

J. H. SWETT.
SPIKE MACHINE.

No. 8,328.

Patented Aug. 26, 1851.

Fig. 1.

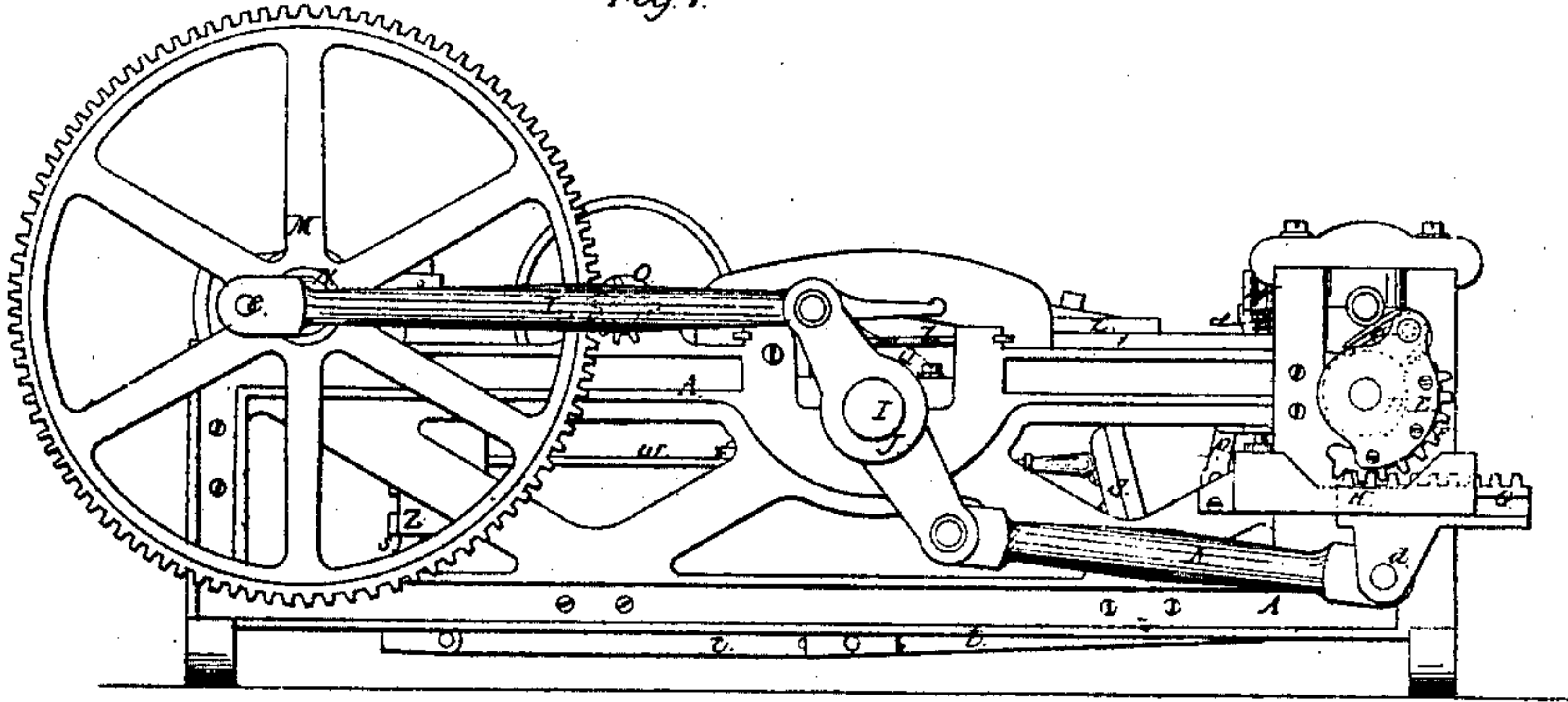


Fig. 2.

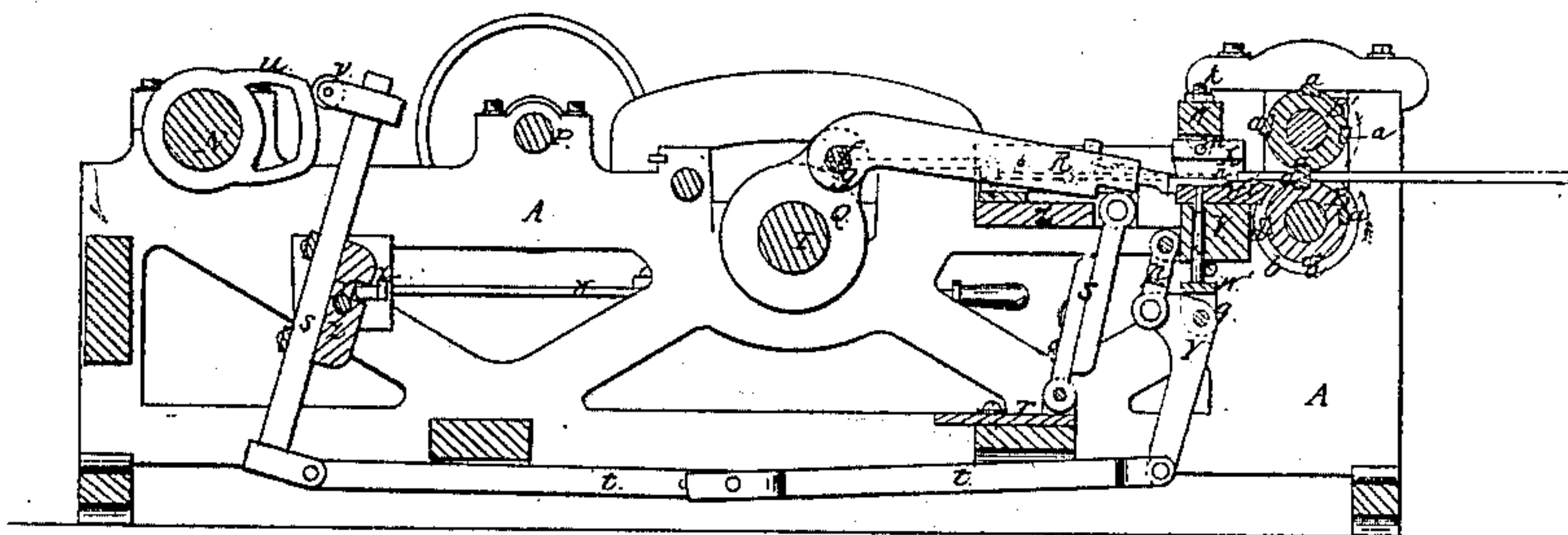


Fig. 3.

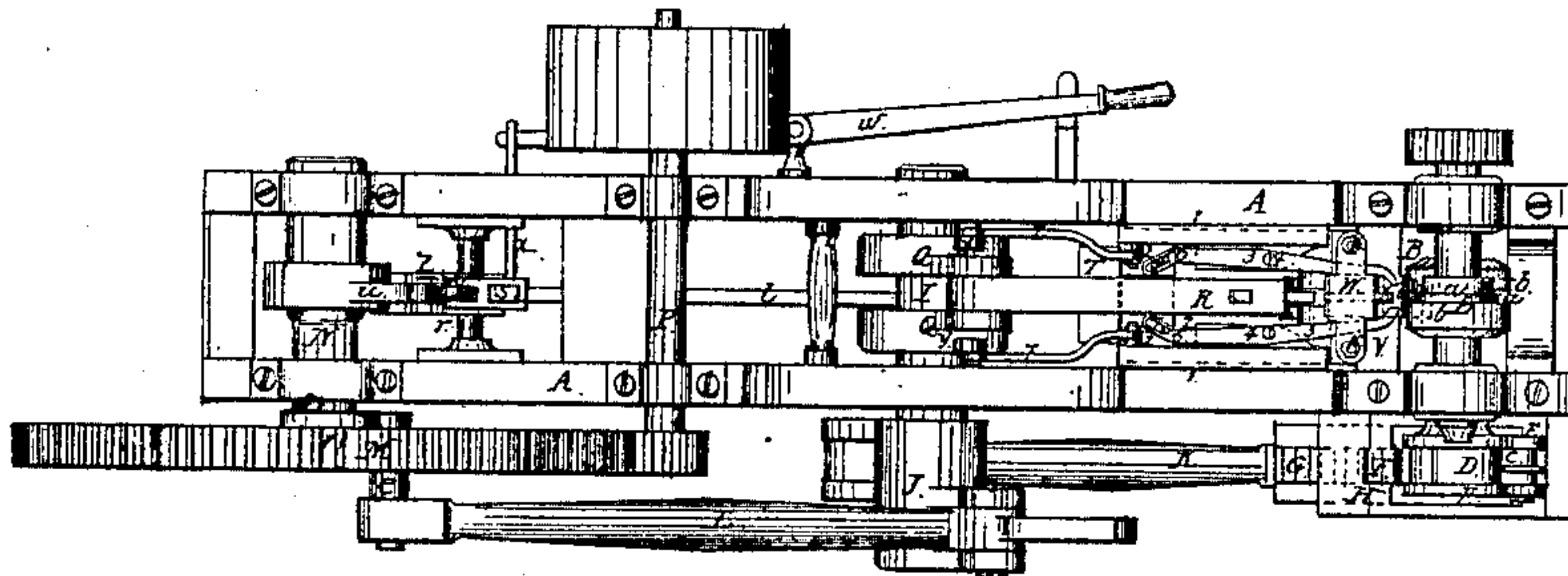


Fig. 4.

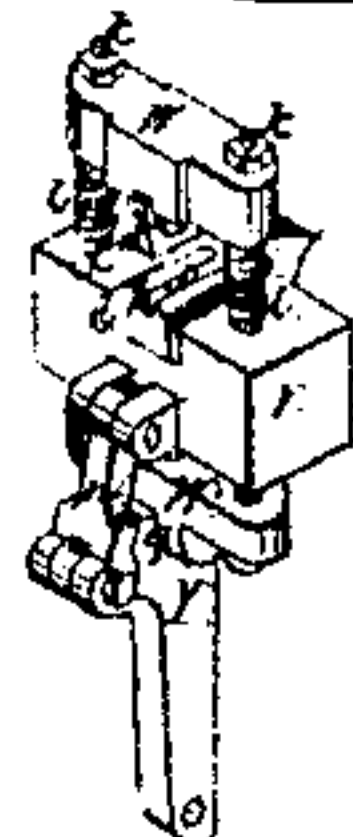


Fig. 5.



Fig. 6.

UNITED STATES PATENT OFFICE.

JAS. H. SWETT, OF CONCORD, NEW HAMPSHIRE.

SPIKE MACHINERY.

Specification of Letters Patent No. 8,328, dated August 26, 1851.

To all whom it may concern:

Be it known that I, JAMES H. SWETT, of Concord, in the county of Merrimack and State of New Hampshire, 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 of the same, reference being had to the accompanying drawings, making part of this specification, in which—

Figure 1, is a side elevation of the machine. Fig. 2, is a longitudinal, vertical section of the same. Fig. 3, is a plan or top view. Fig. 4, is a perspective view of the heading plate and mechanism for holding the spike while the head is being formed. Fig. 5, is a perspective view of the top holding die detached. Fig. 6, is a perspective view of the heading plate or lower holding die.

Similar letters in all the figures represent the same parts.

The general features of my machine are, in their detail, similar in principle, with those of the machine patented to me, on the 10th of October 1848,—the position of the parts being merely changed, to correct such defects in the construction, as present themselves, in the operation of the machine, and which make it more perfect without any change of principle, and need not therefore, be again described.

The nature of my invention consists in the raising up of the end of the spike in the die, after being headed, so that the next following blank, will be drawn underneath it, and tilt it out of the die, as said blank is drawn forward by the nippers, and which prevents the possibility of a spike and blank being in the die at the same time, and the consequent breaking up of the machine.

To enable others skilled in the art to make and use my invention, I will proceed to describe the same with reference to the drawings.

Motion is communicated to the several parts of the machine, by means of the driving shaft P, having thereon a spur wheel O, which meshes into a cogged wheel M, on the shaft N, which carries the cam *u*, which said cam by means of the friction roller *v*, vibrating rod *s*, (on the stationary spindle *r*) and rods *t*, *t*, give motion to the lever Y, for operating the dies. To a wrist pin, on the cogged wheel M, is attached, one end of the connecting rod L, being secured to one end

of the rocking beam J, on the shaft I, and which gives to said shaft a vibratory or rocking motion. The shaft I, in its turn, communicates motion to the header R,—feeding nippers 3, 3,—and by means of the rocking beam J,—connecting rod K,—rack G, and segment wheel F, to the feeding and drawing rollers B B'. The arrangement of these several parts, constitute no part of my present invention; and as their operation is described in detail, in the patent heretofore granted to me, need not again be explained.

There is a rod *o*, secured to the upper face of the lower cross head W', which passes through a block V (seen in Figs. 2 and 4), and when the cross head is raised, it also passes through the lower die U, at about the center of the groove *h*, in which the blank is held, while being headed. The bent lever Y, is hinged to the cross-head W', by means of a pin passing through the lugs *q*, and as said lever is released by the operation of the cam, after holding the blank, for the heading operation, and swings back, the part thereof forces up the rod *o*, which, passing through the die U, raises up the point end of the spike just headed, and at the same moment, the nippers 3, 3, (to be hereafter more fully described) catch the end of the blank, which has been cut off and pointed by the cutters *a*, *a*, on the feeding wheels B B, and draws said blank underneath the point of the finished spike thus raised up, and tips or tilts it out of the die; thus securing the machine against the possibility of having a spike and blank in the dies at the same time, and the consequent breaking up of the machine.

y, *y*, are two lugs, secured to the bosses of the crank arms Q, Q, being equivalent to another pair of cranks, and they are made to slide in grooves in the faces of the bosses, so that they may be adjusted, to vary and regulate the length of their throw.

z, is a sliding carriage, guided on ways 1, 1, secured to the frame of the machine.

2, is a smaller carriage sliding between guides or ways on the carriage *z*.

3, 3, are a pair of nippers, consisting of two levers, which are nearly straight, until near their front ends, where they are slightly bent, so as to form the jaws for taking hold of the blank, after it leaves the drawing and feeding rollers, and which it deposits in the lower die or heading plate U, passing underneath the raised point of the spike just

headed, which it tilts out of the die as heretofore described. The arms of the nippers, are secured to bosses on the carriage 3, at about their middle, by screws or pins 4, 4, which form their fulcra, and in the ends of said arms are oblique slots 5, 5, into which passes and works the pins 6, 6, which are attached to the top of the smaller carriage 2. The smaller carriage 2, is connected by rods 7, 7, to the lugs *y, y*, (before described) on the crank arms *Q, Q*, on the rock shaft *I*, and give a reciprocating motion to the carriage 3, to which the nippers 3, 3, are secured, but as they are not connected immediately with said carriage, but to the smaller carriage 2,—the smaller carriage travels the length of the slots 5, 5, in the back end of the nippers in each direction before the carriage 3, receives its motion, which only commences after the pins 6, 6, reach the ends of the slots—the pins 6, 6, acting on the oblique edges of the slots, draws the points of the nippers toward each

other, or closes them before they commence moving back, and open them before they commence moving forward again. 25

Having thus fully described the nature of my invention, what I claim therein as new and desire to secure by Letters Patent, is—

The method of delivering the spike from the die, by means of the tilting rod *o*, and the movable nippers 3, 3, so as to allow the nippers to draw in the succeeding blank underneath the spike, and tip or tilt it out of the die, which prevents the possibility of a spike and blank being in the die at the same time, and the consequent breaking up of the machine. 35

In testimony whereof I have hereunto signed my name before two subscribing witnesses. 40

JAMES H. SWETT.

Witnesses:

O. D. MUNN,
S. H. WALES.