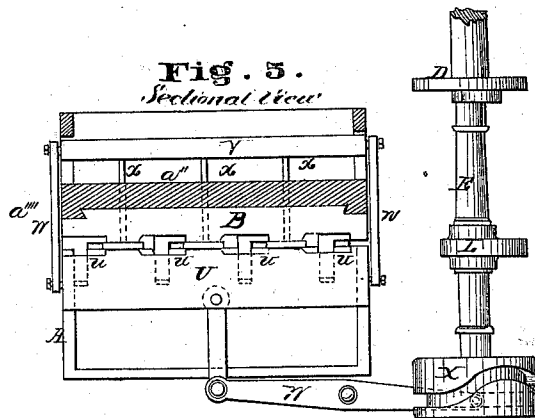
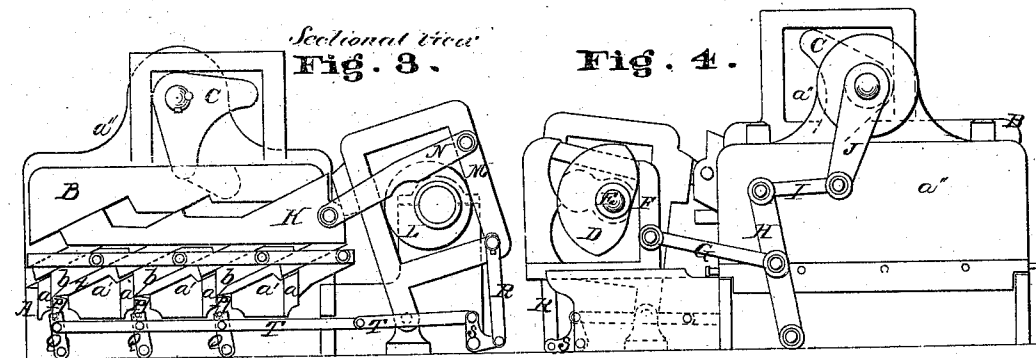
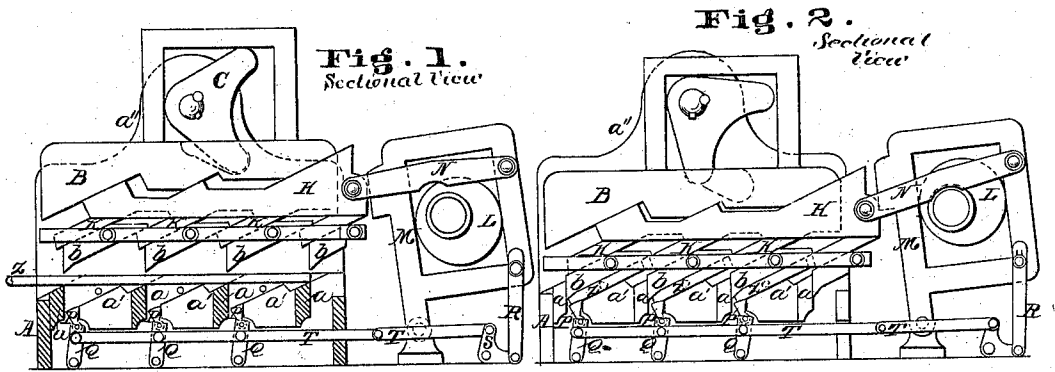


W. H. Shoemaker.

Spike Machine.

N<sup>o</sup> 81,546.

Patented Aug. 25, 1868.



WITNESSES:  
H. Millward  
Chas. D. Shaw

INVENTOR:  
W. H. Shoemaker  
By Knight Bond & Co.

# United States Patent Office.

WILLIAM HAMILTON SHOENBERGER, OF CINCINNATI, OHIO.

Letters Patent No. 81,546, dated August 25, 1888.

## IMPROVEMENT IN SPIKE-MACHINES.

The Schedule referred to in these Letters Patent and making part of the same.

### TO ALL WHOM IT MAY CONCERN:

Be it known that I, WILLIAM HAMILTON SHOENBERGER, of Cincinnati, Hamilton county, State of Ohio, have invented certain new and useful Improvements in Spike-Machines; and I do hereby declare the following to be a full, clear, and exact description thereof, reference being had to the accompanying drawings, making part of this specification.

My invention relates to an improved means, device, or machine, whereby a number of spikes are simultaneously cut off, headed up, and pointed, from a continuous bar of heated iron, at each stroke of the machine.

In the accompanying drawings—

Figure 1 is a partly-sectionized front elevation of a machine embodying my invention, in the position in which the bar of iron (here represented by blue lines) is first introduced for cutting and forming, this position being the extremity of the upward stroke of the machine.

Figures 2 and 3 exhibit the same views of the machine in subsequent positions, fig. 2 being the position just preparatory to "heading up," the spikes in this stage being cut off in lengths and forced down to an inclined bed, where they are forcibly held for heading and sharpening. Fig. 3 is the position of the machine after the spikes are headed up and pointed, the heading and sharpening being accomplished simultaneously.

Figure 4 is a rear elevation of the machine, exhibiting the devices for the movement or operation of the cutter-head.

Figure 5 is a sectional plan, showing the devices for securing the bar of iron sideways, and for forcing off the spikes from the machine when completed.

The bed A of the machine is provided with the stationary cutting-off steelings *a*, inclined bed *a'*, vertically dove-tailed back *a''*, and slides *a'''*, on which the holding and throwing-off devices reciprocate.

B is the vertically-reciprocating cutter-head, confined and sliding within the dove-tails *a''''* of the back *a''*.

The cutter-head has secured to it a series of steelings, *b*, which combine the functions of both knives and clamps, and is operated by means of cam C, journalled in the back, *a''*, cam D, on the driving-shaft E, and connections F G H I J.

Fitted within the cutter-head B is the diagonally-sliding "heading-block" K, the shanks *k* of which slide between the knives *b*. This block K is operated by means of cam L, in shaft E, by the connection of swinging yoke M and pitman N.

The pointing of the spikes is accomplished by means of the "tumblers" P, in the operation of which a rolling pressure is brought to bear upon the ends of the spikes, sufficient to give them the sharpened ends, the pressure being against the knives *b*, which are shaped, as shown, to form one side of the chamber. The tumblers rest in pockets in the ends of the vibrating-arms Q, and are operated by yoke M and connections R S T.

U V are sliding blocks, connected together by means of links *w w*, and adapted to receive a reciprocating motion through lever W and cam-grooved head X. The block U acts to carry forward and secure sideways the bar of iron to be cut, and the block V, on the return stroke, by means of prongs *x*, pushes out the completed spikes. The block U is recessed on its face, at *u*, to correspond with similar recesses in the bed A, in order to give space for the formation of the heads of the spikes.

### Operation.

The bar of iron is inserted on the upward stroke of the machine, and is carried forward and securely held sideways by means of block U. The cutter-head B then descends, cuts off the iron in lengths, and forces the blanks on to the inclined beds *a'*, where they are securely held by the clamping-knives *b*. The heading-block K is then pushed forward, and the tumblers P moved to position, fig. 3, this simultaneous action sufficing to head up and point all the spikes in the manner shown in fig. 3. After this process, the cutter-head rises, the block or side clamp U retires, and the block V, by means of prongs *x*, forces out the finished spikes. The bar of iron, blanks, and finished spikes, are shown in blue, figs. 1, 2, and 3, and are also represented by letter Z.

The devices P Q R S T, I do not claim as entirely my own invention; they will form the subject of a distinct and joint application hereafter.

I claim herein as new, and of my invention—

1. The herein-described series of dies  $a'$ , cutters  $a b$ , and headers  $k$ , all arranged, relatively to the other parts of the machine, substantially as shown, and adapted to make more than one spike at each operation from a single bar or rod.

2. The arrangement, in the cutter-head B, of the head-block K, headers  $k k$ , and cutters  $b b$ , substantially in the manner set forth.

3. The arrangement of the sliding block U, links  $w w$ , head V, ejecting-rods  $x x$ , lever W, and cam X, as described.

In testimony of which invention, I hereunto set my hand.

WILLIAM H. SHOENBERGER.

Witnesses:

GEO. H. KNIGHT,

JAMES H. LAYMAN.