

W. HARTGROVE.
Cultivators.

No. 153,565.

Patented July 28, 1874.

Fig 1

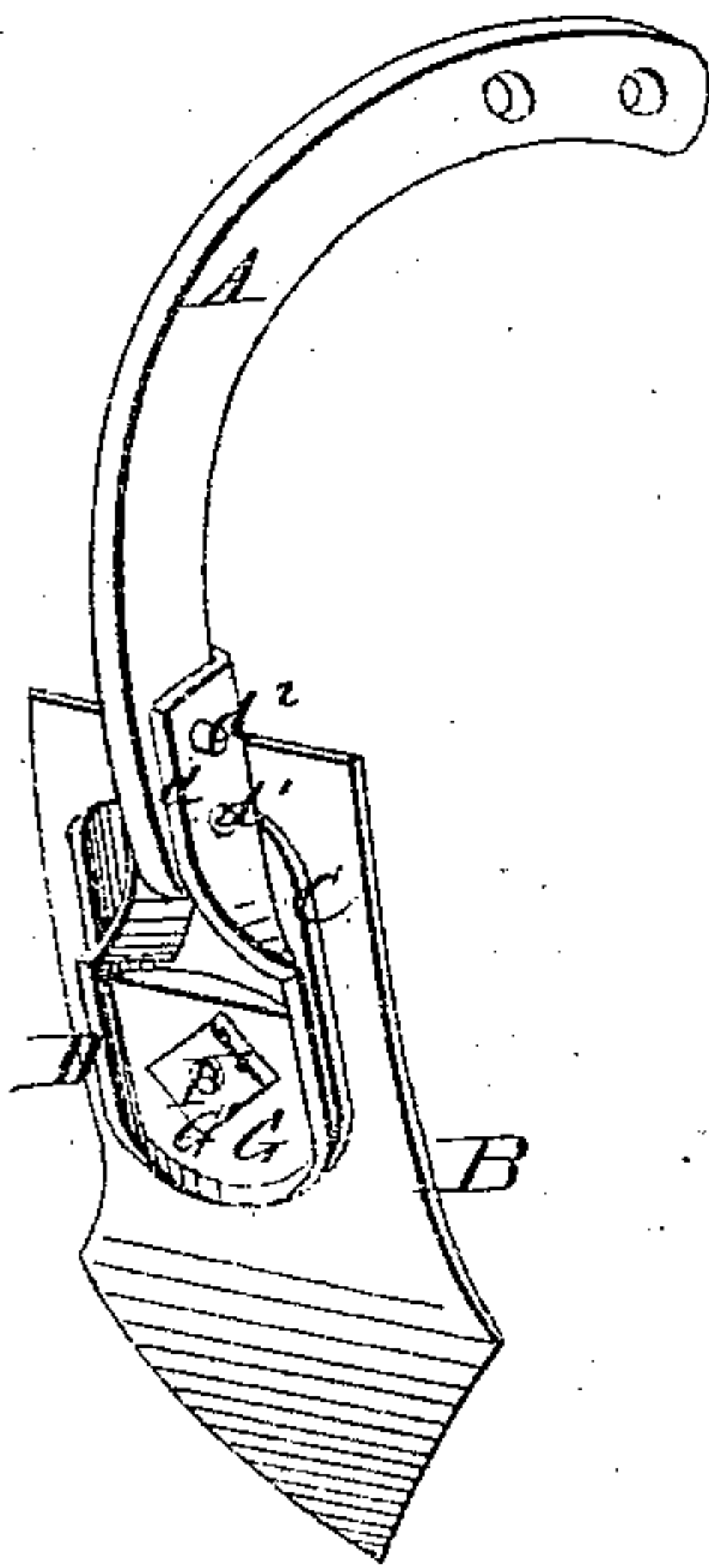


Fig 2

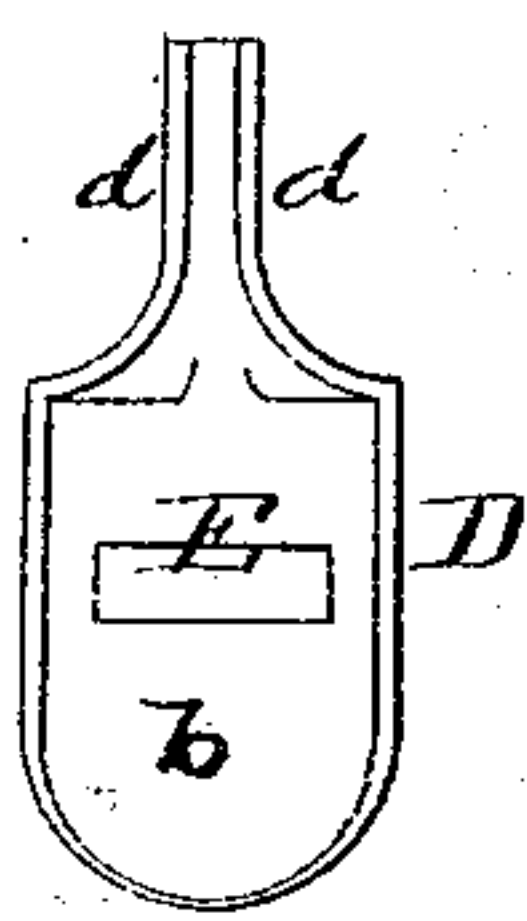
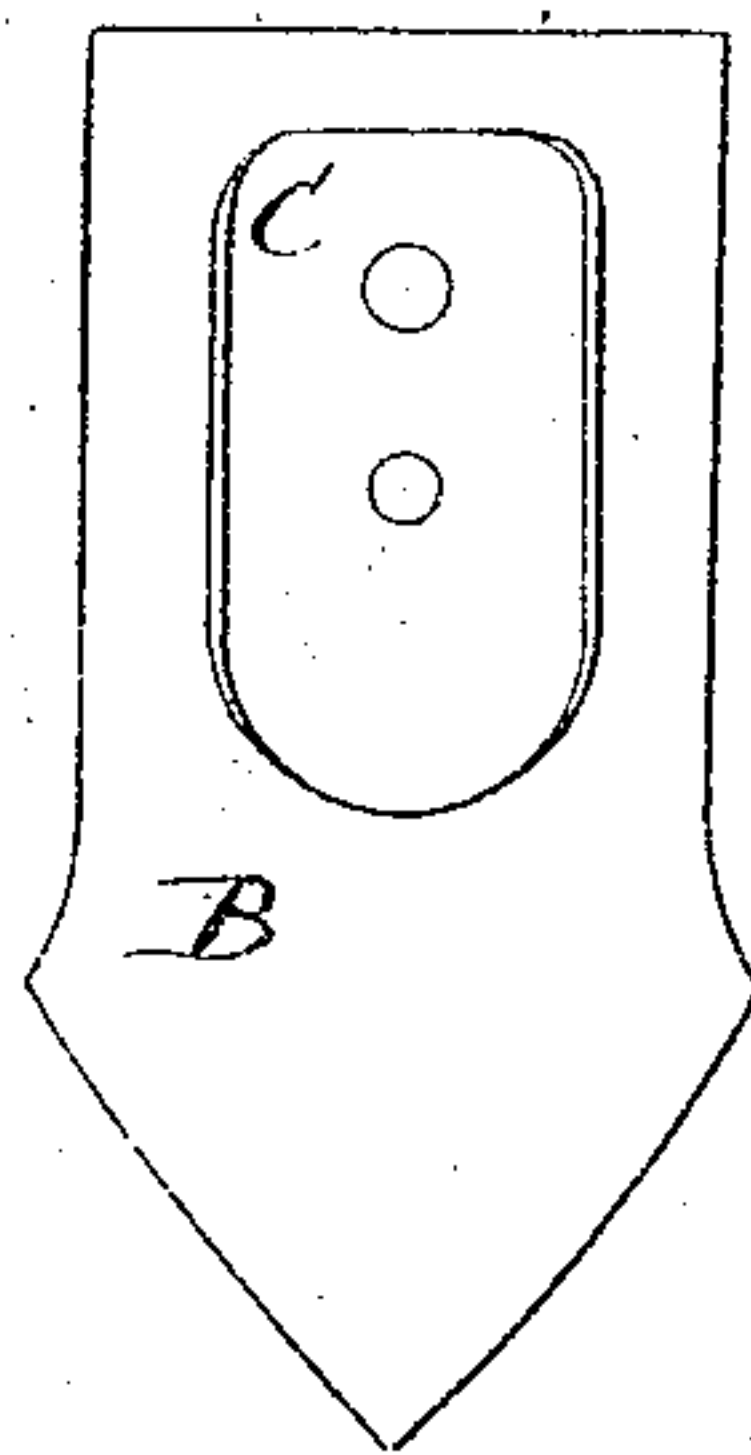


Fig 3



Witnesses
Thos. Connolly
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UNITED STATES PATENT OFFICE

WILLIAM HARTGROVE, OF OXFORD, ILLINOIS.

IMPROVEMENT IN CULTIVATORS.

Specification forming part of Letters Patent No. **153,565**, dated July 28, 1874; application filed December 9, 1871.

To all whom it may concern:

Be it known that I, WM. HARTGROVE, of Oxford, in the county of Henry and State of Illinois, have invented a new and valuable Improvement in Cultivators; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawings making a part of this specification, and to the letters and figures of reference marked thereon.

Figure 1 of the drawings, is a representation of a perspective view of my invention. Fig. 2 is a detail. Fig. 3 is a detail.

This invention has relation to cultivators; and the novelty consists in the construction and arrangement of the parts, as will be hereinafter more fully described and claimed.

Referring to the accompanying drawings, A designates the shovel-beam of a cultivator. B represents the shovel, of the usual concavo-convex shape. C designates a concavo-convex plate, rigidly secured to the back part of the shovel near its upper end. D denotes a metallic shoe, consisting of a spoon-shaped plate, *b*, bent to correspond to the concavity of the plate C, to which it is adapted, as shown in the drawings. The upper part of said shoe is bent so as to form flanges *d*, between which the lower end of the beam A is secured by a transverse pin, *d*¹. A wooden snatch-pin, *d*², is also passed through said flanges and through the beam a short distance above the pin *d*¹. The pin *d*² serves to keep the shovel in a rigid position during the work of cultivating, but is designed to break when the point of the shovel strikes a stone or other like obstruction, and to thus allow the shovel to swing back on the pin *d*¹. E designates a

horizontal transverse slot cut in the shoe D. F represents a bolt which passes through the shovel B, plate C, slot E, and through a plano-convex block, G, which fits the bowl of the shoe. A nut, G', is turned on the end of the bolt after the parts mentioned have been arranged in place. By loosening this nut the shovel may be turned laterally to any desired position without disturbing the beam A, the bolt moving easily through the slot E. The plate C is held closely against the convex surface of the shoe, and hence prevents the shovel from oscillating on the bolt F, or having any other undesirable movement. The block G is employed as a fastening to hold the shovel at any angle. By means of the block the bolt may be easily tightened or loosened. The block, it will be understood, adapts itself perfectly to the concavity of the shoe at any point to which it is moved.

I claim as my invention—

The combination with the shovel B, having rigidly secured to its rear portion the concavo-convex plate C, of the slotted metallic shoe D, consisting of the spoon-shaped plate *b*, bent to correspond to the concavity of the plate C, and its upper part bent to form flanges *d*, between which the lower end of the plow-beam is secured by means of the transverse pin *d*¹ and wooden snatch-pin *d*², substantially as and for the purpose described.

In testimony that I claim the above I have hereunto subscribed my name in the presence of two witnesses.

WILLIAM HARTGROVE.

Witnesses:

JAMES BACHUS,
W. L. THOMAS.