

J. W. ELLS.
Hoe.

No. 226,050

Patented Mar. 30, 1880.

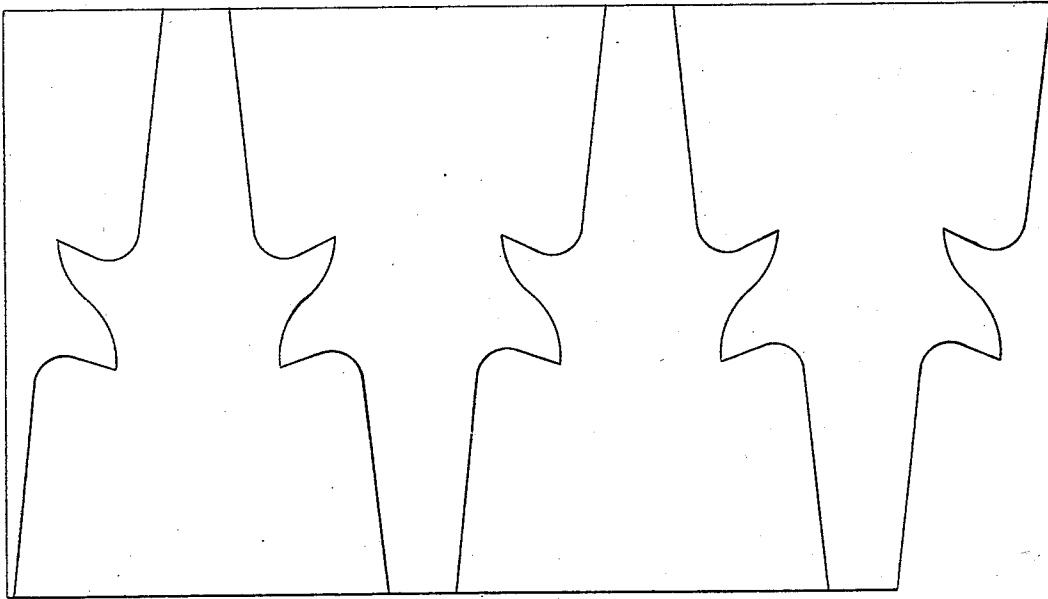


Fig. 1.

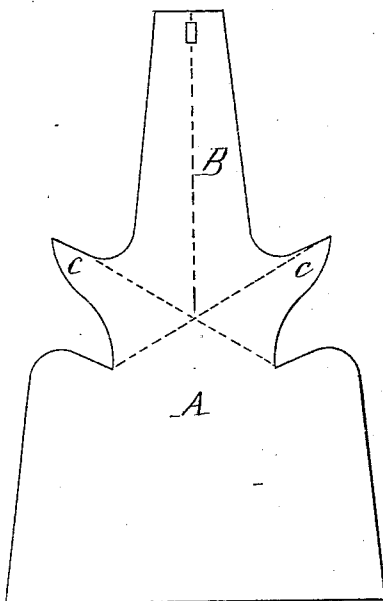


Fig. 2.

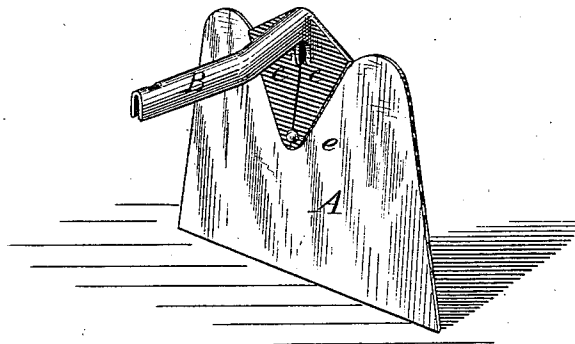


Fig. 3.

Witnesses
Marcus L. Clark
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UNITED STATES PATENT OFFICE.

JOSIAH W. ELLS, OF PITTSBURG, PENNSYLVANIA, ASSIGNOR TO RICHARD E. BREED, OF SAME PLACE.

HOE.

SPECIFICATION forming part of Letters Patent No. 226,050, dated March 30, 1880.

Application filed December 1, 1879.

To all whom it may concern:

Be it known that I, JOSIAH W. ELLS, of Pittsburg, in the county of Allegheny and State of Pennsylvania, have invented a new and Improved Hoe, the construction of which will be readily understood from the following description, taken in connection with the accompanying drawings, wherein—

Figure 1 represents a thin plate or sheet of metal, on which are delineated a series of blanks of the shape required in the formation of my improved hoe; Fig. 2, a single blank from which the hoe is made. Fig. 3 represents a perspective view of my improved hoe without the handle.

My invention relates to an implement known among agriculturists as a "hoe," in which the blade, together with its shank or tang, is formed of a single piece of sheet metal.

To make hoes in accordance with my invention, I take a plain sheet of steel of any convenient length and of a width corresponding to the entire length of a freshly-cut blank, measuring from the cutting-edge of the blade to the extreme end of the shank or tang. From such plate or sheet of metal I sever the blanks after the manner shown by the diagrams in Fig. 1, and in regular sequence but reverse order, whereby no metal is wasted in the process of separation. The blank thus produced consists of a broad portion, A, intended for the blade of the hoe, and a narrow part, B, for the shank, on each side of which and near its point of connection with the blade extends a pointed wing, *c*, as shown in Fig. 2. The blank is then to be made red-hot, and while in that condition subjected to the joint action of such dies as will bend the extension B to a transverse curve or inverted U shape its entire length and cause it to take

the desired relative position at nearly right angles to the blade A, to the end that when the hoe is attached to the handle it may have the proper and requisite set. At the same time and by the same means the wings *c c* are folded flatly down upon the face of the blade with their approximate edges brought closely together beneath the shank, substantially in the manner shown in Fig. 3, where they may be secured by a rivet, *e*, or by any other means found in practice most suitable or convenient.

The dotted vertical and cross lines in Fig. 2 represent the direction or lines of bend the plate or blank undergoes in the process of final formation, and which bending can be accomplished without any strain or weakening of the metal.

In this hoe the shank B is supported by a solid portion of the blade equaling one-half of its entire width, while the wings *c c* are folded on that peculiar angle with relation to each other and the blade, together with its shank or tang, as to re-enforce both and give the greatest possible strength to the parts consistent with the nature of the material used, the whole making an implement simple in form and easily constructed.

Having thus briefly described my improved hoe, I claim—

As a new article of manufacture, formed of a single piece of metal, a hoe having an inverted U-shaped shank or tang, B, in combination with the side wings, *c c*, folded flatly and closely down upon the blade A, substantially in the manner shown and described.

JOSIAH W. ELLS.

Witnesses:

GEO. C. STEWART,
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