

No. 670,017.

Patented Mar. 19, 1901.

W. E. GILMAN & C. W. CLAPP.
SUBSOIL PLOW.

(Application filed Jan. 2, 1900. Renewed Dec. 19, 1900.)

(No Model.)

2 Sheets—Sheet 1.

Fig. 1.

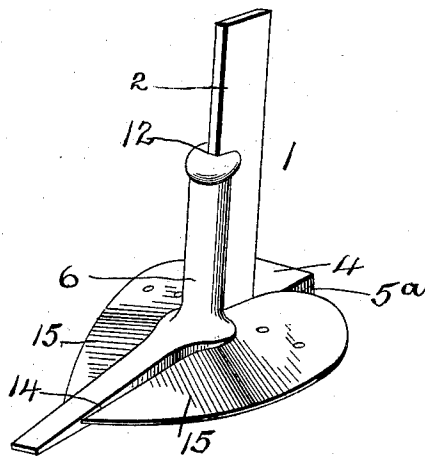


Fig. 3.

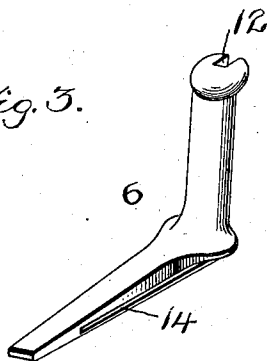


Fig. 2.

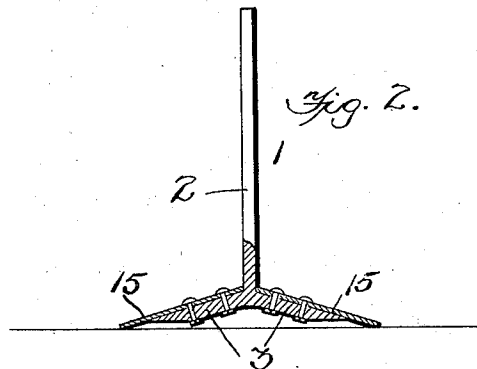
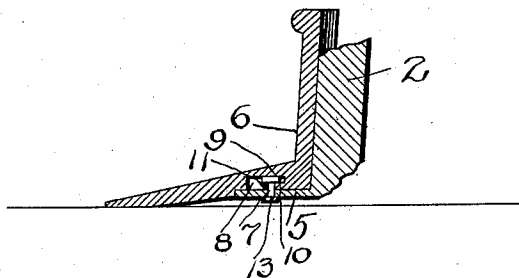


Fig. 4.



Witnesses

D. L. Mocham
H. Joseph Doyle

Inventors

Willis E. Gilman
Charles W. Clapp

No. 670,017.

Patented Mar. 19, 1901.

W. E. GILMAN & C. W. CLAPP.
SUBSOIL PLOW.

(Application filed Jan. 2, 1900. Renewed Dec. 19, 1900.)

2 Sheets—Sheet 2.

(No Model.)

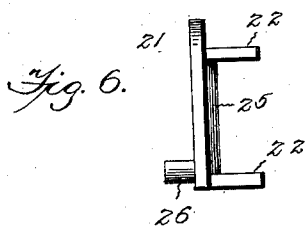
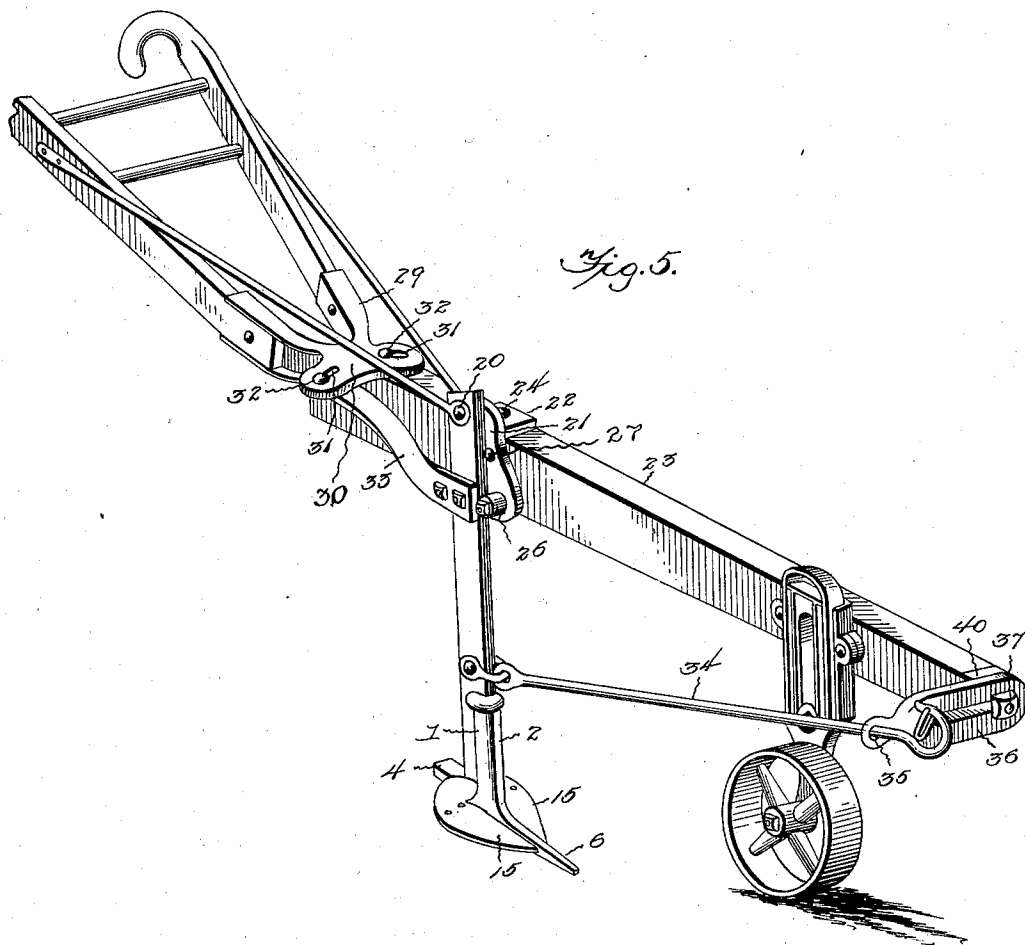
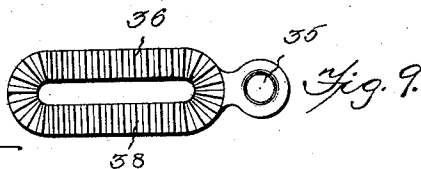
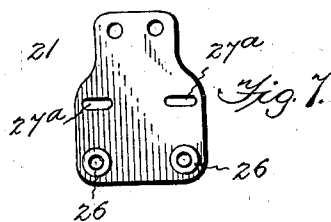
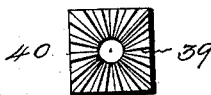


Fig. 8.



Witnesses

P. L. Mockam

H. Joseph Doyle

Inventors
Willis E. Gilman
Charles W. Clapp

UNITED STATES PATENT OFFICE.

WILLIS E. GILMAN AND CHARLES W. CLAPP, OF SOUTH BEND, INDIANA.

SUBSOIL-PLOW.

SPECIFICATION forming part of Letters Patent No. 670,017, dated March 19, 1901.

Application filed January 2, 1900. Renewed December 19, 1900. Serial No. 40,370. (No model.)

To all whom it may concern:

Be it known that we, WILLIS E. GILMAN and CHARLES W. CLAPP, of South Bend, in the county of St. Joseph and State of Indiana, have invented certain new and useful Improvements in Subsoil-Plows; and we hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, which form part of this specification.

Our invention relates to improvements in subsoil-plows.

One object of our invention is to provide a construction by means of which the point and wings can be readily renewed or replaced when worn.

A further object is to provide a construction in which the point and wings are removably secured to the standard and to each other to securely bind them together to form a strong and substantial plow of the character described.

A further object is to provide a plow with handles having an adjustable connection laterally with the plow-beam to allow of the plowman to walk either in the furrow or on the land, as desired.

A further object is to provide a plow in which the standard may be adjustably connected to either side of the plow-beam.

A further object is to provide a plow in which the draw-bar may be adjustably mounted to regulate the direction of pull.

A further object is to provide means for carrying the above objects into effect.

To these and other ends our invention consists in the improved construction and combination of parts hereinafter fully described, illustrated in the accompanying drawings, forming a part of this specification, and particularly pointed out in the appended claims.

In the drawings, in which similar numerals represent similar parts in all of the views, Figure 1 is a perspective view of a plow-standard having the point and wings secured in position thereon. Fig. 2 is a rear elevation of the standard, a portion thereof being broken away to clearly show the manner of attaching the wings to the standard. Fig. 3 is a detail perspective view showing the plow-point. Fig. 4 is a central vertical longitudinal sectional view showing the manner in

which the point is secured to the standard. Fig. 5 is a perspective view of a plow having our improvements in position thereon. Fig. 6 is an edge view of the bracket used in securing the standard to the plow-beam. Fig. 7 is a face view of the same. Fig. 8 is an elevation of a plate secured to the front end of the plow-beam. Fig. 9 is a face view of the draft-bar support, which is adapted to coact with the plate shown in Fig. 8.

In subsoiling-plows, owing to the use to which they are put, the parts forming the operating portions, the point and wings, are subjected to a great deal of wear, tending to make them valueless within a short time and necessitating the purchasing of a new plow. In the present invention this requirement is eliminated to a great extent, inasmuch as provision is made by means of which the parts are renewable separately, but which parts when assembled together will so interlock as to form a construction equally as strong and durable as when the parts are formed in one piece.

In addition to the above we have shown a plow having means for attaching the standard to either side of the plow-beam, mechanism for adjusting the position of the handles laterally by means of which the plowman may walk either on the land or in the furrow regardless of which side of the beam the standard is secured, and have also shown means by which the angle of the draw-bar may be adjustably regulated, thus regulating the direction of pull of the draft-animals to the point desired.

The base or support of my construction consists in the standard 1, which is formed of a comparatively narrow metallic portion 2, the narrow face or edge being toward the front, as shown in Fig. 1. The lower portion of the standard is provided with laterally-extending portions 3, preferably formed integral with the standard, and also having a rearwardly-extending portion 4, to which the shoe 5 is removably secured. As shown in Fig. 4, the standard is also provided with a forwardly-extending portion 5, to which the point 6 is secured by means of a bolt 7, the point 6 being provided on its under face with a recess 8 for the passage of the head of the bolt, said recess extending rearwardly, as at

9, by means of which the head can be moved rearwardly and over the shoulder 10, a slot 11 being provided for the passage of the main portion of the bolt 7. The point 6 is also provided with a vertically-extending groove 12 on its rear face, within which the front portion of the standard is adapted to pass. From this description it will be readily seen that by first inserting the bolt 7 into the recess 8 and then moving it rearwardly a proper distance the point can be placed against the standard (the standard being within the groove 12) and while in this position can be moved downward onto the portion 5, the bolt 7 passing through a suitable opening 13, formed in said portion 5, after which a nut is placed on the bolt and tightened. This is the position shown in Fig. 4. While in this position it will be readily seen that there can be no movement of the point on the standard, as the rearwardly-projecting edges of the point embrace both sides of the standard, preventing lateral movement, while the bolt 7 will prevent any forward or upward movement, it being of course obvious that the standard 1 is of sufficient strength to prevent rearward movement. The base portion of the point 6 is also provided with forwardly-extending grooves 14, of any preferred configuration, which grooves terminate at a suitable point near the front portion of the point. These recesses (one on each side) are adapted to receive the inner edges of the wings 15, as shown in Fig. 1. Suitable bolts are passed therethrough and through the extending portions 3, as shown in Fig. 2, by means of which they are securely fastened to the standard and to the point 6.

It will be readily seen that each of the parts is detachably connected to the standard and to each other, there being no exposed portions into which the dirt or earth can pass and tend to destroy the usefulness of the plow, and as each of the parts is detachably connected it can be readily renewed with a minimum cost and trouble to the owner or user of the plow. By not only securing the parts to the standard, but also to each other, we obtain a mutual co-relation which tends to strengthen the plow, making it substantially as strong and durable as a plow made of a single piece of material.

As shown in Fig. 5, the standard 1 is connected by suitable means, such as a bolt 20, to a bracket 21, which latter is provided with laterally-extending ears 22, through which and the plow-beam 23 suitable securing-bolts 24 are passed, thus securing the bracket in position on the plow-beam, said bracket having a rounded portion 25, (shown in Fig. 6,) which is adapted to abut against the side of the plow-beam.

While the upper end of the standard 1 is removably secured to the bracket by means of the bolt 20, other means must be provided by which the standard will be held fixedly in position, and this is accomplished by placing

suitable stops 26, which may be in the form of rollers, if desired, on opposite sides of the center of said bracket, as shown in Fig. 7, and between which the standard is adapted to pass. As a further aid auxiliary stops 27 may be formed above said rollers, thus insuring the rigid mounting of the standard 1, said stops being formed by passing suitable bolts through the slots 27^a, formed on said bracket.

In connecting the handles 28 to the plow-beam we have so arranged the connection that they may have a limited adjusted movement, so that the plowman may walk in the furrow or on the land. This is accomplished by securing the handles to a frame 29, (shown in Fig. 5,) which frame has a flat forwardly-extending portion 30, which is provided with slots 31, arranged at opposite sides of the center of said portion 30. The slots 31 are adapted to receive bolts 32, one of which is adapted to be secured to the plow-beam, the other bolt being adapted to be secured to the rear end of a supporting-bar 33, the forward end of which is secured to the standard 1, as shown. From this construction it will be seen that the frame 29 may have a movement limited by the length of the slots 31 laterally, which will allow the handles to be substantially in alinement with the furrow made by the plow, as shown in Fig. 5, or may be turned to an angular position relative to the plow-beam, which position will be such as will allow the plowman to walk on the unplowed land. When the plow is changed to the opposite side of the plow-beam, the frame 29 is removed and the opposite slot 31 is secured to the beam, thus enabling the same adjustment being toward and from the land to a position in alinement with the furrow.

34 designates the draft-bar, which is attached to the standard 1 in any suitable manner, as by a clevis, as shown, and has its front end passed through an eye 35, formed on an elongated support 36, adjustably and removably secured at the front end of the plow-beam by means of a bolt 37. To enable the support 36 to be adjustably connected to the plow-beam, we provide its rear face with a series of corrugations 38, which are adapted to cooperate with similar corrugations 39, formed on a plate 40, which latter is secured to the plow-beam.

To adjustably regulate the direction of pull, the bolt 37 is loosened and the support moved laterally or pivotally, or both, if desired, so that the position of the eye will be changed, and obviously changing the angle of the draft-bar.

It is to be understood, of course, that the bracket 21 is arranged in such manner that it can be readily changed from one side to the other of the plow-beam.

Having thus described our invention, what we claim as new is—

1. In a subsoil-plow, the combination with the standard; of independent plow members

including a plow-point and laterally-extending wings, detachably secured to said standard and to each other.

2. In a subsoil-plow, the combination with the standard; of a plow-point detachably secured thereto; and a plurality of wings detachably secured to said standard and to said point.

3. In a subsoil-plow, the combination with the standard; of a plow-point detachably secured thereto, a vertical portion of said point being adapted to embrace said standard, to prevent lateral movement.

4. In a subsoil-plow, the combination with the standard; of a plow-point detachably secured thereto, a vertical portion of said point being adapted to embrace said standard, to prevent lateral movement; and a plurality of wings detachably secured to said standard and to said point.

5. In a subsoil-plow, the combination with the standard, having a forward extension; of a plow-point detachably secured to said extension, a vertical portion of said point embracing said standard, whereby said point will be held immovable on said standard.

6. In a subsoil-plow, the combination with the standard, having a forward extension; of a plow-point, carrying a detachable bolt adapted to pass through said extension and retain the point in position thereon, a vertical portion of said point embracing said standard, whereby said point will be held immovable on said standard.

7. A plow of the character described, comprising in its construction a standard, having forwardly, laterally and rearwardly extending portions; a plow-point detachably secured to said forwardly-extending portion, a vertical portion of said point embracing said standard to prevent lateral movement; forwardly-extending grooves formed on the sides of said point; and wings detachably secured to said laterally-extending portions, the inner edge of said wings extending into the grooves formed in said point.

8. In a plow having a plow-beam and a plow-standard adapted to be carried by either

side thereof, a plurality of handles removably and adjustably connected to the plow-beam, the adjustment being laterally to vary the angles of the handles relative to the plow-beam and the position of the plow-standard, said handles being mounted to have a simultaneous movement.

9. In a plow having a plow-beam and a plow-standard adapted to be carried on either side thereof, a handle-carrying plate removably and adjustably connected to the plow-frame, said connections being at a plurality of points one of which is directly on the plow-beam, said plate being adjusted laterally relative to the plow beam and standard to a limited extent; and handles carried by said plate.

10. A plow comprising a plow-beam; a bracket removably secured thereto, said bracket having an interchangeable connection with either side of said beam, said bracket carrying stops on its outer face; and a plow-standard removably secured to the face of said bracket, said bracket being interposed between the standard and the plow-beam.

11. A plow comprising a plow-beam, a bracket removably secured thereto said bracket being interchangeably connected to either side of said beam; a plow-standard removably secured to said bracket and handles removably and adjustably secured to said beam and said standard, said handles being adjusted laterally toward and from the land, the inward movement being limited to a point in alinement with the furrow, whereby the position of the handles relative to the plow-beam may be varied to correspond with the position of said bracket, the position of the standard determining and controlling the inner or furrow side.

In testimony that we claim the foregoing as our own we affix our signatures in presence of two witnesses.

WILLIS E. GILMAN.
CHARLES W. CLAPP.

Witnesses:

JAS. DU SHANE,
FRED RUSS.