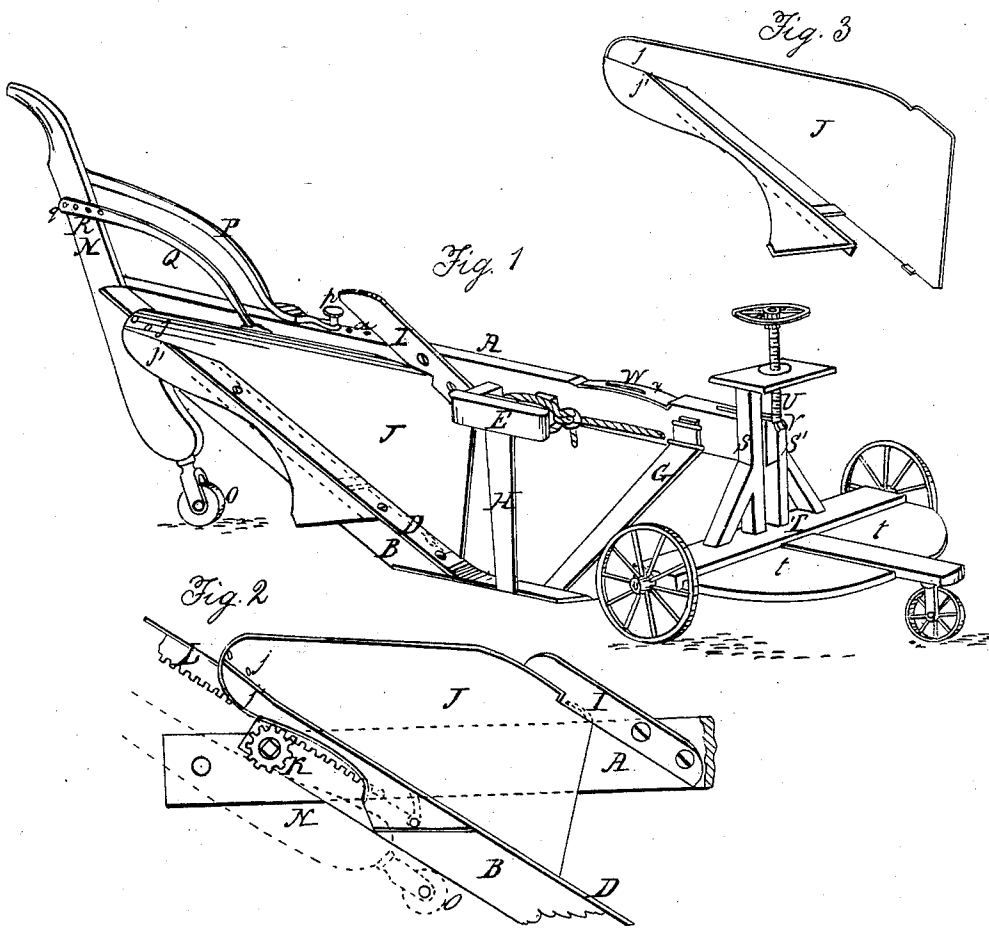


BALLARD & MAGEE

Ditching-Plow.

No. 57,815.

Patented Sept. 4, 1866.



Witnesses:
Frank Mulholland
James H. Layman,

Inventor:
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UNITED STATES PATENT OFFICE.

JACOB BALLARD, OF NEW ANTIOCH, AND THOMAS J. MAGEE, OF CINCINNATI, ASSIGNORS TO THEMSELVES AND PAUL HULTS, OF NEW ANTIOCH, OHIO.

IMPROVED DITCHING-MACHINE.

Specification forming part of Letters Patent No. 57,815, dated September 4, 1866.

To all whom it may concern:

Be it known that we, JACOB BALLARD, of New Antioch, Clinton county, Ohio, and THOMAS J. MAGEE, of Cincinnati, Hamilton county, Ohio, have invented a new and useful Ditching-Machine; and we do hereby declare the following to be a full, clear, and exact description thereof, reference being had to the accompanying drawings, making part of this specification.

This is an improvement in the class of implements designed for excavating open ditches.

Figure 1 is a perspective view of a machine embodying our invention. Fig. 2 is a side elevation of the sliding mold-board. Fig. 3 represents the sliding mold-board detached.

Projecting rigidly downward and forward from a suitable beam, A, is a sheath, B, armed at bottom with a horizontal share, C, and in front with a guide-plate, D, which leads from the share upward and rearward in the manner shown.

E is a bracket projecting from the furrow side of the beam, and containing a stout rung or bolt for the attachment of a cord or chain connected with a windlass or other motor.

The share is braced firmly to the beam by means of two knives or colters, of which the colter G extends from the land side of the share obliquely forward and upward to the beam, and the colter H extends from the discharge side of the share vertically, or nearly vertically, upward to the bracket E.

Attached to the delivery side of the beam, so as to be parallel with the guide-plate D, is an upper guide, I.

The mold-board J is made capable of being slid up or down along the sheath, and is confined to its proper path in the act of adjustment by means of the guides D and I. The mold-board is formed with an upper and rear end projecting wing, J, for the proper turning of the furrow-slice, and a lower wing, J', for the delivery of the slice on the side of the excavation.

The adjustment of the mold-board is effected by means of a pinion, K, gearing in a rack, L, upon the mold-board.

Hinged at M to the rear end of the beam is a handle, N, whose lower end carries a wheel, O, which runs in the bottom of the excavation.

P is an adjustable brace, which, in connection with a pin, p, and perforation a, secures the handle to its proper position.

Q is a rod, which, extending upward and rearward from the sliding mold-board, and having a series of perforations, q, is secured to the handle N by means of a pin, R, so as to hold the mold-board to any desired adjustment.

The forward end of the beam A passes between the two cheeks S of a truck, T, and is held to any desired vertical adjustment by means of a screw, U, which engages in a crotch, V, which projects from the end of the beam.

A platform, t, upon the truck enables the operator to travel with the machine, and, with his hand on the screw, to adjust the machine to a less or greater pitch, so as to secure a uniform grade for the bottom of the ditch. To assist him in this adjustment, a curved spirit-clinometer, W, is let into the top of the beam, a vernier, X, alongside of it indicating different ascending and descending grades.

It is obvious a ditch of any desired depth may be struck by repeated thrusts of the implement, the sliding mold-board being, of course, adjusted higher at every thrust.

When it is desired to run the machine out of the ground, the handle is unbraced from the beam and allowed to assume the position indicated by dotted lines in Fig. 2.

A series of perforations, a, in the beam enables the handle to be set more or less forward, so as to change the elevation of the rear or ditch wheel O.

We claim herein as new and of our invention—

1. The arrangement of sliding mold-board J, lower and upper guides, D and I, elevating mechanism K L, and adjustable brace P, or their mechanical equivalents, substantially as set forth.

2. In the described combination, the beam

A, sloping sheath B, share C, and the colters G and H, as and for the purpose set forth.

3. The clinometer attachment W X, in combination with a supporting-truck, T, and regulating-screw U, for the purpose explained.

4. The shiftable handle N and ditch-wheel O, secured and operated as set forth.

In testimony of which invention we hereunto set our hands.

JACOB BALLARD.
T. J. MAGEE.

Witnesses:

GEO. H. KNIGHT,
JAMES H. LAYMAN.