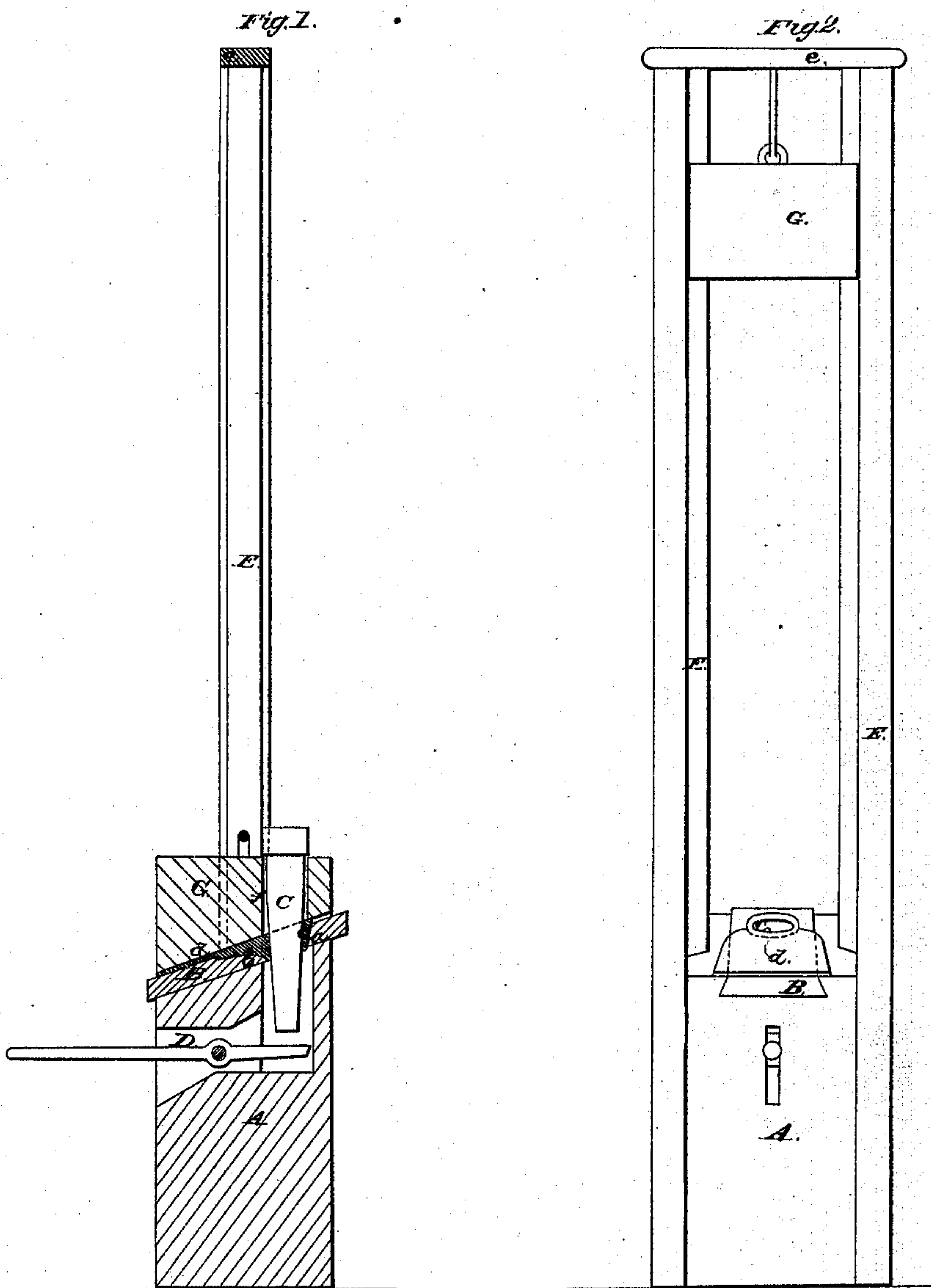


S. Boyd.

Making Hoes.

N^o 26,560.

Patented Dec. 27, 1859.



Witnesses:
M. M. Livingston.
E. M. Hughes

Inventor.
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UNITED STATES PATENT OFFICE.

SAMUEL BOYD, OF BROOKLYN, NEW YORK.

MANUFACTURE OF HOES.

Specification of Letters Patent No. 26,560, dated December 27, 1859.

To all whom it may concern:

Be it known that I, SAMUEL BOYD, of Brooklyn, in the county of Kings and State of New York, have invented a new and useful Improvement in Means Employed for Manufacturing Wrought-Metal Hoes; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the annexed drawings, making a part of this specification, in which—

Figure 1 is a side sectional view of my invention. Fig. 2 is a front view of ditto.

Similar letters of reference indicate corresponding parts in the two figures.

This invention relates to an improvement on a device for manufacturing hoes, for which Letters Patent were granted to me, bearing date August 2d, 1859. In this patented device a socket, anvil and mandrel were used and so arranged as to insure a perfect uniformity of manufacture, and an improved article with less manual labor than had been hitherto required.

The object of the within-described invention and improvement is to still further reduce the manual labor attending the manufacture of hoes, and at the same time insure a better finish and more desirable article than could be produced by the patented device above alluded to.

To enable those skilled in the art to fully understand, and construct my invention I will proceed to describe it.

A represents a block or support on which an anvil, B, is placed. This anvil, B, is a rectangular block of metal placed in an inclined position, or having an inclined upper surface or face which should be of steel. The block or support, A, may be of wood or metal. The anvil, B, has a vertical hole or opening, *a*, made in it, and this hole or opening also extends down into the block or support, A. The upper part of this opening, *a*, is of taper form, and also oval, corresponding to the external form of the eye of the hoe. This upper part of the opening, *a*, may be termed a socket or die as it gives the external form to the eye of the hoe. In the face of the anvil, B, a taper groove or recess, *b*, is made. This groove or recess corresponding inversely with the ridge or prominence which extends from the eye, *c*, of the hoe (shown in red) toward the center of its blade or plate, *d*.

C is a mandrel, which is of taper form, and

transversely it is slightly oval, corresponding to the form of the socket, *a*. This mandrel is of metal, and it is smaller in diameter than the socket, to allow for the thickness of the eye, *c*.

In the block or support, A, a lever, D, is placed. The inner end of this lever extends within the lower part of the opening, *a*, and it serves as a bearing for the mandrel, C, when the latter is fully driven within the hole or socket, *a*.

E E represent two vertical guides, which are attached, one to each side of the block or support, A, and are connected at their upper ends by a traverse bar, *e*. Between the two guides, E E, which are of a suitable height a weight, G, is placed; said weight serving as a drop or die. This weight is of metal and has an inclined face or bottom, corresponding with the inclination of the anvil, B, (see Fig. 1), the face of the weight or drop being perfectly smooth. The weight also has a vertical opening, *f*, made through it, the diameter of said opening corresponding with that of the opening, *a*. The opening, *f*, is in line with the opening, *a*, as shown clearly in Fig. 1.

The anvil, socket and mandrel are precisely similar to those shown in the device formerly patented by me.

The device is used as follows: The hoes are forged, as usual, with the eyes, *c*, attached and they are taken in a rough state from the hands of the forger, properly heated and placed, one, of course, at a time, on the anvil, B, the eye, *c*, being fitted in the socket, *a*. The weight, G, being previously raised, is then allowed to descend by its own gravity, and swages the hoe in proper form, reducing the blade or plate, *d*, to a proper thickness, forming the prominence at the inner side of the blade, and giving the latter a proper oblique position, relatively with the eye, *c*. The weight, G, performs the work that was formerly done manually, and it will be seen that by its use the process of manufacture will be greatly expedited. When the weight, G, has performed its work the mandrel, C, is placed in the opening, *f*, of the weight, G, and the mandrel is driven down by hand or otherwise so as to form the eye *c*, of the hoe, the mandrel causing the eye to expand and fill the socket, and forming or finishing both its internal and external parts.

The opening, *f*, in the weight, G, serves as a guide to the mandrel, insuring a vertical

position of the same while being driven down through the eye, *c*. At the same time the weight, *G*, serves to confine the metal around the edge of the eye, and prevents a bur being formed thereon by the action of the mandrel. The weight, *G*, therefore, it will be seen, performs a double function, to wit: that of a weight or drop, and a guide for the mandrel. The lever, *D*, is merely to throw the mandrel, *C*, upward out of the weight or drop, when the finished hoe is to be removed.

I do not claim the anvil, socket and mandrel for they have been previously used, and were patented by me as previously alluded to. Neither do I claim broadly the employment or use of a weight or drop for that is

a common device and in general use for analogous purposes; but

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

The combination with the drop *G*, and anvil *B*, of the drop opening *f*, and mandrel *C*, so that after the drop has given its blow it will hold the hoe in place and allow the mandrel *C*, to be passed through it into the hoe to form and finish the eye thereof all as herein shown and described.

SAMUEL BOYD.

Witnesses:

M. M. LIVINGSTON,
C. M. HUGHES.