(No Model.)

A. J. BOWMAN.

MOLE DITCHING PLOW.

No. 302,822. Patented July 29, 1884.

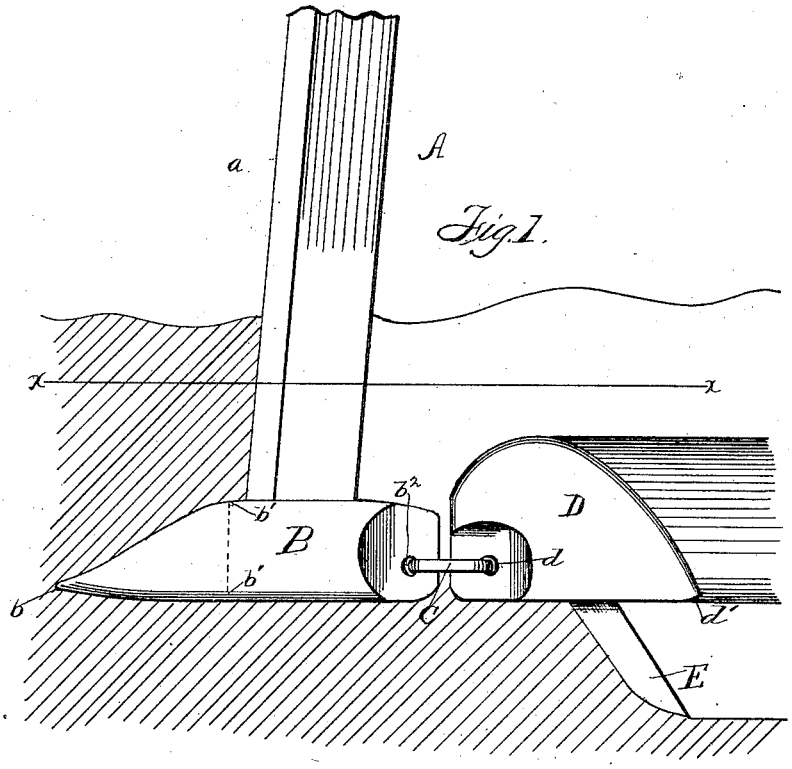

Fig. 1.

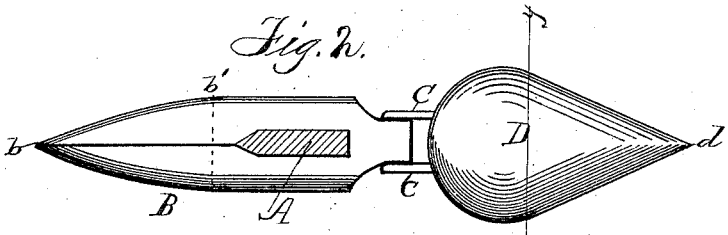

Fig. 2.

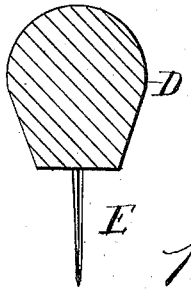

Fig. 3.

Witnesses:
D. Bernhard
W. H. Knight

Inventor:
A. J. Bowman
per Edson Bros.
Attorneys

UNITED STATES PATENT OFFICE.

ANDREW J. BOWMAN, OF DEVALL'S BLUFF, ARKANSAS.

MOLE DITCHING-PLOW.

SPECIFICATION forming part of Letters Patent No. 302,822, dated July 29, 1884.

Application filed January 25, 1884. (No model.)

To all whom it may concern:

Be it known that I, ANDREW J. BOWMAN, a citizen of the United States, residing at Devall's Bluff, in the county of Prairie and State of Arkansas, have invented certain new and useful Improvements in Mole Ditching-Plows; and I do 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, reference being had to the accompanying drawings, and to the letters and figures of reference marked thereon, which form a part of this specification.

My invention relates to subsoil or mole plows, and has for its object the provision of an implement of the class named provided with means whereby a tunnel can be formed having a central downwardly-projecting cut or groove at the bottom thereof to facilitate the passage of water from said tunnel into the surrounding soil.

The invention relates more particularly to means employed whereby obstacles in the path of the opener or its attached knife for forming the above-mentioned groove or cut can be passed without danger of displacing or breaking said mole or its attached knife.

I am aware that mole-plows have been heretofore employed having means for opening a groove or cut at the bottom of the tunnel proper; but in each and every instance, so far as I am aware, where such supplementary opener has been employed, breakage or displacement of the opener takes place when obstacles too large to be avoided by lateral movement of the opener are struck. As mole-plows are at present constructed it is impossible for the supplementary groove-opener to ride or pass over obstacles without lifting the follower bodily, which serves to damage and in some instances to wholly destroy the drain or tunnel by causing abrupt offsets therein, thereby weakening the sides and top of the tunnel.

In view of the above my invention has for its object the furnishing of a mole-plow having a supplementary groove-opener so arranged as to pass over obstacles without changing its course or line of movement.

To the accomplishment of the above my invention consists in the construction and combination of parts as hereinafter set forth, and pointed out in the claims.

In the drawings, Figure 1 is a side elevation of a subsoil or ditching plow provided with my improvements. Fig. 2 is a top plan view of the parts shown in Fig. 1. Fig. 3 is a section taken on the line *y y* of Fig. 2.

Referring to the drawings, in which like letters of reference denote like parts, A represents the connecting-bar between the plow-beam (not shown in the drawings) and the tunnel or ditch opener B. In the present case the bar A operates as a colter, and will, therefore, hereinafter be designated as such. Said colter preferably forms at its forward edge an obtuse angle with the top of the opener B, and is provided with a sharp edge, *a*, as shown.

B represents the tunnel or ditch opener, the forward end, *b*, of which is pointed, as shown, and materially enlarges backward to a point, *b'*, at or near the middle thereof. Rearwardly from the point *b'* said body is about the same in size until near the end, where it is flattened and provided with an aperture, b^2, through which a link, C, passes for the purpose of connecting the opener B with a follow-block, D.

The block D is preferably shaped substantially as shown in the several figures of the drawings, its greatest vertical and transverse axes being greater than the axis of the body of the opener, as shown. The upper surface of the block D is rounded from a point near its forward end to the head thereof, as clearly shown in the drawings. The forward lower edge of the follower-block D may be rounding or flattened, and is provided with an aperture, *d*, through which the link C passes. The joint between the opener B and follow-block D is a loose one, the object of which will be hereinafter described. The rear end of the follow-block D preferably diminishes to a point, *d'*, the lower surface of the block being flattened, as shown in Fig. 3, and provided with a downwardly and rearwardly projecting spur or blade, E. Said blade serves to open a seam or narrow furrow in the soil below the tunnel or ditch to drain the same.

The operation of my invention is as follows:

The tunnel or ditch is first formed by the opener B, the colter A leaving a narrow vertical cut in the soil above such tunnel, which is closed after the passage of the colter by the soil coming together. The outward pressure of the block D serves to pack the earth which forms the side walls of the tunnel or ditch, and thereby make the same more permanent, the soil below having a drain formed by the knife E. When an obstruction is struck by the knife E, it will act as the fulcrum and raise the rear end of the block D. It will be seen that when an obstacle is struck, the block D will, by reason of its rounded top, turn upon its knife as upon a pivot without being bodily raised, as above stated. The joint between the opener and follow-block being loose enables said follow-block to yield slightly when obstructions—such as rock, roots, &c.—are struck.

What I claim, and desire to secure by Letters Patent, is—

1. In a subsoil or mole plow, the combination of the colter having a mole attached to its lower end, with a follow-block hinged to said mole, and having a rounded surface extending backwardly and downwardly to a point, a flat bottom provided with a downwardly-projecting inclined knife or spur, substantially as described, and for the purpose set forth.

2. A subsoil or mole plow consisting of the following elements: a colter, A, provided at its lower end with a mole, B, hinged by a link, C, to a follow-block, D, having its greatest vertical and horizontal diameters near its forward end, pointed rear end, *d*, and a flat bottom provided with a downwardly and rearwardly projecting knife or spur, all combined and adapted to operate substantially as described, and for the purpose specified.

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

ANDREW J. BOWMAN.

Witnesses:
W. L. SORY,
A. W. SORY.