E. C. Hodge,

2 Sheets, Sheet 1.

Side Hill Plow.

No. 108,907. Patented Nov. 1, 1870.

Fig: 1.

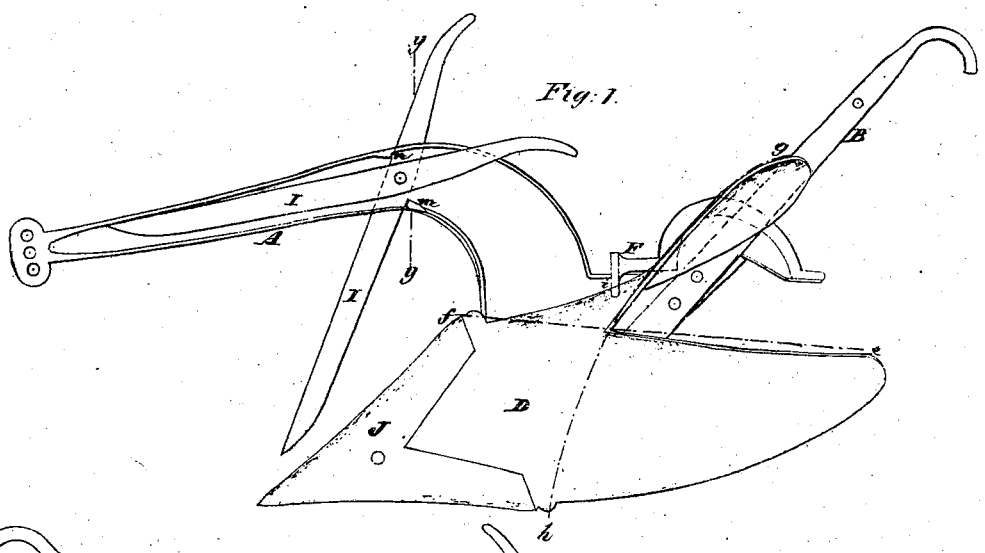

Fig: 2.

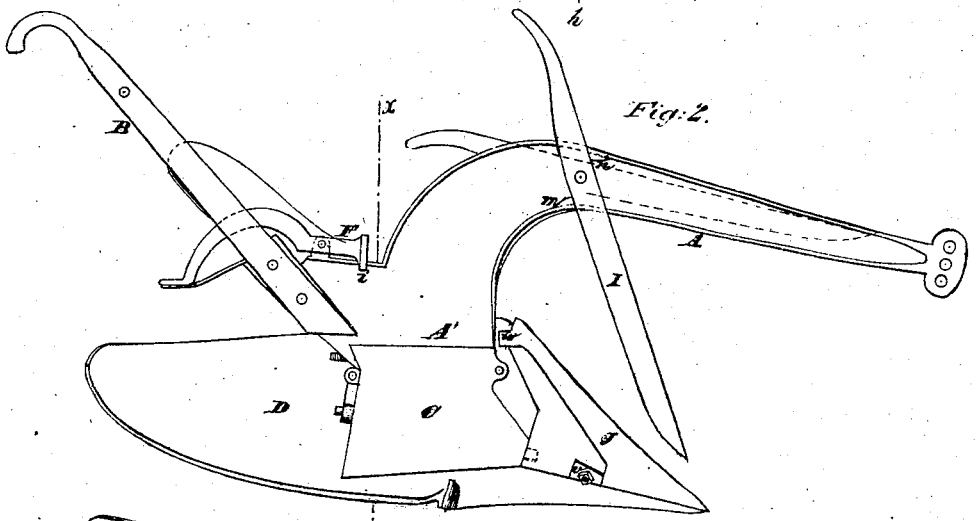

Fig: 10

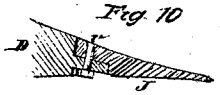

Fig: 3.

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2 Sheets, Sheet 2.

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Fig: 4.

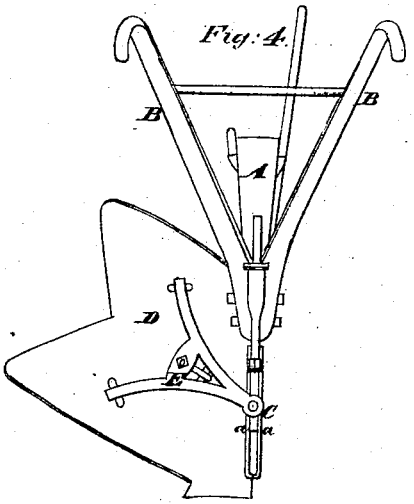


Fig: 7.

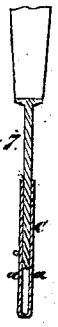


Fig: 8.

Fig: 5.

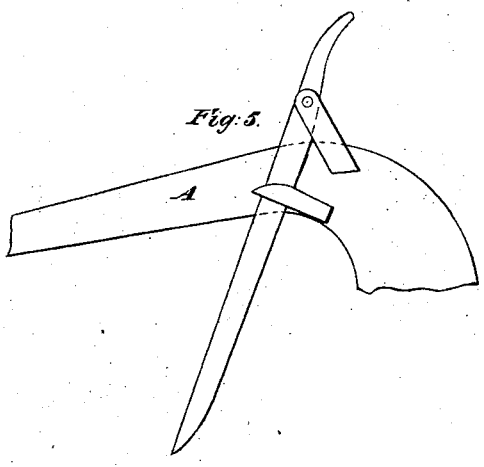
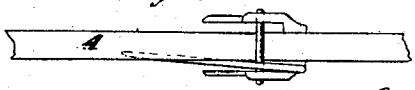


Fig: 9.

Fig: 6.



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EPHRAIM C. HODGE, OF ONEONTA, NEW YORK.

Letters Patent No. 108,907, dated November 1, 1870.

IMPROVEMENT IN REVERSIBLE PLOWS.

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern:

Be it known that I, EPHRAIM C. HODGE, of Oneonta, in the county of Otsego and State of New York, have invented certain new and useful Improvements in Reversible Plows; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawing making a portion of this specification, in which—

Figure 1 is a side view, showing the face of the mold-board of a plow constructed according to my invention.

Figure 2 is a similar view of the same from the other or opposite side.

Figure 3 is a plan or top view of the same.

Figure 4 is an end view, from the rear, of the same.

Figure 5 is a detached side view, showing a modification of one feature of the invention.

Figure 6 is a plan view of the parts indicated in fig. 5.

Figure 7 is a vertical transverse sectional view, taken in the line *x x* of figs. 2 and 3.

Figure 8 is a similar sectional view, taken in the line *y y* of fig. 1.

Figure 9 is a detached view of a portion of the mechanism employed for holding the mold-board in position.

Figure 10 is a central longitudinal sectional view of the connection between the mold-board and share.

Similar letters of reference indicate corresponding parts in all the figures.

This invention relates to that class of plows known as hillside plows, and used for plowing sloping or hillside lands.

Its object is to provide a plow of the kind indicated that may be used not only for that purpose, but which may also be employed in the tillage of flat lands with as much efficiency as if constructed particularly therefor; also, to enable the mold-board to be effectually held in position when in use, and conveniently disengaged preparatory to being turned from one side of the beam to the other.

The invention consists in certain novel means whereby the desired objects are secured.

To enable others to understand the construction and operation of my invention, I will proceed to describe it with reference to the drawing.

A is the beam, which may be of cast metal, of any usual or desired form, or of wood, and having attached to it the handles B in any suitable manner.

To its lower rearward part A′ is fixed the combined shoe and land-side C. This is composed of two plates *a*, as indicated in figs. 4 and 7, bolted firmly upon the two sides of the lower-edge portion of the part A′ just mentioned.

The shoe of the plow is constituted by the lower portion of C and the land-side by the upper portion of the same, the two being thus combined in one, but each serving its own special purpose in the operation of the plow. This enables the land-side and shoe to be readily and conveniently attached in place with reference to each other, the beam, the crotch, and the mold-board, and, at the same time, presents a smooth surface to the land.

The mold-board D has its forward part pivoted to the lower front extremity of the beam inside of the shoe, at *b*, by the usual arbor and socket, and further back carries the ordinary crotch E. The axial end of this crotch E, however, instead of having its pivotal point nearly in line with the bottom of the shoe, as has hitherto been the case, has such pivotal point provided midway, or nearly so, between the base of the shoe and the top of the land-side, as represented in figs. 2 and 4. Very great advantages are gained by this, inasmuch as the axial line or center of oscillation of the mold-board bears a certain relation to the surface contour of the reversible mold-board, and it is found, by careful trial and experiment, that, when the axial line is arranged at or near the base of the shoe, and nearly horizontal, in the usual manner, the lines of a flat-land plow cannot be adapted to the mold-board of a hillside or reversible one, whereas, by elevating the rear pivot of the mold-board to a point midway or between the base of the shoe and the top of the standard, and thereby giving a considerable inclination to the axial line, such adapation of land-side surfaces to hillside or reversible mold-boards is very effectually secured, and the plow is fitted for use either for hillside or flat-land plowing. For example, having reference to fig. 1, when the mold-board is in the position shown in said figure, the part below a line drawn from *e* to *f*, having the form of a mold-board of a flat-land plow, may be used for turning furrows on perfectly level fields. In like manner, when the mold-board is reversed, the part bounded by a line drawn from *g* to *h*, being brought lowermost upon the opposite side of the beam, and being of the same land-side form as the other, may act in the same way on level land. At the same time, the mold-board being reversible, the plow may be used with all convenience for hillside plowing. Such configuration of the mold-board, however, would be unattainable in practice were it not for the special arrangement, hereinbefore described, of the pivotal point at which the crotch is connected to the rear of the standard or shoe, as the case may be, namely, between the base of the latter and the top of the former.

In order to provide for the retention of the reversible mold-board in place upon either side of the beam,

and to dispense with the inconvenient device ordinarily employed for such purpose, I pivot to the rear end of the beam, in front of the handles, a hook, F, having two downwardly-extending prongs, *i*, shown in fig. 9, so arranged that, when the mold-board is brought to its place on one side of the beam, a hole provided in the mold-board near its edge will receive the adjacent prong of the hook, so that the mold-board will be held in place thereby. When the mold-board is reversed, a corresponding hole near the opposite edge of the same receives the other prong of the hook with a corresponding result.

To facilitate the liberation of the mold-board preparatory to its reversal, the hook has its rear end extended back between and behind the handles to form a lever, which is pressed upward by a spring to bring the hook to its place in holding the mold-board, as previously described.

In order to release the mold-board, it is only necessary to depress the lever with the foot to lift the hook, which may, of course, be done without taking the hands from the handles.

In order to enable a colter to be used in the requisite relation with the mold-board, in either position of the latter, two colters I are provided, both upon the same pivot, but one upon each side of the beam, as shown more fully in fig. 8.

These colters are arranged to be let down and raised up alternately as the position of the mold-board is reversed. Each has behind it, at the lower edge of the beam, a stop or stud, *m*, and forward of it, and near the upper edge of the beam, a similar stop or stud, *n*.

These stops *m n* sustain the cutter against the strain upon it when passing through the ground.

In using the plow, the colter on that side of the beam opposite that at which the mold-board is situated is let down into its nearly vertical position, while the other colter is brought up horizontally beside the beam, and there retained out of the way by springing inward between the upper and lower flanges of the beam. This position of the two colters is shown more fully in figs. 1 and 2.

When the mold-board is turned to the opposite side of the beam the position of the colters is, of course, reversed.

As a modification of this feature of my invention, I propose in some cases to employ a single colter attached to the beam by a bolt or pivot arranged above the beam in such a way that the colter may be turned upward and changed from one side of the beam to the other, as will be understood by a reference to figs. 5 and 6, the colter in this case being held against the backward thrust of its work by strap shoulders or stops provided one upon each side of the beam near the lower edge thereof.

In order to provide for the convenient changing or reversal of the position of the colters by the plowman while occupying his proper position between the handles of the plow, the colters are extended beyond their pivots, and curved backward, to form handles, which are within easy reach.

To provide for the more secure retention of the share J in place upon the mold-board, there is provided, at the extremity of each wing thereof, a projection or stud, *w*, shown in fig. 2; and in the adjacent portions of the mold-board are formed recesses of corresponding shape, into which said projections or studs are snugly fitted, while the forward central portion of the share is firmly held to the front extremity of the mold-board by one or more bolts *v*, as is more fully represented in fig. 10.

By means of the joint-holding action of the projections or studs *w* and the bolt or bolts *v*, the displacement in any direction, or in any way, is effectually prevented.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. A reversible plow, in which the bottom edge of the land-side or its shoe is at a depressed angle with the pivotal line on which the mold-board turns, for operation essentially as described.

2. The catch F, pivoted at the rear end of the beam, and extending rearwardly between the handles, with its forward end constructed to secure the mold-board on either side of the beam, for operation substantially as set forth.

3. The double land-side, consisting of two plates, *a a*, formed at their lower edges to serve as a substitute for the ordinary shoe, in combination with a reversible plow, as shown and described.

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Witnesses:
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