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PATENTED JUNE 16, 1908.

O. ASHTON.

MACHINE FOR OPERATING UPON THE TOE PORTIONS OF BOOTS OR SHOES.

APPLICATION FILED JAN. 22, 1907.

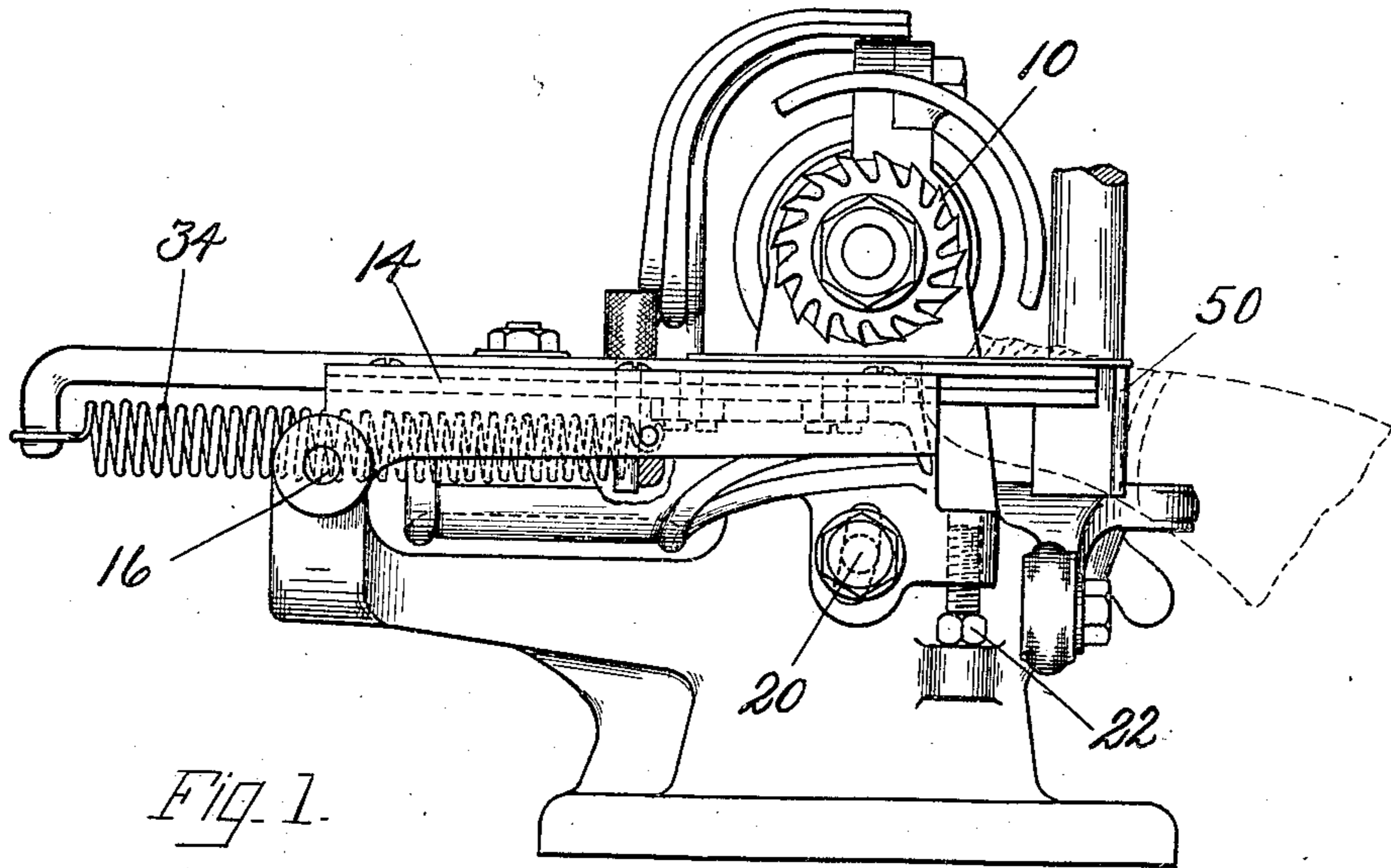


Fig. 1.

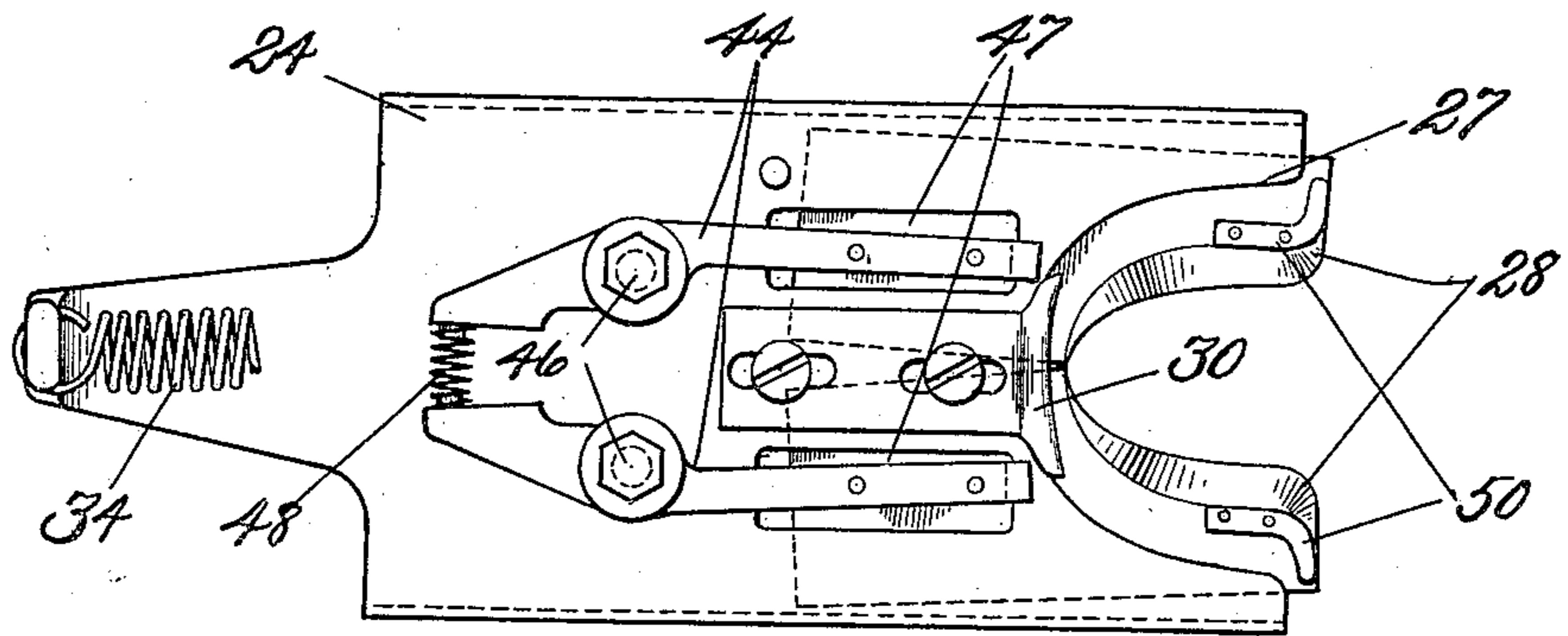


Fig. 2.

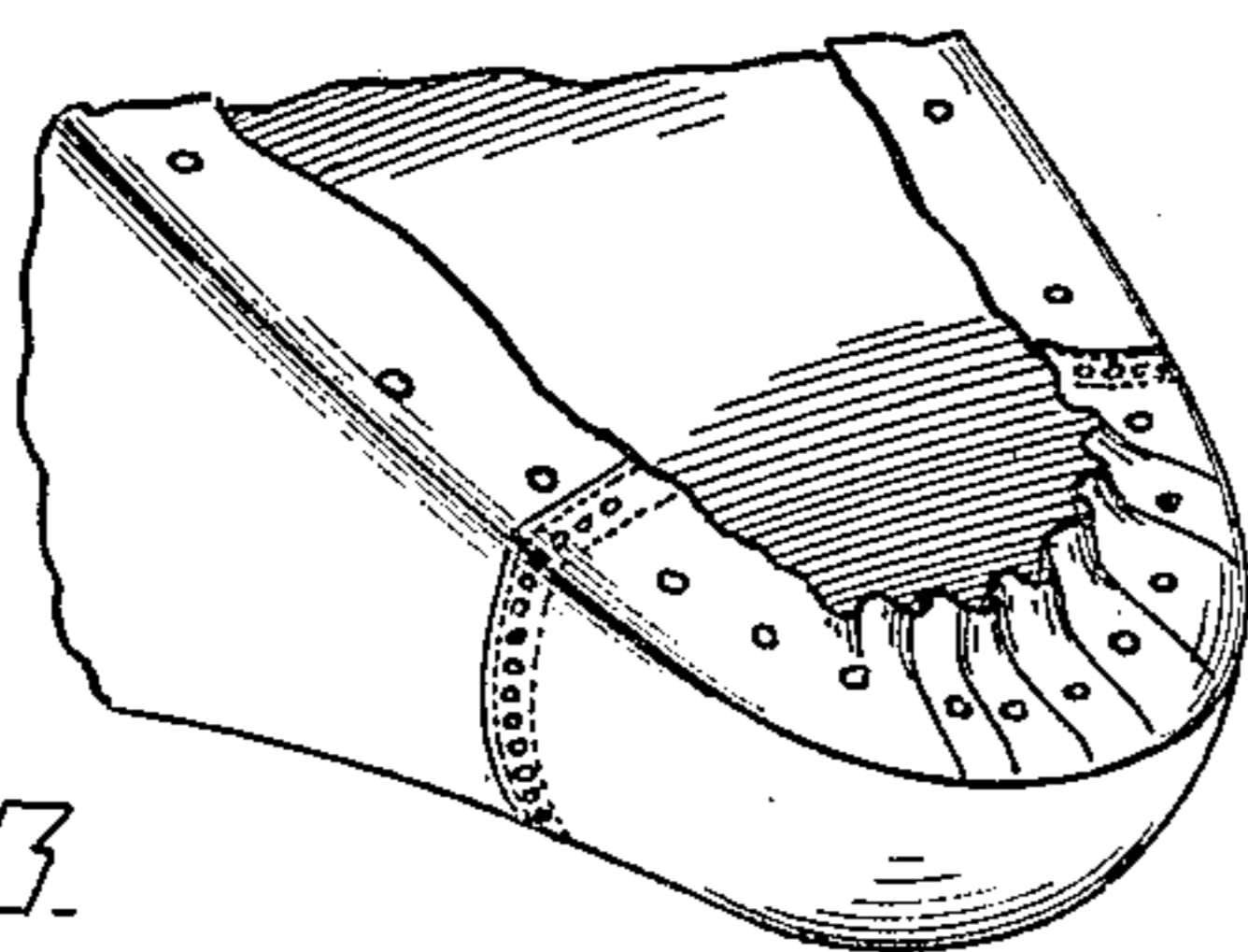


Fig. 3.

WITNESSES.

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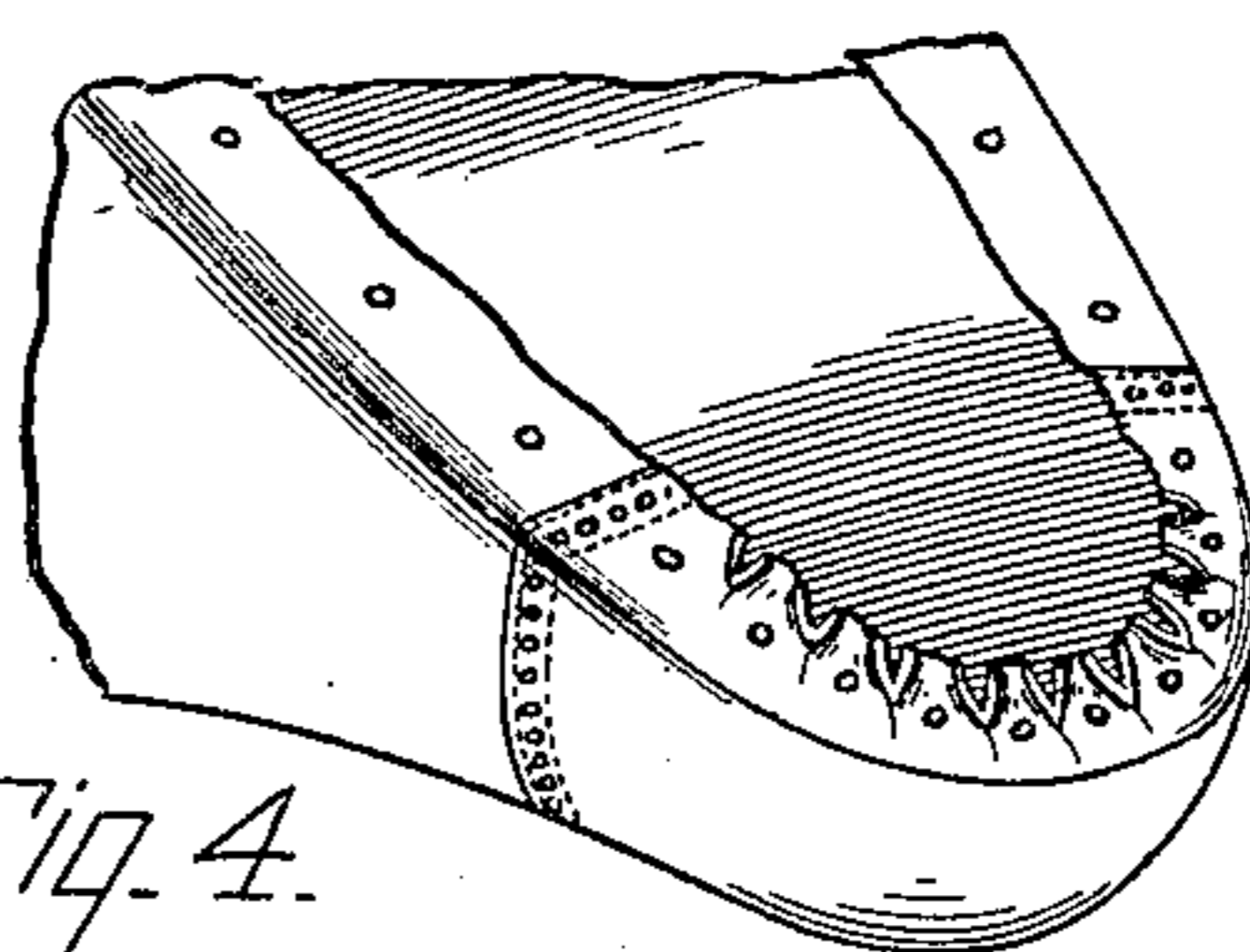


Fig. 4.

INVENTOR.

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# UNITED STATES PATENT OFFICE.

ORRELL ASHTON, OF LAWRENCE, MASSACHUSETTS, ASSIGNOR TO UNITED SHOE MACHINERY COMPANY, OF PATERSON, NEW JERSEY, A CORPORATION OF NEW JERSEY.

MACHINE FOR OPERATING UPON THE TOE PORTIONS OF BOOTS OR SHOES.

No. 891,131.

Specification of Letters Patent.

Patented June 16, 1908.

Application filed January 22, 1907. Serial No. 353,508.

*To all whom it may concern:*

Be it known that I, ORRELL ASHTON, a citizen of the United States, residing at Lawrence, in the county of Essex and Commonwealth of Massachusetts, have invented certain Improvements in Machines for Operating upon the Toe Portions of Boots or Shoes, of which the following description, in connection with the accompanying drawings, is a specification, like reference characters on the drawings indicating like parts in the several figures.

This invention relates to machines for operating upon the toe part of a boot or shoe after lasting. The invention is herein shown as an improvement on the trimming machine disclosed in a prior application for United States Patent filed June 26, 1905, Serial No. 267,074, but it may be applied if desired to other forms of machines for reducing the projecting portions of an upper upon the bottom of a shoe at the toe.

The machine shown in said prior application includes a rotary cutter and a gage arranged for movement beneath the cutter in a plane parallel to the axis of the cutter. The gage is shaped to receive the toe part of a shoe and is arranged to permit projections on the bottom of said toe part to extend above the upper surface of the gage. A rest is provided adjacent to the gage in position to be engaged by the toe tip. In the movement of the gage and shoe beneath the cutter, projecting portions of the upper upon the bottom of the toe part which extend above the gage are brought into the path of the cutter and are evenly trimmed, the shoe being manually held by the operator in engagement with said rest and gage.

It is desirable that prior to the action of the cutter on the shoe the toe part of the shoe be accurately positioned with relation to the cutter. If the shoe approach the cutter too closely, too much stock may be removed; if the bottom of the shoe is too far away from the axis of the cutter too little stock is severed from the shoe. It is important therefore that the gage against which the bottom of the shoe is held should be of the proper width for if the gage is too wide there is liability of the shoe being mutilated or improperly trimmed and if it is too narrow the trimming operation is incomplete.

An object of the present invention is to improve the machine of said prior application

to facilitate an accurate trimming operation. To this end the invention includes a gage formed for engagement with the bottom of a shoe at the toe and arranged for adjustment in width to receive shoes varying in size and means for controlling the width of the gage in accordance with the width of the toe part of the shoe to be trimmed. The arrangement shown is such that the gage may be adjusted to the precise width required to secure the best results. It is desirable that the gage project inwardly over the edge of the shoe, since such an arrangement insures that the portion of the shoe covered by the gage will not come in contact with the cutter, and also facilitates a proper positioning of the shoe upon the gage.

To secure the best results, the gage should project inwardly over the edge of the shoe as far as possible without covering the upwardly projecting portions of the upper, or interfering with the trimming of so much of such projecting portions as it is desired to remove. The arrangement herein disclosed is such that a uniform projection of the gage over the edge of the shoe is insured, regardless of the size of the shoe being trimmed. The construction is preferably such that in the presentation of the shoe to the machine the gage is adjusted in width by the movement of the shoe into position upon the gage. Liability is thus avoided of an operator neglecting to adjust the gage when circumstances render adjustment desirable. In the construction herein shown gage sections into which the gage is divided longitudinally are held yieldingly toward each other and are provided with members arranged to be engaged by the sides of the shoe at the toe as it is presented to the machine. These members constitute guides for positioning the shoe laterally with relation to the gage and also coöperate with the shoe to control the width of the gage since in the movement of the toe part of the shoe between said members, the gage sections are forced apart to a distance dependent on the width of the toe part. The toe rest adjacent to the gage sections insures that the toe of the shoe will not be moved too far between the controlling members.

Other features of the invention will be hereinafter described, and defined in the claims.

In the drawings which illustrate a machine

constituting one embodiment of the invention, Figure 1 is a view in side elevation of the machine; Fig. 2 is a bottom plan view of a slide which carries the gage and toe rest; Fig. 3 is a view showing a toe tip before being acted upon by the machine; and Fig. 4 is a view showing a toe after being trimmed.

In the machine herein illustrated a rotary cylindrical cutter 10 is suitably journaled for movement about a horizontal axis. A frame 14 is arranged below the cutter 10, said frame being pivoted at its rear end upon bearings 16 carried by the base of the machine. The forward end of the frame 14 is clamped in fixed position by a bolt 20 passing through a slot in the frame and entering the base of the machine. A set screw 22 is provided to facilitate adjustment of the frame 14. The frame 14 is provided with horizontal guideways formed to receive a plate 24 arranged for reciprocation beneath the cutter 10. The forward end of the plate 24 is provided with a recess 27 as shown in Fig. 2. Gage sections 28 are mounted upon the upper face of the plate 24, said sections forming between them at their forward ends a recess substantially of the shape of the toe of a shoe, said recess being located above the recess 27. A toe rest 30 is secured to the lower face of the plate 24, said toe rest being arranged for adjustment longitudinally of said plate. A spring 34 is provided to hold the plate 24 toward the front of the machine. The construction thus far described is the same as that disclosed in the prior application above referred to.

The gage sections 28 are secured to arms 44 pivoted at 46 upon the lower face of the plate 24, apertures 47 being provided in the plate 24 to permit movement of said sections 28 and arms 44. A spring 48 is arranged between the rear ends of the arms 44 to hold the forward ends of the gage sections 28 together. Each gage section 28 is provided at its forward end with a depending member 50 arranged to be engaged by the side of the shoe at the toe as it is presented to said gage sections.

Each member 50 is arranged at a distance from the inner edge of its gage section, this distance being such as to bring said inner edge into proper relation to the edge of the shoe. The members 50 are shown of right angle shape in horizontal section and the corners with which the shoe engages as it is moved horizontally between them are rounded, as shown in Fig. 2.

In the operation of the machine herein shown and described, the toe part of a shoe is advanced, sole uppermost, by the operator horizontally between the members 50 into engagement with the toe rest and it is also held upwardly against the gage so that the upper of the shoe bears on the edge of the recess formed between the gage sections. It

will be seen that in its movement into operative relation to the gage, the shoe adjusts the gage to a proper width by engagement with the members 50, and that whatever be the width of the shoe the projection of the gage over its edge will be the same. The shoe at this stage is without the path of the cutter. The shoe is then moved with the gage and rest beneath the cutter which is in continuous rotation and the projections extending above the top face of the gage are trimmed by the cutter, the amount of surplus stock removed being dependent upon the extent to which the shoe is allowed by the gage to project upwardly into the path of the cutter.

In the present machine not only is the relative position of the gage sections controlled by engagement of the members 50 with the shoe and the opening between the gage sections thus caused to be of the proper width, but also the shoe is guided into proper relation to the gage by said members. It will be apparent from Fig. 1 that the members 50 extend downwardly from the gage sections 28 to such a distance that a shoe may be readily advanced between said members. It will be observed that if the shoe is advanced between the members 50 into position upon the toe rest and is held upwardly against the gage sections, a proper position of the toe part of the shoe with relation to the gage is insured. The contact of the members 50 with the sides of the shoe in its movement between them is also of advantage in smoothing down the upper at the side edges of the toe part. It will be obvious that said members have a tendency to smooth out any wrinkles or bunches in the upper at these points.

In the gage herein shown the sections are arranged for independent yielding movement so that one section may be moved by the shoe further away from the longitudinal median line of the plate 24 than is the other. This is of advantage in facilitating the presentation to the machine of shoes the toe parts of which differ considerably in shape. As will be seen, the gage sections as arranged permit the toe part of a shoe to be advanced between them into engagement with the toe rest in a path at right angles to the axis of the cutter, regardless of the contour of said toe part.

Having described my invention, what I claim as new and desire to secure by Letters Patent of the United States is:—

1. A machine for reducing projecting portions of an upper upon the bottom of a shoe at the toe, having in combination, a tool for separating from the shoe the surplus material to be removed, a gage formed to engage the bottom of the shoe at the toe and present the projecting portions of the upper to the tool and arranged for adjustment in width to receive shoes varying in size, and means for ad-

justing said gage constructed and arranged to insure adjustment thereof in accordance with the width of the toe part to be trimmed prior to the action of the tool upon the shoe.

5 2. A machine for reducing projecting portions of an upper upon the bottom of a shoe at the toe, having in combination a tool for separating from the shoe the surplus material to be removed, a gage formed to receive  
10 the toe part of a shoe, adjustable in width to receive shoes varying in size and arranged to maintain the shoe normally out of the path of the tool and to move with the shoe to permit said projecting portions to be  
15 brought within the path of the tool, and means controlled by the shoe for adjusting said gage in accordance with the width of the toe part to be trimmed arranged to become effective prior to the movement of the shoe  
20 into the path of the tool.

3. A machine for reducing projecting portions of an upper upon the bottom of a shoe at the toe, having in combination a tool for separating from the shoe the surplus material  
25 to be removed, a gage divided longitudinally into a plurality of relatively movable sections arranged to receive the toe part of a shoe between them and to project inwardly over the edge of the shoe, means for holding said sections yieldingly toward each other and mem-  
30 bers carried by said sections arranged for engagement with the sides of the shoe for moving said sections apart into effective position.

4. A machine for reducing projecting portions of an upper upon the bottom of the shoe at the toe, having in combination a tool for separating from the shoe the surplus material to be removed, a gage formed to engage  
40 the bottom of a shoe at the toe and to project inwardly over the edge of the shoe, and arranged to present the projecting portions of the upper to the tool, and members arranged to engage opposite sides of the shoe and position relatively the shoe and the gage in a  
45 lateral direction.

5. A machine for reducing projecting portions of an upper upon the bottom of a shoe at the toe, having in combination a tool for separating from the shoe the surplus material  
50 to be removed, a gage formed to receive the toe part of a shoe and to project inwardly over the edge of the shoe and arranged to present the projecting portions of the upper

to the tool, members arranged to engage opposite sides of the shoe, and position the shoe  
55 laterally with relation to the gage, and a toe rest for positioning the shoe longitudinally with relation to the gage.

6. A machine for reducing projecting portions of an upper upon the bottom of a shoe  
60 at the toe, having in combination a tool for separating from the shoe the surplus material to be removed, a gage for presenting the projecting portions of the upper to the tool formed to engage the bottom of the shoe at  
65 the toe, and to project inwardly over the edge of the shoe, and means for controlling said gage arranged to insure a uniform projection over said edge for shoes varying in  
70 size.

7. A machine for reducing projecting portions of an upper upon the bottom of a shoe at the toe, having in combination a tool for separating from the shoe the surplus material to be removed, a gage formed to engage  
75 the bottom of the shoe at the toe and to project inwardly over the edge of the shoe, and arranged to present the projecting portions of the upper to the tool and constructed for adjustment in width to receive shoes varying  
80 in size, and means for adjusting said gage actuated by the movement of the shoe into operative relation to the gage.

8. A machine for reducing projecting portions of an upper upon the bottom of a shoe  
85 at the toe, having in combination, a tool for separating from the shoe the surplus material to be removed, a gage divided longitudinally into a plurality of sections arranged to receive the toe part of a shoe between them and  
90 to project inwardly over the edge of the shoe and constructed for independent movement laterally of the shoe, means for holding said sections yieldingly toward each other and members carried by the sections arranged  
95 for engagement with the sides of the shoe for moving said sections apart into effective position.

In testimony whereof I have signed my name to this specification in the presence of  
100 two subscribing witnesses.

ORRELL ASHTON.

Witnesses:

BERNARD BARROWS,  
H. DORSEY SPENCER.