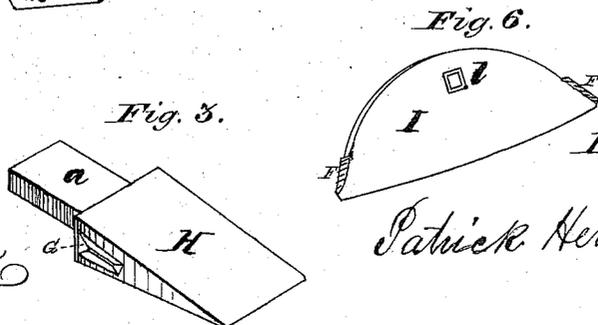
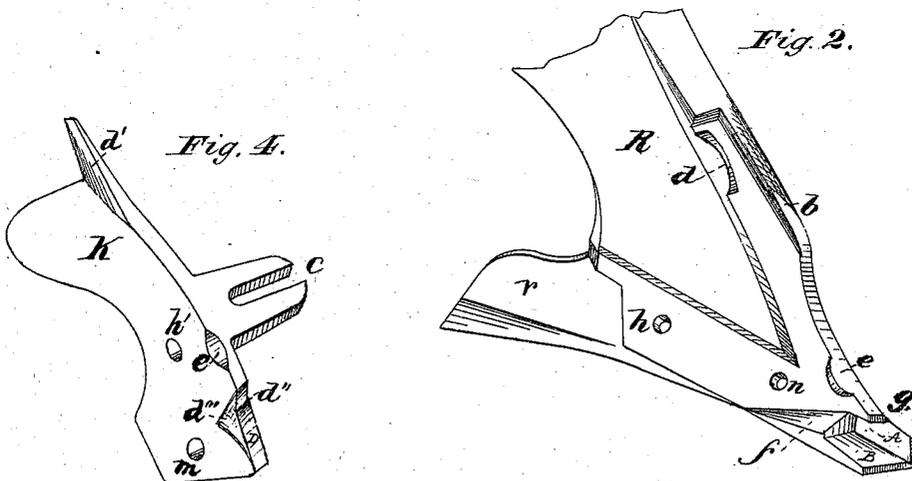
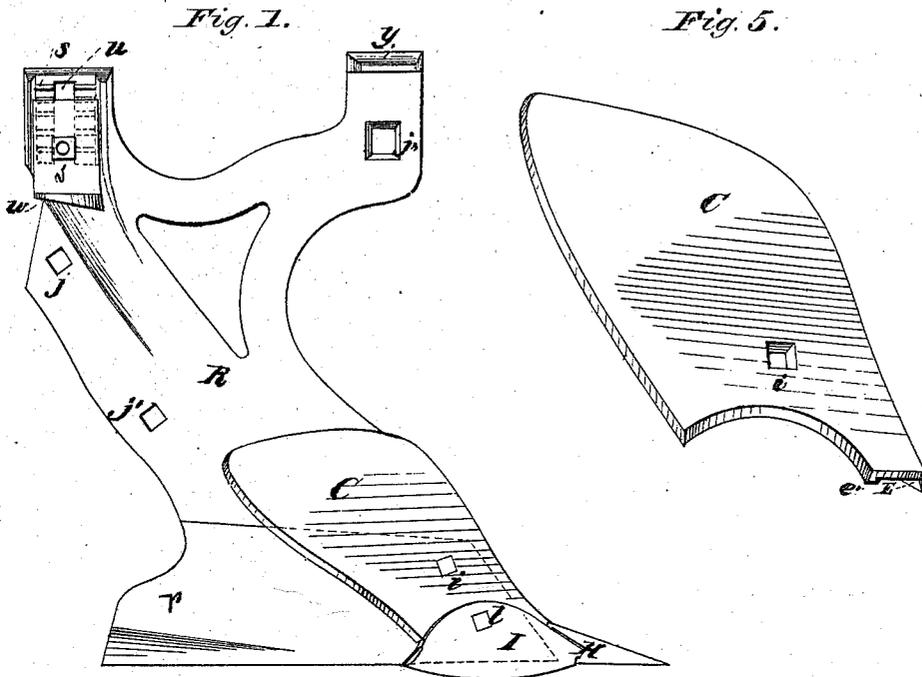


P. H. STARKE.

Plows.

No. 141,960.

Patented August 19, 1873.



Witnesses:

W. H. Hull
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UNITED STATES PATENT OFFICE

PATRICK H. STARKE, OF RICHMOND, VIRGINIA.

IMPROVEMENT IN PLOWS.

Specification forming part of Letters Patent No. 141,960, dated August 19, 1873; application filed July 11, 1873.

To all whom it may concern:

Be it known that I, PATRICK H. STARKE, of the city of Richmond, in the county of Henrico and State of Virginia, have invented certain new and useful Improvements in Plows; and I do hereby 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 pertains to make and use it, reference being had to the accompanying drawings, which form part of this specification, in which—

Figure 1 is a side view of the plow; Fig. 2, a view of the standard with the front piece, mold-board, and share detached; Fig. 3, a view of the point; Fig. 4, a view of the front piece; Fig. 5, a view of the mold-board; Fig. 6, a view of the share.

This invention relates to mold-board plows, used for turning the soil. The object is to make all the parts in separate pieces, each piece being produced with flanges or lugs, and the adjoining pieces with counterparts, so that when brought together each supports and strengthens the other, so that very few bolts are required to firmly bind the whole together. When worn out or broken, any piece or part may be readily replaced with a new one, thus saving much time and expense in making repairs.

The nature of my invention consists in so constructing the standard, front piece, mold-board, and point that each piece can be molded and cast in a simple, plain piece of casting, made in what is known by molders as a "two-part flask"—the simplest kind of casting; and it consists, further, in forming each part of the plow as shall be hereinafter more fully set forth. My object is to make a plow that will be simple and cheap in its construction, and that will admit any one part, when worn out, to be readily replaced at a trifling expense.

In Fig. 1, R is the standard; C, the mold-board; I, the share; H, the point; and *r* the rear end of the land-side plate. *s* is a groove, with ridges running horizontally across it, and in it is a longitudinal slot, *v*, in order that the plate *v*, which is to be bolted to it, may be adjusted when necessary. The plate *v* has a ridge on its inner surface, and slides in the

groove *s*, and is provided on its lower end with a flange, *w*, upon which the rear end of the beam rests. *y* is a flange that prevents the forward end of the beam from tilting, and *j j'* is a hole to receive a bolt that attaches the forward end of the beam to the standard. Bolts pass through the holes *j j'* to fasten the handles of the plow to the standard.

In Fig. 2, R is the standard cast with the flange *b* and lugs *d e*, which are to aid in supporting the front piece of the plow, and with the swell *f*, side A, whose upper outer edge is beveled to receive the beveled flange E of the mold-board, bottom B, and projection *g*, all of which form part of a mortise for the reception of the tenon *a* of the reversible wedge-shaped plow-point H; and with the holes *h n*, through which bolts pass for attaching the land-side plate and the front piece to the standard. *r* is the rear end of land-side plate.

In Fig. 4, K is the front piece of the plow, with flange *d* formed so that it will pass between the lug *d* and flange *b* of the standard. *c* is a fork on and at an oblique angle to the front piece K, and is to receive a bolt that passes through hole *n* of the standard. *e'* is a recess to receive the lug *e* of the standard; and D *d''* are sides of the front piece, with a flattened surface, *d'''*, at the top for supporting the flange *e''* of the mold-board, and aid in forming the mortise to receive tenon *a* of the point H; and *m* is to receive a bolt that fastens the share to the front piece.

In Fig. 5, C is the mold-board, which is bolted to the front piece K by a bolt passing through hole *i* of mold-board and hole *h'* in the front piece, and it has a beveled flange, E, that bears upon the beveled side A of the standard, and a flange, *e''*, that rests on the flattened surface *d'''* of front piece K. Now, when the standard, front piece, and mold-board are bolted together, a mortise is formed for the reception of the tenon of the point.

In Fig. 3, H is the beveled wedge-shaped plow-point, with tenon *a* to fit into the mortise formed by the standard, front piece, and mold-board, and is provided with a groove, G, on both sides to receive projections F of the share. The point is held in place by its tenon *a* pressing against the walls of the mortise, and by aid of the projections F on the share

I. The point H is reversible, and has its upper and lower surfaces made with the same pitch.

In Fig. 6, I is the share, which is made reversible, and is bolted to the front piece K by a bolt passing through the holes *l m*. FF are projections on both ends of the share, and are to assist in holding the point H in the mortise, as well as to support the share, by entering the groove G in the point.

I have described all the parts as formed by casting, but some of them may be formed by stamping wrought-iron or steel plates in dies. They may be cast in steel or any of the composition metals suitable for the purpose.

Having described the construction of the parts of the plow, I will now mention how they may be put together. It is as follows: The projection *d'* on the front piece is placed between the flange *b* and lug *d* of the standard, when it will be found that lug *e* has entered the recess *e'* on the front piece and that the fork *c* is directly over the hole *n* in the standard. A bolt is now put through hole *n* in the standard and through the fork *c* of the front piece, after which a nut is screwed down tightly on the bolt, securing the front piece firmly to the standard. The land-side plate is next placed in position and a bolt put through it and the hole *h* of the standard, and a nut applied. The mold-board is now placed on the standard, with its beveled flange E and flange *e''* resting upon the beveled side A and flattened surface *d'''* of the standard and front piece, respectively, and a bolt passed through the hole *i* in the mold-board and then through hole *h'* in the front piece, after which a nut is screwed onto the bolt, whose point is now on the under side of the front piece. The mortise is now complete, and tenon *a* of the point H is inserted into it.

The next step is to place the share I in position on the front piece, one of the projections F entering the groove G of the point H, and to push a bolt through the hole *l* of the share and *m* of the front piece, and screw a nut onto it.

The upper side of the beam bears against the flange *y* of the standard, and a bolt is passed through it and the hole *j''* of the standard. The under side of the rear end of the beam is now placed on the flange *w* of the plate *v*, and the bolt that passes through the slot in the groove *s*, and the plate *v* is continued through the beam; and, after the beam has been suitably adjusted by means of the plate *v*, a nut is applied to and screwed down tightly onto the bolt, holding the beam firmly in place.

The handles are attached to the plow by bolts passing through them and the holes *j j* of the standard.

The parts of my plow can be made cheaply by casting or molding them separately in a single two-part flask; or they may be formed by stamping them from wrought-iron or steel plates, in dies. It will also be noticed that if any one part of a plow be worn out or broken before another part it can be replaced in a short time and at a little cost.

There are other advantages obtained by my invention that are too numerous to mention in this specification.

I am aware that there are bits and nibs for plow-points made separate from the share, and which fasten without bolts. I am also aware that there are reversible points, but they require fastenings of various kinds.

The plow may be readily taken to pieces and put together by any one, so that all the parts may be packed in a small space for transportation or storage.

It will be noticed that I have referred to a process of casting; but I do not claim it, as it is old, and have merely mentioned it to show the advantages of my invention.

Having thus described my invention, I claim—

1. The standard R, with beveled side A, bottom B, projection *g*, and swell *f*, as and for the purpose described.

2. The front piece K, with flange *d'*, fork *c*, recess *e'*, sides D *d''*, and flattened surface *d'''*, as and for the purpose set forth.

3. The front piece K, flange *d'*, fork *c*, recess *e'*, sides D *d''*, and flattened surface *d'''*, in combination with flange *b* and lugs *d e* on standard R, as and for the purpose set forth.

4. The mold-board C, with beveled flange E and flange *e''*, as and for the purpose set forth.

5. The mortise formed by combining the standard, front piece, and mold-board, substantially as shown and described.

6. In a plow, the combination of standard, front piece, and mold-board, each having the form substantially as shown and described.

7. The single wedge-shape plow-point H, provided with a tenon, *a*, and having a groove, G, on each of its two sides, running parallel to the length of the tenon and terminating so as to leave a space between it and the shoulder, in order to fasten the point by means of the share, as set forth.

In testimony that I claim the foregoing I have hereunto set my hand this 10th day of July, 1873.

PATRICK HENRY STARKE.

Witnesses:

E. D. STARKE,
F. J. CONRAD.