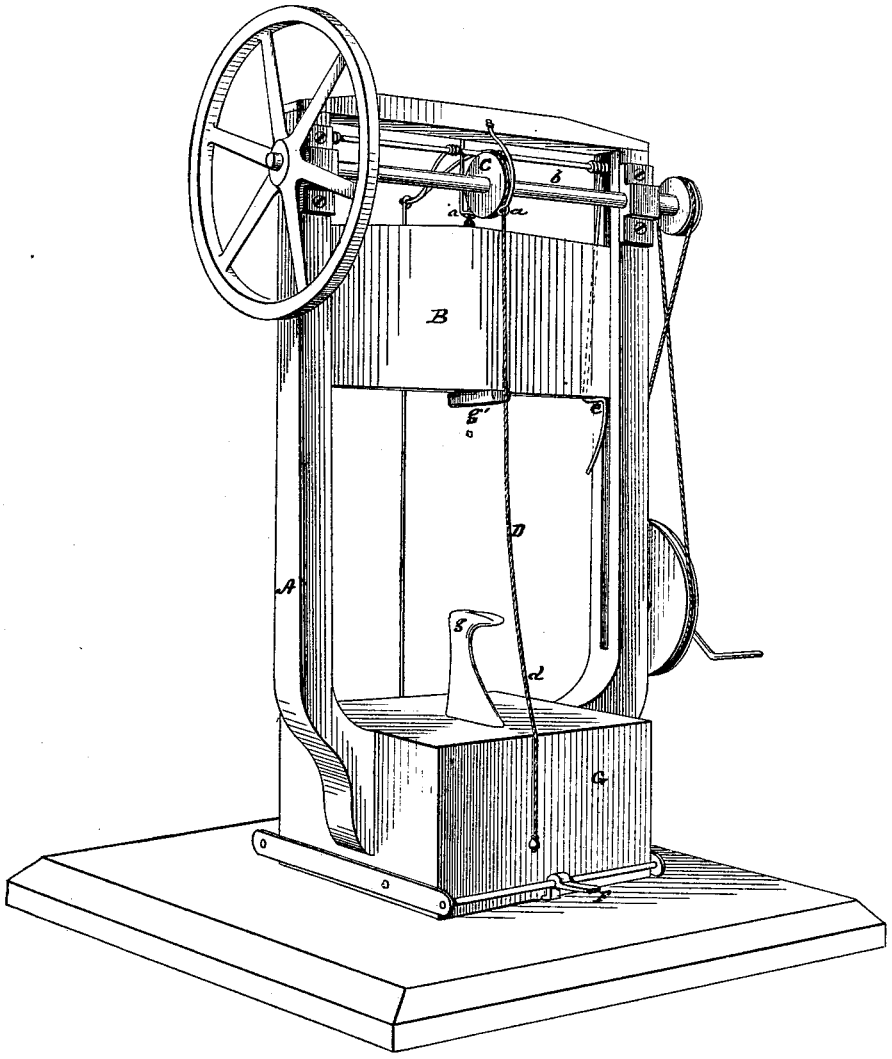
E. M. DICKINSON.

MACHINERY FOR FORMING AND LEVELING THE BOTTOMS OF SHOES.

No. 188,603. Patented March 20, 1877.



Witnesses,

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UNITED STATES PATENT OFFICE.

ELIJAH M. DICKINSON, OF FITCHBURG, MASSACHUSETTS.

IMPROVEMENT IN MACHINERY FOR FORMING AND LEVELING THE BOTTOMS OF SHOES.

Specification forming part of Letters Patent No. **188,603**, dated March 20, 1877; application filed February 14, 1877.

To all whom it may concern:

Be it known that I, ELIJAH M. DICKINSON, of Fitchburg, in the State of Massachusetts, have invented a new and useful Improvement in Machinery for Leveling and Forming Bottoms of Shoes; and I do hereby declare the following to be a clear, full, and exact description thereof, reference being had to the accompanying drawings, making part of this specification, in which the figure is a perspective view of my improvement with the hammer in position for striking the blow.

The object of my invention is the instantaneous leveling and forming bottoms of shoes by a heavy percussive blow; and it consists in the combination of devices hereinafter described and claimed.

To enable others skilled in the art to make and use my invention, I will proceed to describe the exact manner in which I have carried it out.

In the drawings, A represents a metal framework of sufficient strength to sustain the tilt-hammer B, made of any suitable metal, and operated in any manner desired. I have shown a horizontal shaft, *b*, which may be revolved by proper gearing, and by the application of hand or other power. On the center of the shaft *b* I rigidly attach the pulley-wheel C, provided with a groove upon its periphery, in which fits the raising cord or chain D, and is held in position by the guides *a a*. The pulley-wheel C may, however, have a flat face to accommodate a flat cord. By holding the end *d* of the cord taut, it is evident that the revolution of the pulley-wheel will raise the hammer to the desired height, where it is caught by the spring-catches *e e*, and held until it is required to strike the blow, when by a pressure by the foot upon the treadle-lever F the catches *e e* are forced out of position under the hammer, and the hammer is allowed to fall. To the anvil-block G, immediately under the hammer, I secure the removable last *g* by any convenient means, so that one size may be readily substituted for another when desired, and immediately above the metal last, and to the lower face of the hammer, I secure a removable die, *g'*, fitting to and corresponding in shape with the metal lasts. This die may also be changed at pleasure to suit the size of the metal last.

The operation of my invention is as follows: The hammer being raised and caught on the spring-catches *e e*, the shoe, the sole of which is to be straightened, is placed upon the last *g*, and the hammer is allowed to fall upon, and strike with a heavy percussive blow, the bottom of the shoe, instantaneously leveling and forming the same.

I am aware that dies for forming the bottoms of shoes are old, but heretofore they have been applied by pressing, which is a slow process, and one requiring much greater power than is required when the forming and leveling are done by a quick percussive blow.

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

1. In a shoe-bottom leveling and forming machine, the drop-hammer B, provided with the die *g'*, in combination with the anvil-block G, provided with the last *g*, all constructed to operate substantially as and for the purpose set forth.

2. The drop-hammer B, provided with the die *g*, in combination with the anvil-block G, provided with the last *g*, the cord D, shaft *b*, pulley C, and guides *a a*, substantially as and for the purpose set forth.

ELIJAH M. DICKINSON.

Witnesses:

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