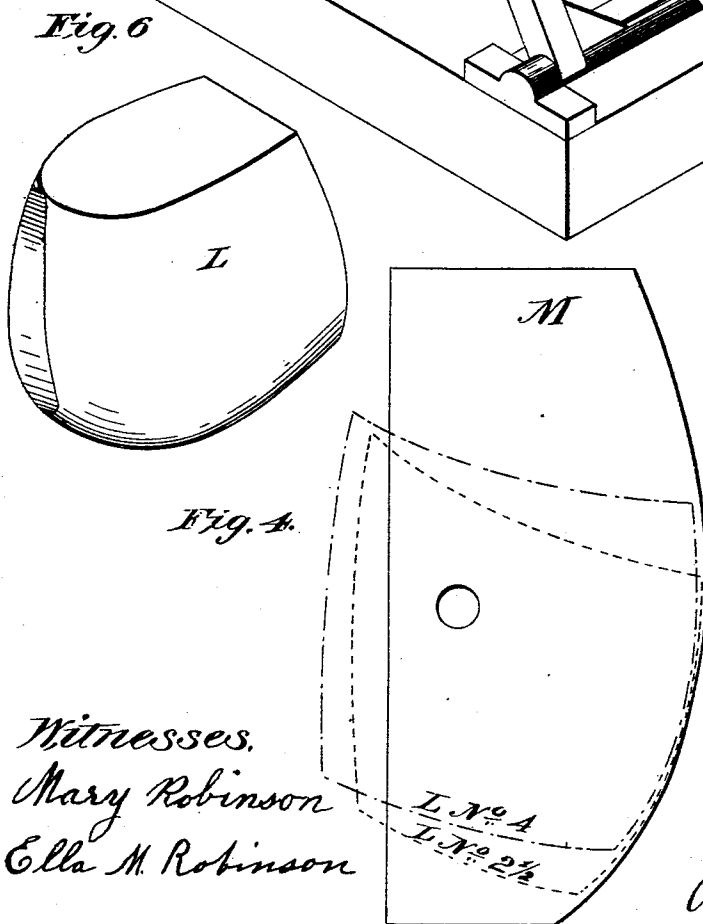
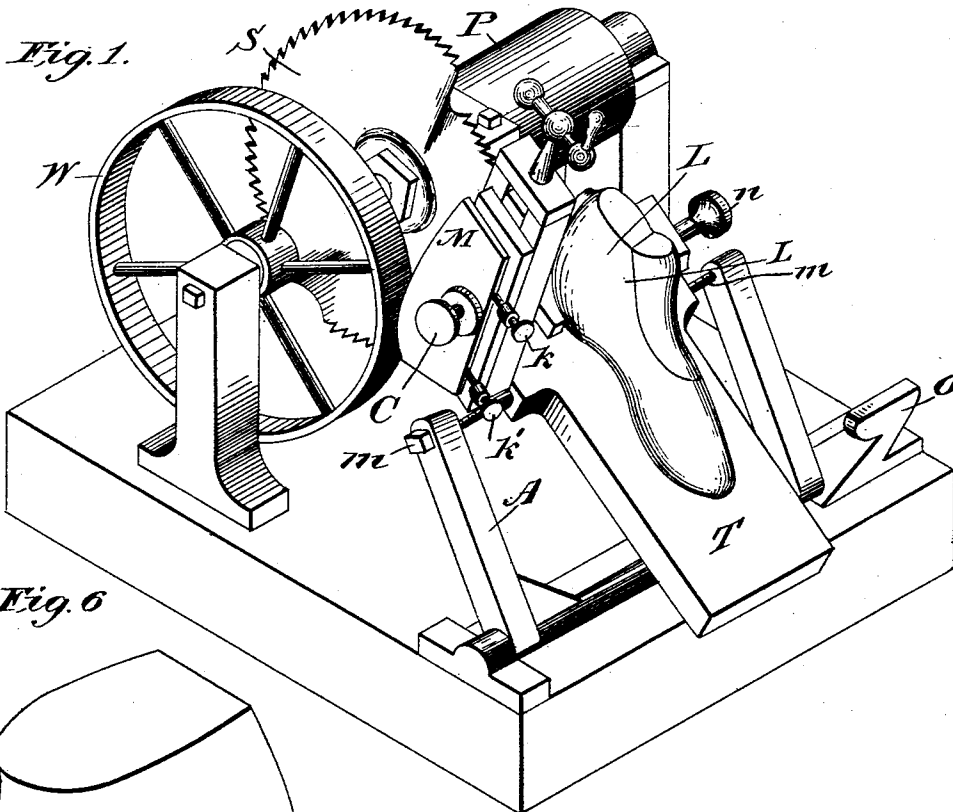


A. G. FITZ.
MACHINE FOR SHAPING HEELS OF LASTS.

No. 541,158.

Patented June 18, 1895.



Witnesses,
Mary Robinson
Ella M. Robinson

Inventor,
Amos G. Fitz
by
Almon Robinson
Atty.

(No Model.)

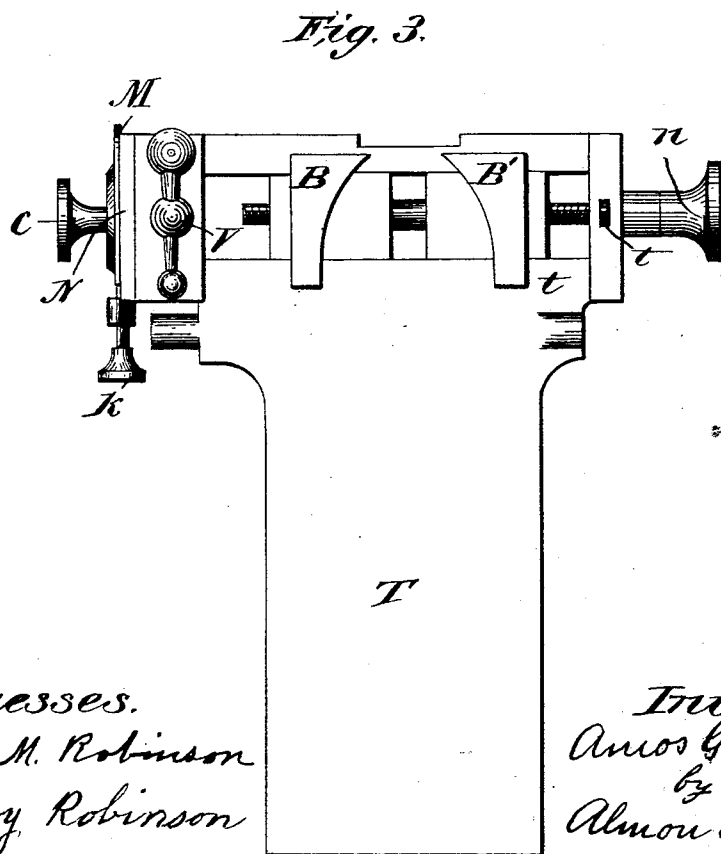
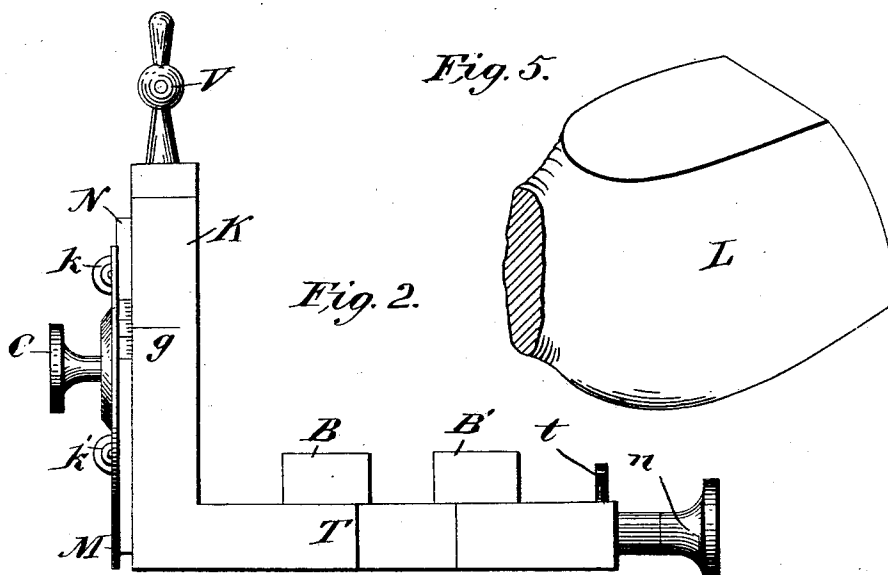
2 Sheets—Sheet 2.

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UNITED STATES PATENT OFFICE.

AMOS G. FITZ, OF AUBURN, MAINE.

MACHINE FOR SHAPING HEELS OF LASTS.

SPECIFICATION forming part of Letters Patent No. 541,158, dated June 18, 1895.

Application filed April 16, 1894. Serial No. 507,693. (No model.)

To all whom it may concern:

Be it known that I, AMOS G. FITZ, a citizen of the United States, residing at Auburn, in the county of Androscoggin and State of Maine, have invented certain new and useful Improvements in Machinery for Shaping the Heels of Lasts, of which the following is a specification.

My invention relates to the class of machines in which a rotary cutter of some sort is employed to remove, under control of a pattern, the stub left at the heel by the last lathe.

In such machines as heretofore constructed a separate pattern is provided for each size and style of last.

A principal object of my invention is to provide a construction which shall require but one pattern for all the lasts of a set, and my invention consists primarily in the combination with the other parts of such a trimming machine of a pattern whose working edge is a compound curve that contains in some part of its length the exact curve desired for each size of a set.

My invention further comprises a combination of parts for changing and accurately adjusting the position of this pattern to correspond with these different sizes.

My invention further comprises various details hereinafter fully set forth.

In the accompanying drawings, Figure 1 is a general view of the machine. Fig. 2 is an elevation of that side of the supporting-platform for the last which comes next to the saw. Fig. 3 is a plan of the same. Fig. 4 shows one of the patterns drawn to full size. On this figure are shown in dotted outline the heels of two lasts. Fig. 5 shows the heel of a last before trimming by my machine. Fig. 6 shows the same heel after it has been trimmed.

In the drawings L is the last.

T is a supporting platform pivoted at *m* and *m'* in the rocking frame A. At the front end of the platform T are the stops B, B', which slide in a groove and are moved to and from each other by a right and left hand screw which is clamped by the thumb screw *t*. The stop, *o*, limits the backward motion of the swinging frame.

K is a slotted standard upon which the sliding piece N, is moved up and down by the

screw V. Upon this piece, N, is clamped the model M by means of the screw C. When C is loosened M turns upon it as upon a pivot and is adjusted in angular position by the screws *k, k'*.

W is the model wheel against which the model M is pressed.

S is the rotary cutter driven by the pulley P. As shown, this cutter, S, is a saw whose opposite sides are bent in reverse directions.

At *g* in Fig. 2 are shown graduations upon the sliding piece N.

When I wish to use my invention I provide a supply of lasts of the same style and size which have been brought to the form shown in Fig. 5 by sawing off part of the lathe center stub with a circular saw. I then place upon the sliding piece N a pattern M which corresponds with the style of the lasts. I then turn the screw V until the line of the graduation *g*, which corresponds with the size of the last, comes opposite the index mark upon the standard. I then adjust the pattern M to an approximately correct angle by turning the screws *k, k'*, in and out and thereafter clamp it by tightening the screw C. I now adjust the stops B, B', to a distance which I judge to be a little less than that necessary to permit the saw S to cut the lasts to the full depth desired. Placing now the last L upon the table T, I press the heel against the stops B, B', swing the last against the saw and rock the table T upon its pivots *m, m'*, keeping the pattern M pressed against the pattern wheel W. I then swing the rocking frame A back against the stop O, remove the last and examine it. If the saw has cut nearer to either the top or the bottom, I readjust the angle of the pattern by means of the screws *k, k'*. When this angle is found correct I carefully move the stops B, B' farther apart until the saw S cuts deep enough, when it will have produced a surface curved to the exact outline of the finished heel and touching it at its center line as shown in Fig. 6. If the pattern M and the stops B, B', are now clamped in this position the machine can be depended upon to correctly shape any desired number of similar lasts. In making the pattern M, I copy upon the central portion the heel outline of the middle size of the set of lasts which corresponds with the pattern used in

the last lathe. I then extend this outline in both directions in a smooth curve, slightly increasing the curvature of the lower part and decreasing that of the upper. I now try
 5 the pattern in the machine, and if the extreme sizes show a noticeable difference in outline I flatten or round the pattern as necessary. This, like all the other curves of a last, is variable and arbitrary, and dependent
 10 upon the skill and judgment of the designer. For this reason the above method is to be preferred to the more tedious one of determining the outline of each size separately and then combining them into one curve.
 15 I have shown and herein claim a combination of parts for accurately adjusting the position of the pattern M; but a skilled workman can attain good results, though much less conveniently, by setting the pattern entirely
 20 by trial; and it is obvious that a mechanic skilled in the construction of machinery for shaping irregular surfaces might use in connection with my improved pattern a construction differing in some of its elements from
 25 that shown and yet obtain practically equivalent results.

Having now fully described my invention and the manner of using it, what I claim, and desire to secure by Letters Patent, is—

- 30 1. In a machine for automatically shaping the heels of lasts a pattern whose working surface is cut to a curve which includes in its length curves corresponding to all the different sizes of the same set.
- 35 2. In a machine for automatically shaping the heels of lasts a pattern whose working surface is cut to a curve which includes in its length curves corresponding to two or more different sizes of the same set.
- 40 3. The combination of a rotary cutter, a

support for the last which is free to move in two directions, one or more stops upon the support which fix the position thereon of the last, a pattern wheel, a pattern corresponding to the combined curves of the last and
 45 means of adjusting the pattern vertically and angularly, all as set forth.

4. In a machine for automatically shaping the heels of lasts a pattern having a compound curve adapted to two or more sizes, a
 50 vertically sliding piece upon which the pattern is pivotally mounted, a pair of screws upon the sliding piece for the angular adjustment of the pattern, means of adjusting the sliding piece vertically, and a graduation
 55 upon its edge for indicating the amount of adjustment, all as and for the purpose set forth.

5. In a machine for shaping the heels of lasts a pattern having a compound curve, 60 means of adjusting it vertically and angularly, a rocking frame and a support for the last and pattern pivotally mounted thereon.

6. In a machine for automatically shaping the heels of lasts, a supporting platform for
 65 the last which is free to move in two directions in the same plane, a curvilinear sheet metal pattern, a pattern wheel against which the pattern is pressed, and a pair of later-
 70 ally adjustable stops upon the supporting platform against which the heel of the last is pressed; all acting together to determine the position of the last heel.

In testimony whereof I have hereunto set my hand this 22d day of March, 1894.

AMOS G. FITZ.

Witnesses:

GRACE E. FITZ,
 EDNA L. DREW.