M. M. BOWERS.

Detachable Plow Point.

No. 231,261. Patented Aug. 17, 1880.

Fig. 1.

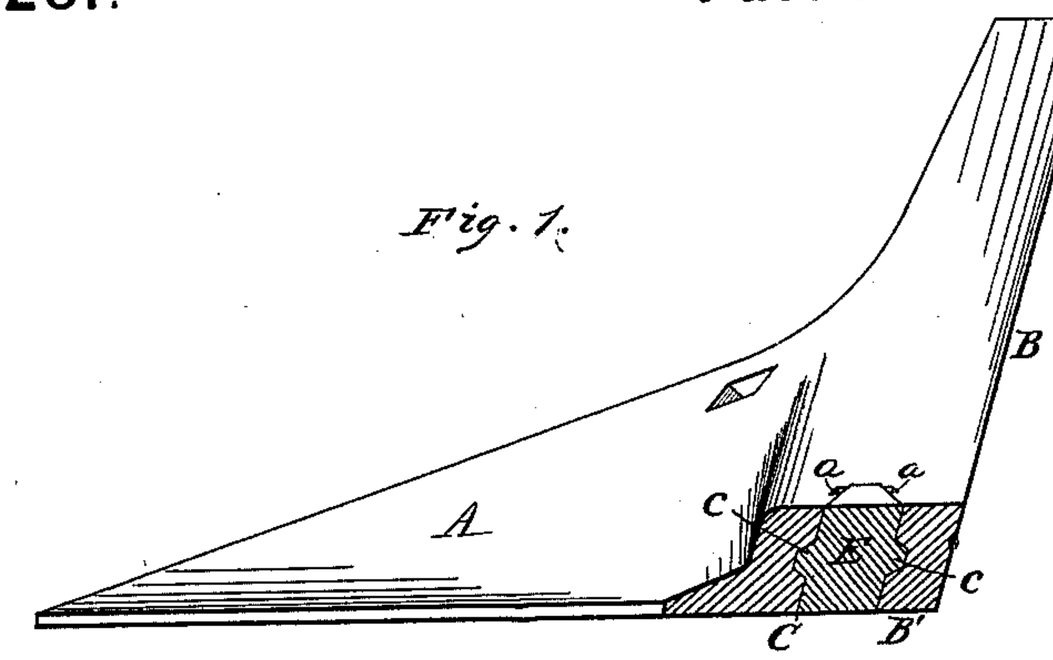


Fig. 2.

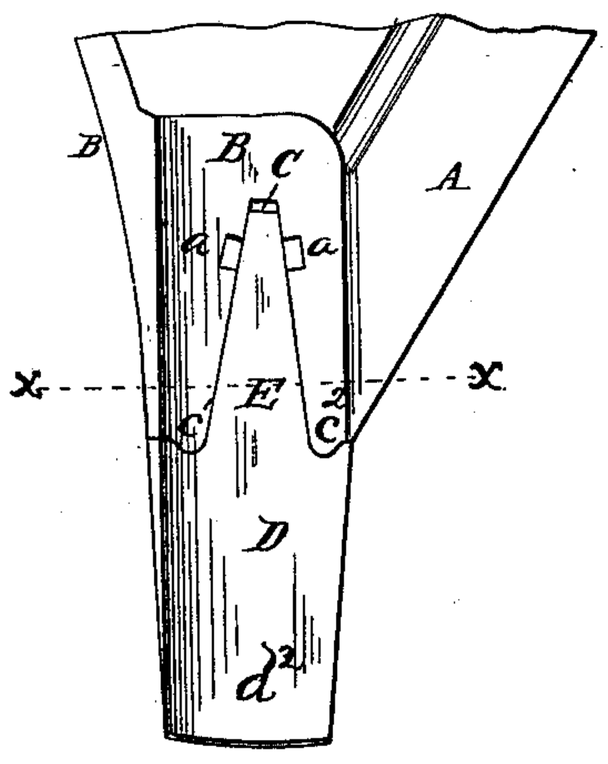


Fig. 3.

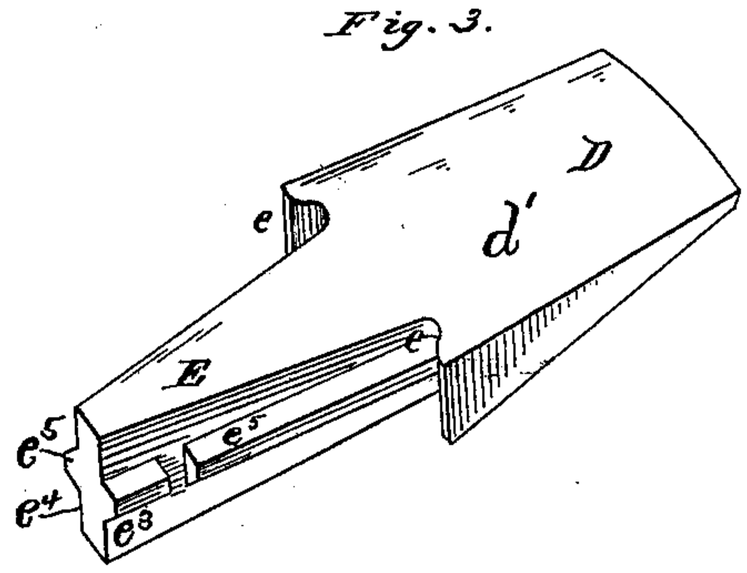
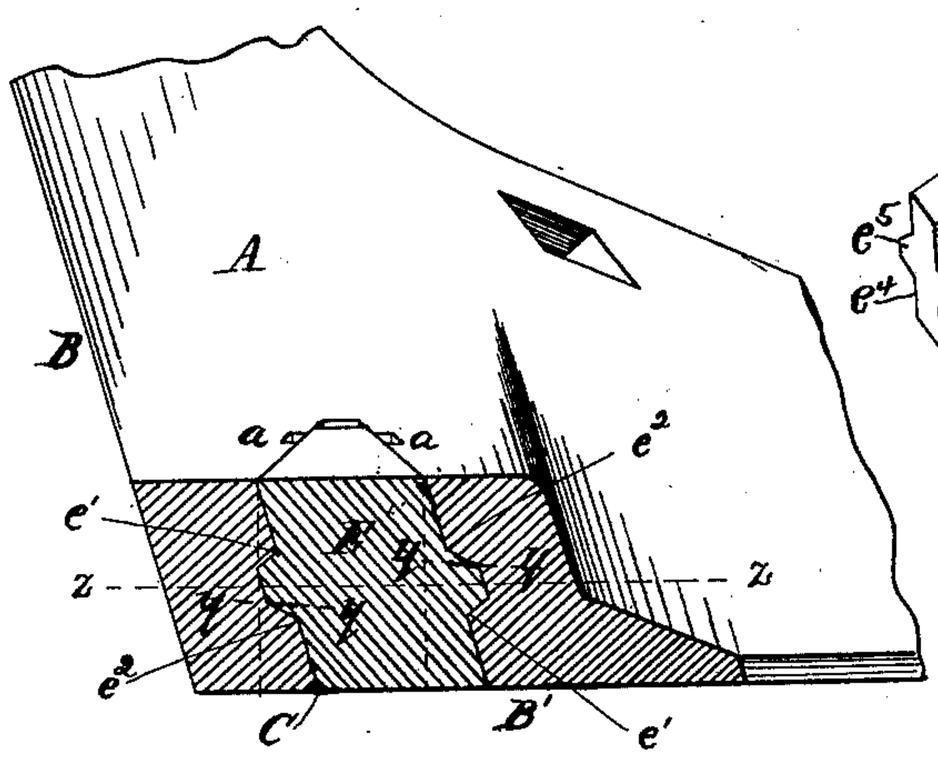


Fig. 4.



Witnesses:

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UNITED STATES PATENT OFFICE.

MARCUS M. BOWERS, OF RICHMOND, VIRGINIA.

DETACHABLE PLOW-POINT.

SPECIFICATION forming part of Letters Patent No. 231,261, dated August 17, 1880.

Application filed December 15, 1879.

To all whom it may concern:

Be it known that I, MARCUS M. BOWERS, of Richmond, in the county of Henrico and State of Virginia, have invented certain new and useful Improvements in Detachable Plow-Points; and I do hereby declare that the following is a full, clear, and exact description of the invention, which 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 letters of reference marked thereon, which form a part of this specification.

Figure 1 is a vertical section of a share and point embodying my invention, taken on line *x x*, Fig. 2. Fig. 2 is a bottom view. Fig. 3 is a view of the point or slip detached. Fig. 4 is a vertical section, illustrating the manner of attaching my improved point to a share having a left-hand mold-board.

My invention consists in an improvement upon the construction patented to me July 20, 1875, whereby the application of a detachable slip to a plow in which the landside is inclined relative to the sole and point is greatly facilitated, in order that such plows may have removable points applied to them.

In the drawings, A is the plowshare, which may be made of any usual or approved form. B is the landside of the share, which, instead of being arranged to run in a vertical plane, is constructed at an angle to the sole B′ and bottom of the furrow which the plow is intended to cut. The forward end of the share is provided with an opening or socket, C, the sides or walls of which, instead of being vertical, as in my former patent, are situated in planes which are inclined to the sole or bottom of the furrow to be cut, their inclination being substantially the same as that of the landside of the share. The side walls of the socket C in the plowshare are formed to interlock with the sides of the shank of the slip to be hereinafter described; and for that purpose these sides of the socket may be constructed with central longitudinal grooves, *c*, to receive a corresponding rib, e^5, on the shank of the slip; or these walls of the socket may have projecting ribs, or their upper and lower edges may be beveled to fit the lips or flanges projecting from the upper and lower sides of the shank of the slip.

a a are key-seats formed in the side walls of the socket C to receive a key or keys.

D, Figs. 2 and 3, is a plow point or slip made in the form of an equal-sided wedge, and provided with a shank, E, the upper and lower faces of which are formed in extensions of the planes of the upper and lower sides, d' d^2, of the slip D.

In my former patent the sides of the shank occupy parallel planes at right angles to the upper and lower faces of the point, whereas in my present invention the sides e^3 e^4 of the shank occupy planes which have the same inclination to the upper and lower faces of the point as do the sides of the socket C. Thus it will be seen that the slip is reversible in its supporting-socket, and also that, whichever side up the slip may be, the point will have the same set or pitch relative to the share and to the sole or lower edge of the landside of the plow.

The front ends of the jaws of the socket C are beveled or chamfered upon their outer sides, as at c' c^2, and the slip is provided with correspondingly-shaped recesses or seats *e e* at each side of the base of the shank, to fit closely the beveled ends c' c^2, so that when the slip is drawn tightly to its place they support the jaws of the socket against lateral strain, the slip being locked in this position by means of a key or keys inserted in the key seats or notches formed for their reception in the socket and in the shank.

It will, of course, be understood that that portion of the key-seat or key-seats, when two are used, which is formed in the socket should be so related to the portion or portions formed in the shank as to give the key or keys the requisite draft, in order that the shank may be drawn firmly into place as the key or keys are driven in.

By examination of Fig. 4 it will be seen that forming the shank with its sides in planes at right angles to the horizontal planes of the upper and lower sides of the slip would be objectionable for two reasons: First, it would necessitate forming the socket in the forward end of the share with vertical sides, as indicated in dotted lines, which would leave the metal at the lower edge of the left end or outside jaw of the socket so thin and weak that

it would be liable to be broken whenever the point came in contact with a stone or other equivalent obstruction; and, secondly, it would be impracticable to so shape the beveled ends c' c^2 of the jaws of the socket and the corresponding recesses at the base of the shank as to make these parts fit each other when the slip is reversed with the desired accuracy, it being apparent from an examination of the drawings that a recess which would fit closely and support the upper edge of the jaw c^2 would not properly fit and support the lower edge or corner of jaw c'.

When the walls of the socket and the sides of the shank are made oblique to the bottom of the share, as described, not only can the share be made much thicker and stronger on the land side, but, moreover, the point is held more firmly in the socket by reason of the greatly increased resistance against vertical strain or movement; whereas when the walls of the socket and the sides of the shank are situated as shown in dotted lines, Fig. 4, the walls offer no vertical resistance to assist in holding the point in place. Said dotted lines indicate the directions of the displacing tendencies, they being substantially at right angles to the face d' or face d^2 of the point.

In order to facilitate casting the slip I construct the ribs on the sides of the shank with different bevels or inclined faces, as follows: By referring to Fig. 4 it will be seen that the faces e' e' present a less obtuse angle to the adjacent faces of the shank E than do the faces e^2 e^2 to the faces of the shank adjacent to them, the advantage arising from this construction being that it enables the molder to use a pattern which is divided on the line z z, Fig. 4, without having a thin edge at one side of each half of the pattern, as he would if the faces e^2 e^2 were formed on the dotted lines y y, Fig. 4.

The upper face of each rib is substantially parallel to the lower face of the opposite rib, so that the point or slip, when reversed, shall fit the socket as tightly as possible.

It will, of course, be understood that the edges of the slip are, by preference, to be beveled to correspond with the inclination of the landside.

What I claim is—

1. A detachable plow slip or point having a supporting shank with parallel sides, adapted to fit a corresponding socket in a share, and formed with the plowing-faces d' d^2, which are arranged to alternately coincide with the bottom of the share, and are situated obliquely to the parallel sides of the shank, substantially as set forth.

2. A plowshare having a horizontal sole, B′, the landside B, inclined at an oblique angle to said sole, and a socket which extends entirely through the share, and has parallel lateral walls which are inclined at an oblique angle to the bottom or sole B′, substantially as set forth.

3. A reversible plow point or slip having the faces d' and d^2 arranged to alternately coincide with the bottom of the share when attached, and having the shank E formed with the sides e^3 e^4 oblique to said faces d' d^2, and with the ribs e^5, each of which has its upper face and its lower face inclined at different angles to the side of the shank, and has its upper face parallel to the lower face of the opposite rib, substantially as set forth.

In testimony that I claim the foregoing as my own I affix my signature in presence of two witnesses.

MARCUS M. BOWERS.

Witnesses:

F. M. HILTZHIMER, Jr.,

HARRY TRINPER.