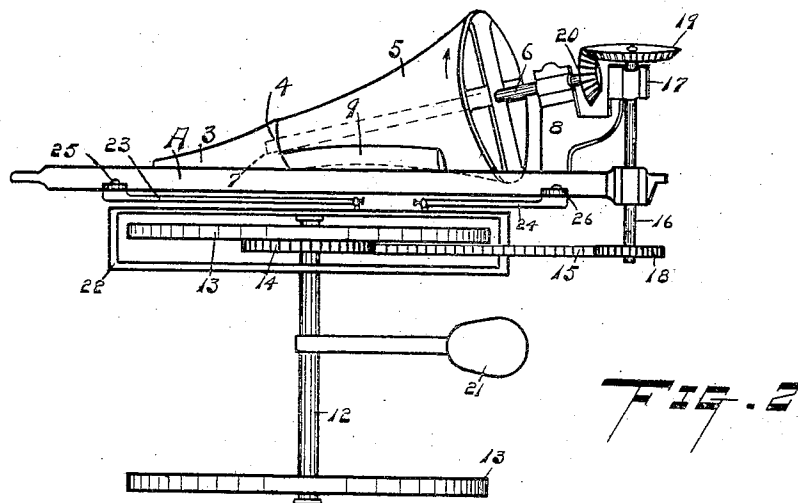
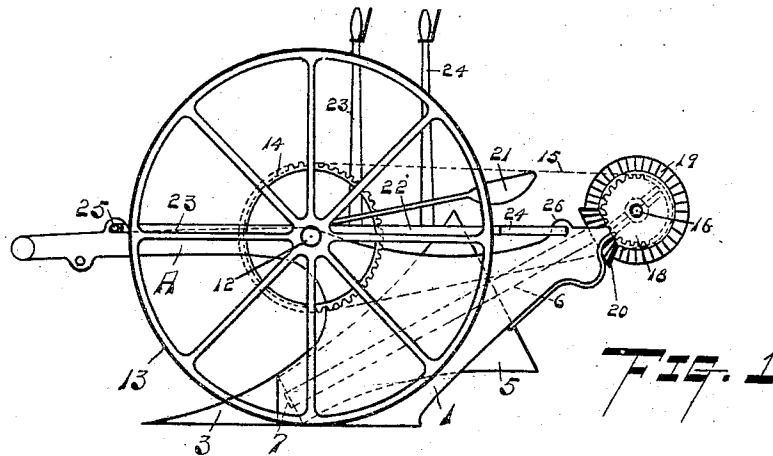


A. MORISON.
 ROTARY MOLDBOARD FOR PLOWS.
 APPLICATION FILED APR. 10, 1909.

948,457.

Patented Feb. 8, 1910.

2 SHEETS—SHEET 1.



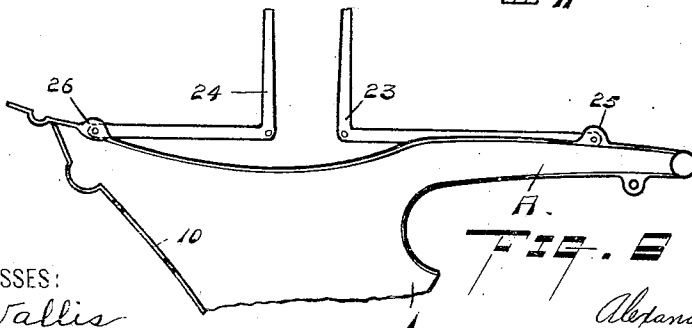
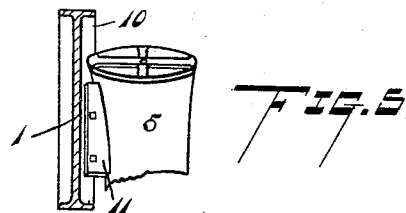
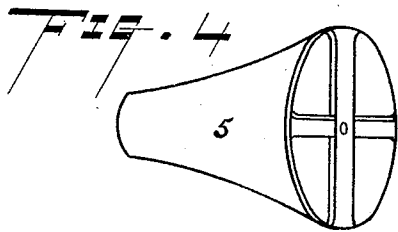
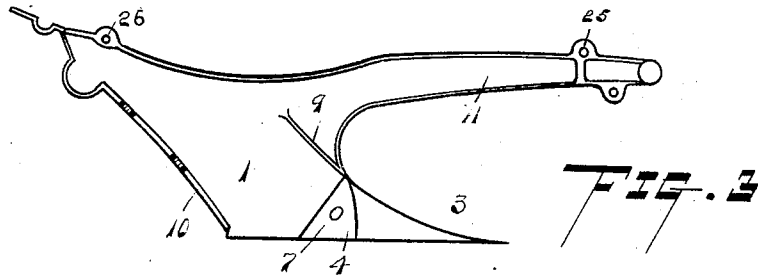
WITNESSES:
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Ralph H. Warfield

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UNITED STATES PATENT OFFICE.

ALEXANDER MORISON, OF SAGINAW, MICHIGAN, ASSIGNOR OF ONE-HALF TO HENRY NIENSTEDT, OF SAGINAW, MICHIGAN.

ROTARY MOLDBOARD FOR PLOWS.

948,457.

Specification of Letters Patent.

Patented Feb. 8, 1910.

Application filed April 10, 1909. Serial No. 489,075.

To all whom it may concern:

Be it known that I, ALEXANDER MORISON, a citizen of the United States, residing at Saginaw, in the county of Saginaw and State of Michigan, have invented certain new and useful Improvements in Rotary Moldboards for 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.

My invention relates to rotary mold boards for plows.

One object is the provision of a plow of novel design which will reduce the draft on the team.

Another object accomplished is the reduction of friction on the mold board.

Still another object is the provision of a plow which will turn a clean furrow.

A further object is the provision of means whereby the inclination of the toe and heel of the plow may be controlled to the end that the plow will easily and quickly enter and leave the furrow without the exercise of great strength.

A still further object is the provision of means for maintaining the mold board clean and for insuring that the earth shall fall on the furrow side of the plow.

More particularly, my invention consists in the association with a plow standard and shoe, of a rotary bell-shaped mold board with which is associated a scraper and a shield. The plow beam may be provided with levers for raising and lowering the forward and rear ends of the plow.

To these ends, therefore, my invention consists in certain novel features and combinations such as will be more fully described hereinafter and particularly pointed out in the claims.

In the accompanying drawings, Figure 1 is a side view illustrating my invention, Fig. 2 is a top plan view, Fig. 3 is a detail view of the plow beam and standard from the opposite side to that shown in Fig. 1, Fig. 4 is a detail view of the mold board, Fig. 5 is a detail view of the scraper, Fig. 6 is a detail view of the levers for causing the toe to enter and leave the furrow.

While I have illustrated my invention as applied to a sulky plow, it is evident that it is equally applicable to a handled plow.

A indicates the beam from which a standard 1 depends, the standard being equipped with a forwardly projecting foot carrying a shoe 3 of any usual form, the left face of the standard coöperating with the left hand side of the shoe to form a vertical land side. The foot of the plow projects laterally toward the right and its upper end is inclined as at 4, to form a seat for the smaller end of a bell-shaped mold board 5 fast on a shaft 6 extending longitudinally there-through, the lower end of the shaft is received in a step bearing 7 in the inclined seat 4, the upper end of the shaft being journaled in one end of a bracket 8 projecting from the upper end of the standard. The concavity of the bell-shaped mold board forms to all practical purposes a continuation of the concavity of the plow share or shoe, as shown in Fig. 2. The bell-shaped mold board may have a slatted or a solid periphery as preferred.

The mold board is arranged on two angles, one extending upward from the horizontal and the other away from the vertical, as represented by the plow standard. Obviously, as the mold board is concave or bell-shaped, a space would be left between the mold board and the vertical standard. In order to close this space to prevent the earth which rides up on the foot and the mold board from falling back into the furrow through the space above mentioned, I provide a flange 9 projecting laterally from the standard. This flange extends upward across the standard at an angle parallel to the shaft 6 and its outer edge is convexed to fit into and conform to the periphery of the mold board. The flange lies on a plane above the axial plane of the shaft, and hence, the free edge of the plate overlaps the mold board slightly. The mold board rotates away from the standard in the direction of the arrow, by reason of the frictional engagement of the earth with the concave surface of the mold board set at an angle to the ground, and turns the sod and earth over.

The standard 1 is also provided on its furrow-side with a flange 10 substantially parallel with the plate 9, but lying below the mold board. A scraper 11 is secured to this flange, the outer face of the scraper being adapted to fit the periphery of the

mold board and scrape it clean of adhering clay or other material.

It is obvious that as above described and with the addition of a pair of handles, my invention can be used as a handled plow.

If the invention is to be used as a wheeled plow, I may employ the following construction as one well adapted to the purpose. A truck is located laterally and on the land side of the standard, such truck conveniently consisting of an axle 12 and traction wheels 13, 13, one of which carries a sprocket 14 connected by a chain 15 with a second sprocket 18 on a shaft 16, journaled at the peak of the standard and in a box 17 on the bracket 8 respectively. The shaft 16 carries a gear 19 meshing with a gear 20 on the mold board shaft 6, whereby to positively actuate the mold board. A seat 21 is provided on the truck for the convenience of the driver.

In order to raise and lower the toe and heel of the plow, I provide a frame 22 stationary on the truck. Bell-crank levers 23 and 24 are pivotally secured at their angles to the frame, the arm of lever 23 extending forwardly and being pivotally connected to the beam of the plow near its outer end as at 25, to afford a means for throwing the toe of the plow downward in starting a furrow, or upward to raise it out of the furrow. Similarly, the arm of the lever 24 extends rearwardly and is pivotally connected to the rear of the standard as at 26, to provide a means for raising and lowering the heel of the plow during its operation. It is also obvious that in transporting the plow from place to place, the levers may be so adjusted that the plow is held in raised position out of contact with the ground.

By reason of the rotating mold board, I provide a plow which lessens the draft on the team, by reducing the friction of the earth with the mold board, whereby the rubbing and scraping action of the earth on the mold board is eliminated.

The scraper provides means for automatically maintaining the mold board free from any sticky material adhering thereto. Changes might be made in the form and arrangement of the several parts described

without departing from the spirit and scope of my invention.

Having thus fully disclosed my invention, what I claim as new, is:—

1. The combination in a plow with a beam, a standard, a substantially horizontally-extending tapered foot carried by the standard and projecting laterally to one side thereof, a land side on the opposite side of the standard, and a point received on the foot, of a smooth-faced rotatable bell-shaped member, constituting the entire mold-board of the plow, the lower reduced end of the member located directly behind and constituting a continuation of the point, and means for rotatably supporting the bell-shaped member laterally of the beam.

2. The combination in a plow with a beam, a standard, a foot carried by the standard and projecting laterally to one side thereof, a land side on the opposite side of the standard, and a point received on the foot, of a smooth-faced rotatable bell-shaped member, constituting the entire mold-board of the plow, the rear end of the foot being inclined to form a seat, the lower smaller end of the member resting on and adapted for rotation relative to the seat, and means for rotatably sustaining the upper end of the mold-board at an angle to the horizontal and to the vertical plane of the land side.

3. The combination in a plow with a beam, a standard, a foot carried by the standard and projecting laterally to one side thereof, a land side on the opposite side of the standard, and a point received on the foot, of a smooth-faced rotatable bell-shaped member, constituting the entire mold-board of the plow, the bell-shaped member being inclined at an angle to the horizontal, and a rigid shield carried by the beam and overlapping the member to prevent the earth from falling on the land side.

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

ALEXANDER MORISON.

Witnesses:

RALPH S. WARFIELD,
CHRISTINE A. BRAIDEL.