J. HARTMANN
Swivel-Plow

No. 198,611. Patented Dec. 25, 1877.

Fig. 1

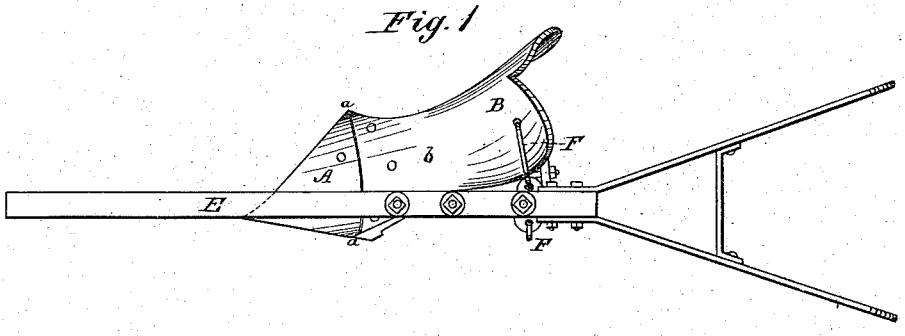

Fig. 2

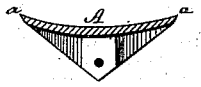

Fig. 3

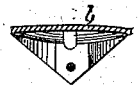

Fig. 4

Fig. 5

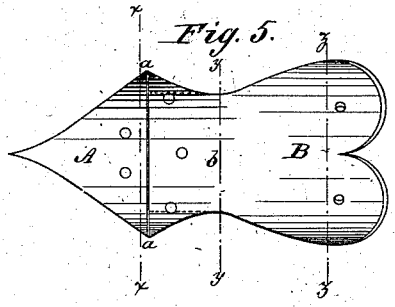

Fig. 6

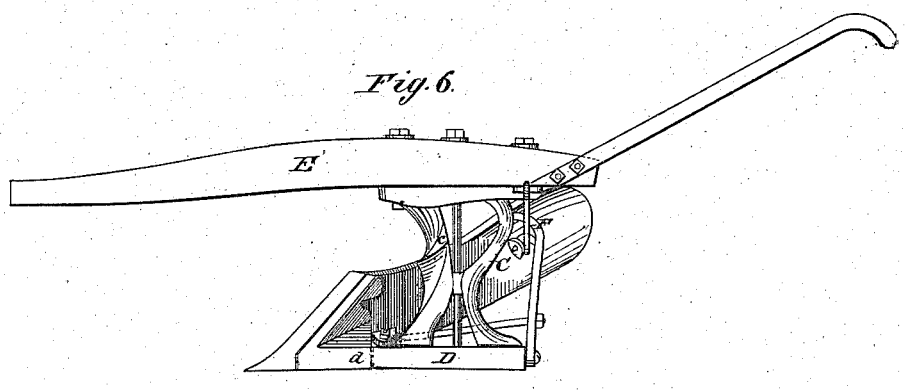

Fig. 7

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JULIUS HARTMANN, OF LOUISVILLE, KENTUCKY.

IMPROVEMENT IN SWIVEL-PLOWS.

Specification forming part of Letters Patent No. **198,611**, dated December 25, 1877; application filed October 27, 1877.

To all whom it may concern:

Be it known that I, JULIUS HARTMANN, of Louisville, in the county of Jefferson and State of Kentucky, have invented a new and useful Improvement in Swivel-Plows; and I do hereby declare that the following is a full, clear, and exact description of the same.

The swivel-plow is the only one whose use is easily practicable on hilly or uneven land; and it is also desirable for use on level land, in order to avoid the "dead-furrow," so called.

The swivel-plows heretofore used have had certain defects which it is the object of my invention to remove, and to thereby provide a plow adapted to the needs of every farmer.

To this end I adapt the construction and arrangement of parts hereinafter described, and illustrated in accompanying drawing, in which—

Figure 1 is a plan view. Figs. 2, 3, 4 are cross-sections on the lines *x y z*, respectively, of Fig. 5. Fig. 5 is a plan view of the point and mold-board. Fig. 6 is a side elevation of the plow. Fig. 7 is a cross-section of the bottom or land-side bar.

In said drawing, A indicates the point, and B the mold-board, of my improved plow. C is the standard; D, the bottom or land-side bar; E, the beam, and F the changeable brace or locking device.

The outline of the point A is triangular, and it is made concave in a transverse direction. The front end of the mold-board B meets or abuts the rear edge of the point A, and is of like width thereat, the two forming an angular projection, *a*, on each side.

The spaces directly in rear of the lateral angles *a* of the point A are thus filled by the increased width of the mold-board, so that weeds, grass, &c., can find no lodgment there, as in other hill-side plows, whose mold-boards are narrowed at the front end, as shown by dotted lines, Figs. 1 and 5, but will pass along over the top edge of the mold-board on the land side.

The mold-board is gradually narrowed or contracted in width from such projections *a a* back to the standard C, which is opposite, or nearly so, to the lengthwise middle of the point and mold-board taken together. Forward of such middle point *b* the mold-board and triangular point have a continuing or coincident concavity, and in rear of such point *b* the mold-board has a gradually-increasing convexity and width.

This form of the wearing side or surface of the point and mold-board is such as to enable the plow to turn the furrow-slice over flat with the least amount of draft or power, to run free or scour well, and not clog with stubble in any soil, and to also pulverize the soil in a superior manner.

The mold-board and point are so shaped as to extend in front of the standard and laterally therefrom on the side opposite that on which the furrow-slice is turned, thus forming what is known as a "center-draft" plow.

The front edge of the point A acts as a colter, and the lateral projection of the same past the standard prevents choking with grass, weeds, or stubble, which constitutes a great annoyance in using the old form of swivel-plow.

The standard C is provided with inclined shoulders or projections *c*, which engage or abut the edge of the mold-board when the same is locked by brace F on either side of the beam. This relieves the pivots of the reversible mold-board of part of the strain which they would otherwise have to sustain, and gives the plow the same apparent rigidity when in operation as is possessed by plows which are not reversible.

The land-side or bottom bar D is beveled or inclined on each side from the upper edge downward. In other words, said bar is broader on the upper side. The object of this construction is to avoid excessive friction between the bar and land when the plow is in use. The piece *d*, to which the point A is attached, is also similarly beveled along its lower side or edge.

To sum up the advantages of my improved plow, it has the cheapness, lightness, and strength of the old form of swivel-plow, will not choke, will scour perfectly in all kinds of soil, and turns the furrow-slice with the least amount of draft, and pulverizes the soil well.

I do not claim, broadly, a triangular concave plow-point, nor a convex mold-board, nor a beveled land-side; nor do I claim a center-draft plow, since I am aware these are not new; but

What I claim is—

1. As the hereinbefore-specified improvement in swivel-plows, the combination, with the beam and standard, of the swiveled mold-board and point, extending laterally to form a center-draft, and otherwise constructed and arranged as shown and described—that is to say, the wearing-surface formed of said mold-board and point having a gradually-increasing convexity and width back of the center *b*, and a gradually-increasing concavity and width forward of the center to the angular projections *a a*, the concavity extending thence to the nose of the point, all as set forth, for the purpose specified.

2. As an improvement in swivel-plows, the combination of the reversible mold-board and point with the standard having the inclined shoulders or projections, substantially as and for the purpose specified.

3. As an improvement in swiveled or reversible plows, the bottom or land-side bar, beveled or made oblique on opposite sides, as shown and described.

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