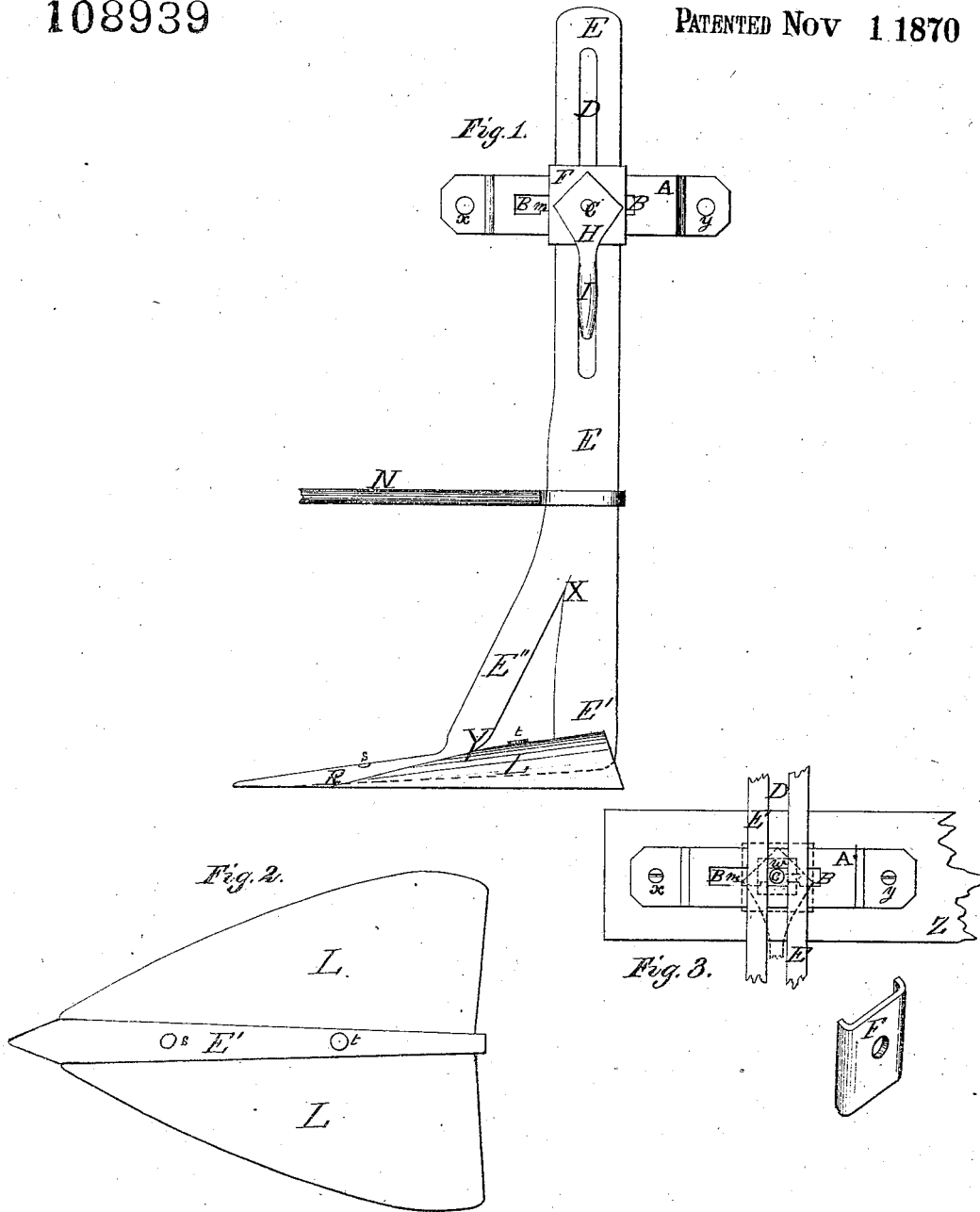


# ALBERT F. ROBERTS' Subsoil Attachment For Plows.

108939

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Witnesses  
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# United States Patent Office.

ALBERT F. ROBERTS, OF LEXINGTON, KENTUCKY.

Letters Patent No. 108,939, dated November 1, 1870.

## IMPROVEMENT IN SUBSOIL ATTACHMENTS FOR PLOWS.

The Schedule referred to in these Letters Patent and making part of the same.

### To all whom it may concern:

Be it known that I, ALBERT F. ROBERTS, of the city of Lexington, county of Fayette and State of Kentucky, have invented a new and useful Improvement in Subsoiling-Attachments for Plows, of which the following is a description, reference being had to the accompanying drawing.

### Nature and Objects of the Invention.

The invention relates to that class of subsoil-attachments for plows of all descriptions which has for its object the loosening or pulverizing of the soil at a point below the surface of the bottom of the furrow. This object is effected by the present invention by means of a standard, secured to the rear end of the beam of a plow, which can be lowered or elevated by a slot and sliding bolt. To the lower end of the standard is affixed a pointed convex shovel, immediately under the longitudinal center of which, and running to its point, is secured the foot of the standard. Directly in front of the front edge of the standard, and secured thereto, is a colter, being a portion of the standard itself, though partially divided therefrom. The distance separating these parts of the standard increases until the colter reaches the point where it is secured to the shovel, at or about the center of its upper surface. This colter terminates in a foot secured to the center of the shovel, in front of the junction of the colter therewith, and terminates in a broad, sharp point, somewhat beyond the point of the shovel, where it is secured to that portion of the foot of the standard on the under side of the shovel.

### Description of the Accompanying Drawing.

Figure 1 is a side elevation of the invention.

Figure 2 is a view of the lower surface of the shovel.

Figure 3 is a view of the slotted strap and bolt, showing the means of attaching the standard to the beam of the plow, the dotted lines indicating the nut, with lever and sliding plate.

### General Description.

A in the accompanying drawing represents the slotted strap secured to the side of the rear end of the beam of a plow, Z, on the right or left side, according as the plow is right-handed or left-handed, by means of bolts through the apertures x and y. Through the longitudinal center of the elevated portion of A runs a slot, B, the interior of the upper surface of which is provided with rectangular projections, m, the distances between which and between either thereof, and the ends of the slot on each side, slightly exceeds the length of the shoulder w on the set-screw C.

The set-screw C is provided with a head of such

dimensions as to prevent it passing through the slot B.

Immediately in front of this head is the shoulder w, that part of which, opposite the head when in position, is flush with the exterior surface of the strap A.

From the center of this shoulder projects a screw, passing through the slot D in the standard E, and through a sliding plate, F, the sides of which lap over and slide upon the edges of the standard, where it is inserted through a nut, H, provided with an ear or lever, I, by means of which the tension of the screw is regulated.

The standard E is provided, at its longitudinal center, with a slot, D, of requisite length.

A part of the lower portion, E', of the standard is curved under, and securely riveted to the under side of the convex shovel L, the part thus secured being drawn out so as to be firmly attached. The front end of this part passes beyond the point of the shovel and below it.

The standard E being divided through the lower portion of its center at the point X, the part E'' is inclined forward, its front edge being drawn sharp, its rear coming in contact with the upper surface of the shovel L at the point Y.

The part E'' is drawn out, in a reverse direction to its edge, into a foot, R, which projects along the central line of and beyond the point of the shovel L.

The foot R and the forward end of the portion E', on the under side of the shovel, are secured together by welding or otherwise.

The rest of the portions E' E'', on the lower and upper surfaces of the shovel, are secured together by bolts, s and t, which pass also through the shovel.

The shovel is convex and triangular, being sharpened at its sides and point, which is in front, its rear side being at lateral right angles to the portion E' of the standard E.

Over the rear of the standard E, at a proper height above the shovel, passes the loop of a draw-bar, N, the front end of which is secured rigidly to a bolt in the share of the plow.

### Operation.

The attachment being secured to one side of the rear of the beam of the plow by means of screws or bolts through the apertures x and y, in such position that the standard E projects vertically downward and the point of the shovel L is in front, the plow and attachment are ready for operation.

When it is desired to increase the depth of the subsoiling, the set-screw C is loosened by means of the lever I, whereupon the standard E slides downward upon the screw in the slot D, and may be adjusted as desired by tightening the screw C.

In light and loamy soils the pitch of the shovel L

should be less than in heavy, gravelly, and stony ground. When it is desired to increase the pitch of the shovel, the set-screw C is loosened sufficiently to allow the shoulder *w* to be cleared of the projections *m* or ends of the slot B. The attachment is then moved forward, and the shoulder *w* introduced between others of the rectangular projections *m*, and the set-screw C then tightened. The further forward the standard is moved and secured, the greater will be the pitch of the shovel L.

*Claims.*

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

1. The standard E, composed of the portion E', attached to the shovel L, and the portion E'', constituting the colter, with the foot R, with the adjust-

ment composed of the slotted strap A, provided with the projections *m*, set-screw C, plate F, and nut H, substantially for the uses and purposes shown and set forth.

2. In a plow, cultivator, or subsoil attachment, the device A, provided with the projections *m*, for the uses and purposes described and shown.

In testimony that I claim the foregoing improvement in subsoil attachments for plows, as above described, I have hereunto set my hand this 11th day of October, 1870.

ALBERT F. ROBERTS.

Witnesses:

EDM. F. BROWN.  
DENNIS TINNEY.