A. W. MATTHEWS.

MACHINE FOR USE IN THE MANUFACTURE OF BOOTS AND SHOES.

APPLICATION FILED JULY 3, 1908.

999,050. **Patented July 25, 1911.**

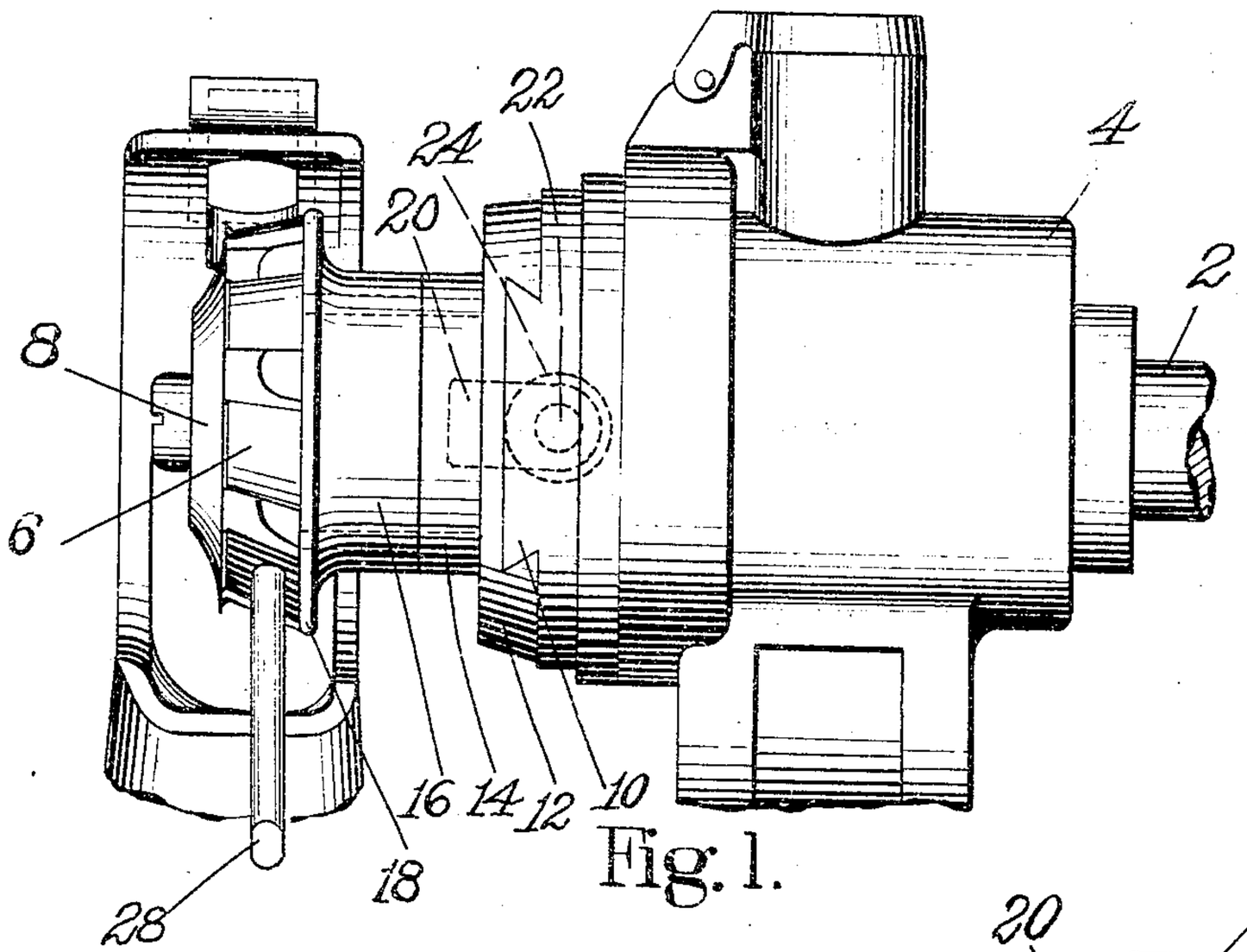

Fig. 1.

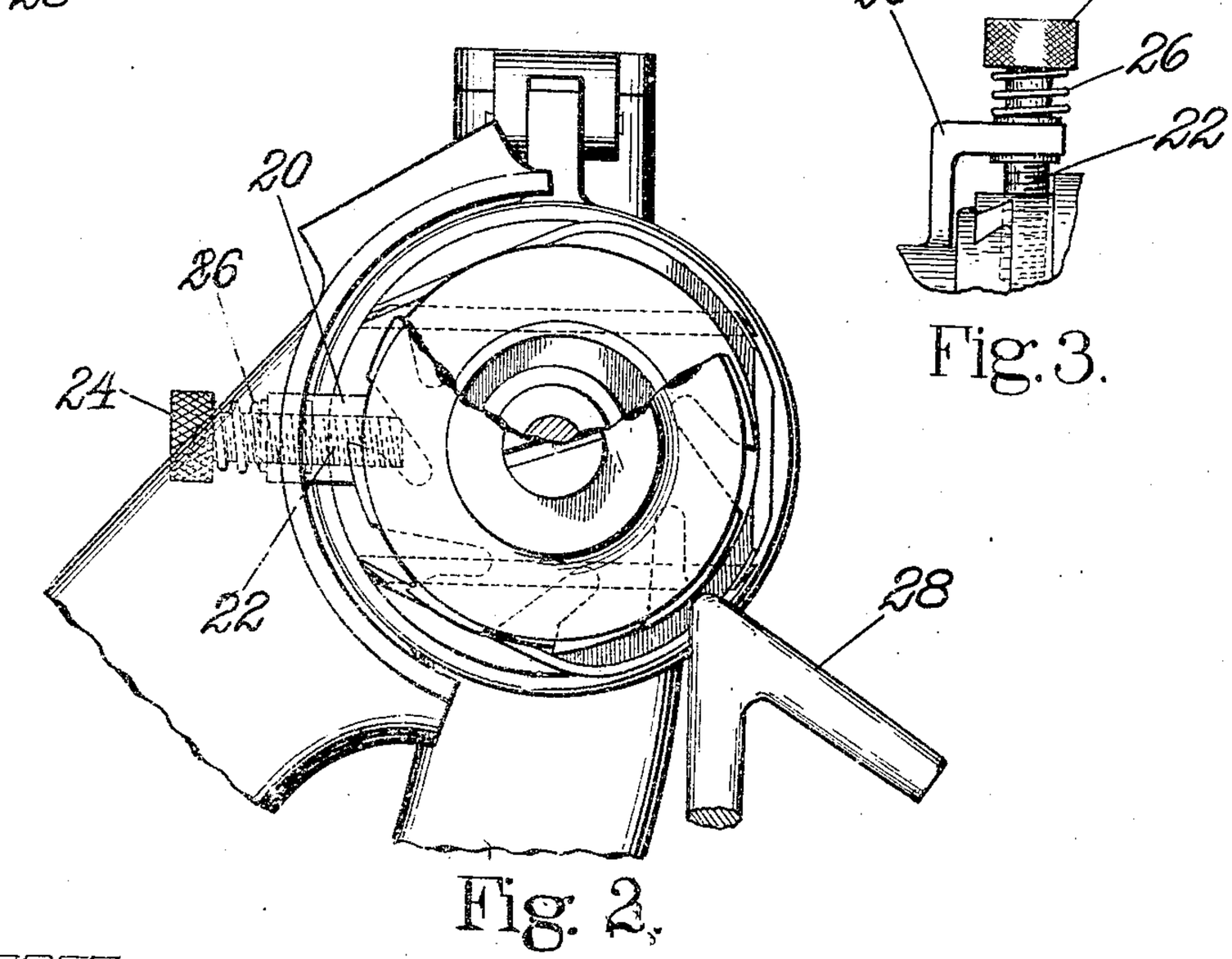

Fig. 2.

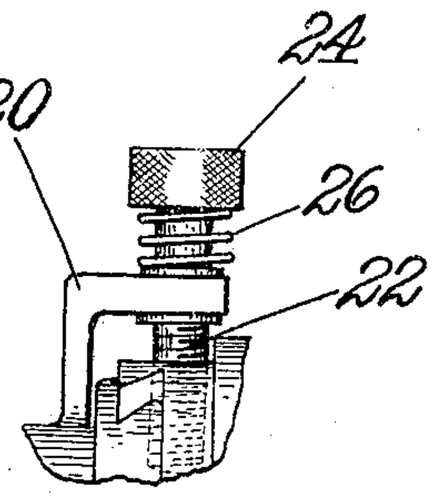

Fig. 3.

WITNESSES

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ALGERNON W. MATTHEWS, OF HAVERHILL, MASSACHUSETTS, ASSIGNOR TO UNITED SHOE MACHINERY COMPANY, OF PATERSON, NEW JERSEY, A CORPORATION OF NEW JERSEY.

MACHINE FOR USE IN THE MANUFACTURE OF BOOTS AND SHOES.

999,050. Specification of Letters Patent. Patented July 25, 1911.

Application filed July 3, 1908. Serial No. 441,336.

To all whom it may concern:

Be it known that I, ALGERNON W. MATTHEWS, a citizen of the United States, residing at Haverhill, in the county of Essex and Commonwealth of Massachusetts, have invented certain Improvements in Machines for Use in the Manufacture of Boots and 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 trimming machines used in the manufacture of boots and shoes and especially to machines used in trimming the edges of the heels or soles of boots and shoes.

In particular the invention relates to a machine used in trimming and randing the edge of the heel seat portion of the sole together usually with a portion of the adjacent edge of the heel.

In many machines in commercial use at the present time the operation of trimming the heel of a shoe is performed in two steps; the first step consisting in trimming the greater part of the edge of the heel upon a cutter of a width substantially equal to the height of the heel to be trimmed, and the second step consisting in trimming the portion of the heel which includes the heel seat end of the sole upon a narrower cutter having a rand trimming portion. This latter cutter is usually provided with a rand guard, which enters the rand crease and protects the upper in this region from injury during the trimming operation, and a back guard or back shield which extends to the path of travel of the cutting edge of the cutter adjacent to it and prevents the cutter from cutting too deep into the portion of the heel which has previously been trimmed on the larger cutter above referred to.

Difficulty has been found in maintaining the outer edge of the back shield substantially flush with the path of travel of the adjacent cutting edge of the cutter, especially after the cutter has been sharpened. Adjustment of this shield to the cutter, after sharpening, has been effected usually, up to the present time, either by grinding down the shield until its outer edge is flush with the path of travel of the adjacent cutting edge of the cutter, or by providing a series of shields of different diameters so that a shield of a smaller diameter may be attached to the cutter after it has been ground back to sharpen it. The first of these methods is somewhat objectionable since the grinding back of the shield consumes considerable time of the operator and the second method is also objectionable since the cost of the extra shields is considerable.

An object of the present invention is to provide a shield for cutters of the type above mentioned which can be adjusted to the cutter for use therewith after many successive grindings of the cutter.

A further object of the invention is to provide a shield for use with cutters of the above mentioned type which does not rotate with the cutter during the trimming operation and therefore does not rub the work or cause the work to partake of the lateral vibrations of the cutter shaft.

Another object of the invention is to provide a shield which, although not arranged to rotate with the cutter, is nevertheless free to be rotated by the work as it is turned by the operator to bring different portions into operative relation to the cutter.

With the foregoing and other objects in view the invention is herein shown as embodied in a construction comprising a sleeve having a shaft receiving opening of a diameter considerably greater than that of the shaft, whereby the sleeve may be adjusted transversely of the shaft, and a shield rotatably mounted upon said sleeve and maintained by said sleeve adjacent to the back face of the rotary cutter. The sleeve is preferably mounted upon guides extending at right angles to the cutter shaft and means is provided for moving the sleeve transversely of the cutter shaft, an important feature of the invention being the provision of means for adjusting the sleeve and shield transversely of the cutter shaft while the latter is rotating.

In the accompanying drawings,—Figure 1

is a front elevation of a portion of a heel trimming machine having the invention of this application applied thereto; Fig. 2 is an end view of the portion of the heel trimming machine shown in Fig. 1, a part of the rand guard and cutter being broken away to show the back shield, and Fig. 3 is a detail view showing especially the construction of the means for adjusting the shield carrying sleeve transversely of the cutter shaft.

The cutter carrying shaft 2 mounted in suitable bearings in a frame 4 and having at its outer end a rotary cutter 6 shaped to trim the heel in the region of the heel seat end of the sole and to rand the upper edge of the heel seat end of the sole, said cutter being provided with a rand guard 8, may be of any suitable or usual construction, these elements, *per se*, constituting no part of the present invention. Extending across the shaft of the machine to opposite sides of the bearings for said shaft is a dove-tail guide 10, providing guiding portions above and below the shaft upon which is maintained the support 12 of the shield carrying sleeve 14, the outer end of said sleeve being reduced to receive the hub 16 of the back shield or guard 18. Formed integral with the support 12 of the sleeve 14 is an offset extension 20 in which is rotatably mounted an adjusting screw 22 having a knurled head 24 by which it may readily be turned, this screw being received in a threaded opening in the portion of the frame 4 lying between the edges of the dove-tail guide upon the back side of said frame. A spring 26 provides friction to prevent accidental turning of the screw after a desired adjustment has been secured.

In trimming shoes on a rotary cutter only a small portion of the path of travel of the cutter is traversed by the shoe, usually not over one-third and therefore an adjustment of the back shield 18 substantially transversely of the cutter shaft to compensate for changes in the diameter of the cutter will give a bearing surface for the work nearly enough concentric with the path of travel of the adjacent cutting edge of the cutter for practical purposes, especially if the shield is brought into a position substantially flush with said path of travel at the point where most of the trimming is done. The dove-tail guide is therefore so located with respect to the work rest 28 that movement of the shield carrying sleeve 14 back and forth over it will produce the desired adjustment of said sleeve.

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

1. A machine of the class described, having in combination, a rotary cutter, a cutter shaft mounted in bearings in the machine frame, guides above and below the shaft and extending across the shaft to opposite sides of the bearings therefor, a sleeve loosely surrounding the shaft, adjustable upon said guides transversely to the axis of rotation of said shaft and receiving direct support from said guides upon all sides of said shaft, and a back shield for said cutter mounted to turn independently of said cutter upon said sleeve.

2. A machine of the class described, having in combination, a cutter shaft mounted in bearings in the machine frame, a rotary cutter upon said shaft, guides above and below the shaft and extending across the shaft to opposite sides of the bearings therefor, a sleeve support slidingly mounted upon said guides, a sleeve carried by said support loosely surrounding said shaft whereby it may be moved transversely thereto, said sleeve being directly connected to its support upon opposite sides of said shaft, a back shield carried by said sleeve, and means for moving said support to carry said sleeve across the shaft.

3. A machine of the class described, having in combination, a rotary cutter, a cutter shaft mounted in bearings in the machine frame, a sleeve loosely surrounding said shaft, a back shield for said cutter mounted upon said sleeve, a concentric support for said sleeve provided with transverse guides and coöperating guides upon the machine frame extending across the shaft.

4. A machine of the class described, having in combination, a cutter shaft mounted in bearings in the machine frame, a rotary cutter upon said shaft, a sleeve loosely surrounding said shaft between the cutter and the shaft bearings, a back shield for said cutter mounted to turn upon said sleeve, a concentric support for said sleeve provided with transverse guides, coöperating guides upon the machine frame extending across the shaft, a laterally offset extension upon said support and a screw threaded into the machine frame constructed to operate upon said extension to move said sleeve transversely to the shaft.

5. A machine of the class described, having in combination, a cutter shaft mounted in bearings in the machine frame, a rotary cutter upon said shaft, a dove-tailed guide extending across said shaft, a sleeve adjustable upon said guide transversely to the axis of rotation of said shaft and directly supported from said guide upon all sides of said shaft, and a shield for said cutter mounted to turn upon said sleeve.

6. A machine of the class described, having in combination, a rotary cutter, a cutter shaft mounted in bearings in the machine frame, guides above and below the shaft and extending across the shaft and a back

shield for said cutter loosely surrounding said shaft and a support for said shield arranged to slide upon said guides, said shield support and guides being so connected that said shield receives direct support from said guides upon all sides of said shaft.

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

ALGERNON W. MATTHEWS.

Witnesses:
MARIE L. STEUTERMANN,
EDITH C. HOLBROOK.