

V. K. SPEAR.

Machinery for Burnishing Boot and Shoe Heels, &c

No. 162,775.

Patented May 4, 1875.

Fig. 1.

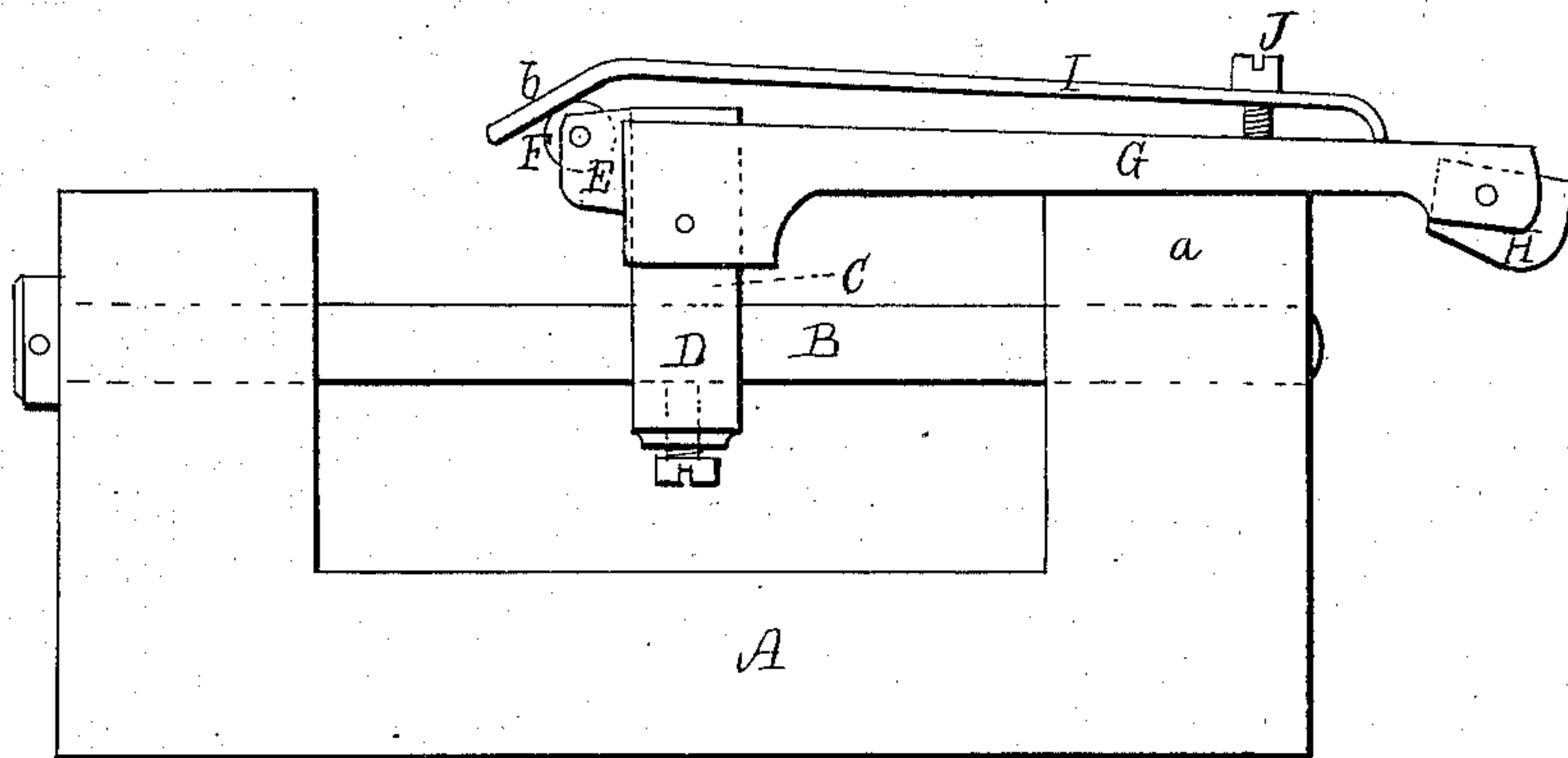


Fig. 2.

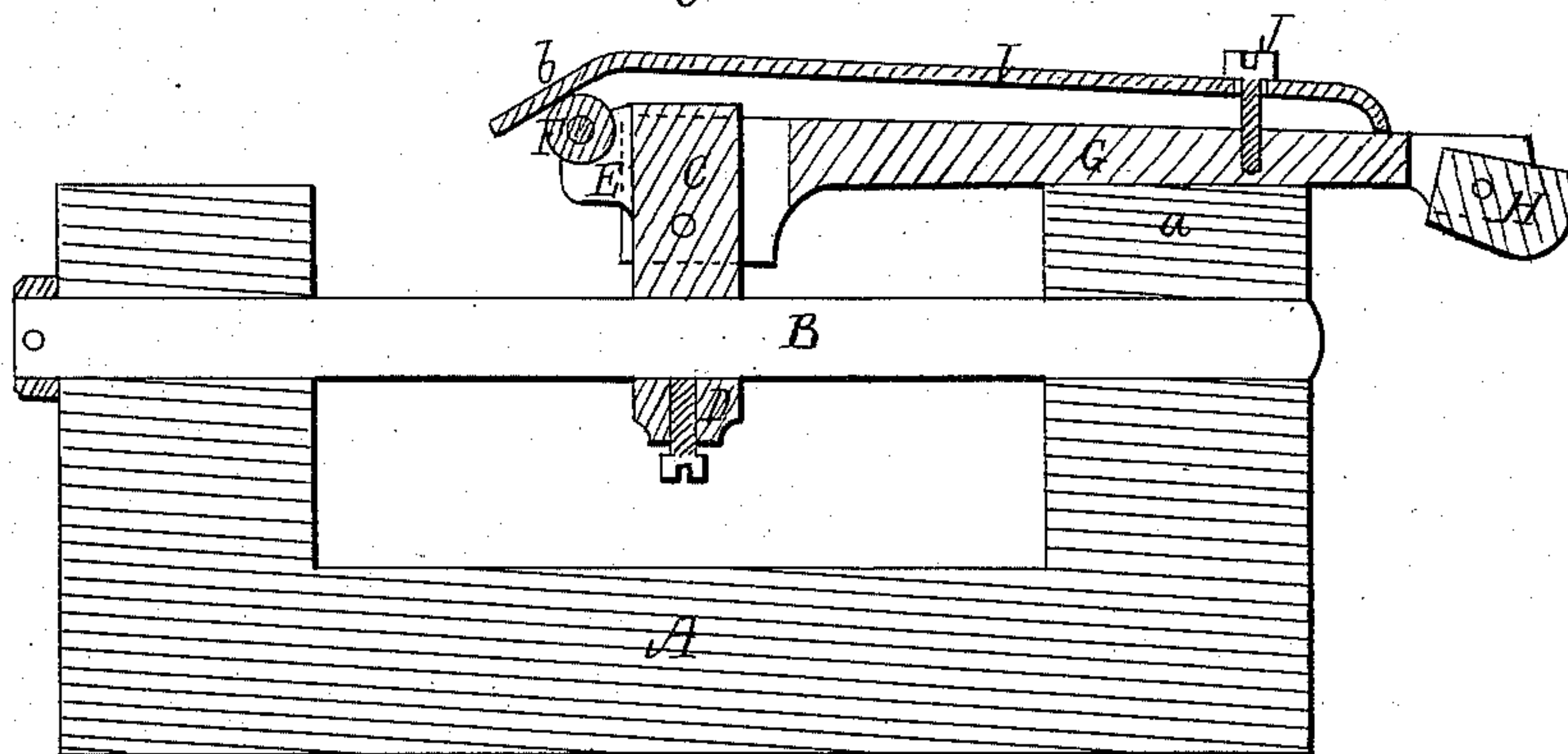
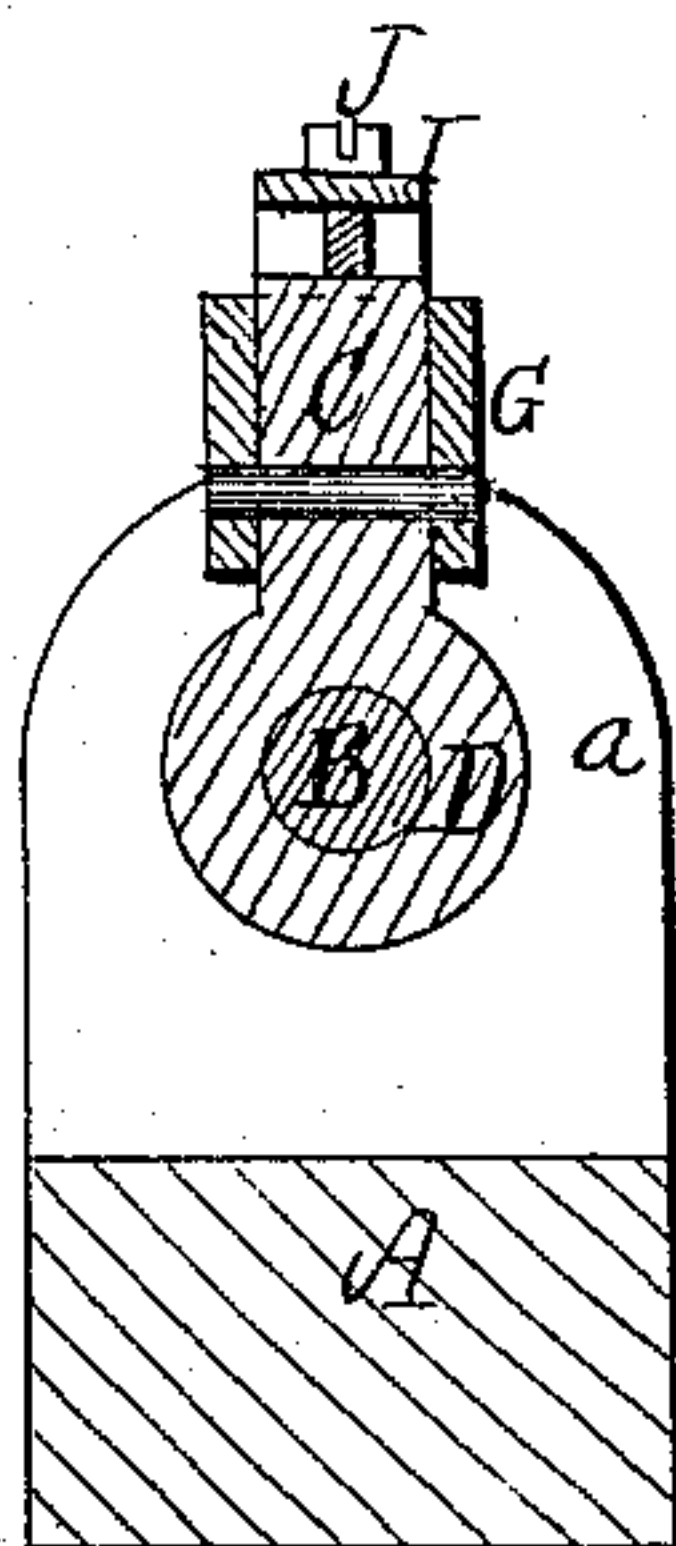


Fig. 3.



Witnesses.
Francis E. Faxon,
At Boardman.

Virian K. Spear.
At Curtis. Atty.

UNITED STATES PATENT OFFICE.

VIVIAN K. SPEAR, OF LYNN, MASSACHUSETTS.

IMPROVEMENT IN MACHINERY FOR BURNISHING BOOT AND SHOE HEELS, &c.

Specification forming part of Letters Patent No. **162,775**, dated May 4, 1875; application filed November 28, 1873.

To all whom it may concern:

Be it known that I, VIVIAN K. SPEAR, of Lynn, in the county of Suffolk and State of Massachusetts, have invented certain Improvements in Machinery for Burnishing Boot and Shoe Heels, of which the following is a specification:

These improvements relate to a class of machines in which a burnishing-tool of hardened steel, preferably heated by suitable means, is caused to describe a series of reciprocating sweeps in a circular arc about the edge of the heel, the tool, while thus moving, being pushed up by the workman from the outer boundary or tread of the heel to its inner termination or the rand-seam of the boot, in order to go over and burnish the entire edge of such heel, the tool being mounted upon the extremity of a yielding bar, and the latter depressed toward the heel by a suitable spring.

In machines heretofore constructed the burnishing-tool, as it advances toward the upper or rand seam of the boot, naturally rises, owing to the angle of the heel-edge, and the spring is consequently stiffened and increased in power, and the tool unavoidably exerts greater force upon the upper part of the heel-edge, which is the weakest.

As this result occasions considerable injury to a heel I have endeavored, in my present improvement, to avoid this objection by so applying the spring to the tool-carrier that as the latter and tool ascend the slope of the heel-edge the power of the spring shall automatically lessen, and the gist of my improvement may, therefore, be said to consist mainly in such adaptation of the spring.

In the present construction of these machines the spring has been secured to the post to which the tool-carrier is pivoted, and its stress exerted upon the free or variable end of such carrier, which supports the tool; consequently, as this end of the carrier is elevated, the power of the spring increases.

In carrying out my improvement in one of several methods in which I can avail myself of its principle, I attach the idle end of the spring to the free end of the tool-carrier, and I extend the free end of the spring outward beyond the pivoted post of the carrier, and allow such end to impinge against an anti-

friction roller or an abutment making part of such post, the said free end of the spring being bent at an angle to its body at such a slope varying with conditions, as may be found necessary, in order that the degree of stress of the spring upon the carrier may be varied as the latter rises.

The drawings accompanying this specification represent, in Figure 1, a side elevation, in Fig. 2, a vertical and longitudinal section, and in Fig. 3 a vertical and cross-section, of a device embodying my improvements.

In these drawings, A represents the head or upper portion of the main standard of a machine for burnishing heels, which is substantially in the form of the "head-stock" of a turning-lathe, while mounted within such head A is a horizontal rock-shaft, B, to which, in practice, semi-rotary reciprocating or rocking movements are imparted by suitable mechanism. Upon this shaft or arbor B I mount and secure a collar, D, bearing an upright post, C, whose outer upper part terminates in an abutment, E, within which I prefer to mount an anti-friction roller, F. The tool-carrier or bar is shown at G as pivoted at one end to the post C, and extending inward horizontally over the inner standard *a* of the head A, its free extremity at this point having the burnishing-tool H pivoted to it.

In carrying out my improvement in one of several methods in which manifestly it may be accomplished without departing from its principle other than adaptation of mechanical details, I attach the spring I, which is a stiff plate-spring, and overlies the tool-carrier, to the latter by an adjusting-screw, J, or otherwise, and I extend the free end of this spring outward over the abutment E, and so that it shall rest and exert its power upon the latter, or the anti-friction roller pivoted to it. The extremity of the spring impinging against or upon the roller is depressed or sloped at an angle to its body, as shown at *b* in the drawings, and the extent of this slope is to be guided by circumstances, according as the degree of power of the spring in ascending is to be increased or diminished, as I am enabled to effect either. The sloping portion *b* of the spring, in order to effect a weakening of the spring, should be at an oblique angle of

greater or less extent to its body, and tangential to or eccentric with respect to a circle described from the pivot of the carrier as a center, while, if the spring is to remain the same throughout the use of the tool, the sloping end of the spring should be an arc of a circle concentric with the pivot of the carrier. The tangential slope of the active end of the spring may be of such character that the power of the spring may be increased should a change of labor or other conditions render this necessary, but thus far my object has been to lessen it.

It is obvious that various modifications of the principles of my improvement will readily manifest themselves to good mechanics, and I consider myself at liberty to use such modifications without confining my invention to any given details, so long as I effect the im-

portant and valuable result of automatically varying the power of the spring as the carrier rises.

I claim—

1. In combination with the tool-carrier and the abutment, with or without the roller, the spring, attached at one end to said carrier, and playing at the other upon the abutment, substantially as described.

2. In machinery for burnishing boot and shoe heels, the spring I, bent at its free end, substantially as described, in relation to the pivot of the carrier, as and for the purpose set forth.

VIVIAN K. SPEAR.

Witnesses:

F. CURTIS,

W. E. BOARDMAN.