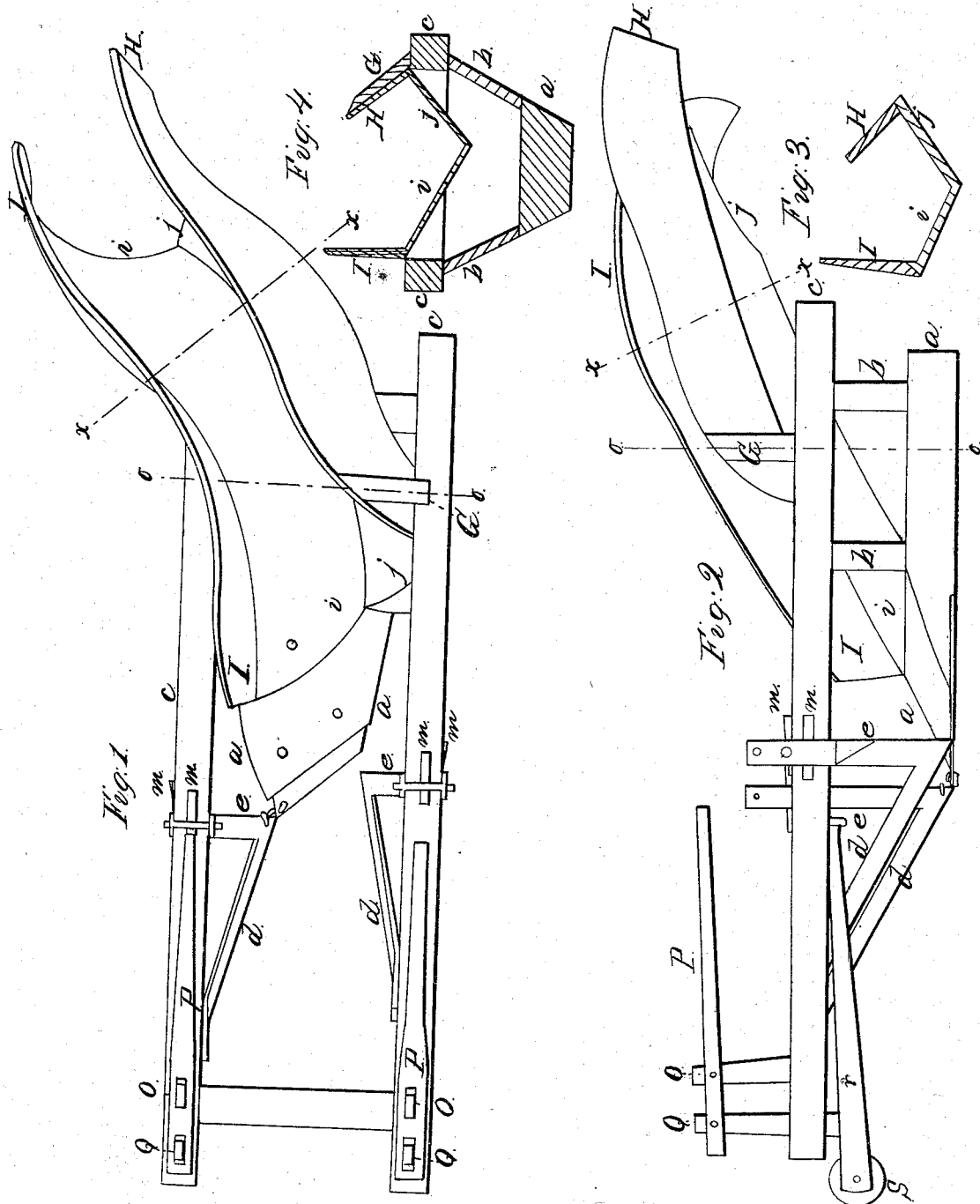


Excavator.

No. 4,113.

Patented July 14. 1845.



UNITED STATES PATENT OFFICE.

ROBERT COMMINGS, OF LIMA, INDIANA.

IMPROVEMENT IN DITCHING-MACHINES.

Specification forming part of Letters Patent No. 4,113, dated July 14, 1845.

To all whom it may concern:

Be it known that I, ROBERT COMMINGS, of Lima, in the county of La Grange and State of Indiana, have invented a new and useful Improvement in Ditching-Machines for Ditching in Marshes and Wet Grounds, (and for all other grounds where such a machine can be used,) commonly called the "Perfect Ditcher," for which Letters Patent were issued to Horace Cleveland, of the State of Indiana, and also in the ditching-machine for which like letters were issued to Cromwell R. Bartlett, of the State of Illinois, and also in the improved ditcher for which like letters were issued to James Herbert, of said State of Indiana; and I do hereby declare that the following is a full and exact description thereof, reference being had to the annexed drawings, making part of this specification, in which—

Figure 1 is a top view of this machine. Fig. 2 is a side elevation. Fig. 3 is a cross-section at the line *xx* of Fig. 1. Fig. 4 is a cross-section at the line *oo* of Fig. 1.

It consists of a bed-piece, *a*, made horizontal on the bottom and scarfed on top at the front at an angle of about ten or fifteen degrees, in the manner of a wedge, the front being brought to a feather-edge and slanting back from the right corner at an angle of about forty-five degrees with the line of draft, and sloped on the sides at an angle corresponding with the slope of the ditch to be cut, and square on the back. Four posts, *b*, two on each side, for supporting the frame upon the aforesaid bed, are mortised and tenoned into it at the sides at the same angle as the slope of the sides of the bed, the outer sides being coincident therewith, the upper ends being tenoned into the under sides of the sides of the frame.

The frame *C* is made in the usual manner. A rhomboidal-shaped share or cutter, for cutting the bottom of the ditch, is fastened on the under side of the front part of the bed *a* by bolts or other suitable fastenings. Two inclined metallic cutters, *d d*, for cutting the sides of the ditch, are fastened to the inner sides of the frame in front of the rhomboidal share, the one on the right extending down to the forward front corner of the aforesaid rhomboidal share, and the one on the left extending down and back to the left front corner of the share. The

cutters are then turned upward toward the under sides of the frame, to which they are made fast by having their upper ends made like a clasp to embrace three sides of the beams of the frame to which they are properly fitted. The upright portion of the knives and clasps is pierced with a number of apertures for the insertion of bolts that lie upon the top of the frame, between which and the frame keys or wedges *m* are inserted for tightening the clasp and for adjusting the position of the cutters to correspond with the required slope of the ditch, or for any other purpose. The inclined sides of the cutters are fastened to the frame at their upper ends by bolts or screws, or by any suitable means. The before-described cutters are designed for cutting the sides of the ditch. The mold-board for forming part of the embankment and laying the sward thereon, with the grass side toward the ditch, is made in the following manner:

A spiral inclined bottom, *i*, extends from the sloped part of the bed up and over the left rear corner of the frame, to which it is fastened in any convenient manner, the front end of said bottom being made thin and slightly rounded, and the rear end slightly concave. A spiral side or wing, *j*, corresponding in size and shape with the right edge of the aforesaid bottom *i*, is fastened thereto at an angle of about one hundred and thirty degrees therewith, the angle of inclination gradually decreasing from the front toward the rear end. A spiral mold-board, *I*, for gradually raising and laying the side of the furrow-slice is fastened to the edge of the said spiral bottom *i*, and at the rear is extended downward in a spiral curved line inclining toward the frame beyond the concave end of the bottom, for the purpose of supporting and confining the furrow-slice to the position in which it is dropped. Another spiral mold-board, *H*, of greater breadth and less length than the mold-board *I*, is placed nearly parallel with the latter, and inclining also to the right, being fastened against the upper edge of the before-described wing *j* in any convenient manner, having braces, such as that represented at *G*, for bracing it to the frame. This mold-board is rounded off at the forward end, where it is united to the wing and frame. Its rear end extends beyond the rear end of

the wing and as far as the rear extremity of the opposite parallel spiral mold-board. These two peculiarly shaped and arranged mold-boards are designed, in combination with each other and with the aforesaid bottom and wing, to catch the furrow-slice as it rises from the ditch, and so to press upon it as to assist in depositing the same behind the machine on its left edge or side, and with the grass side facing the ditch. The right-hand mold-board I, in connection with the left-hand mold-board H, assists to hold the furrow-slice to its place until deposited on its left side, as aforesaid.

The posts O, levers P, and swards Q, roller-frame r, for elevating or depressing the rollers S, for governing the running of the machine, and the depth of cutting, may be arranged in the usual or most approved way. After the ditch has been formed and the furrow-slice laid with its grass side on the same line of inclination, and coincident with the side of the ditch, a similar operation is performed over and against the opposite side of the furrow-slice thus placed

with a machine constructed like the one just described, except that it will turn the furrow-slice in a contrary direction, thus forming a fence or ridge corresponding in height to the depth of the ditches, one on each side thereof, accomplishing the double object of fencing and draining the land.

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

The combination and arrangement of the mold-boards H and I, formed in the manner and for the purpose above described, with the twisted bottom *i*, and ring *j*, and base *a*, and adjustable cutters *d*, as hereinbefore described.

I make no claim to the other parts of the machine, as they are common to all ditching-machines.

ROBERT COMMINGS.

Witnesses:

EDWARD BROWN,
JOHN D. FILKINS.