

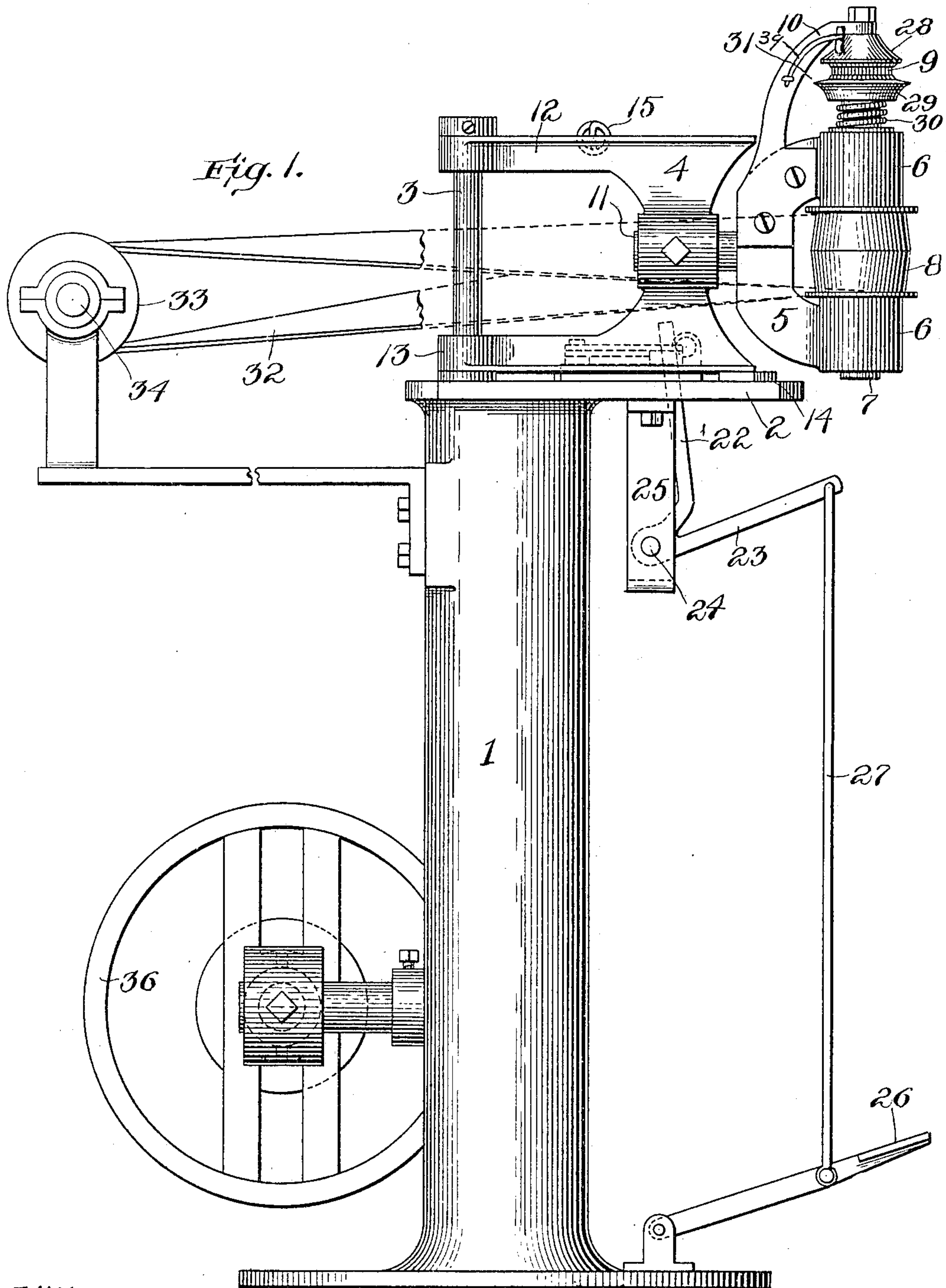
No. 818,637.

PATENTED APR. 24, 1906.

W. F. PACKARD.
SOLE EDGE TRIMMING MACHINE.

APPLICATION FILED OCT. 31, 1904.

2 SHEETS—SHEET 1.



Witnesses:
Arthur F. Randall
M. A. Jones

Inventor:
William F. Packard,
by *Geo. H. Maxwell*
Attorney.

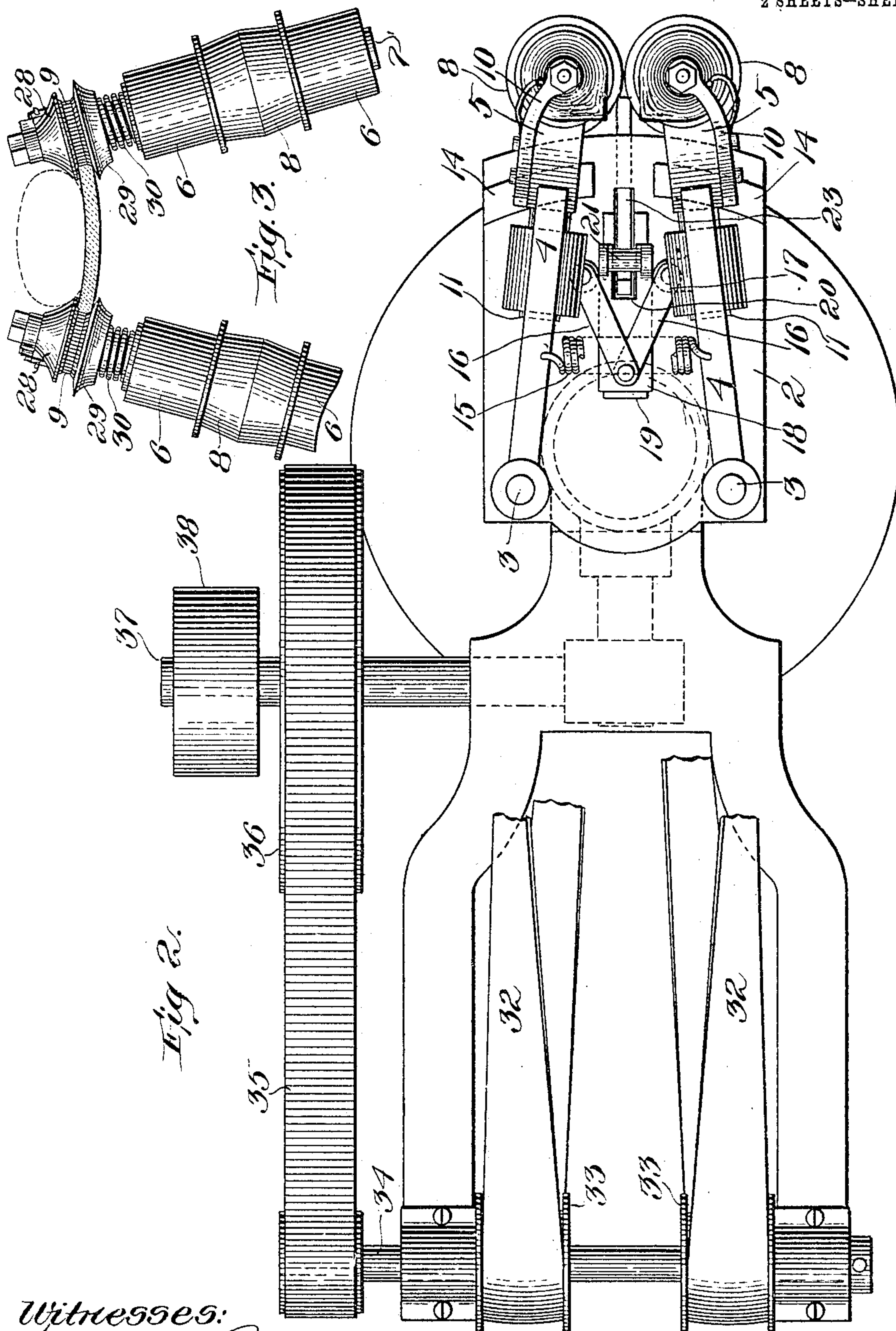
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by Geo. St. Maxwell
Attorney.

UNITED STATES PATENT OFFICE.

WILLIAM F. PACKARD, OF BROCKTON, MASSACHUSETTS, ASSIGNOR OF
ONE-HALF TO CHARLES E. FIELD, OF BROCKTON, MASSACHUSETTS.

SOLE-EDGE-TRIMMING MACHINE.

No. 818,637.

Specification of Letters Patent.

Patented April 24, 1906.

Application filed October 31, 1904. Serial No. 230,681.

To all whom it may concern:

Be it known that I, WILLIAM F. PACKARD, a citizen of the United States, residing at Brockton, in the county of Plymouth and State of Massachusetts, have invented an Improvement in Sole-Edge-Trimming Machines, of which the following description, in connection with the accompanying drawings, is a specification, like numerals on the drawings representing like parts.

My invention has for its object the provision of means for quickly, accurately, and neatly trimming the edges of a boot or shoe sole.

Stated in general terms, my invention comprises opposite rotary cutters mounted at the ends of arms swinging on fixed pivots and held yieldingly together for simultaneously engaging the opposite edges of a sole, said cutters having an edge guide for engaging the crease between the upper and sole for guiding the cutters and also having means for maintaining the sole in correct position and being preferably adjustable in said arms to vary the angle or style of trimming.

Further advantages and details of construction will be pointed out in the course of the following description, reference being had to the accompanying drawings, in which I have shown a preferred embodiment of my invention, the latter being more particularly defined in the appended claims.

In the drawings, Figure 1 is a view in side elevation of one embodiment of my invention. Fig. 2 is a top plan view thereof, and Fig. 3 is a fragmentary detail illustrating the adjustability and operative relation of the cutter-heads and cutters.

Carried by a suitable base or pedestal 1 is a head or shelf 2, provided with opposite fixed pivots 3 3, on which are pivotally mounted arms 4, each carrying a cutter-head or cutter-supporting frame 5, having heavy journal-bearings 6, or a vertical shaft 7, on which is mounted a pulley 8 between said bearings 6 and a cutter 9 above said bearings, being steadied by a projection 10 of said arm 5 engaging the upper end of the shaft 7.

The cutter-head 5 is horizontally journaled at 11 in the outer ends of said arms 4, and the latter have a strong frame-like construction comprising an upper portion 12 and a lower portion 13, the latter sliding at

its outer end on ways 14, and said arms are held yieldingly toward each other by a heavy spring 15. At their lower ends the arms 4 are connected by a toggle comprising links 16, pivoted at one end to ears 17 and at their other ends pivoted to a slide 18, moving longitudinally on a way 19 on the upper side of the head 2. At its forward end the slide 18 is slotted at 20 and carries an antifriction-roll 21, adapted to be engaged by the upper end 22 of a bell-crank 23, pivoted at 24 to a hanger 25, extending from said head 2, said bell-crank 23 being operated by a treadle 26, connected thereto by a link 27.

Above each cutter 9 I provide a yielding edge guide or pattern-flange 28, adapted to follow the crease between the upper and the sole for limiting the inward cutting action of the cutter-knife, and thereby making the sole conform to the desired pattern or style of the shoe, and beneath each cutter 9 is a yielding flange or work-rest 29, held normally upward by a spring 30, said flange or work-rest being beveled on its upper edge, as shown at 31, to permit the work always to enter readily. Said cutters are driven by opposite belts 32, connecting their pulleys 8 with pulleys 33 on a shaft 34, driven by a belt 35 from a belt-pulley 36 on the driving-shaft 37, which also carries a pulley 38 to be belted to the counter-shaft of the building.

The operation of my edge-trimming machine will readily be understood from the foregoing description. The operator seizes the shoe to be trimmed and first depresses the treadle 26, so as to separate the cutters, then quickly engaging the shoe adjacent the shank at its opposite edges with the respective cutters, the edges of the sole readily entering between the guide-flange or edge 28 and the beveled work-support 29, the edge-guides 28 simultaneously follow around the crease of the shoe adjacent the sole, thereby permitting the edge of the latter to be trimmed to the right extent only. As the sole is guided and held the flange or rest 29 yields downwardly for the thick portions thereof and also holds the sole firmly in position and prevents any wavering movement or uncertainty of trimming operation. When the sole has been trimmed at its opposite sides, the cutters approach each other at the toe end of the shoe, and the workman quickly gives the shoe a

half-swing one way and then the other, thereby rounding the toe properly against the cutters before withdrawing the sole from between the two flanges 28 29. If it is desired to change the bevel of the cut edge of the sole, the cutter-heads are adjusted to the required angle by turning them slightly in their bearings 11 in the swinging arms 4. The operator has it within his power to regulate to an appreciable extent the trimming by using the treadle for varying the pressure of the edge-guides 28, due to the spring 15 upon the crease between the upper and sole. Usually the cutters will be permitted to follow around the shoe without any treadle action. The longitudinal inner edges of the guides 28 are held in normal position capable of yielding slightly by springs 39 and engage with the shoe for a sufficient length to prevent the cutters from following any slight irregularity of sewing or surface, but are rounded off at their forward ends to facilitate the quick swinging movement above explained for rounding the toe.

By my invention great rapidity of work is possible, as the cutters being driven at a very high speed the operator is required simply to depress the treadle so as to enable him to put the shoe in place toe forward in engagement with the cutters at the shank of the shoe and then merely draw the shoe toward him, terminating the movement with a quick swinging of the shoe on its toe as a pivot, thereby turning said toe first against one cutter and then against the other cutter. This quick simple movement serves to finish the edge-trimming of the shoe. The work is smooth and uniform, as no jumping or irregularity of finish is possible, because of any thick portions or hard portions of sole-leather, as the trimming does not depend upon any hand-pressure of the sole against the cutter, and for the same reason there can be no uncertainty or irregularity as to the bevel or angle of trimming, which is necessarily uniform, as the opposite edges are held in direct engagement simultaneously with the opposite cutters guided by the shoe itself.

Another main object had in view is the elimination of complicated parts and construction. It will be seen that there is practically nothing to get out of order or to require adjustment, as everything is substantially automatic.

It will be understood that my machine is capable of many variations in form, construction, and combination of parts without departing from the spirit and scope of the invention, and accordingly I do not intend to limit the latter except as expressed in the claims, taken in connection with this specification.

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

1. A sole-edge trimmer, comprising opposite arms mounted to swing on fixed pivots,

rotary cutters, shafts, and pulleys carried in the free ends of said arms, a spring normally holding said cutters toward each other, and treadle mechanism for positively separating said cutters at will.

2. A sole-edge trimmer, comprising cutters movable toward and from each other, edge-guides movable with said cutters for engaging the opposite sides of the shoe and automatically directing the trimming action of said cutters by said engagement with the shoe, and yielding means normally holding said cutters toward each other and maintaining said edge-guides in engagement with the shoe.

3. A sole-edge trimmer, comprising opposite arms mounted to swing toward and from each other, and each provided with a cutter and with an edge-guide for bearing directly on the shoe and directing the cutting action, and with a yielding work-rest for engaging the sole opposite the edge-guide, yielding means for yieldingly pressing said edge-guides in unremitting engagement with the shoe on opposite sides thereof, and means for rotating said cutters.

4. A sole-edge trimmer, comprising opposite cutters for simultaneously engaging the opposite edges of a sole, yielding means for maintaining said cutters under a tendency to move toward each other, and treadle mechanism for controlling at will the action of said yielding means.

5. A sole-edge trimmer, comprising opposite cutters mounted to move toward and from each other, means for rotating them, yielding means normally holding said cutters toward each other, said cutters being at all times free to move toward each other into engagement with the opposite edges of the sole, and means carried by said cutters for supporting a shoe at its opposite sides in proper position for trimming.

6. A sole-edge trimmer, comprising opposite cutters mounted to swing about fixed pivots, means for manually separating said cutters to receive a sole between them, and automatic means for bringing said cutters together for trimming the toe as the shoe is pulled by the operator from between the cutters.

7. A sole-edge trimmer, comprising opposite arms swinging about fixed pivots, rotary cutters carried by said arms, a tension-spring connecting said arms, and manual separating means therefor, said cutters being provided with means for simultaneously engaging the opposite sides of a shoe-sole at its opposite edges.

8. A sole-edge trimmer, comprising swinging arms carrying cutters at their free ends, means for swinging said arms toward each other, means carried by said cutters for directing the extent of cutting action thereof, a toggle connecting said arms, and a treadle for operating said toggle.

9. A sole-edge trimmer, comprising opposite cutters for simultaneously engaging the opposite edges of a sole, and edge-guides to engage the shoe for guiding said cutters, said
5 edge-guides having a longitudinal edge adjacent the shoe for preventing the cutters from following a slight unevenness in the shoe.

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

WILLIAM F. PACKARD.

Witnesses:

GEO. H. MAXWELL,
M. A. JONES.