

(No Model.)

2 Sheets—Sheet 1.

W. F. HIGHFILL.
SUBSOILING ATTACHMENT FOR PLOWS.

No. 469,434.

Patented Feb. 23, 1892.

Fig. 1.

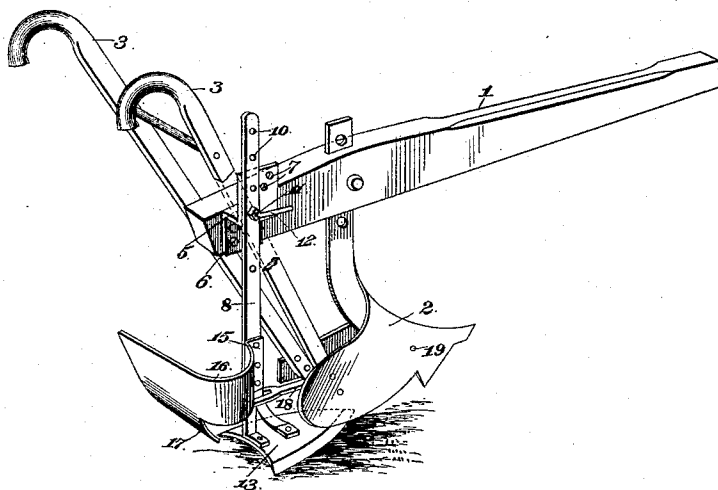
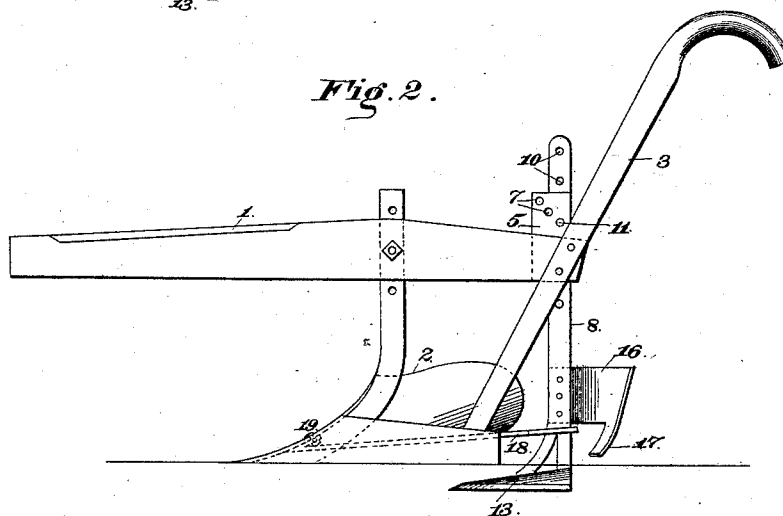


Fig. 2.



Witnesses

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W. F. Duval

Inventor

William F. Highfill

By his Attorneys,

C. A. Snow & Co.

(No Model.)

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Fig. 3.

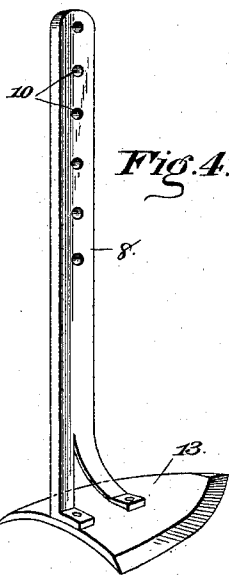
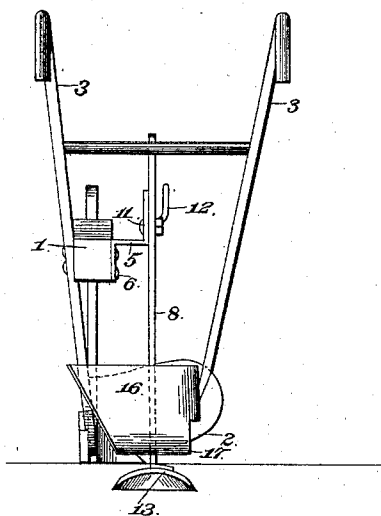


Fig. 4.

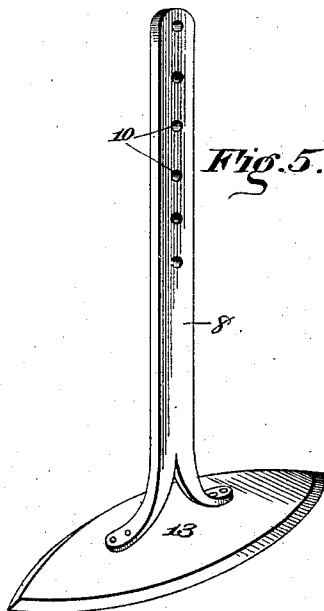


Fig. 5.

Witnesses:

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UNITED STATES PATENT OFFICE.

WILLIAM F. HIGHFILL, OF DANVILLE, VIRGINIA, ASSIGNOR OF ONE-HALF
TO THOMAS BAILEY, OF SAME PLACE.

SUBSOILING ATTACHMENT FOR PLOWS.

SPECIFICATION forming part of Letters Patent No. 469,434, dated February 23, 1892.

Application filed October 13, 1891. Serial No. 408,602. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM F. HIGHFILL, a citizen of the United States, residing at Danville, in the county of Pittsylvania and State of Virginia, have invented a new and useful Subsoiling Attachment for Plows, of which the following is a specification.

This invention relates to an attachment for plows for subsoiling purposes and to be used during the first plowing of crops; and the objects in view are to provide an attachment for an ordinary plow whereby the subsoil will be loosened at the bottom of the furrow without being turned and to provide means for directing the loosened soil from the furrow to the landside of the plow, thus effectually covering all grass, weeds, and other growth.

Various other objects and advantages of the invention will appear in the following description, and the novel features thereof will be particularly pointed out in the claims.

Referring to the drawings, Figure 1 is a perspective of a plow provided with my attachment. Fig. 2 is a reverse side elevation of the same. Fig. 3 is a rear elevation. Fig. 4 is a detail, in perspective, of the attachment. Fig. 5 is a similar view of a modification of the attachment, the same being adapted for two-horse plows.

Like numerals of reference indicate like parts in all the figures of the drawings.

1 designates the plow-beam, from which depends the usual standard carrying the plow 2, said standard being adjustable in the beam. From the landside and mold-board of the plow the handles 3 extend upwardly and are connected at their upper ends by the transverse rung. Such is the construction of the ordinary one-horse plow in connection with which I have illustrated my invention.

5 denotes a bayonet-shaped plate, preferably of iron, the same being bolted at its lower edge at 6 to the mold-board side of the plow-beam at the rear end of the latter, said plate having formed therein a diagonally-disposed series of bolt-openings 7.

8 designates the standard of the attachment, and the same is perforated at 10, whereby through the medium of a bolt 11 it may be adjusted at any height upon the bayonet-

shaped plate, and upon the outer end of the bolt a tail-nut 12 is mounted, by which the bolt may be removed from the standard without the necessity of a wrench. The lower end of the standard of the attachment is bifurcated, and its bifurcations are connected to the upper side of a substantially triangular or semi-elliptic concavo-convex shoe 13, the edge of which is beveled to cut, as shown.

Secured by bolts to the standard of the attachment immediately above the foot is the shank 15 of a deflector 16. This deflector is inclined in vertical section, and is bent laterally around from the mold-board side of the plow to the landside thereof, and has its lower edge extended below its shank and bent forwardly at 17, so as to form a scoop for raising the loose dirt left by the shoe, and thus direct the same toward the landside, where it is discharged. This deflector may or may not be used in connection with the attachment, but in single plows is an essential feature to a successful operation.

In Fig. 5 of the drawings I have illustrated a slightly-modified construction of attachment, such modification consisting simply in the form of the foot, which in lieu of being semi-elliptical is elliptical. The operation, however, of this attachment and its advantages are precisely the same, the only addition being that such a form of foot can be readily reversed, and thus the durability of the attachment increased twofold and the necessity of sharpening the same so often is avoided.

In operation the attachment is let down a few inches below the plow, so that it operates in the subsoil while the plow proper simply turns the soil above, and in this manner the subsoil at the center of the furrow is effectually loosened without any actual turning of the same to the top, which it is desired to avoid, as the clay is injurious to the life of the plants. The loose dirt above the clay is caught by the deflector and discharged to the landside, so that while the plow proper is hilling up at one side the deflector is hilling at the opposite side, and in this manner all weeds, grass, and other foreign growth are effectually covered up.

18 designates a brace-rod, bolted, as at 19, to the plowshare and terminating at its rear end in a loop 20, which loosely receives the standard of the attachment, and in this manner
5 braces the same when at work.

Having described my invention, what I claim is—

1. The combination, with the plow-standard, the beam, and plow, of the rear standard
10 terminating at its lower end in a foot, and the deflector secured to the rear standard above the foot and disposed laterally therefrom from the landside of the plow, said deflector being inclined and terminating in a
15 lower cutting-edge, substantially as specified.

2. The combination, with the plow-beam, the plow, and its standard secured to the beam, of the adjustable standard and the described deflector connected therewith and laterally
20 bent from a point in rear thereof to a point opposite the landside of the plow and having

its lower edge curved and beveled to form a cutting-edge, substantially as specified.

3. The combination, with the plow-beam, its standard, and plow, of the standard secured to the rear end thereof and terminating in a foot, and the deflecting attachment consisting of the shank adjustably bolted to the rear standard at the mold-board side of the plow inclined vertically and laterally bent
30 or curved around to and beyond the landside of the plow and having its lower edge extended and curved below its shank to form a scoop, substantially as specified.

In testimony that I claim the foregoing as
35 my own I have hereto affixed my signature in presence of two witnesses.

WILLIAM F. HIGHFILL.

Witnesses:

P. R. TAYLOR,
J. R. COOK.