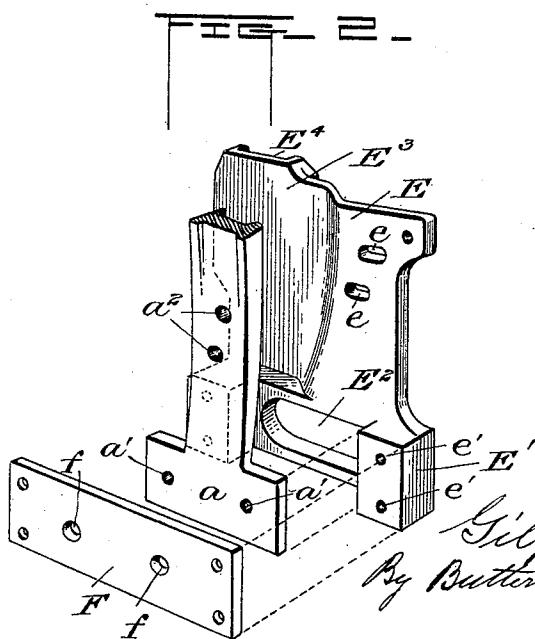
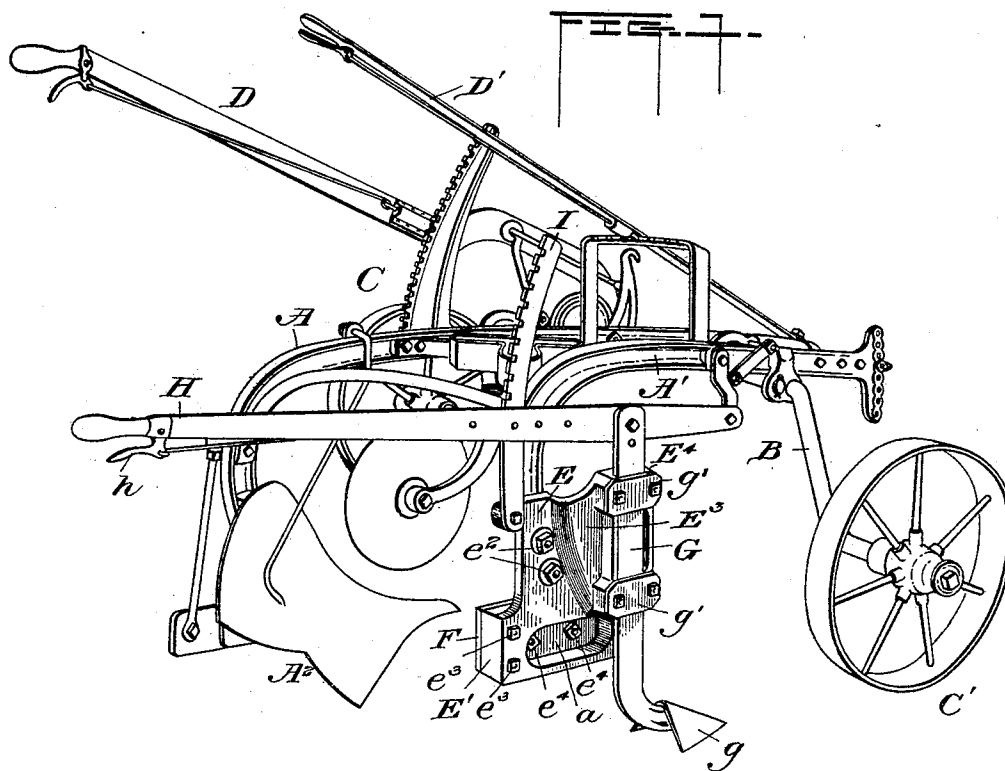


(No Model.)

G. MOORE.
SUBSOIL ATTACHMENT FOR PLOWS.

No. 499,888.

Patented June 20, 1893.



Witnesses
L. A. Cummings
Chas. E. Riordan

Inventor-
Gilpin Moore
By *Butterworth & Dowell*
his Attorneys

UNITED STATES PATENT OFFICE.

GILPIN MOORE, OF ROCK ISLAND, ILLINOIS.

SUBSOIL ATTACHMENT FOR PLOWS.

SPECIFICATION forming part of Letters Patent No. 499,888, dated June 20, 1893.

Application filed April 4, 1893. Serial No. 468,990. (No model.)

To all whom it may concern:

Be it known that I, GILPIN MOORE, a citizen of the United States, residing at Rock Island, in the county of Rock Island and State of Illinois, have invented certain new and useful Improvements in Subsoil Attachments 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.

This invention relates to improvements in plows, and the primary object of the invention is to provide an improved sub-soil attachment adapted to be used interchangeably with one of the plows of a gang, in that class of plows known in the art as gang plows. But of course the application of the invention is not limited to any particular type or class of plows, it being capable of independent use and designed to be used in various relations and as a sub-soil attachment to plows generally.

The invention is particularly adapted to be used in beet culture, for the purpose of loosening and stirring up the ground so as to permit and facilitate the penetration of the beet roots.

In the accompanying drawings forming a part of this specification and in which I have illustrated the application of my invention to a gang or wheel plow, Figure 1 represents a rear perspective view of a gang plow of ordinary construction with my improved sub-soil attachment applied thereto; and Fig. 2 is a detailed perspective view of the frame-piece or sub-soil plow support and landside plate and the foot of the plow beam, illustrating the method of uniting these parts.

Similar letters of reference are used to denote similar parts in both of the views.

In the drawings A, A', denote plow beams of ordinary construction to which may be attached ordinary turn or other suitable plows, as at A².

B, denotes the usual crank axle carrying the wheels C, C', and D, and D', are operating levers for shifting the positions of the axle and plow beams, respectively, in a manner well known to persons skilled in the art, and for the purpose of changing the inclination of the plow and varying the depth of penetration in the usual manner.

The parts thus far described may be of the form shown, or of any preferred construction, but inasmuch as they form no part of my present invention further description thereof herein is not deemed necessary.

The beam A', is preferably of the form shown, having the lower T-shaped end or foot a, and perforated as at a', a², for the attachment of the landside bar and working parts of the plow. The frame-piece or support E, of the sub-soil attachment may consist of an upright plate or casting of the form shown, having perforations or slightly elongated slots e, e, near the upper end thereof to receive the bolts e², e², which secure the same to the beam A', and similar perforations e', e', in the lower opposite edges thereof to receive bolts e³, e³, for the attachment of the landside bar or plate F. The base of the standard at the edges thereof through which the holes e', extend is thickened or formed with inwardly projecting portions or lugs E', so as to provide an intervening clearance or recess to receive the T-shaped end or foot of the beam A', which may be secured in said recess between the landside bar and the inner face of the support by bolts e⁴, which pass through holes f, f, in the landside bar and through the holes a', in the foot of the beam and project into an elongated slot E² in the base of the support to receive nuts which may be screwed thereon as shown, without forming obstructions on the outer face of the support; the heads of the bolts e⁴, being countersunk in the wearing face of the landside bar so as to provide a smooth surface flush with the surface of the landside. The frame-piece or support E, is further provided with a forward outwardly bulged or offset extension E³, having a vertically disposed guide-way E⁴, therein, within which is fitted a vertically sliding bar or sub-soil plow standard G, carrying at its lower end a shovel plow or share g; the said sliding bar being confined in said guide-way by means of perforated plates or cleats g', bolted or otherwise secured to the support.

In order that the bar G, may be raised and lowered, when desired, to vary the depth of penetration of the sub-soil plow, I provide means for adjusting said bar and securing it in the desired position. Any suitable means may be employed for this purpose, but to afford a ready means by which the desired ad-

justment may be easily and quickly effected, I provide a hand lever H, which may be pivoted at its forward end to the beam A', or other part of the plow frame, and connected to the upper end of the sub-soil standard a short distance in rear of said pivotal connection; said lever being also provided with a thumb-lever h, connecting in the usual manner with a pawl or dog for engaging the teeth of a rack I, extending from the support E, and working in a suitable guide fixed to the side of the lever in position to permit the dog or catch to readily engage the rack for the purpose of locking the lever and thereby securing the sub-soil plow in the desired position.

The operation of the invention will be readily understood from the foregoing description taken in connection with the accompanying drawings.

The landside bar F, is adapted to slide against the unplowed ground with the foot of the sub-soil plow support resting on the bottom of the previously turned furrow in advance of the plow A², so as to serve as a gage regulating the width of cut and the depth of penetration of the sub-soil plow; the latter penetrating to a considerable depth.

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

1. A sub-soil attachment for plows comprising the frame-piece or sub-soil plow support, the landside bar, the vertically sliding bar or standard carried by said support, and means for adjusting and securing said standard in the desired position, substantially as described.

2. In combination with the plow beam, the frame-piece or support provided with the landside bar at one side thereof, and with a vertically adjustable sub-soil plow at its opposite side, and means for adjusting and securing said plow in the desired position, substantially as described.

3. In combination with the plow beam, the frame-piece or support detachably secured to said beam, the landside bar secured at one side of said support, the vertically adjustable plow standard secured at the opposite side of said support, and means for adjusting and securing said standard in the desired position, substantially as described.

4. In combination with the plow beam, the

frame-piece or support removably secured thereto and provided at one side thereof with a landside bar and at its opposite side with a vertically sliding standard carrying a shovel plow or share, a lever for raising and lowering said standard, and means for locking said lever in the desired position, substantially as described.

5. In combination with the frame-piece or sub-soil plow support having the perforated lugs or projections at the base thereof and the elongated slot extending between the lugs, the landside bar secured to said lugs, the plow beam having the T-shaped lower end or foot fitting between said landside bar and the base of said support, and means for connecting said parts, substantially as described.

6. In a gang plow, the sub-soil attachment adapted to be used interchangeably with one of the gang of plows, comprising a frame-piece or sub-soil plow support and means for removably securing the same to the plow beam, the landside bar and adjustable sub-soil plow carried by said support, and the lever and rack for adjusting and securing the subsoil plow in the desired position, substantially as described.

7. In combination with the plow beam, the frame-piece or support provided with a landside plate and having a forward offset extension with guide-way therein, a vertically sliding standard fitting said guide-way and carrying a sub-soil plow or share, and means for adjusting and securing said standard in the desired position, substantially as described.

8. In a gang plow, the combination with the frame-piece having the inwardly projecting lugs and intervening elongated slot and provided with the forward offset extension having the vertically disposed guide-way therein, the landside plate secured to said lugs, the plow beam having the T-shaped end or foot clamped between said landside bar and support, the standard fitted in said guide-way, the pivoted hand lever, the rack, and the thumb lever and pawl or dog for engaging said rack, substantially as described.

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

GILPIN MOORE.

Witnesses:

JOHN E. POOLE,
FRED H. COOPER.