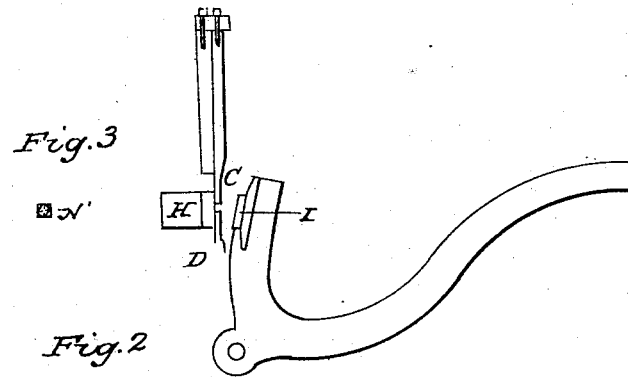
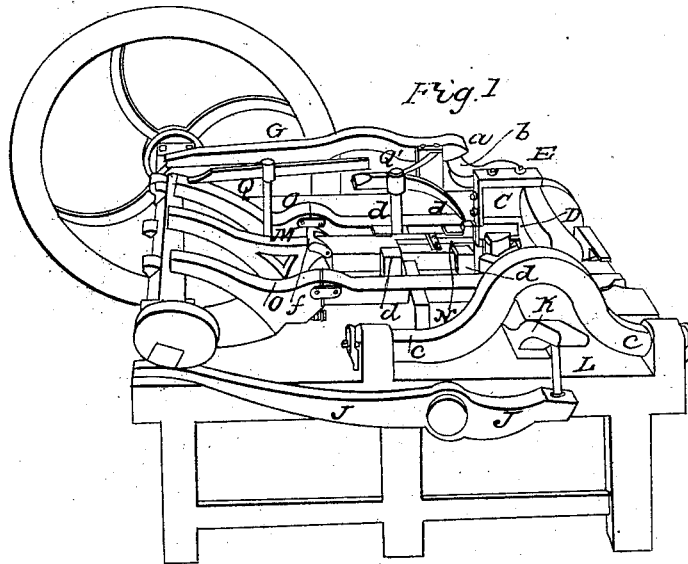


R. SAVERY.  
Making Wrought Nails.

No. 664.

Patented April 2, 1838.



# UNITED STATES PATENT OFFICE.

RICHARD SAVARY, OF PITTSBURGH, PENNSYLVANIA.

## MACHINE FOR MAKING WROUGHT SPIKES AND NAILS.

Specification of Letters Patent No. 664, dated April 2, 1838.

*To all whom it may concern:*

Be it known that I, RICHARD SAVARY, of the city of Pittsburgh, in the county of Allegheny and State of Pennsylvania, have invented certain new and useful Improvements in Machines for Making Wrought Nails and Spikes; and I do hereby declare that the following is a full and exact description thereof.

In its general construction this machine resembles some others which have been previously constructed for the same, or a similar purpose, but it is distinguished from them by certain peculiarities particularly, in the manner of gripping the nails, or spikes in the dies, and also in the manner of forming the points.

In the accompanying drawing Figure 1, is a perspective, and Fig. 2, a top view of the machine. Fig. 3, shows some parts detached for the purpose of a more full explanation.

In each of the figures like parts are distinguished by the same letters of reference.

A, A, is the frame of the machine.

B, is the cam shaft by which the levers are moved, which are connected in the different operations to be performed in making the nail or spike. The rod of suitable size for the body of the spike, is fed in between two vertical dies, the uppermost of which raises to admit the rod, and then closes upon it.

C is the uppermost or movable, and D the lowermost or fixed die; the former is held in the frame E, which moves with it. In Fig. 2 this frame and die, with their appendages, are removed, and the lower die D, distinctly shown, with its end pointed in the form which is to be given to the point of the spike; the upper die being of the same form. The upper die rises sufficiently to admit the rod, which is stopped by the heading die N. The lever G is then raised by its cam shaft; its end *a* consequently passes upon *b*, which is attached to the upper vertical die, and the rocking shaft *c, c*, and the gripping by the upper die is consequently effected. There is also a stationary and movable side die, for gripping the rod laterally.

H is the stationary, and I, the movable side die, the former of which is constantly in contact with the vertical dies, while the latter closes to grip, and opens to liberate the spike. J, is the lever which operates

upon the movable side dies which die is attached to the inner end of the lever H, the fulcrum of which is on the under side of the machine; its general form being shown in Fig. 3. The connecting rod L serves to convey motion from J to K, when the rod is secured between the vertical and side dies, the heading and pointing are effected by simultaneous movements.

N, is the heading die, the end of which *n*, may be in any desired form.

*d, d*, are the guides of the slide *e, e*, of the heading die.

M is the lever of the heading die, which is attached by a hinge joint or stump at F, to the side *e*; this lever bending down under this joint, and having its fulcrum sufficiently low down to give the requisite motion to the slide.

In forming the head a very slight swell is given to the head end of the spike or nail, commencing about half an inch below the head.

O, O, are the two pointer levers, which operate the two pointing dies *g, h*, Fig. 2. P, P, P, P, are the slides to which those dies are affixed, and adjusted by set screws. These slides have sufficient lateral motion to enable them to perform the operation to be described. These slides are each borne outward, by springs *i i*. On their outer edges they have projections K, K, which bear against fixed guide pieces *l, l*. The guide piece *l* is so formed as to carry the pointer *g*, along the end of the spike and vertical dies, and to cause it to follow in at the taper end of these dies. The fixed guide *l*, is so formed as to carry the pointer *h*, up against the vertical dies, and then along them in the same manner with the former, the object of allowing this latter die to recede from the vertical dies, is to admit of the removal of the spike from between them, when finished. There is not any cutting off die used in this machine, this purpose being completely effected by the pointer dies.

2, 2', are clearing or discharging levers so arranged as to cause the entire point of 2', to bear laterally against the finished spike, as the dies open, and thus to discharge it from between them. There are spiral or other springs, attached to each of the levers to bear their ends down, and insure the action of the cam shaft upon them.

What I claim as constituting my invention is—

The particular manner of constructing and operating the vertical and lateral or  
5 side dies, in combination with the pointing dies, operating and operated upon, substantially as herein set forth, and dispensing by

this arrangement and combination, with cutting off dies, employed in all other nail and spike machines.

RICHARD SAVARY.

Witnesses:

W. THOMPSON,  
LINTON THORN.