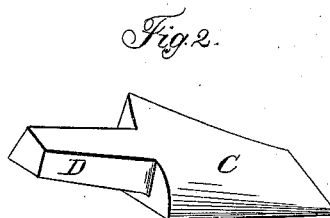
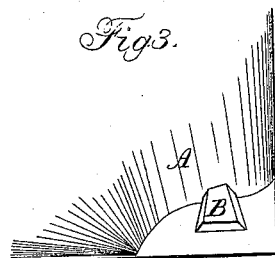
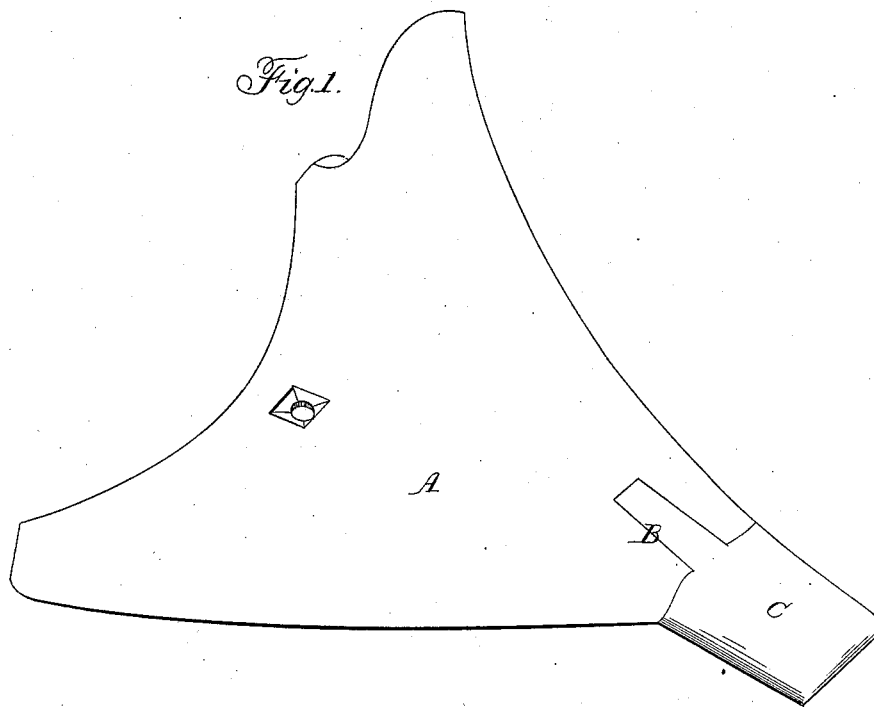


L. M. BATES

Plow-Point.

No. 54,095.

Patented Apr. 24, 1866.



Witnesses:  
Andrew Whitely  
Chas Hadaway

Inventor:  
L M Bates  
By his atty  
R D O Smith

# UNITED STATES PATENT OFFICE.

L. M. BATES, OF NEWARK, OHIO.

## IMPROVEMENT IN PLOWS.

Specification forming part of Letters Patent No. **54,095**, dated April 24, 1866.

*To all whom it may concern:*

Be it known that I, L. M. BATES, of Newark, in the county of Licking and State of Ohio, have invented a new and useful Improvement in Plows; and I do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawings, in which—

Figure 1 is a perspective view of a plowshare, showing my improvement. Fig. 2 is a perspective view of the point of the plowshare attached. Fig. 3 is an end elevation of the front of the plowshare, showing the dovetail recess for the shank of the point.

The nature of my invention consists in attaching a removable point, which may be sharpened by forging or otherwise, to a cast-metal plowshare by means of a shank having a cross-section of dovetail shape, so that the dovetail recess into which the shank fits may be open along one of its sides, and thus allow a perfect support to the core which forms said recess along its entire length.

That others may understand the nature and operation of my invention, I will particularly describe it.

The plowshare A does not differ from those commonly in use, except at the point and in the mode of attaching said point. The share is designed to be cast or otherwise constructed with a recess, B, running up from the end some three or four inches along the upper face of the share, in a line about parallel with the land-side face. This recess has a cross-section of a dovetail form, or wider at the bottom than at the top, and is slightly tapering from the front to the rear end, as shown in Figs. 1 and 3.

The point C is designed to be constructed of some metal that may be rendered very hard and at the same time will admit of sharpening by means of forging. This is not, however, deemed imperative, as it may be found economical to use a cheap article of simple cast-iron.

The point C is provided with a tapering dovetail-shaped shank, D, which corresponds to and fits accurately the recess B, so that when said shank is inserted into said recess the shoulders around the shank D meet the surface of the end of the share surrounding the entrance to the recess B, and thereby the point is firmly supported on all sides liable

to strain, and the labor of the shank D is proportionately reduced.

The form of the point and of the share is such that when the point is in place the surface of one coincides with the surface of the other at the line of junction, so that in passing through the soil no impediment is offered by the joint between the two parts.

In order to properly construct a plow share and point in accordance with my method it is necessary to make that part where the share and point are united a little thicker, vertically, than is usually done where the share and point form one piece. This increase of thickness is not, however, sufficient to injure the contour of that part of the plow or to in any way affect its perfection of operation.

The advantages of my method may be briefly stated. The point is the part of the plow which receives the most violent usage, and it is therefore first to become worn and useless. In consequence of this various contrivances have been resorted to in order to increase the durability of the point or to render the substitution of a new for an old one easy. Such contrivances have, however, so increased the first cost of the plows to which they have been attached that they have seldom been found to be economical. With my improvement the case will be different, as the extra cost will be only the difference in cost between a cast and a forged point—an amount altogether insignificant. This fact is apparent when it is observed that the recess B may be formed perfectly when the share is cast, and with so much certainty that it will not increase the liability to loss from imperfect casting. This certainty is attributable to the fact that the core around which the metal flows in forming said recess admits of support from the mold along its entire length, and there is therefore no danger of its displacement by the flowing metal and the consequent ruin of the casting, for if the recess B cannot be made perfectly in the process of casting the work cannot be economically done. If it was necessary to support this core from one end merely, as would be the case were the recess B covered on top, experience has shown that in a large proportion of cases it would be displaced in casting, and the share would therefore be spoiled.

The advantage of a tapered shank having a

dovetailed shape in section must be apparent. It is a form easy of manufacture and therefore cheap. It may be inserted and removed with the utmost facility, and will therefore be convenient in use. The metal surrounding the shank D, when inserted in the recess B, rises, as is apparent, obliquely on either side quite to the level of the upper surface of the shank, so that the entire oblique surface of said shank receives support from the surrounding metal, and the utmost strength attainable is thereby secured to those parts—an amount which cannot be secured by any other form which permits one side of the recess to be left open and uncovered, so that the core upon which it is formed may be supported along its entire length.

It is evident that if, from any cause, it is necessary to secure the point more firmly than it will be secured by the form and fit of the shank and recess, a pin, key, or screw may be inserted through or into the shank to accomplish that purpose.

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

The detachable point C, attached and secured to the plowshare by a shank having a dovetail section, substantially as and for the purpose specified.

L. M. BATES.

Witnesses:

R. D. O. SMITH,  
ANDREW WHITELEY.