

[84.]

No. 118,945.

Patented Sep. 12, 1871.

# Ross Johnson's Subsoil Attachment for Plows

Fig. 1

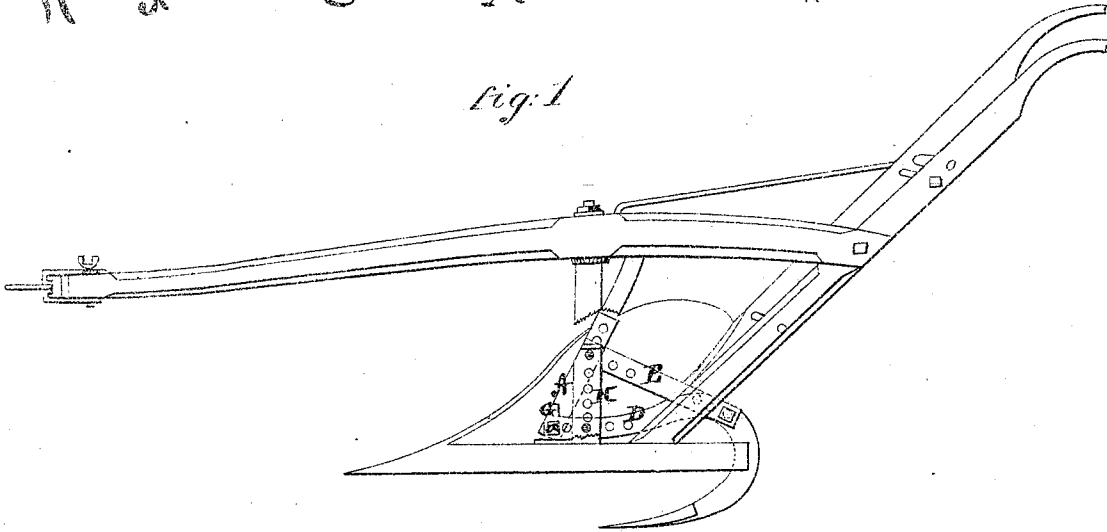
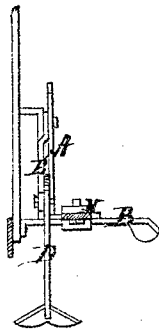


Fig. 2



Witnesses

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# UNITED STATES PATENT OFFICE.

ROSS JOHNSON, OF LAWRENCE, KANSAS.

## IMPROVEMENT IN PLOWS.

Specification forming part of Letters Patent No. 118,945, dated September 12, 1871.

*To all whom it may concern:*

Be it known that I, ROSS JOHNSON, of Lawrence, in the county of Douglas and in the State of Kansas, 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 thereof, reference being had to the accompanying drawing and to the letters of reference marked thereon making a part of this specification.

My present invention is intended as an improvement upon the subsoil attachment for plows patented by me May 10, 1870. This first subsoil attachment was found to be deficient in not being able to adapt the subsoiling to suit the character of team which might happen to be employed—in other words, it lacked an arrangement by which the gooseneck-hook and barb could be raised or lowered at will with facility and without changing the horizontal set of the barb. In the old case there was also too much strain and twisting force brought to bear upon the small bar or brace under the plow, particularly when working in a hard substratum of earth, or when obstructions were encountered by the barb. In the present improvement I have obviated these difficulties; and the nature of my invention hence consists, first, in the means for making the subsoiler adjustable up and down, and also backward and forward; and second, in the construction and arrangement of the neck of the subsoil-hook.

In order to enable others skilled in the art to which my invention appertains to make and use the same, I will now proceed to describe its construction and operation, referring to the annexed drawing.

Figure 1 is a side view of a plow with my subsoil attachment, and Fig. 2 is a rear view of the subsoil attachment.

A represents an upright bar, which may be straight, curved, or angular, as may be found best adapted to the variety of construction and shape of various mold-boards. This upright bar is, in fact, merely designed as a rear appendage or rib placed upon the under or back surface of the mold-board edgewise, to receive connection with the subsoil-hook D, and also with the cross-brace E. The shank or subsoil-hook D is con-

nected with the upright A by means of a bolt, a, the shank resting upon the bar B. There being a number of holes through shank D, as well as on the upright, as shown, the shank may be adjusted up and down and backward and forward. The cross-brace E extends from the curve of the gooseneck or hook diagonally, or it may be bowed to a point near the upper end of the upright bar A, thus bearing the upward leverage or pressure, and consequently relieving the twisting strain on the small bar or brace B under the plow. The brace E is also made adjustable at both ends, as shown. The end of the hook D in this improvement sits edgewise instead of flat, as before, and will, therefore, likewise hold the instrument much more firmly and of itself bear a greater strain in the process of plowing. The upright bar A may be made, at will, to rest against any portion of the rear or back surface of the mold-board and appendages; as, for instance, against the iron standard found in all plows, and forming really a part of the mold-board, as the latter is either cast with or bolted to it in most every variety of plows, both iron and steel. The projection G is designed to be a continuation of the straight end of the subsoiler, only turned up in order to form a brace against the mold-board.

It will be particularly noticed that I use, under all circumstances, the mold-board or some of the iron work connected therewith as the point of resistance to the upward strain in the process of subsoiling.

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

The combination, with the mold-board of a plow, of the shank or subsoil-hook D, upright bar A, and brace E, all constructed and arranged as described, so that the mold-board will form the point of resistance to the upward strain of the subsoiler, substantially as herein set forth.

In testimony that I claim the foregoing I have hereunto set my hand this 30th day of January, 1871.

ROSS JOHNSON.

Witnesses:

E. D. HAMMOND,  
J. W. ADAMS.