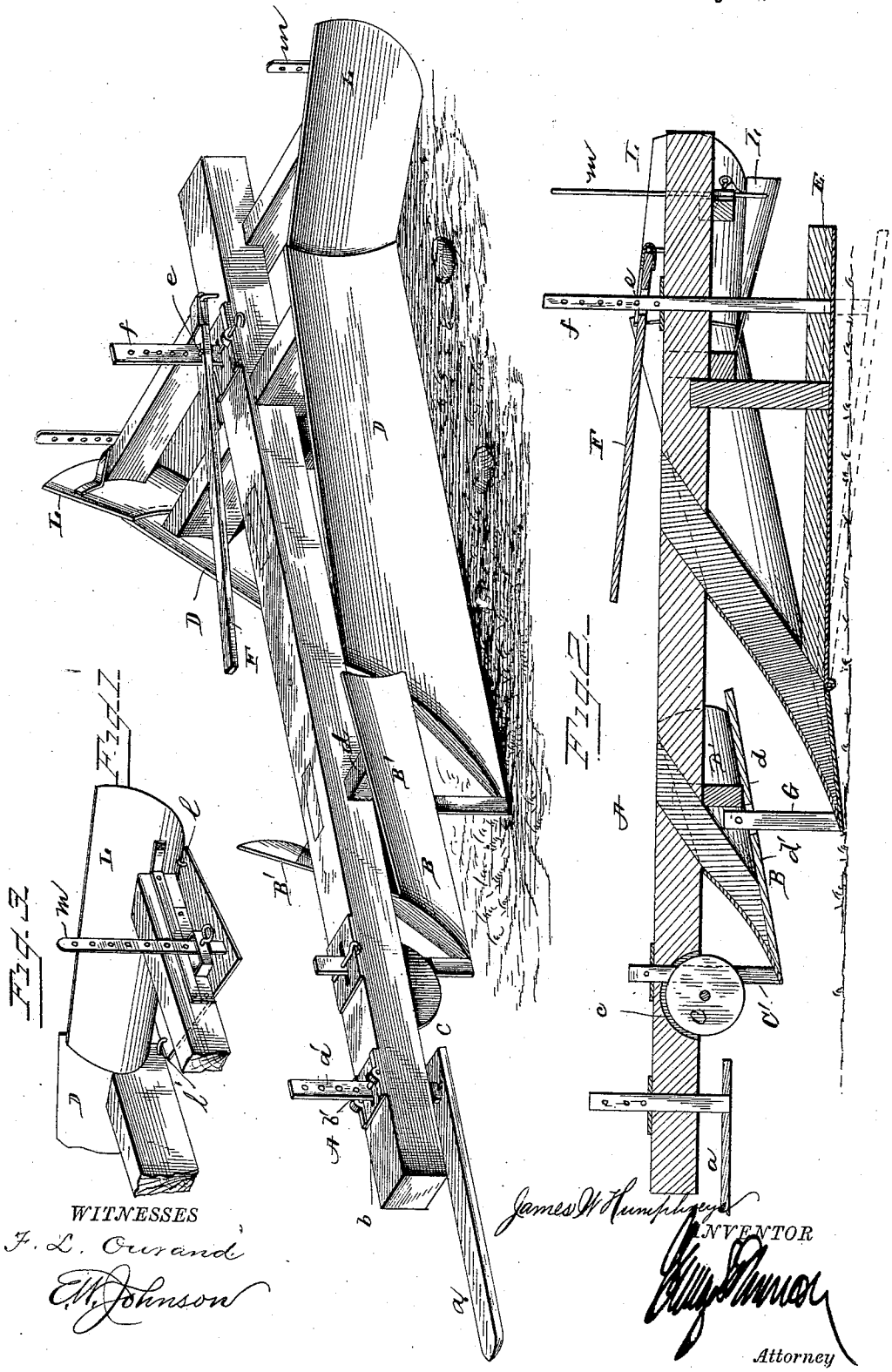


Fig. 3.

WITNESSES

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JAMES W. HUMPHREYS, OF IROQUOIS, ILLINOIS.

DITCHING-PLOW.

SPECIFICATION forming part of Letters Patent No. 321,898, dated July 7, 1885.

Application filed February 12, 1885. (No model.)

To all whom it may concern:

Be it known that I, JAMES W. HUMPHREYS, a citizen of the United States of America, residing at Iroquois, in the county of Iroquois and State of Illinois, have invented certain new and useful Improvements in Ditching-Plows; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters or figures of reference marked thereon, which form a part of this specification.

My invention relates to certain new and useful improvements in ditching-machines, and relates more especially to that class which are known as "surface-ditchers," or technically as "ditching-plows;" and my invention consists in the construction and combination of the parts, as will be hereinafter more fully set forth, and specifically pointed out in the claims.

My invention is an improvement upon the Letters Patent granted to me on the 8th day of October, 1878.

In the accompanying drawings, which illustrate my invention, Figure 1 is a perspective view; Fig. 2, a sectional view; and Fig. 3 is a detail perspective view.

A represents the beam of the ditching-plow, to the forward portion of which is adjustably attached a shoe, *a*, the rear portion of which is provided with a vertical standard, *a'*, which passes through a longitudinal slot, *b*, in the front end of the plow-beam. Adjacent to this slot on the upper side of the beam are attached plates, through which passes a pin, which enters perforations in said plates and the standard *a'*, so as to hold the shoe in position. By providing the beam with a longitudinal slot, through which the flat upright or standard passes, the shoe *a* is prevented from turning. The under side of the beam A is provided with a semicircular recess, *c*, for the reception of a rolling-colter, C, which is pivotally attached to the under side of the plow-beam immediately in front of the forward plow, B, which is rigidly attached to the beam. This forward plow, B, has double mold-boards B', which are held apart from each other by the cross-beam *d*, the outer ends of which are curved so as to correspond with the interior configuration of the said mold-boards, and centrally with cross bar is attached to the under side of the beam A. From the point of the plow B, extending rearwardly and upwardly, is attached a shoe, *d'*, and from the point of said plow a cutter, C', extends upwardly and passes through the recess *c* and plow-beam A, to the upper surface of which it is secured. Said cutter lies adjacent to the colter C. To the beam A, in rear of the plow B, are attached mold-boards or shares, which are constructed substantially as shown, said construction and arrangement being fully described in my Patents Nos. 187,446 and 208,682, said mold-boards having at their rear ends wings or extensions L. Under the shoe of the rear plow is hinged an adjustable sole, E, which sole is adjusted by means of a lever, F, which is pivotally connected to the upper side of the plow-beam and slotted so that the standard *f*, attached to the rear portion of the sole, may pass through the same. This standard is provided with similar means to the standard *a'* of the shoe *a*, and when it is desired to elevate or depress the shoe a pin, *e*, is placed in the perforations in the standard *f* either above or below the lever. The point of the rear plow is provided with an upwardly-projecting cutter, G, which passes through a slot in the shoe *d'* and is attached firmly to the frame of said plow.

The operation of my invention is as follows: When it is desired to either cut a new ditch or open an old one, the forward shoe is adjusted to the desired distance from the plow-beam, according to the depth of the ditch desired to be made. By the construction hereinbefore described this shoe will be allowed a swinging movement upon its transverse securing-pin, the rolling-colter will effectually cut and separate the weeds and earth in front of the cutter attached to the forward plow, and prevent the forward cutter becoming obstructed. The plow B will remove the top soil or sod and loosen the same, throwing the earth removed so that it will be taken up and carried by the mold-board of the rear plow, the cutter of the rear plow will enter the subsoil, and the earth will be thrown by the mold-board of this plow to each side of the ditch, the wings or extensions to the rear mold-

boards being for the purpose of guiding the earth so that it may be deposited where desired at the edge of the ditch and for the purpose of throwing the earth at a greater distance from the edge of the ditch. The depth of the ditch may be regulated by adjusting the sole E, which is pivotally attached under the shoe of the rear plow. A vertical depression of said shoe throws the points of the plow downwardly so that they will enter more deeply into the ground, and by this adjustment the ditch can be cut at different depths in uneven ground. By providing two plows, one located above the other, the forward one being of less dimensions than the rear plow, the draft is lessened and the passage of the ditching-machine through the earth is much easier. To the lower edge of the wings or extensions L are attached plates L′ by means of the hinges *l l′*, the forward hinge, *l′*, if desired, may be attached to the cross-beam which is located forward of the rear beam, as shown. The plates L′ are triangular in shape, and will keep the wings a certain distance from the surface of the ground, and will regulate to a certain extent the depth of the ditch, said plates acting in conjunction with the sole, which is located under the shoe E. The plates are normally located at a slight distance above the ditch, and their angle with relation to the extensions L may be changed by means of the bar *m*, which passes through a bail attached to the rear cross-beam of the frame, said bar being held rigidly in position by means of the pin *n*.

The plates hereinbefore described, besides serving to regulate the depth of the ditch, will also keep the earth from falling back into the ditch, as it will smooth and compress the surface as it passes over the same.

I claim—

1. The combination, in a ditching-plow, of a rigid beam provided at its forward end with an adjustable and pivotally attached shoe, plows with diverging mold-boards and vertical cutters, as shown, a rolling-colter journaled adjacent to the cutter of the forward plow and above the point of the same, and a sole pivoted to the underside of the rear plow and provided with a lever for adjusting the same, the parts being constructed and organized substantially as shown and described,

2. In a ditching-plow, the hinged horizontal plates L′ adjustably attached to the frame and rear wings, said plates being provided with means for adjusting the same, substantially as shown, and for the purpose set forth.

3. In a ditching-plow constructed as described, the combination of the mold-boards D, wings or extensions L, and an adjustable shoe, plates L′, hinged near the extensions L, and a bar which extends upwardly from said plate and is adjustably connected to the frame, the parts being organized substantially as shown, and for the purpose set forth.

In testimony whereof I affix my signature in presence of two witnesses.

JAMES W. HUMPHREYS.

Witnesses:

JOSEPH H. MCCLAIN,
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