J. WALDRON & D. G. MOORE.

Machines for Pointing Spikes.

No. 138,058. Patented April 22, 1873.

Fig. 2.

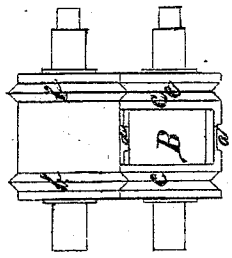


Fig. 1.

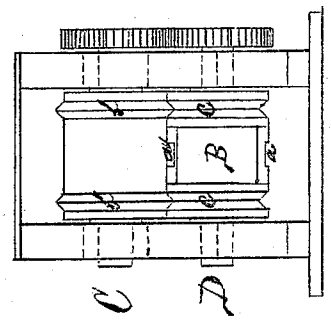
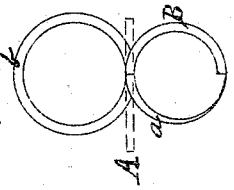


Fig. 3.



Witnesses.
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UNITED STATES PATENT OFFICE.

JAMES WALDRON AND DOUGLASS G. MOORE, OF ELIZABETH PORT, N. J.

IMPROVEMENT IN MACHINES FOR POINTING SPIKES.

Specification forming part of Letters Patent No. **138,058**, dated April 22, 1873; application filed October 7, 1872.

To all whom it may concern:

Be it known that we, JAMES WALDRON and DOUGLASS G. MOORE, of Elizabeth Port, in the county of Union and State of New Jersey, have invented certain Improvements in Rotary Machines for Shaping Spikes, Edge-Tools, and other similar articles from Bars of Metal, of which the following is a specification:

This invention relates to the combination of frictional gearing and shaping-surfaces in a rotary spike-machine in such manner that the friction-gears and shaping-surfaces shall all form parts of the peripheries of the rolls used in the machine. The object of this invention is to substitute in some cases, for the ordinary spur-gearing at the ends of the rolls, friction driving and guiding gears as a means of rotating and guiding the rolls, and in other cases to use such gears as supplementary to end spur-gearing, as will be hereinafter explained.

It will be understood that the rolls herein described are to be supported in suitable bearings in any frame of ordinary construction and of sufficient rigidity.

Figure 1 of the drawing forming part of this specification is a front elevation of a machine embodying this invention. Fig. 2 shows the rolls detached from the machine. Fig. 3 presents an end view of the rolls, showing a bar of metal in process of being shaped into the desired article.

In these figures, A is a bar of metal inserted between the rolls C and D. B is a recess in the periphery of roll D, concentric with its axis and serving as a guide to the entering bar A. *a* is another recess in the periphery of roll D, eccentric to its axis and narrower than the recess B. It commences with its greatest depth coincident with the bottom and at the end of said recess, and diminishes in depth in its progress around the roll until it terminates in or near the surface of the roll near the other end of recess B. This recess *a* is the shaping-surface of the roll, and the degree and distribution of its eccentricity determine the shape of the bar of metal fed to the rolls, and compressed and cut by their rotation. In the drawing, the compressing-surface of roll C is shown concentric with its axis, but it may be varied in its shape to suit the requirements of the case in order to shape any article desired. *b b c c* are the respective V-shaped friction driving and guiding gears for actuating the rolls C D. They are formed in and upon their peripheries, and constitute parts of the rolls themselves. As many of these gears may be used as circumstances may require, and the length of the rolls will be governed by the width of the articles to be shaped and the number of these friction driving and guiding gears. The intervention of this frictional gearing upon the peripheries of the rolls distributes the friction necessary for actuating one roll, by the rotation of the other, over a large surface, and thus while both driving and guiding the rolls it imparts greater steadiness of motion to them than if they were actuated solely by ordinary spur-wheels at their ends.

By this method of construction greater strength and compactness can be imparted to the machine, accompanied with less strain and wear upon it. It is thus rendered more durable in all of its moving parts, and consequently is a cheaper and more efficient machine.

The use of spur-gearing at the ends of the rolls, with its disadvantages of "bottoming" and of "lost motion" between the teeth of the wheels, can thus in many machines, where the metal to be compressed is not of great mass, and especially when hot and soft, be entirely avoided, and at the same time both rolls can be actuated and guided by the application of any suitable rotary power to either one of them alone. Where the metal to be compressed is of great mass it may be advantageous to use both systems of gearing in preference to either one alone.

In operating this machine a suitable rest or guide may be erected in its front for the support of the bar of metal while being fed to the rolls, and an adjustable stop also, if desired, may be placed in rear of the rolls for regulating the length of the article to be cut; but this stop and rest form no part of this invention.

We do not broadly claim as our invention friction-gears merely as guides for the rolls, nor as means of simply transmitting motion, but we do claim them as forming novel parts of other devices in a machine, and as such, in

combination with those devices, performing the important functions of both driving and guiding them, and thus, as novel elements, making the combination into which they enter a novel one; therefore, as our invention,

We claim—

In a rotary machine for the fabrication of spikes and other similar articles from bars of metal, the combination of two shaping-rolls, C D, having the shaping-surfaces of their peripheries both concentric with and eccentric to their axes, substantially as described, and each roll having upon its periphery, and forming a part of itself, friction driving and guiding gears *b b c c*, whereby the said rolls are both rotated and guided, substantially as and for the purposes described.

JAMES WALDRON.
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Witnesses:
OLIVER DRAKE,
THOMAS PAULIN.