

J. H. SWETT.

Machines for Making Grooved-Spikes.

No. 156,186.

Patented Oct. 20, 1874.

Fig. 1.

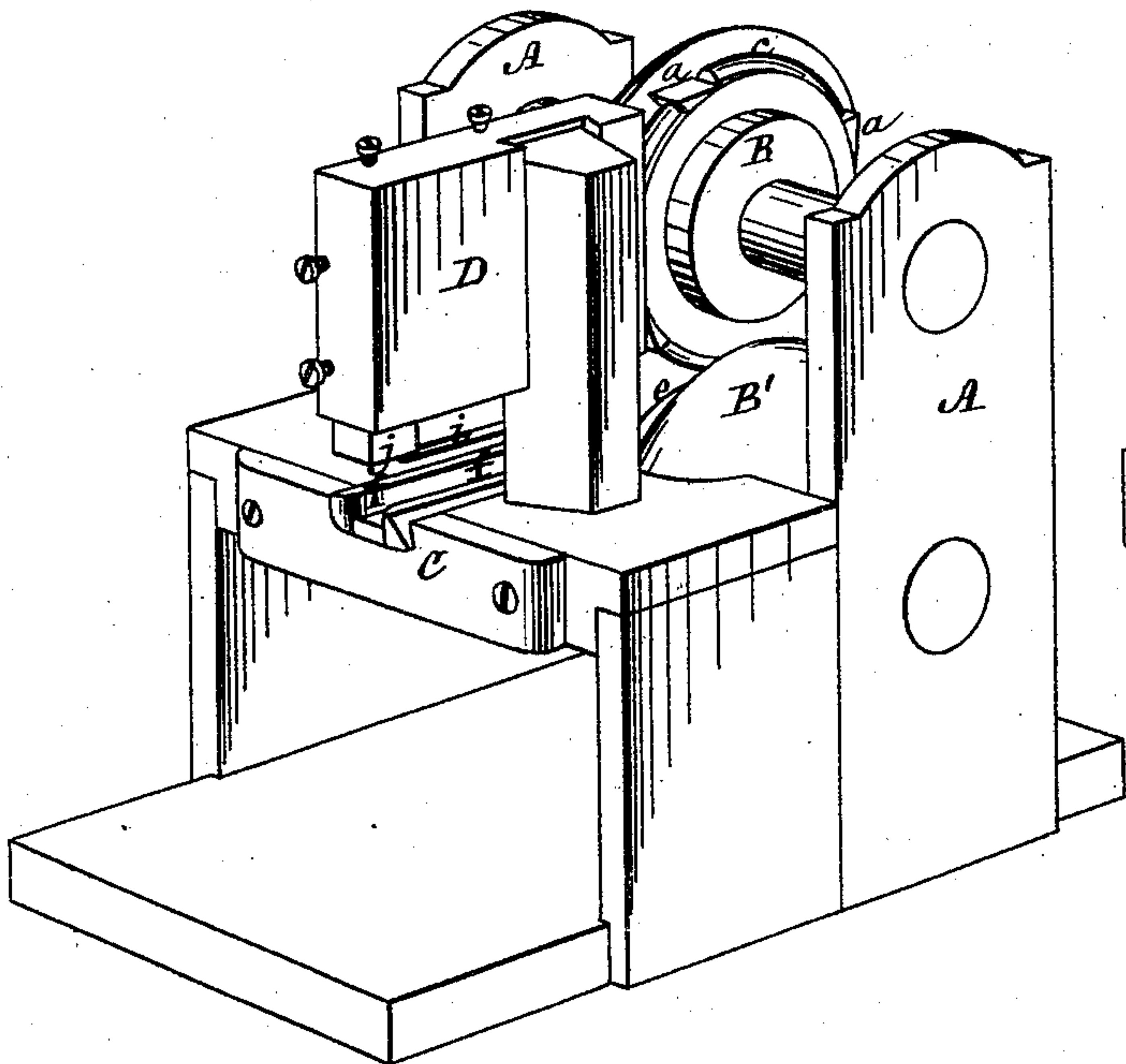


Fig. 2.

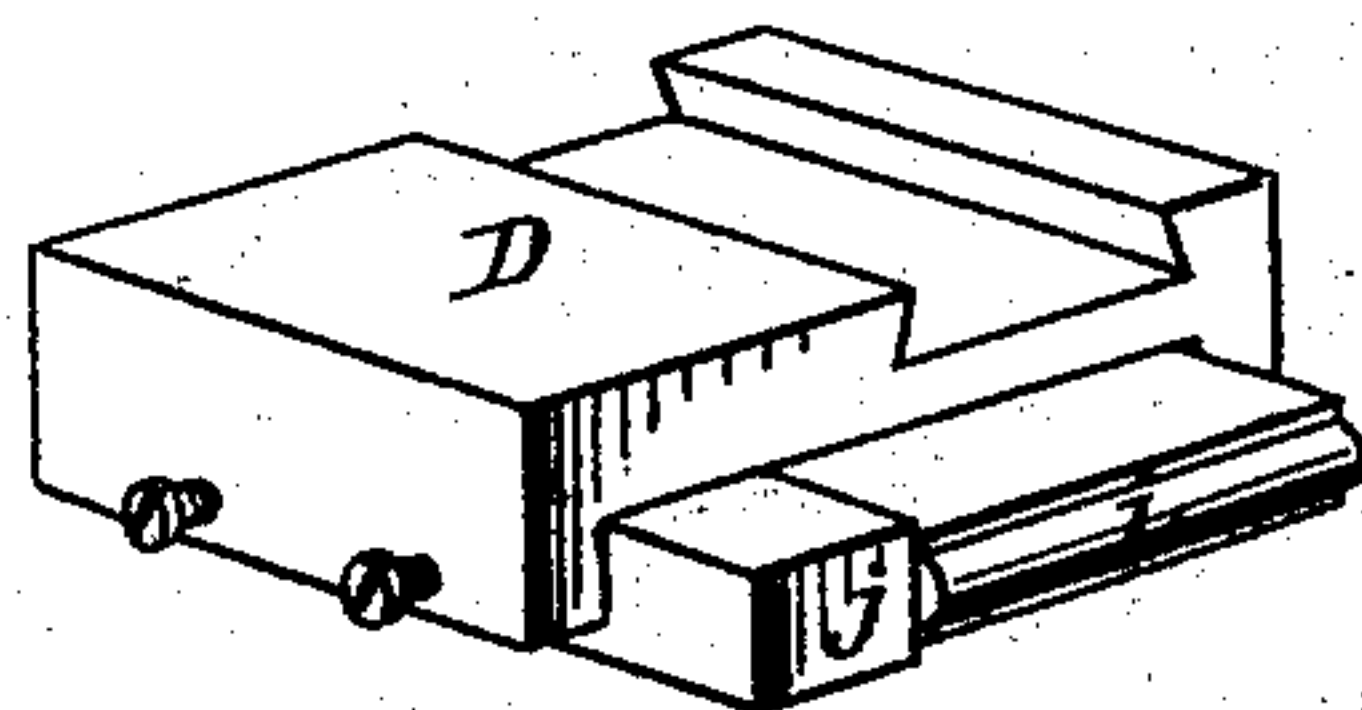


Fig. 5.

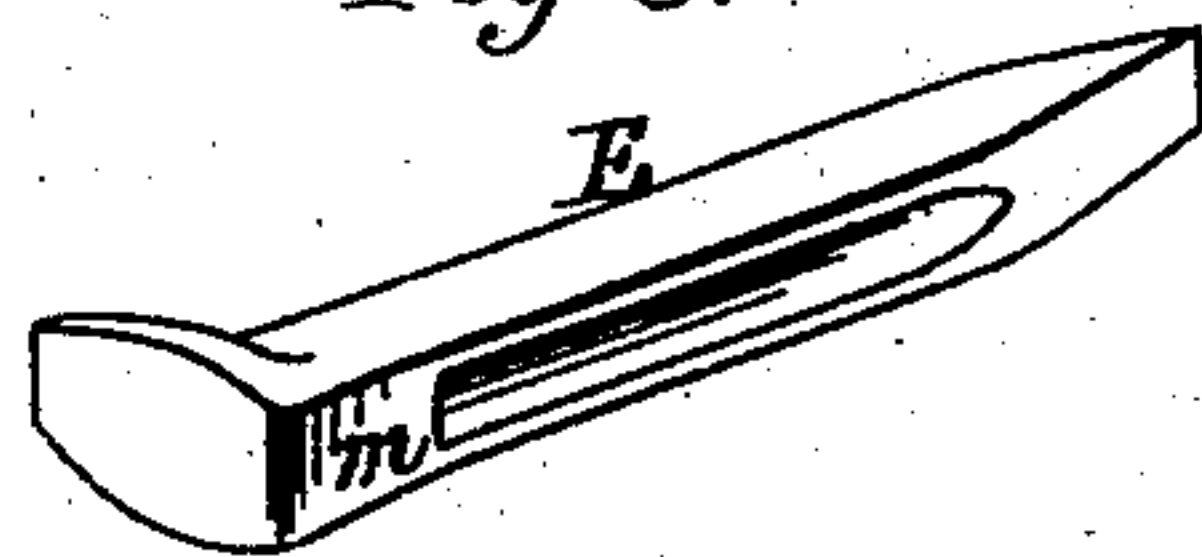


Fig. 3.

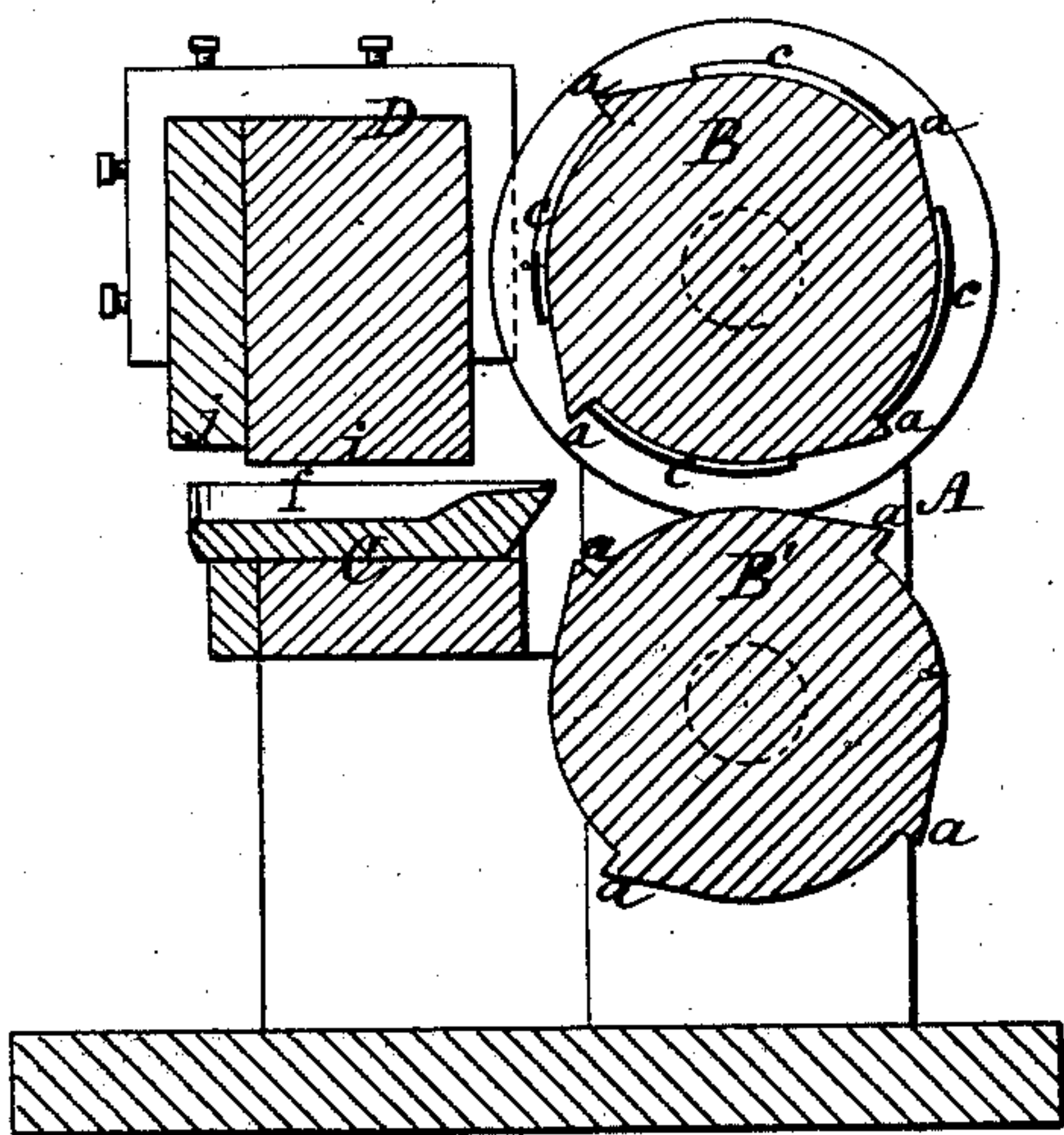
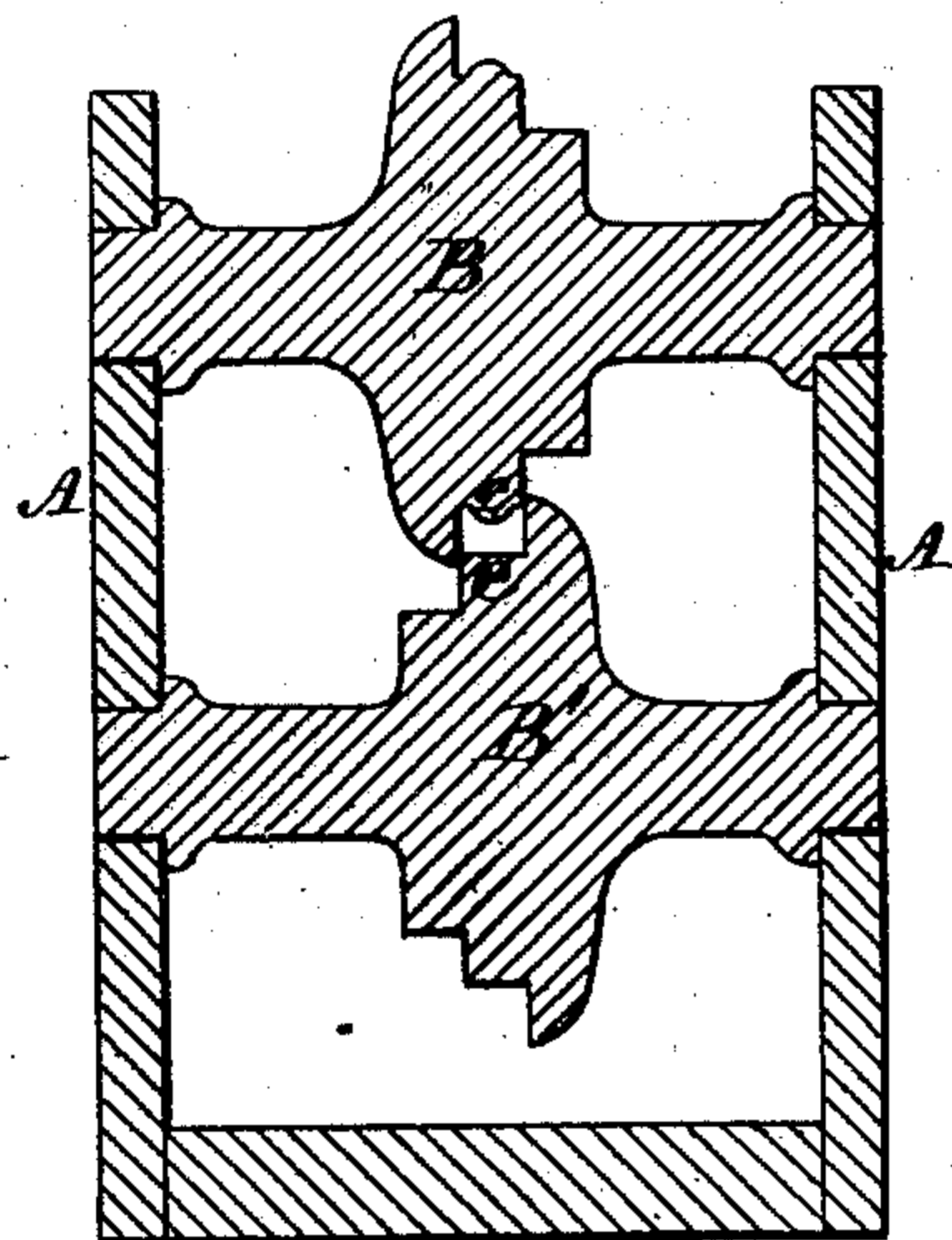


Fig. 4.



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JAMES H. SWETT, OF PITTSBURG, PENNSYLVANIA.

IMPROVEMENT IN MACHINES FOR MAKING GROOVED SPIKES.

Specification forming part of Letters Patent No. **156,186**, dated October 20, 1874; application filed September 18, 1874.

To all whom it may concern:

Be it known that I, JAMES H. SWETT, of Pittsburg, in the county of Allegheny and State of Pennsylvania, have invented certain new and useful Improvements in Machinery for Making Grooved, Hook-Headed, or Railroad Spikes; 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 a part of this specification, in which—

Figure 1 represents, in perspective, so much of the spike-machinery as will illustrate my invention. Fig. 2 represents, in perspective, and separated from the spike-machine, the movable gripping-jaw and the form of the die therein. Fig. 3 represents a longitudinal vertical section through the machinery shown in Fig. 1; and Fig. 4 represents a transverse vertical section, taken through the pointing and feeding rolls. Fig. 5 represents one of the finished spikes.

The object and purpose of my machine is to make grooved spikes, and more particularly hook-headed or railroad spikes; and to this end the spike-rods are first rolled with a groove in one of their sides, which is readily done when said rods are rolled out, and most economically done at the last pass of the spike-rod through between the rolls. This grooved spike-rod is fed into, cut off, pointed, and headed by the machine which I have invented, as will be hereinafter described; and my invention consists, first, in combining with the pointing and feeding rolls a convex or beaded surface on one of the rolls, and a plain surface on its mate or fellow roll, so that the convex or beaded surface shall fit and bear upon the grooved portion of the spike-rod, and the plain surface upon that side of the spike-rod that is opposite the grooved surface or side thereof; and my invention further consists in combining with one of the gripping jaws, (and preferably with the moving jaw of the pair,) having a convex or beaded surface throughout a portion of its length, and a flat and less projecting surface throughout another portion of its length, the trough-shaped recessed dies in the counter or stationary gripping-jaw, for the purpose of holding, shaping, and heading the previously-pointed blank under the force

of the heading instrument, as will be explained.

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.

In suitable housings A, and geared so as to run truly together, are hung the feeding and pointing rolls B B'. Upon these rolls are placed the pointing-dies *a a* in the usual well-known way, and for the usual well-known purpose. Upon the upper roll B of the pair, and in the line of its pointing-dies, and intercepted by said dies, is made a convex projection, *c*, which takes into the groove made in the spike-rod, and thereby aids to feed in or along the spike-rod, or the grooved and pointed blank after it is severed from the rod. On the under roll B' the surface that acts in connection with the convex projection of the top roll is plain, as at *e*, and intercepted only by its pointing-dies. These rolls take and feed in the grooved spike-rod, and, when a blank is pointed and severed from said rod, said rolls take said blank and deposit it in the recessed die *f* made in the lower griper C, with enough of it projecting beyond said die *f*, and of that portion of said die in which the metal is upset to form the hook-head of the spike when the header comes up against it, and drives it back into said die.

The upper griper D is movable, it being raised to allow the blank to be properly placed in the die of the lower griper C, and to admit of the throwing out of the previously-formed spike. Upon the face of the griper D, and throughout a portion of its length is made a convex projecting die, *i*, that will enter and fit the groove of the spike-blank, and beyond this projecting die *i* there is a flat-surfaced, recessed, or sunken portion, *j*, which comes down upon the blank, and, when the header comes up, squares that portion of the finished spike (as shown at *m*, Fig. 5, by closing up the groove in the spike) that is formed under it. The griper D must be held down upon the blank with very great power, so as to resist the force of the header when it is brought up against the projecting end of the blank. This is readily done by using heavily-weighted levers.

I have not deemed it necessary to show the machinery for raising, lowering, and holding the griper D, nor the header or its operating machinery, as I propose to use such as are shown and well known in spike-machines made and used by me. So, too, of the gages and delivering apparatus.

I have represented one of my finished machine-made grooved spikes at E, Fig. 5. The economy and advantage of such spikes are well known. They save metal, hold better in the wood, and drive with less twisting than common spikes.

I am aware that grooved square-headed spikes have been made, and that it has been essayed to make grooved hook-headed spikes; but no machinery that I am aware of, before that made by myself, ever was devised by which a practical and economical grooved railroad-spike could be made. If more than one side of a spike-rod is grooved, it takes away so much of the metal that sufficient to form the head can scarcely be driven up at all, but, if so, at great expense of power and danger

of breaking up the machine. To roll in the grooves after the spike is made is too expensive to be put in practice.

Having thus fully explained my invention, what I claim in machinery for feeding in, pointing, and holding grooved blanks or spike-rods to hold said blank while operated upon by the header, is—

1. In combination with the feeding and pointing rolls B B', the convex die *c* on one for taking into the groove of the spike rod or blank, and the square or plain surface *e* on the other roll, as and for the purpose described and represented.

2. In combination with the recessed square-walled die *f* on the griper C, for receiving the body of the spike-blank, the square-walled projecting die *j*, and the rounded die *i* on the griper-jaw D, as and for the purpose described and represented.

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Witnesses:

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