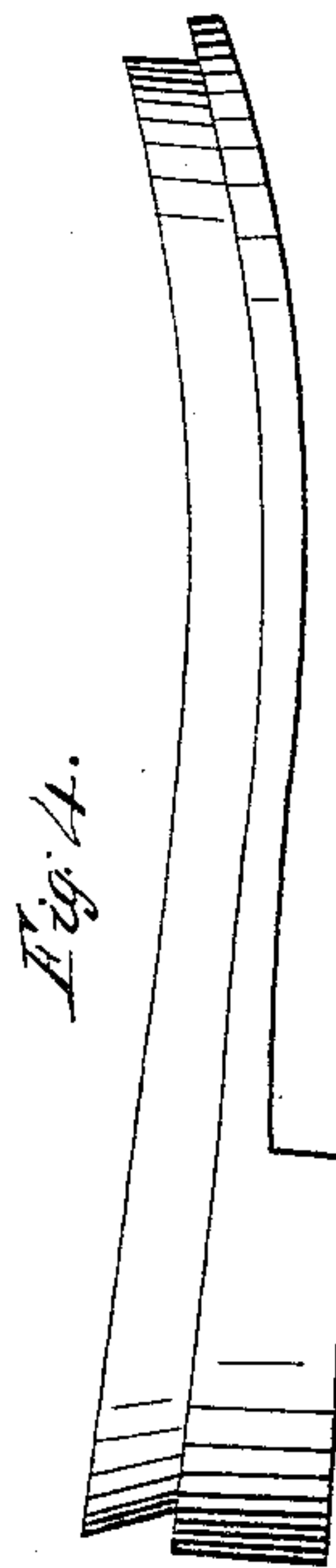
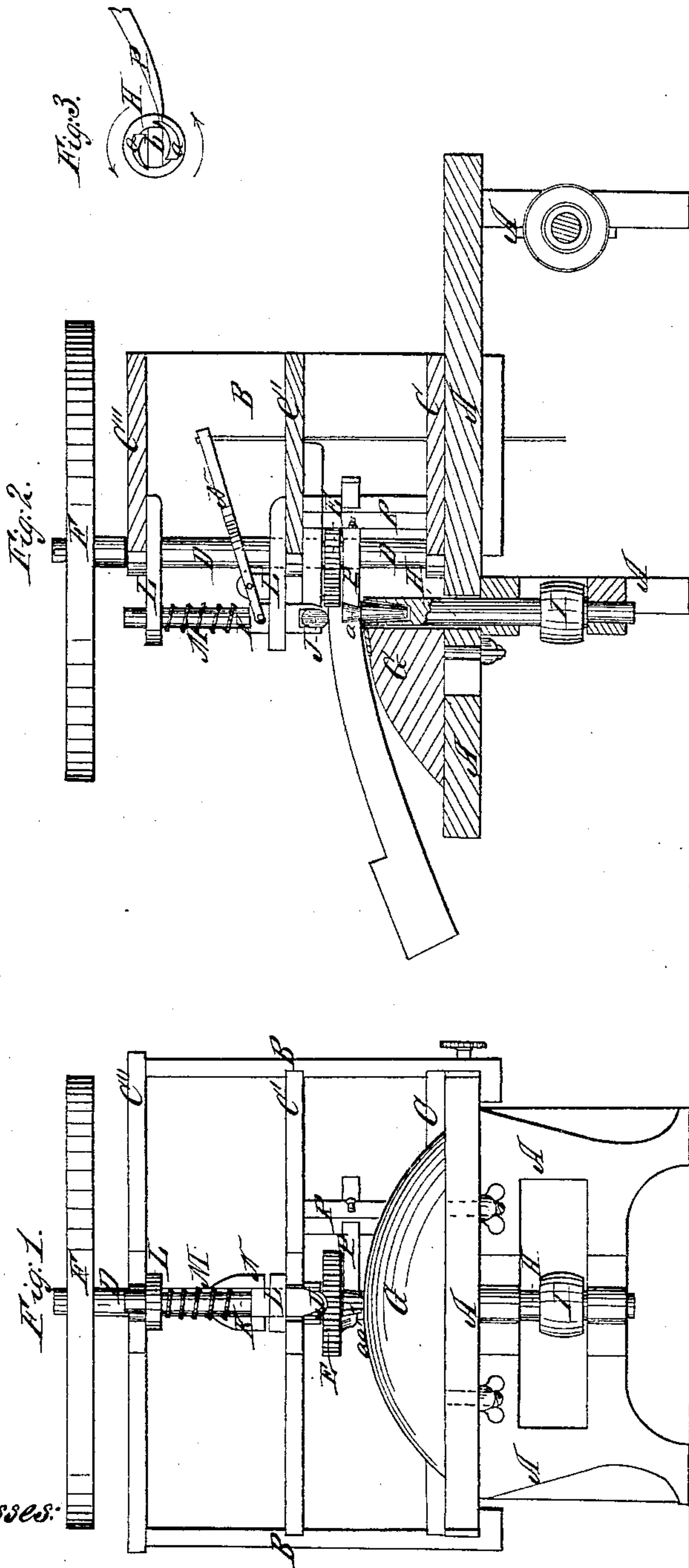


J. Kimball,

Wood Molding Machine.

N<sup>o</sup> 26,113.

Patented Nov. 15, 1859.



Witnesses:

W. Ware,  
Attest.

Inventor:

John Kimball

# UNITED STATES PATENT OFFICE.

JOHN KIMBALL, OF BOSTON, MASSACHUSETTS.

MACHINE FOR RABBETING WOODEN SOLES FOR SHOES.

Specification of Letters Patent No. 26,113, dated November 15, 1859.

*To all whom it may concern:*

Be it known that I, JOHN KIMBALL, of Boston, in the county of Suffolk and State of Massachusetts, have invented certain new and useful Improvements in Machinery for Rabbeting Wooden Soles for Shoes; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, forming a part of this description, in which—

Figure 1, represents a front elevation of the machine. Fig. 2, is a longitudinal vertical section of the same showing the operation of cutting the rabbet in the sole of a shoe. Fig. 3, is a plan view of the cutters and tool for preventing the wood from splintering during the operation. Fig. 4, shows the wooden sole when finished ready for receiving the upper.

Similar letters of reference indicate corresponding parts in the several figures.

This invention relates to improvements in machinery for forming a rabbet of a suitable character around the edge of the wooden soles in which the edges of the upper of the shoe are nailed for giving strength and durability to the shoe and for making it impervious to water, and giving to the shoe a neat appearance when finished.

My invention for the above mentioned purpose consists in a novel guide rest in connection with a pressure roller and feed wheel for keeping the sole in its proper position with respect to the cutters during the operation of forming the rabbet as herein-after described.

It further consists in combining with the rotary cutters a fixed tool which shall precede said cutters, and prevent the edges of the wooden sole from splintering as the cutters perform their work and the various curves of the sole are presented to them.

To enable others, skilled in the art, to understand my invention, I will proceed to describe its construction and operation.

In the drawings A, represents the table or bed for supporting the machinery about to be described. Proceeding up a suitable height is a frame B, with three shelves C, C', C'', placed at equal distances apart.

D is a vertical shaft having its bearings in the shelves C, C', C'', and carrying the feed roller E, which is rotated with a slow motion by the large belt wheel F, fixed on the top of its shaft D; on the periphery of this roller

are suitable serrations for preventing its slipping during the manipulations of rabbeting.

G, is a convex guide rest fixed upon the top of table A, over which the sole is guided. The crown of this rest is elevated sufficiently above the bed of the table to permit the sole to accommodate itself to the various positions it takes during the operation of rabbeting.

H, is a cutter stock passing up through the table to the crown of guide rest G, and receiving beveled cutters, *a, a*, which project from the crown of the guide rest the depth of the rabbet to be cut in the wooden sole, this cutter stock is rotated by a belt pulley I, under the table, over which passes a belt communicating with any suitable prime mover, so that the cutters will rotate with relatively the same speed as the feed wheel, so that the cutters will have ample time to perform their work as the sole is fed up to them. These cutters *a, a*, have their cutting edges slightly beveled inward so as to form a beveled rabbet upon the edges of the sole. By this means when the leather upper is nailed to the sole it will form a neat job, at the same time it will not be so liable to tear away from the nail heads, as if the surface of the rabbet was straight; these cutters are held in the head of the cutter stock by having their shanks tapered off or wedge shaped which fit in a corresponding cavity in the stock, and are secured there by a key *b*. These cutters being formed on the end of tapering shanks can be taken out of the cutter head and sharpened with facility by simply removing the wedge or key *b*.

Over the guide rest and cutters, is a pressure roller J, slightly rounding on its surface which is hung on the end of a vertical shaft K, which works in guides L, L, proceeding out from the shelves C', C'', a sufficient distance to permit the shaft J, to have a free vertical play in front of the feed roller E. This shaft K, with its pressure roller is held down upon the work by a helical spring M.

N is a lever having its fulcrum in the lower guide L, which is to be operated by a treadle (not shown in the drawings) for elevating the pressure roller, for removing and replacing the soles for receiving the rabbet and for raising the pressure roller on the heel of the sole, when it arrives at that point for cutting.



On the right side of the rotary cutters, as, clearly represented by Fig. 3, is a fixed tool P, with its end tapered to an edge and this edge beveled so as to correspond with the bevel on the cutters. The edge of this tool is brought up very close to the cutting edge of the cutters under the feed rollers E, still not sufficiently near them to affect their cutting. This tool is fixed by a screw, to a vertical post R and if necessary may be adjusted to or from the cutters. This tool serves a very important object and it is found necessary to prevent the edges of the wooden sole from splintering, or being chipped off, by the action of the cutters, particularly where the cutters cut against the grain of the wood or in turning very abrupt corners, if this tool or some provision similar to it was not employed it would be impossible for the work to be accomplished, with any degree of accuracy or nicety, this tool therefore constitutes a part of my invention when used for this special purpose.

The drawings represent the frame B, as being made adjustable on the table A, this is only a provision for removing the cutters from the stock for sharpening which may be done in any other convenient way.

The operation of rabbeting wooden soles, with this machine, I will briefly describe as follows. The wooden sole, represented by Fig. 4, of the drawings is first sawed out from a block the required shape and width; it is then placed on the guide rest G, and the pressure roller elevated by the foot acting upon its treadle; the edge of the sole is

then pressed against the cutters, and the pressure roller relieved; it is then kept steady against the cutters until the rabbet has commenced when the projecting edge will come in contact with the serrated surface of the feed roller and also against the end of tool P. The sole is then guided by the hands of the operator who has only to keep it close against the feed roller and to turn it as the cutting progresses, as the feed roller will move it along commensurate with the action of the cutters. The crown of the guide rest is elevated above the surface of the table sufficiently to prevent the sole from striking the table in the variety of positions which it will take during the operation of rabbeting; and its convexity will permit the sole to find its own bearings so that the rabbet will be cut regularly around the edge of the wooden sole.

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

1. The combination of the convex guide rest, G, with the pressure roller J, and feed roller E, when arranged substantially, as, and for the purpose set forth.

2. I claim in combination with the rotary cutters and feed roller E, the fixed tool P, when used in the manner and for the purposes herein set forth.

JOHN KIMBALL.

Witnesses:

H. WARE,  
ALFRED MUDGE.