

# Omar A. Wadsworth: Spike Machine.

117128

PATENTED JUL 18 1871

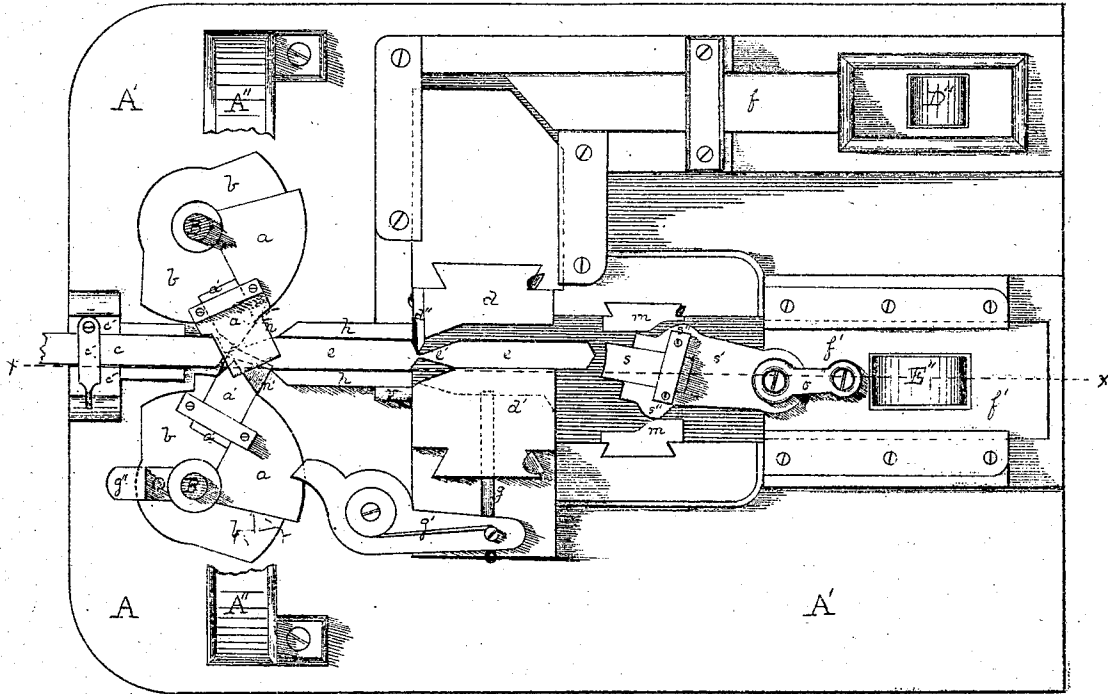


Fig. 1.

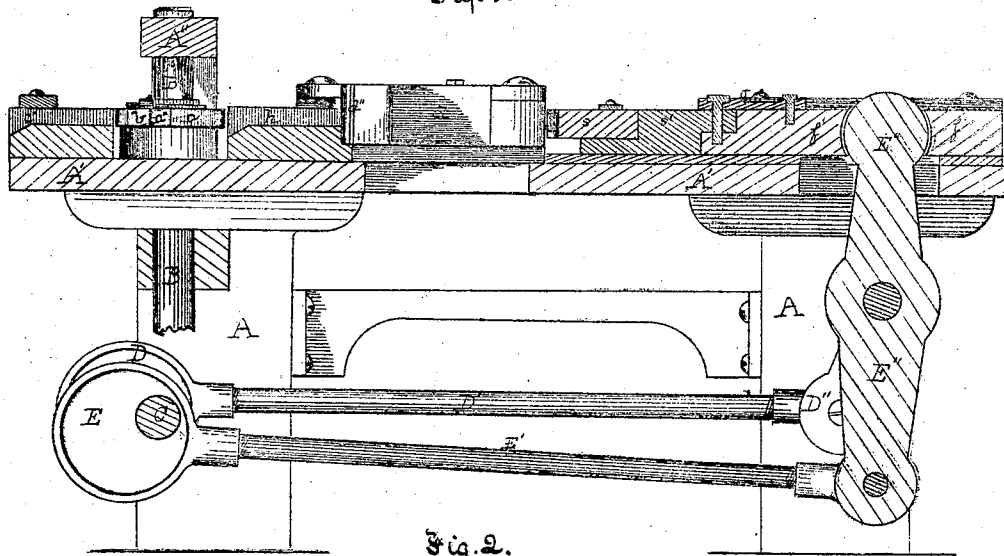


Fig. 2.

Witnesses:

R. Wrenshall  
James S. Kay.

Inventor:

Omar A. Wadsworth,  
by Bakewell, Christy & Kerr,  
his Attys.

Omar A. Wadsworth: Spike Machine.

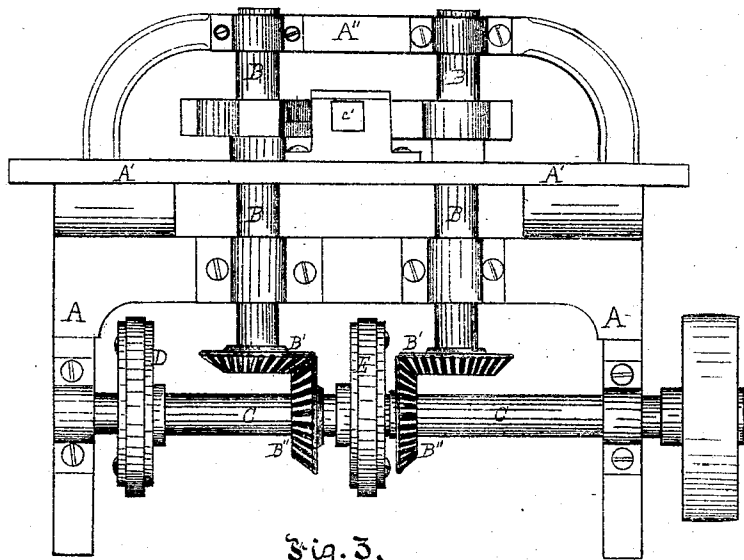


Fig. 3.

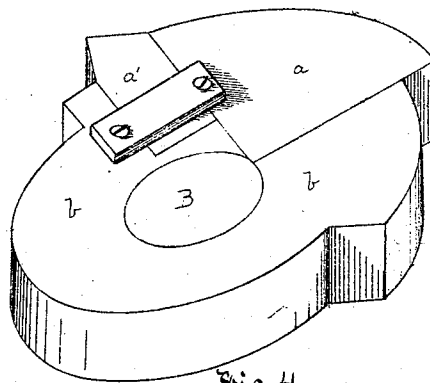


Fig. 4.

Witnesses:

*R. Wadsworth*  
James J. Kay.

Inventor:

Omar A. Wadsworth,  
by Bakewell, Christy & Kerr,  
his Attys.

# UNITED STATES PATENT OFFICE.

OMAR A. WADSWORTH, OF ALLEGHENY CITY, PENNSYLVANIA.

## IMPROVEMENT IN MACHINES FOR MAKING SPIKES.

Specification forming part of Letters Patent No. 117,128, dated July 18, 1871.

*To all whom it may concern:*

Be it known that I, OMAR A. WADSWORTH, of Allegheny City, in the county of Allegheny and State of Pennsylvania, have invented a new and useful Improvement 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 drawing making a part of this specification, in which—

Figure 1 is a top or plan view of my machine. Fig. 2 is a vertical sectional view thereof in the line *xx*, Fig. 1. Fig. 3 is an end elevation from the feeding end, and Fig. 4 is an enlarged perspective view of one of the feeding and pointing-rolls.

Like letters of reference indicate like parts in each.

My improvement consists in certain features of construction, substantially as hereinafter claimed, whereby the machine is rendered efficient and rapid in its operation, and a well-made spike is manufactured from the parent bar.

To enable others skilled in the art to make and use my improvement, I will proceed to describe its construction and mode of operation.

The frame-work *A A'* is of any suitable form or material. At one end is a pair of upright revolving shafts, *B B*, which are steadied at their upper ends, a little distance above the bed-plate *A'*, by an arch or yoke, *A''*. By an arrangement of bevel-gear wheels *B' B''*, they take their power from the driving-shaft *C*. On this latter are the cams or eccentrics *D E*, which, by the cam-rods *D' E'*, communicate motion to the upright oscillating levers *D'' E''*. The lever *D''*, by its upper end, operates the die-plunger *f*, and the latter, *E''*, in like manner operates the heading-plunger *f''*. On each upright shaft *B*, and just in the line of feed, is a rotating die-holder, *b*, having such form that the segmental feed-rolls *a* may be set therein—also, the pointing-dies *a'*—but having itself a periphery, such that it will at all times work clear of the edge of the bar *c*, which is fed in through the guide *e'*. The outer face or periphery of each feed-roll *a* is of the form of a segment of a circle, and is of such radius that it will engage the edge of the bar *c*, and is of such length that the two, operating on the bar *c* in conjunction, will, at each revolution, feed in the proper length of bar *c* to form the entire spike, except the beveled point. Just back

of these segmental feed-rolls *a* the pointing-dies *a'* are arranged, one in each die-holder *b*, and so that, acting simultaneously on opposite sides of the bar *c*, they will form the beveled point *e'*. These dies are affixed in the die-holders *b* so as to be removable, renewable, and interchangeable. A plate, *n*, is attached to one die-holder, *b*, above, and with its outer end projecting out over the pointing-die *a'*, and a like plate, *n'*, to the other die-holder and under its die, and projecting in like manner. The object of these plates is to prevent the vertical spread of the metal while the point *e'* is being made by the pointing-dies *a'*. As the spike-blank *e e'* is thus being formed, the blanks previously formed are fed forward through the guide *h*, and at the termination of each forward feed one of them comes between the griping-dies *d d'*. The female die has a groove in its face, as shown by dotted lines, to receive the spike-blank, such groove being tapered out at its heel end so as to form a bed for the point *e'*. In its opposite end it has the usual recess for the swaging therein of the spike-head. This die is set a little to one side of the line of feed, so that the spike-blank when fed in may clear its face; then, when the die-holders *b* complete their revolutions the male die *d* is driven forward by the ram *f*. A cutter, *d''*, attached to this die, separates the point *e'* of one blank from the body *e* of the next, and the blank is driven into the groove of the female die *d'* and held until headed. It will now be observed that the function of the guide *h* is not only to guide the series of blanks directly along in the line of feed, but also to hold each blank steadily and firmly in place while the cutter *d''* makes its forward thrust to cut off the blank immediately between the dies *d* and *d'*. The guide *h* is held fixedly in place, so as to resist the effect of the lateral thrust of the cutter *d''*, by means of a stud, *v*, or in other suitable way. The heading-die *s* is attached to a die-block, *s'*, which latter, by projecting guides *s''*, is so directed in its motion between parallel but inclined ways *m* as that the heading-die *s* will strike the end of the spike-blank with a side stroke and thus bend it over and form the side head desired. This die-holder *s'* is pivoted by a strap, *o*, to the ram *f'*, so as to be capable of the swinging motion described. To discharge the finished spike from its matrix I use a knocker, *g*, which is operated by a lever,

$g'$ , and arm  $g''$ , the latter being fixed at the proper point on one of the die-holders  $b$  so as to engage the lever  $g'$  and discharge the spike as soon as the die  $d$  recedes. Both the die  $d$  and knocker  $g$  may be brought back by springs in the usual way.

I am aware of the construction and operation shown in patent granted to Leopold Thomas, December 28, 1869, for a spike-machine, and the same is hereby disclaimed.

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

1. The rotating segmental feed-rolls  $a a$ , having working-faces of suitable length for feeding forward at each revolution the proper length of blank for the head and body of a single spike, removably attached to the rotating die-holders  $b b$ , in combination with the fixed guide  $h$  of a length equal to that of the rolled blank, said feed-rolls being arranged and adjusted to operate in relation to the operation of the clamping-dies and header, substantially as described.

2. In combination with the devices of the pre-

ceding claim, the dies  $d d'$ , arranged with their cavity, when they are closed, a little out of line of feed, one of the dies carrying a knife,  $d''$ , for cutting off the blanks, such dies being operative during the suspension of the forward feed, substantially as described.

3. A fixed guide,  $h$ , arranged between and in combination with the feeding and pointing-tools described at one end, and the griping-dies  $d d$  and cutter  $d''$  at the other end, whereby each blank is not only guided accurately in the line of feed, but also is held firmly against the effect of the forward thrust of the cutter in severing the blanks.

In testimony that I claim the foregoing as my own I affix my signature in presence of two witnesses.

OMAR A. WADSWORTH.

Witnesses:

PERCEVAL BECKETT,  
E. MALCOLM TURNER.