S. Chesnut.

Making Shovels and Spades.

No. 50,416. Patented Oct. 10, 1865.

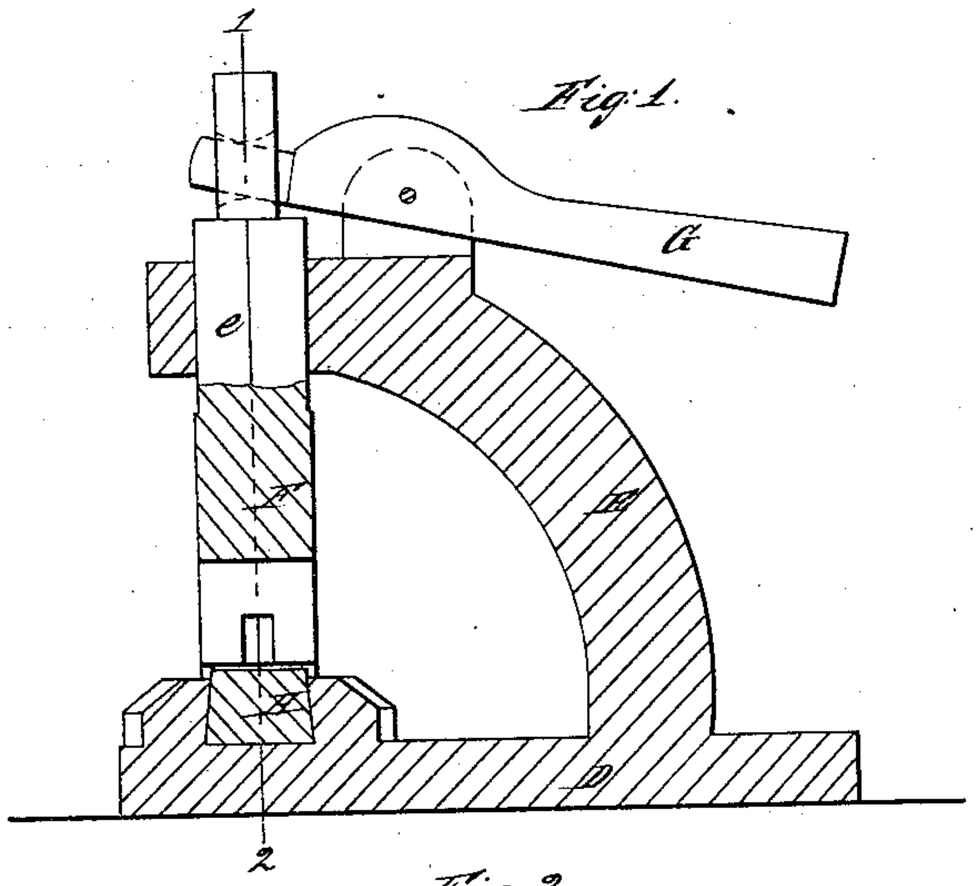


Fig: 1.

Fig: 2.

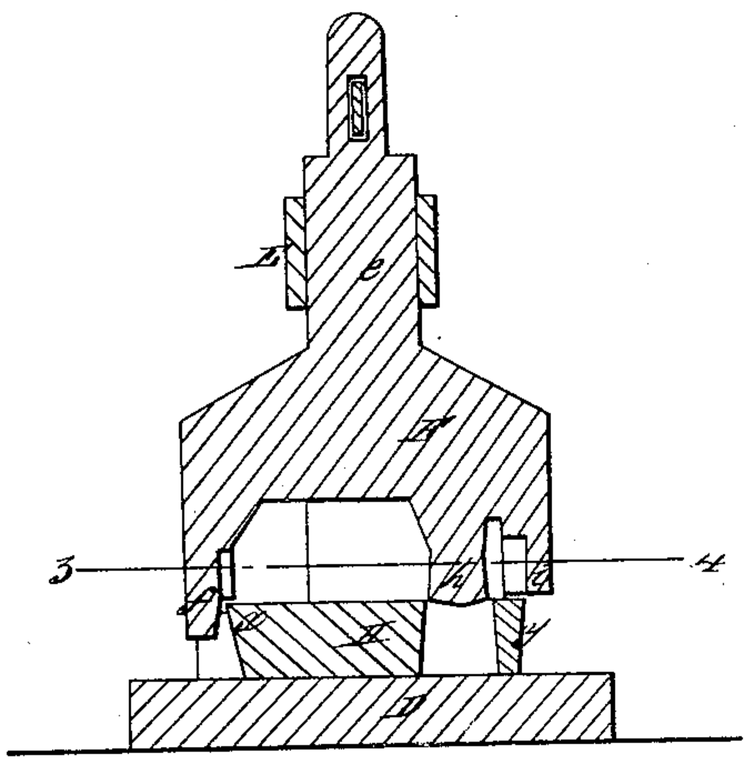


Fig: 3

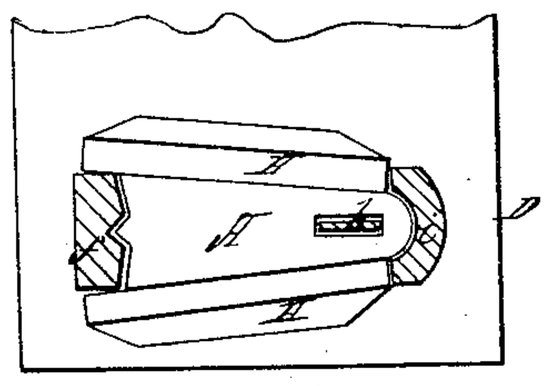


Fig: 4.

Witnesses:

Wm. Albert Stiel
M. R. Delany.

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by his Attorney.
Henry Howson

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# UNITED STATES PATENT OFFICE.

SAMUEL CHESNUT, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR TO HIMSELF AND THOS. JONES, OF SAME PLACE.

## IMPROVEMENT IN CUTTING AND PUNCHING SPADE-STEPS.

Specification forming part of Letters Patent No. **50,416,** dated October 10, 1865.

*To all whom it may concern:*

Be it known that I, SAMUEL CHESNUT, of Philadelphia, Pennsylvania, have invented a Machine for Cutting and Punching Spade-Steps; and I do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon.

My invention consists of a reciprocating cross-head with certain projections acting in combination with a stationary block with cutting-edges, in the manner described hereinafter, so as to form the flattened end of an iron bar at one operation into a spade-step, to make which tedious forging has hitherto been demanded.

In order to enable others to make and use my invention, I will now proceed to describe its construction and operation.

On reference to the accompanying drawings, which form a part of this specification, Figure 1 is a vertical section of my machine for cutting spade-steps; Fig. 2, a transverse vertical section on the line 1 2, Fig. 1; Fig. 3, a sectional plan on the line 3 4, Fig. 1; and Fig. 4, a view of the step.

Before explaining my machine it will be proper to describe the spade-steps, the manufacture of which it is intended to facilitate. All spades intended for digging and for the application of the foot of the operator for causing the blade to penetrate the soil are provided with what are known as "steps," on which the foot rests.

A, Fig. 4, represents one of these steps, which consists of a piece or wrought-iron, of the form illustrated, there being at one end, which is thicker than the other, a slot, *a*, for the reception of a piece of the edge of the blade, the said piece being riveted to the step. The thinner and wider end of the step is driven against the handle B of the spade, which is penetrated by the pointed projection *b* before the step is riveted to the blade. Hitherto these steps have been made by the usual processes of forging, cutting, and punching on an anvil, operations demanding tedious manipulation, which is avoided by the use of the machine which I will now proceed to describe.

D is the foundation-plate, from which projects the bent arm E. In the outer end of the latter the square stem *e* of the cross-head F is arranged to slide vertically, and to this cross-head a vertical reciprocating motion is imparted by means of the lever G, or by any other suitable appliances.

On the under side of the cross-head are three projections, *f*, *h*, and *i*, the inner edge of the projection *f* being formed to correspond to the shape of the wide end of the step, as seen in Fig. 3, and to the inclined cutting-edge *x* of a block, H, secured to the foundation-plate D. The inner edge of the projection *i* is formed to correspond to the rounded end of the step, as is also the edge *y* of the block, and the projection *h* forms a punch for cutting the slot *a* in the step, a hole for receiving this punch being formed in the block.

It should be understood that the inner edge of the projection *f* is close to the edge *x* of the block as the cross-head descends, and that the inner edge of the projection *i* is close to the edge *y* of the block. A bar of iron appropriately heated is flattened on an anvil at one end, so as to be of the desired shape of the step laterally. It is then, while still hot and while the cross-head is elevated, placed on the block H. On the descent of the cross-head the combined actions of its projections *f*, *h*, and *i* and the edges *x* and *y* of the block will at once cut and punch the flattened end of the bar into the desired step, ready for application to the blade and handle of the spade, thereby obviating the necessity of resorting to the usual tedious forging process.

I claim as my invention and desire to secure by Letters Patent—

The reciprocating cross-head F, with its projections *f*, *h*, and *i*, in combination with the block H and its edges *x* and *y*, the whole being arranged for joint action, substantially as and for the purpose herein set forth.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

SAMUEL CHESNUT.

Witnesses:

HENRY HOWSON,

W. J. R. DELANY.