

T. J. HOUSTON.  
Cultivator-Shovels.

No. 158,375.

Patented Jan. 5, 1875.

Fig. 1.

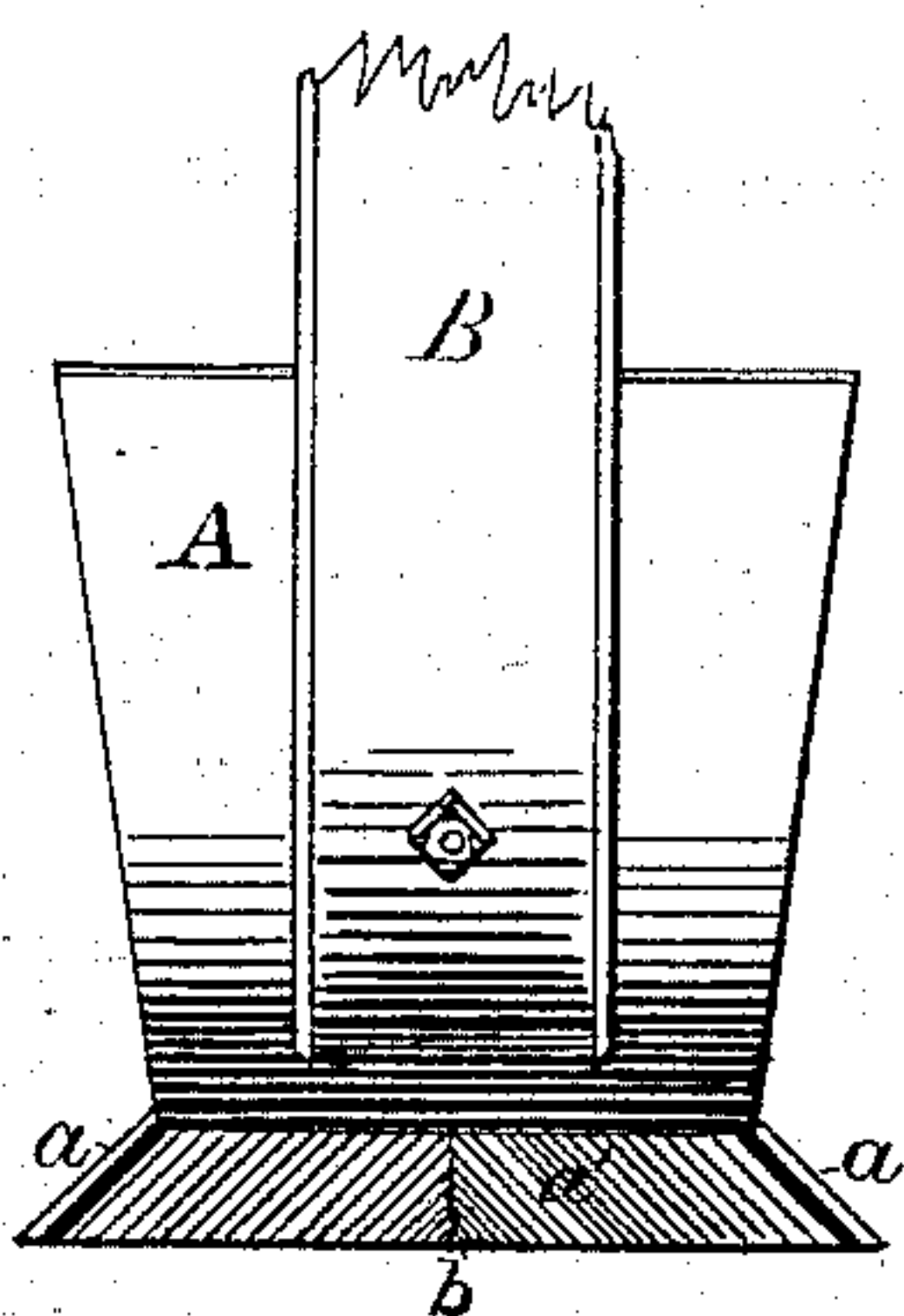


Fig. 2.

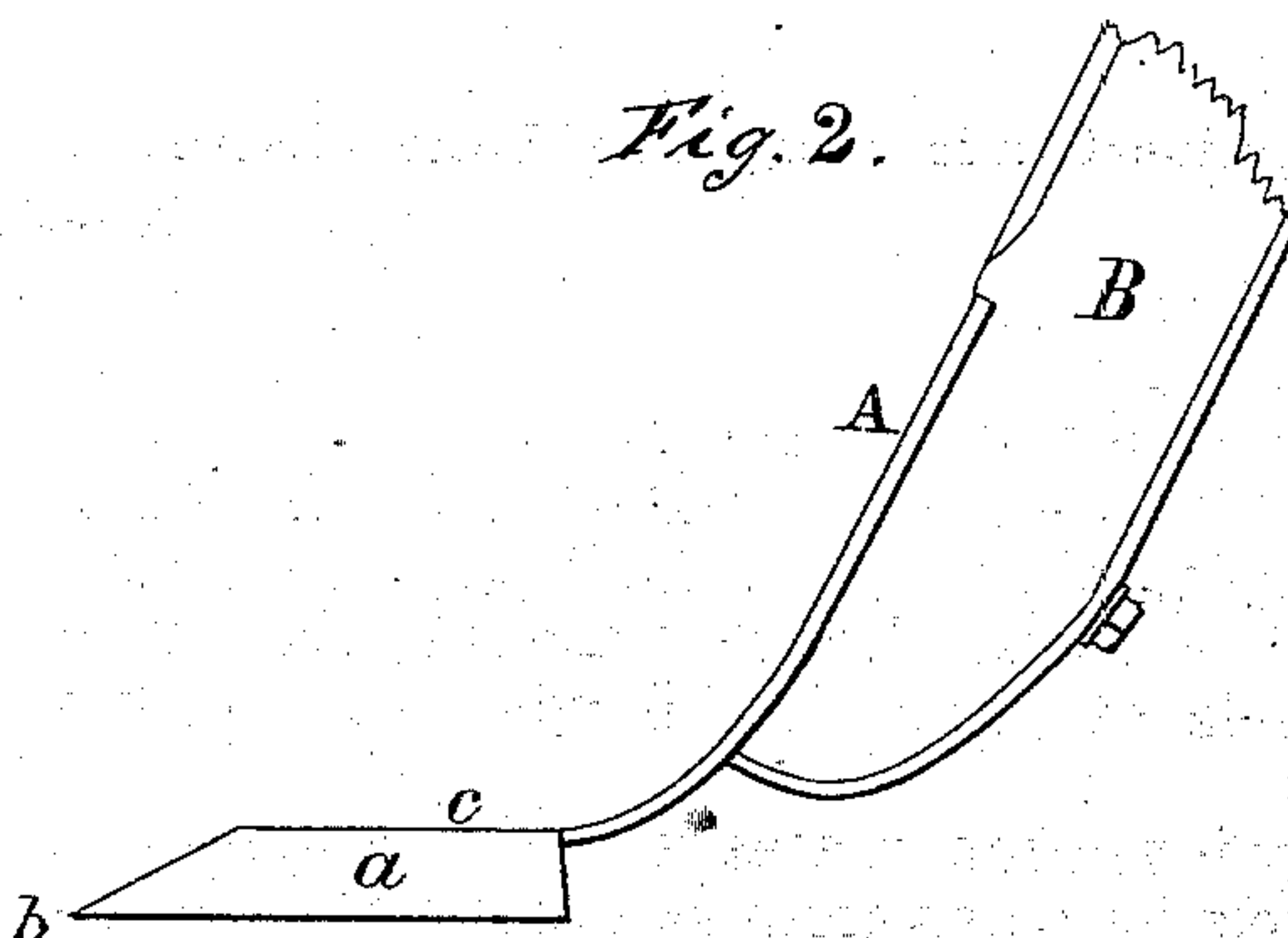


Fig. 3.

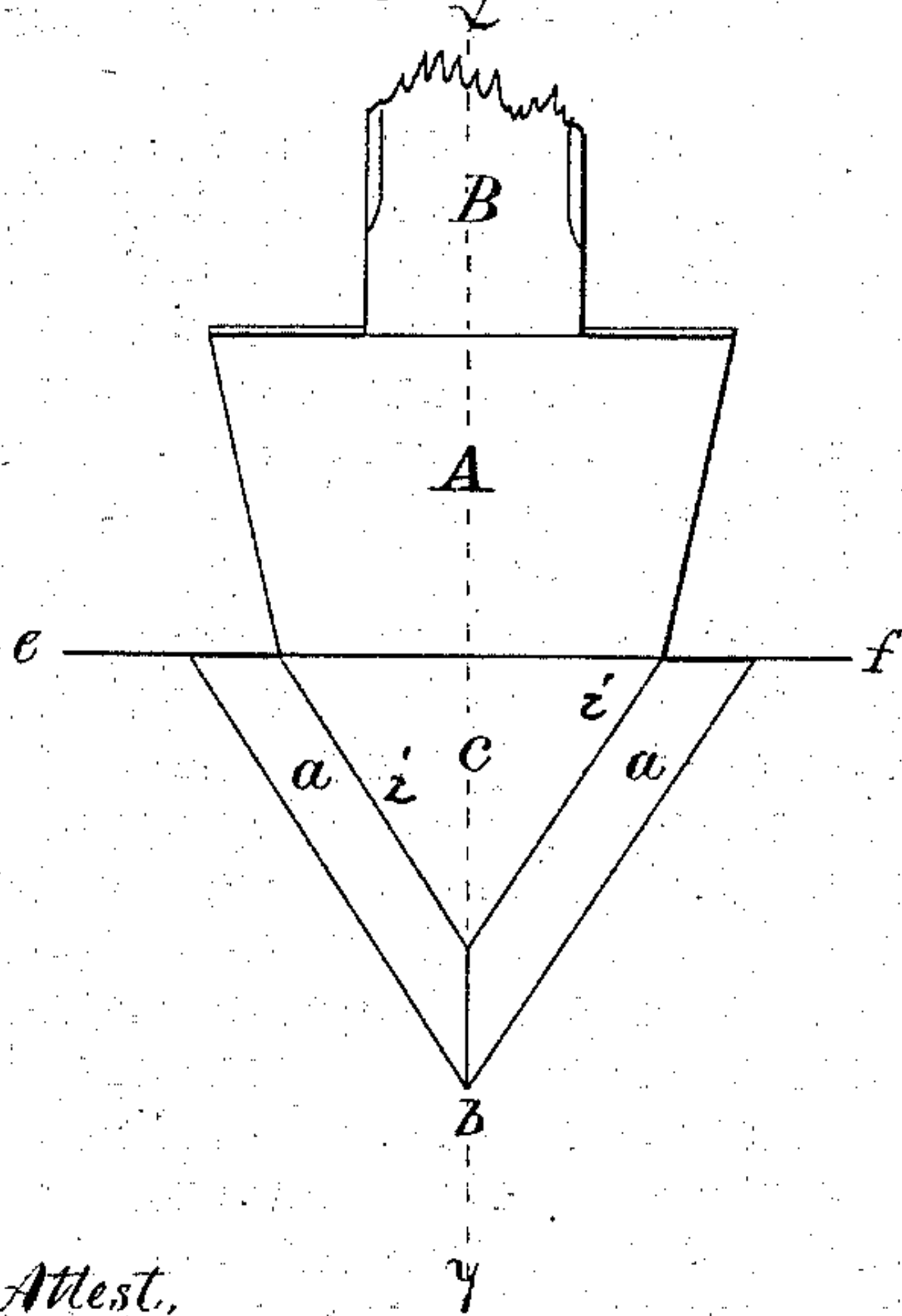
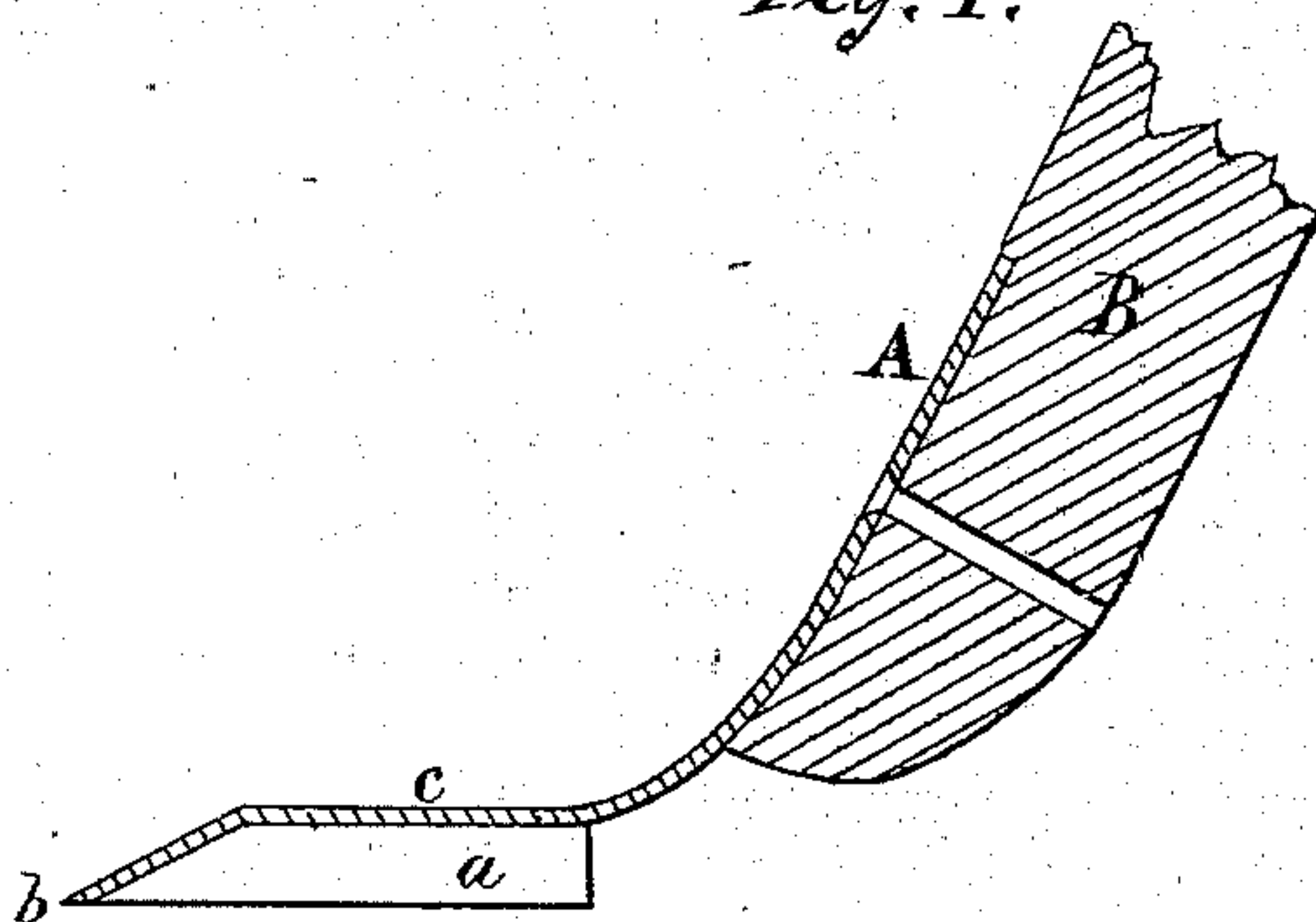


Fig. 4.



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# UNITED STATES PATENT OFFICE.

THOMAS J. HOUSTON, OF MADISON COUNTY, OHIO.

## IMPROVEMENT IN CULTIVATOR-SHOVELS.

Specification forming part of Letters Patent No. **158,375**, dated January 5, 1875; application filed October 7, 1874.

*To all whom it may concern:*

Be it known that I, THOMAS J. HOUSTON, of Madison county, in the State of Ohio, have invented certain Improvements in Cultivator-Shovels, of which the following is a specification:

My invention relates to an improvement in shovels for cultivators and shovel-plows; and consists in constructing the foot of the shovel with a horizontal surface on the top of the same, extending back to a point represented in Fig. 3 of the drawings by the line *e f*. It is triangular, and is formed with a beveled or inclined share on each side, extending out about two inches from the level portion. Its inclination is about forty degrees, and its lower edges are parallel with the upper surface of the foot part, so as to leave a cavity on the under side, the object of which is to cause the plow to stick to the bottom of the furrow and not "run out" to the surface, as is the case with ordinary cultivator-shovels. The foot, when bisected from the upright portion, as shown in Fig. 3, represents the frustum of a pyramid, with the rear side straight, as cut by the line *e f*. From this line the upright part A rises, the bend beginning at the line.

Figure 1 is a rear view of my improved cultivator-shovel. Fig. 2 is a side elevation of the same. Fig. 3 is a plan view. Fig. 4 is a longitudinal section in elevation through line *x y*, Fig. 3.

A is the upright portion of my improved cultivator-shovel; B, a section of the standard bolted to the same. *a a* are the two angular sides, which slope down from the level part C. They extend from the point *b* back to the line *e f*, Fig. 3, being about two inches wide at the point of termination. The upright part A is narrower at the line *e f*, where it joins the foot part, being only about five inches across in the full size. *i i*, Fig. 3, are edge lines of C, or angles formed by it and the inclined sides *a a*. They begin at the points where the upright joins the foot, (line *e f*), and unite on the plane of C to form the point.

*a'*, Fig. 1, shows the cavity under the foot. It is seen also in Fig. 4. My cultivator-shovel is formed of a single piece of sheet steel or iron.

When in operation the foot is horizontal, as shown in Figs. 1, 2, and 4. The earth is divided by the diamond-shaped point *b*. Ascending the inclined sides *a*, it does not pass over the level surface with contact, but, as it is turned, is broken and pulverized by the upper and outer parts of A. There is, consequently, much lighter draft to the shovel than in the ordinary cultivator-shovel, which has the entire surface of the foot part at an inclination, so as to be drawn against the earth, instead of having sufficient clearance to pass under it, as is the case with the surface C in my shovel.

The operation of this implement is much like that of a carpenter's chisel in cutting shavings from a soft pine board, when used with the bevel up. It can easily be seen that it cuts much more easily than when reversed.

I disclaim the construction of a cultivator-shovel made in parts and bolted together so as to form the share and face parts of the same, as it would be impracticable, and would be devoid of the elements contained in my improvements, a principal one of which is greater strength, from being made with the concave part *a'* in it; also, in being constructed in one piece, so as to give greater strength with least weight of metal. Nor do I claim a shovel with prolongs, barbs, or flukes extending back of the line *e f*, as the same is shown in other patents.

I claim as my improvement—

The cultivator-shovel shown and described, with the upright A and foot part C made in a single piece, so as to form the cavity *a'* beneath, having the angular sides *a*, as hereinbefore set forth.

THOS. J. HOUSTON.

Attest:

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