

[66.] *F.J. Kimball. Spike Machine.*

Fig. 1.

Fig. 2.

No. 118,539.

Patented Aug. 29, 1871.

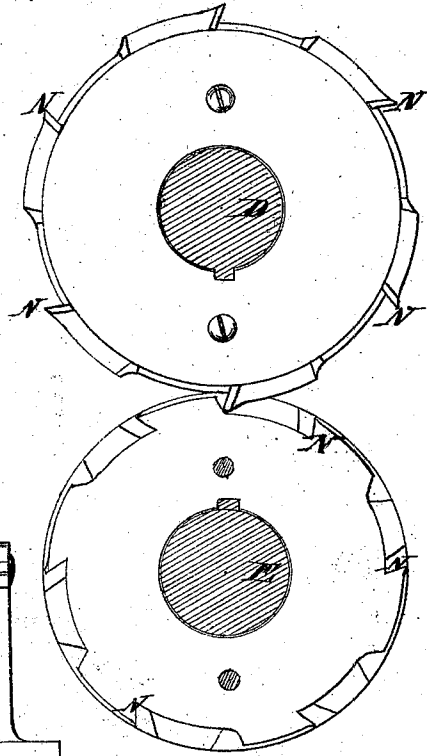
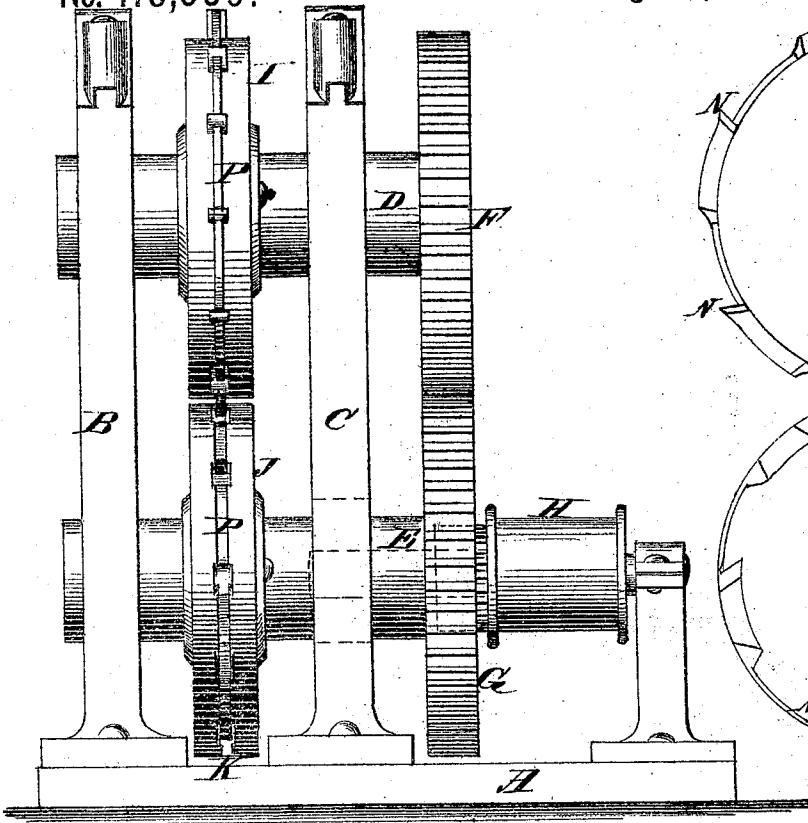
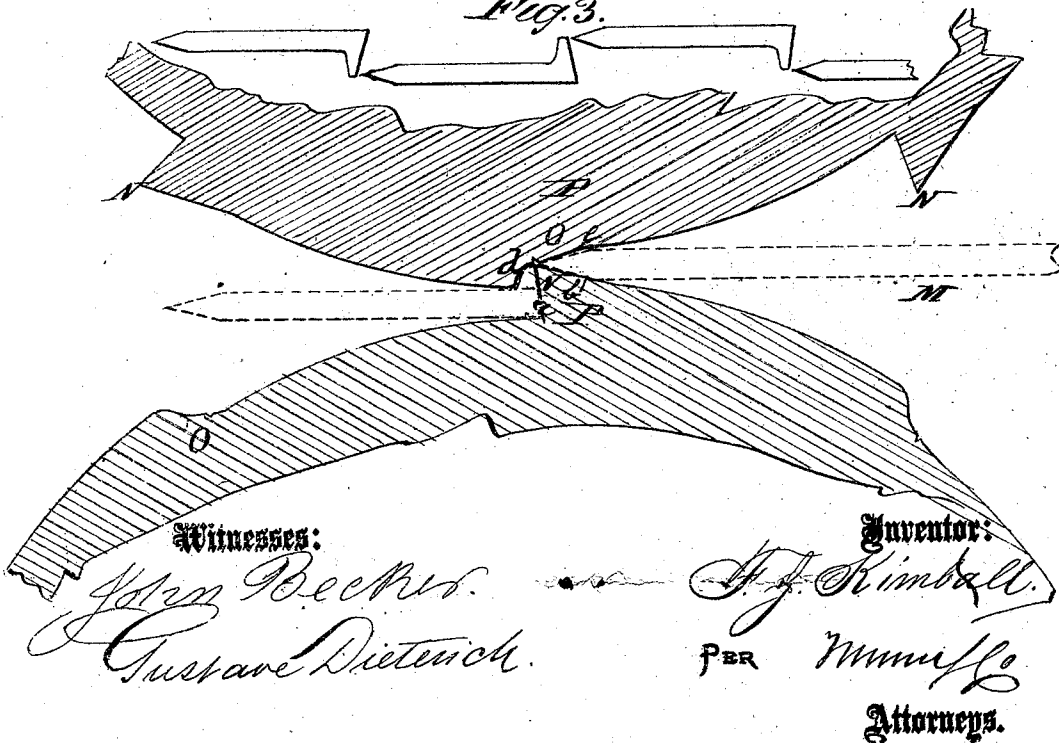


Fig. 3.



Witnesses:

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UNITED STATES PATENT OFFICE.

FREDERICK J. KIMBALL, OF PHILADELPHIA, PENNSYLVANIA.

IMPROVEMENT IN MACHINES FOR MAKING SPIKES.

Specification forming part of Letters Patent No. 118,539, dated August 29, 1871.

To all whom it may concern :

Be it known that I, FREDERICK J. KIMBALL, of the city and county of Philadelphia and State of Pennsylvania, have invented a new and Improved Spike-Machine; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawing forming a part of this specification.

My invention consists in improving the construction of rolling-dies by which spikes are cut from a rod and pressed into shape, as hereinafter fully described and subsequently pointed out in the claim.

Figure 1 of drawing is a front view of the dies, their supporting-frame, and their operative mechanism. Fig. 2 is a side view of the middle disks. Fig. 3 is an enlarged side view of the same.

A represents the bed; B, the uprights; D E, the shafts, and F G the equal-sized spur-wheels. I J are die-rolls, each consisting of two disks, between which is inclosed another disk, P or P'. N represent the cutting, and O the anvil-dies, both of which are preferably arranged alternately upon the top and bottom rolls, and, of course, opposite to each other. The inner sides of the outer disks of the rolls are recessed (according to the lateral spread desired in the head) at points adjacent to the dies O. The edge of cutters N projects forward, and the sides *a b* thereof decline backward therefrom. The die O has a concavity, *d*, as shown in Fig. 3 of drawing, which, in conjunction with the laterally-recessed outer disks, receives the metal intended to form the head. It also has a head, *e*, inclined backward to correspond to the decline of the cutter's side *b*.

The mode of operation is as follows: A rod, M, Fig. 3, is inserted between the rolling-dies, and the rolls themselves are revolved at the

same velocity. A cutter, N, first catches the metal and cuts into it, at the same time bending over a portion against the die O and into its cavity *d*. As the rolls continue to move the edge of cutter N strikes the dies O, cuts off the spike, and crowds sufficient metal into cavity *d* and into the recesses of the outer disks to form the head. At the same time the sides *b e* of dies N O compress the metal into the desired shape for the point. In this latter operation there is, perhaps, some metal forced back, which is either compressed into the body of the rod adjacent, or rolled back toward the part where the head of the next nail is made.

The rod employed by me in making a spike is square in cross-section, but where I desire to make a half spike (which requires a heavy head) I then employ a rod one-half by five-eighths of an inch in cross-section.

It will be perceived that I use a single cutter, and am thus enabled to project said cutter forward out of a radial line drawn from the center of motion. This allows the die N both to cut the rod and crowd the metal into the cavity *d*, while it also enables me to elongate the point, as shown in Fig. 3 of drawing.

Having thus described all that is necessary to a full understanding of my invention, what I esteem to be new, and desire to protect by Letters Patent, is—

In rolling-dies for making spikes, the combination of dies N O, when the former has sides *a b*, and the latter has cavity *d* and side *e*, respectively, constructed and arranged as and for the purpose specified.

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Witnesses:

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