N. TAY.

Spike-Machines.

No. 149,544. Patented April 7, 1874.

FIG. 2.

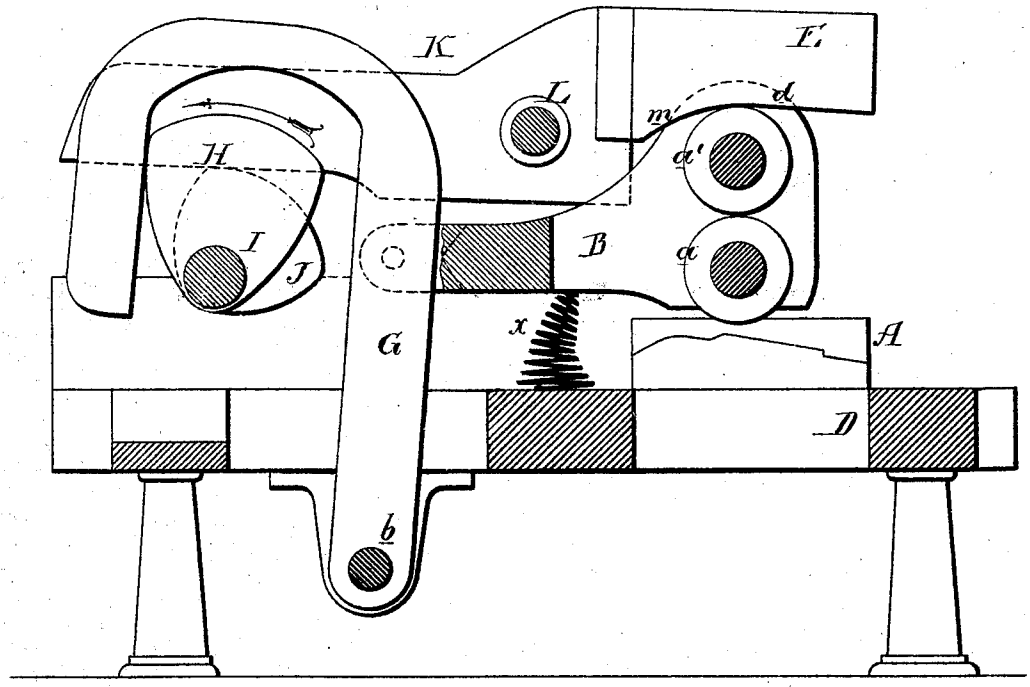
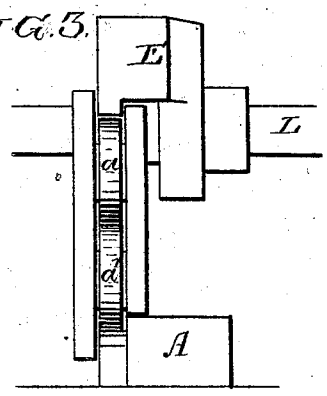


FIG. 3.



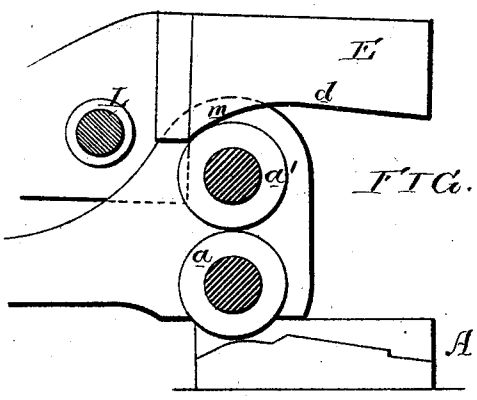
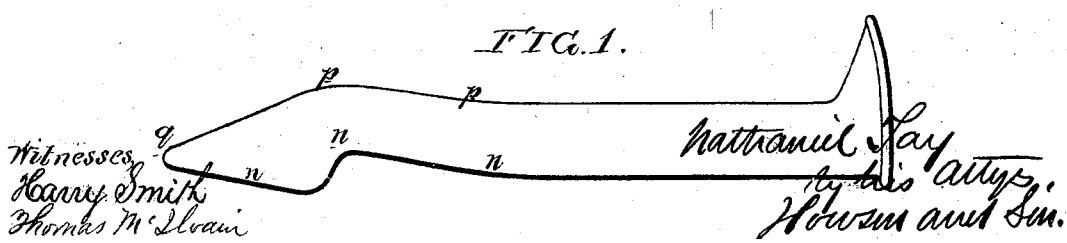


FIG. 4.

FIG. 1.



Witnesses,
Harry Smith
Thomas McElwain

Nathaniel Tay
by his attys.
Howson and Son.

UNITED STATES PATENT OFFICE.

NATHANIEL TAY, OF MEDFORD, MASSACHUSETTS, ASSIGNOR TO HIMSELF AND CORYDON WINCH, OF PHILADELPHIA, PENNSYLVANIA.

IMPROVEMENT IN SPIKE-MACHINES.

Specification forming part of Letters Patent No. 149,544, dated April 7, 1874; application filed March 9, 1874.

To all whom it may concern:

Be it known that I, NATHANIEL TAY, of Medford, Middlesex county, Massachusetts, have invented a Machine for Forming and Pointing Spikes, of which the following is a specification:

The object of my invention is to form with rapidity and exactitude the peculiarly-shaped end of the spike, (shown in Figure 1 of the accompanying drawing,) by the combination of the fixed die A, the reciprocating bar B, its rollers *a* and *a'*, and movable guide E, (shown in the vertical section, Fig. 2, and end view, Fig. 3, of the accompanying drawing,) the heated spike being forced into the recesses of the die A by the roller *a*, which is controlled vertically by the said guide E.

The die A, having a recess conforming with the edge *n n* of the spike, is secured to a suitable base, D, and the bar B is connected to a yoke, G, which is secured to a shaft, *b*, arranged to vibrate freely in bearings secured to the base, the yoke being actuated by a cam, H, on the main shaft I, which is also adapted to suitable bearings on the base or frame, and which is also furnished with a cam, J, bearing against the under side of the long arm of a lever, K, secured to a shaft, L, which is arranged to vibrate in bearings on standards secured to the base. Two rollers, *a* and *a'*, the periphery of one bearing against that of the other, are hung to the reciprocating bar B, the upper roller being adapted to the under edge of the guide E, while the lower roller acts on the spike. When the bar B has reached, or nearly reached, the limit of its outward movement, the guide E being elevated, and the bar B itself being retained in an elevated position by any suitable spring, *x*, the heated spike-blank, which has been previously headed, may be placed in the recess of the die A. As the reciprocating bar recedes the guide E will be lowered by the action of the cam J, and its curved or inclined portion *m* will be traversed by the upper roller *a'* of the bar B, the latter being consequently depressed, so that the lower roller, before it reaches the limit of its rearward movement, will not only compress the metal against and into the recesses of the die, and reduce it to the form shown at *n n*, Fig. 1, but will also form the opposite edge *p p* of the spike, and reduce it to a comparatively sharp point, *q*. The cam J is so shaped that, when the formation of the spike has been completed, the guide E will be elevated, thus permitting the ready withdrawal of the spike from the die, and it will retain its elevated position long enough to permit the introduction of another spike-blank before a repetition of the above operation takes place.

I claim as my invention—

The fixed die A, reciprocating bar B, its rollers *a* and *a'*, and movable guide E, all combined and operating substantially as and for the purpose set forth.

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

NATHANIEL TAY.

Witnesses:

WM. A. STEEL,

HARRY SMITH.