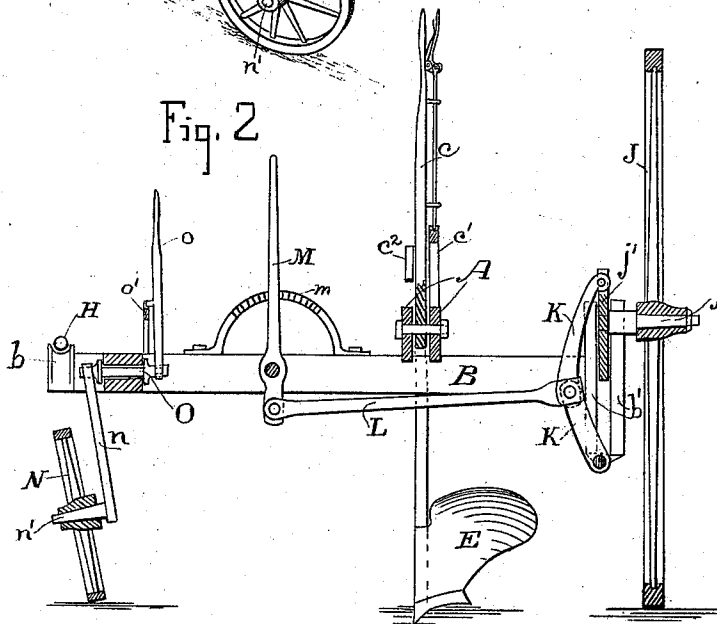
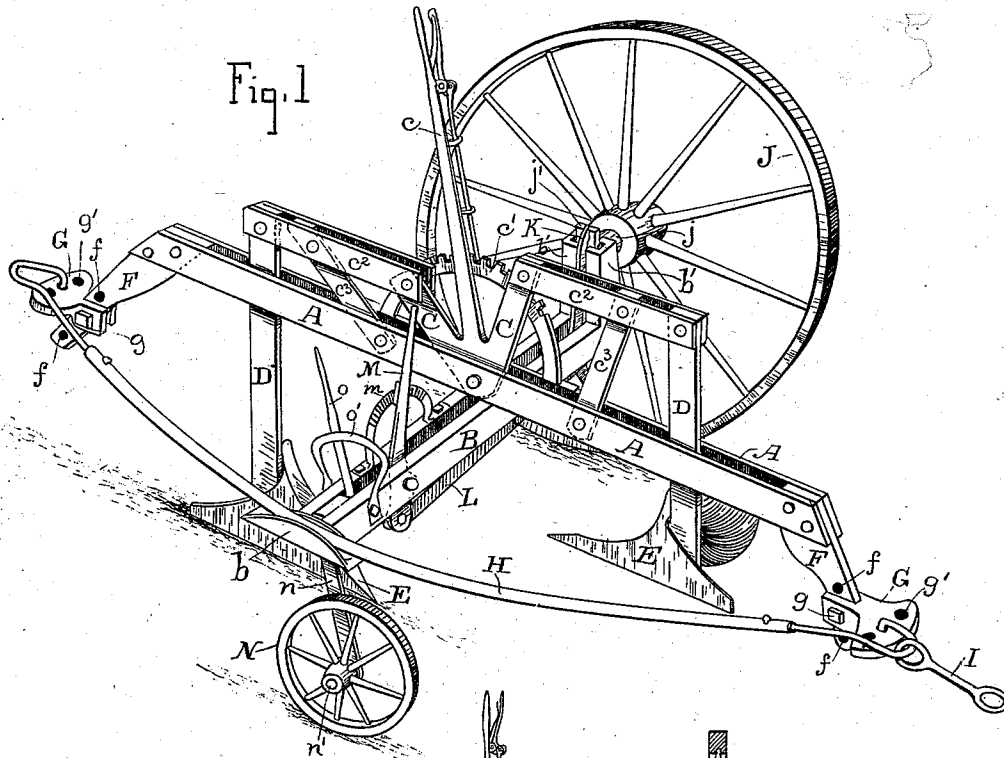


(No Model.)

A. D. WILLIAMS.
SIDEHILL PLOW.

No. 547,192.

Patented Oct. 1, 1895.



Witnesses,
J. H. Boyless

Inventor,
Albert D. Williams
By *Dewey & Co.*
attys

UNITED STATES PATENT OFFICE.

ALBERT D. WILLIAMS, OF LAFAYETTE, CALIFORNIA.

SIDEHILL-PLOW.

SPECIFICATION forming part of Letters Patent No. 547,192, dated October 1, 1895.

Application filed May 21, 1895. Serial No. 550,121. (No model.)

To all whom it may concern:

Be it known that I, ALBERT D. WILLIAMS, a citizen of the United States, residing at Lafayette, county of Contra Costa, State of California, have invented an Improvement in Sidehill-Plows; and I hereby declare the following to be a full, clear, and exact description of the same.

My invention relates to the class of plows to be used on side hills; and it consists in a plow having pivoted to its beam or frame a tilting or rocking lever, from the extremities of which are supported plow-bottoms, one at each end, said plow-bottoms being reversed with respect to each other and adapted by means of the rocking or tilting of the lever to be alternately raised and depressed, so that while one is working in one direction the other is raised up out of the way, and when the other is working in the other direction the first is raised up out of the way.

My invention also consists, in connection with said frame or beam, of a guide-rail joined to its ends and a sliding draft-link adapted to travel along said rail from one end to the other of the frame, whereby the team may be moved readily from end to end.

It also consists in the novel means for mounting and adjusting the main wheel of the plow, so that it may be raised or lowered and also remain equidistant between the plow-bottoms, and also in the means for mounting and adjusting the small wheel on the other side, whereby it tends to throw the plow to the land, and in details of construction and arrangement which I shall hereinafter describe.

The object of my invention is to provide a simple and effective plow for side hills adapted to be readily reversed without having to turn the entire frame or to loosen fastenings for the purpose of turning the plow-bottom on its own axis.

Referring to the accompanying drawings, Figure 1 is a perspective view of my plow. Fig. 2 is a cross-section of same through the axle.

A is the frame or beam of the plow carried by an axle B. To this frame or beam at its middle is pivoted a tilting or rocking lever C, having a handle *c* rising from it, which said handle is guided and controlled by means of

a suitable rack *c'*. The extremities of the lever consist of pivoted brackets *c²*, the outer ends of which are supported horizontally by pivoted links *c³*. This lever C has secured to its extremities *c²* the standards D, carrying the plow-bottoms E. The standards are guided down through the slotted or two-part beam and their plow-bottoms are reversed in direction with respect to each other, one being adapted to plow in one direction and the other in the other direction. Now, by moving the handle back or forward one of the plows will be raised out of the way while the other will be lowered to its work, and at the end of the furrow the first plow may be lowered to its work and the other raised. In this operation no time is lost in adjusting and arranging fastenings, such as is common in sidehill plows where the same plow-bottom is made to do the work in both directions by turning upon its own axis either horizontally or vertically.

To the ends of the frame or beam A are secured brackets F, having a series of holes *f*, with any one of which the clevises G are connected by means of a cross-pin *g*, whereby said clevises may be vertically adjusted to suit the necessary height of draft. With these clevises are connected the ends of a rail H, which extends around sidewise and is guided over a suitable bearing *b* on the end of the axle B. The connection of this guide-rail with the clevises G is an adjustable one to suit the side draft, this being effected by fitting its end in any of a number of holes *g'* in said clevises. In order to provide for this adjustment, the guide-rail is made extensible, as by having its center portion of a tubular form and its ends made of rods adapted to telescope or slide in said tube. Upon this guide-rail is loosely and freely fitted the draft-link I, which is adapted to be moved from one end of the rail to the other, so that it is only necessary, when the plow has reached the end of the furrow, to drive the team around to the other end, as the draft-link will follow on the guide-rail and come to its bearing at said other end. Thus the plow is not turned.

J is the main wheel of the plow. This wheel is usually mounted upon a crank-axle in order to raise and lower the plow; but as it is necessary in my device to keep it about

midway between the two plow-bottoms—that is, at the same distance from either plow while at work—I have provided for the direct vertical adjustment of the wheel instead of the adjustment through the arc of a circle as is the case where the crank is used, and which would throw the wheel nearer to or farther from the line of the plows. My adjustment is effected by mounting the spindle *j* of the wheel in a slide *j'*, fitted and adapted to move up and down in guides *b'* on the end of the axle B. This movement is given to the slide by means of a toggle-lever K, pivoted to the guide below and to the slide above and having a connecting-rod L joined to it at its angle, said connecting-rod being attached to the lower end of a pivoted lever M within reach of the driver. It is controlled by a rack *m*.

N is the smaller wheel on the other end of the axle. The crank *n* of this wheel extends downwardly from its rocking shaft O, which latter is journaled in the end of the axle B and has connected with its other end a handle or lever *o*, which is controlled by a rack *o'*. The crank *n* is not vertical but is bent inwardly at an angle toward the plow-bottoms, and the spindle *n'* upon which the wheel is mounted is at right angles to said crank, so that the wheel is at an outward inclination. This inclination of the wheel when said wheel is thrown to either side of the axle tends to draw the whole plow-frame toward the land.

The peculiar construction of the lever C, with its pivoted extremities *c'*, is such that the plow-bottom standards may be rigidly secured to them, because of the horizontal position of said extremities in rising and falling as the lever is rocked or tilted.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a side hill plow, the combination of a beam or frame, plow bottoms carried thereby and reversed with respect to each other so that they are adapted to plow in opposite directions, and a lever mechanism interposed between and connected with the plow standards whereby one of the plow bottoms is simultaneously raised with the depression or lowering of the other plow bottom.

2. In a plow, relatively reversed plows each mounted upon a fulcrumed support and a lever mechanism interposed between and connected with said supports for raising one plow simultaneously with a lowering of the other plow whereby the plow may operate in opposite directions.

3. In a side hill plow, and in combination with its beam or frame, a rocking or tilting lever carried thereby and a plow bottom supported from each end of said lever, said plow bottoms being reversed with respect to each other whereby they are adapted to plow in opposite directions alternately.

4. In a side hill plow and in combination with its beam or frame, a lever pivoted thereto and adapted to tilt or rock, a standard con-

nected to each end of the lever and passing down and guided by the beam or frame, and a plow bottom on the lower end of each standard, said plow bottoms being reversed with respect to each other and adapted to plow alternately in opposite directions.

5. In a side hill plow, and in combination with its beam or frame, a lever pivoted thereto, a handle by which said lever is rocked or tilted and a plow bottom supported from each end of the lever and reversed with respect to each other whereby they are adapted to plow alternately in opposite directions.

6. In a side hill plow, the combination of a beam or frame, a tilting lever pivoted thereto and having pivoted brackets forming its extremities, pivoted links for supporting the outer ends of said extremities whereby they remain horizontal in rising and falling, a standard rigidly secured to each extremity and a plow bottom on the lower end of each standard, reversed with respect to each other and adapted to plow alternately in opposite directions.

7. In a side hill plow, having independent plow bottoms relatively reversed, and means for raising one plow and simultaneously lowering the other plow, a guide rail extending between opposite ends of the beam or frame and a draft link freely slidable upon said rail, whereby the team may be readily changed from end to end.

8. In a side hill plow, the combination of a beam or frame, plow bottoms carried thereby and reversed with respect to each other whereby they are adapted to plow in opposite directions, means for alternately raising and lowering said plows, a guide rail extending between opposite ends of the beam or frame, and a draft link freely movable on said rail whereby the team may be changed from one end of the beam or frame to the other.

9. A side hill plow consisting of a beam or frame, a lever pivoted thereto and having a handle whereby it is rocked or tilted, said lever having pivoted extremities held horizontally by pivoted links, a plow bottom supported from each extremity of the lever, and reversed with respect to each other, whereby they are adapted to plow alternately in opposite directions, a curved guide rail extending between opposite ends of the beam or frame and a draft link freely movable on said rail whereby the team may be changed from one end of the frame to the other.

10. In a side hill plow having independent alternately vertically adjustable plow bottoms arranged reversely with respect to each other, a lever located between the plows, having its extremities connected by oppositely extending links with the plow standards, an axle in a plane midway between the plows, when the latter are at the same elevation, a wheel on the axle, and means for adjusting said wheel in a perpendicular plane.

11. In a side hill plow having independent alternately vertically adjustable plow bot-

toms arranged reversely with respect to each other, a lever located between the plows, having its extremities connected by oppositely extending links with the plow standards, an axle in a plane midway between the plows, when the latter are at the same elevation, a wheel on the axle and means for adjusting said wheel in a perpendicular plane, consisting of a slide to which the spindle of

the wheel is attached, a toggle lever for operating said slide and a lever and connecting rod for operating the toggle lever.

In witness whereof I have hereunto set my hand.

ALBERT D. WILLIAMS.

Witnesses:

S. H. NOURSE,
WM. F. BOOTH.