H. Burden.

Spike Machine.

No. 1,757. Patented Sept. 2, 1840.

Fig: 3.

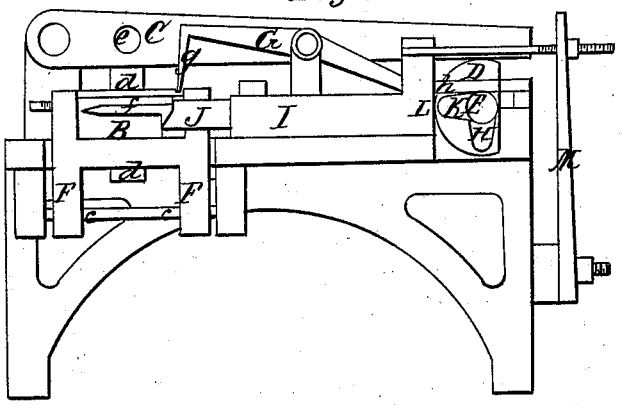


Fig: 2.

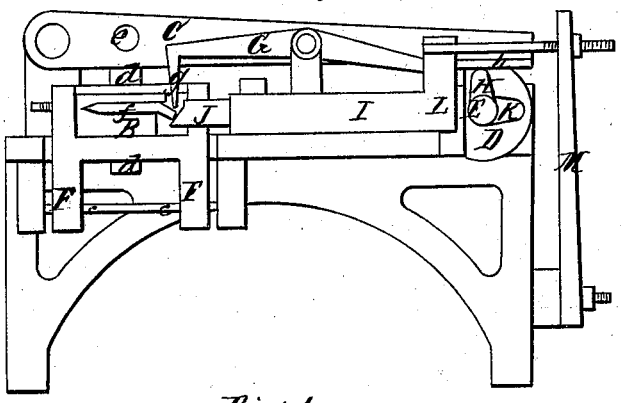
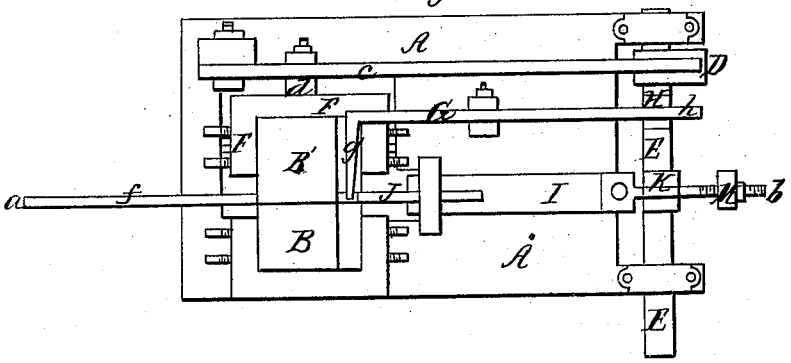


Fig: 1.



N. PETERS, PHOTO-LITHOGRAPHER, WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

HENRY BURDEN, OF TROY, NEW YORK.

MACHINERY FOR MAKING HOOK OR BRAD HEADED SPIKES.

Specification of Letters Patent No. 1,757, dated September 2, 1840.

To all whom it may concern:

Be it known that I, HENRY BURDEN, of the city of Troy, in the county of Rensselaer, in the State of New York, have invented certain improvements in machines for manufacturing wrought-iron spikes, by means of which improved machine they are made with hook or brad heads; and I do hereby declare that the following is a full and exact description thereof.

In my improved machine, the feeding in of the rod, the cutting it off, and the pointing the spike are effected in the way previously used by me for performing the same offices in my ordinary spike machines, or adopted by others; and my improvement for forming the spikes with hook, or brad, heads may be applied to spike machines of various construction.

Before the introduction of my improvement, the heads of hook, or brad-headed spikes were, so far as I am informed, always made by hand; and they were necessarily imperfect, being deficient in that uniformity in shape and strength, which are important requisites. My improvement in manufacturing them consists, principally, in the employment of what I denominate a bending lever, or some analogous device, by means of which the portion of the rod which is to constitute the head is bent down so as to form an angle with the shank, and in then forcing up a heading die, properly formed, so as to upset the bent portion, and to cause it to assume the desired shape.

In the accompanying drawings, Figure 1 is a top view of the machine, and Figs. 2 and 3 are sectional side views, or elevations, from end to end, along a line extending from *a*, *to b*, in Fig. 1. In each of these figures, where like parts are shown they are designated by the same letters of reference.

A, A, is the bed plate upon which most of the operating parts of the machine are sustained.

B, B′, are the dies which grip and hold the spike rod during the time the bending and heading are effected.

C, is a lever by which the die B′, is closed, the die B, being stationary. This lever is acted upon by the segmental cam D, on the driving shaft E, of the machine; the frame F, F, which holds the die B′, works on a joint rod *c*, *c*, and is lifted by the strap *d*, *d*, attached by the joint pin *e*, to the lever C. The spike rod *f*, is to be fed into the dies in the usual way, and as soon as the dies are closed upon the piece to be headed, the bending lever G, has its outer end *h*, raised by the cam H, on the shaft E, which causes its end *g*, to descend upon the projecting end of the spike rod, and to bend it down in the manner shown in Fig. 2.

I, is the heading slide which carries the heading die J, and as soon as the cam H, escapes from the outer end of the bending lever *h*, and that end descends, the cam K, comes into contact with the end L, of the heading slide, which it forces forward, and the head of the spike is completed, as represented in Fig. 4.

M, is a spring which serves to draw the heading slide back when it is released from the action of the cam K. The exact form of the head will necessarily be determined by that of the heading die, and by the cavity in the gripping dies within which the metal is upset by the heading die, and may be varied at pleasure.

Having thus fully described the manner in which I, in general, construct my machine for the making of hook, or brad-headed spikes, and having given that form thereof which, after numerous experiments, I have deemed to be the best, I will observe that it will be manifest to every competent machinist that considerable variation may be made in the manner of arranging and operating the respective parts while it would remain substantially the same in all its essential characteristics; and I do not intend, therefore, by the foregoing description to confine, or limit, myself to the precise form and arrangement of the parts herein shown, but hold myself at liberty to vary them as I may think proper, while I attain the same end by analogous means.

What I claim, therefore, in the above described machine as constituting my invention, and which I desire to secure by Letters Patent, is—

1. The bending of that portion of the end of the spike rod from which a hook, or brad-headed spike is to be formed, by means of

what I have denominated the bending lever, or by some analogous device, operating substantially in the manner and for the purpose herein set forth.

2. And in combination therewith I also claim the so forming of the heading die, and of the parts of the gripping dies within which the bent part is to be upset, as to give the proper shape to the work, or brad-head to be thus formed.

In testimony whereof I hereunto set my hand, this eighteenth day of August—1840.

H. BURDEN.

Witnesses:

THOS. O. JONES,

GEORGE BEST.