Dec. 21, 1937. L. SABO ET AL 2,103,120

HEEL BREAST COVER CUTTING AND SKIVING DEVICE

Filed Nov. 12, 1936

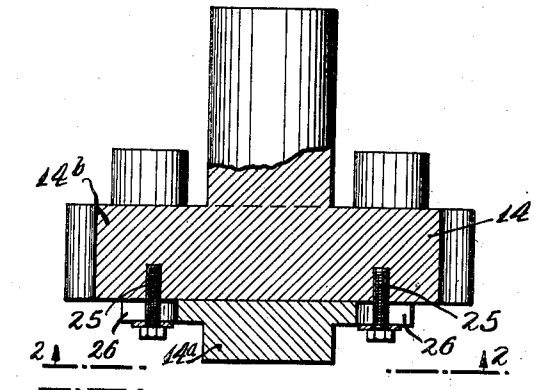


Fig. 1.

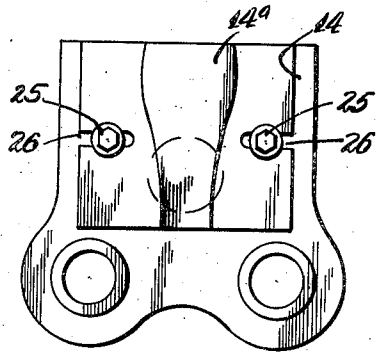
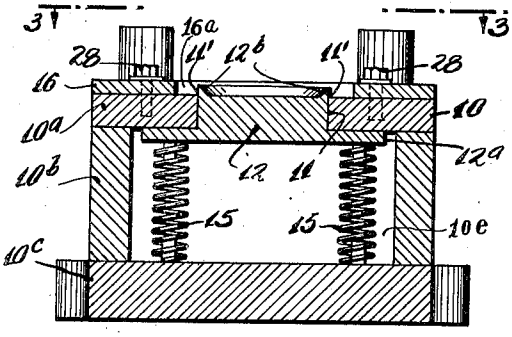


Fig. 2.



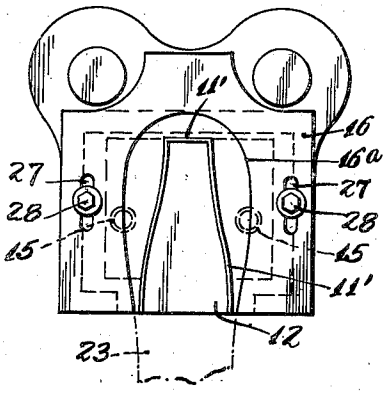


Fig. 3.

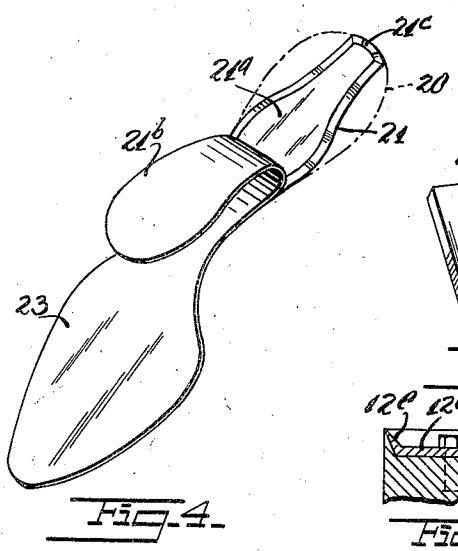


Fig. 4.

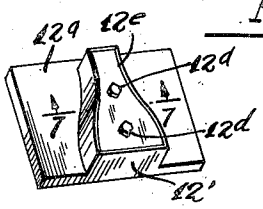


Fig. 6.

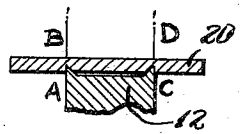


Fig. 5.

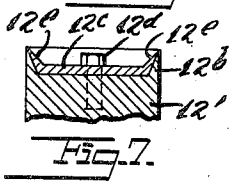


Fig. 7.

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Patented Dec. 21, 1937 2,103,120

UNITED STATES PATENT OFFICE

2,103,120

HEEL-BREAST COVER CUTTING AND SKIVING DEVICE

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Application November 12, 1936, Serial No. 110,438

2 Claims. (Cl. 12—17)

This invention relates to new and useful improvements in a machine for cutting and bevelling heel breast covering flaps for shoes.

It is customary to manufacture shoe soles by splitting the heel portions thereof, to have one of the split portions engage across the inside vertical face of a shoe heel and the other to extend across the top face of the shoe heel. In order to properly shape the heel breast covering flap it is necessary that it be cut down along its edges and furthermore, that at the edges it be formed with a bevel.

This invention relates particularly to a mechanism for cutting down and bevelling the heel portion as pointed out in the previous paragraph.

Heretofore the bevels mentioned were either formed manually with a knife or they were formed mechanically by bending the heel portion while it was being cut down. This invention proposes a new system by which the necessity of bending the heel portion is eliminated. The main advantage gained resides in the fact that the mechanism may be relatively simpler in construction. There is no need for producing curved parts. All of the parts may be relatively flat and therefore cheaper to produce.

Another one of the objects of this invention resides in characterizing the operation of the mechanism by the fact that it first embosses a groove within the heel portion and then cuts out the heel portion along the groove and so produces the taper along the edge of the heel portion.

Another one of the objects of this invention is to variably arrange that portion of the mechanism which produces the groove so that the angle of the groove forming part may be varied and so the inclination of the bevel changed.

For further comprehension of the invention, and of the objects and advantages thereof, reference will be had to the following description and accompanying drawing, and to the appended claims in which the various novel features of the invention are more particularly set forth.

In the accompanying drawing forming a material part of this disclosure:—

Fig. 1 is a transverse vertical sectional view of a mechanism for punching and tapering the heel breast covering flap constructed according to this invention.

Fig. 2 is an elevational view looking in the direction of the line 2—2 of Fig. 1.

Fig. 3 is an elevational view looking in the direction of the line 3—3 of Fig. 1.

Fig. 4 is a perspective view of a shoe sole, the way it appears after it has been operated upon by the punching and tapering mechanism.

Fig. 5 is a transverse sectional view of a portion of the shoe sole and a portion of the mechanism to show the manner in which the grooves are formed in the breast flap.

Fig. 6 is a perspective view of the groove forming portion of the mechanism shown constructed according to a modification of the invention.

Fig. 7 is a sectional view taken on the line 7—7 of Fig. 6.

The machine for punching and tapering the heel breast covering flap comprises a female die 10 having an opening 11 formed to the shape of the proposed punched heel portion and having a cutting edge 11'. A groove element 12 is mounted within the opening 11 and is resiliently urged upwards to a position slightly above the said cutting edge 11'. A male die 14 is cooperative with the female die 11 for forcing a shoe heel portion against the grooving element and then punching out the periphery of the grooved area to shape the heel portion with a bevelled edge.

More specifically, the female die 10 comprises a top plate 10^a which is supported by a wall structure 10^b upon a base plate 10^c. Between these plates there is a compartment or interior hollow 10^e in which several strong springs 15 are located. These springs act between a portion of the body of the female die and the grooving element. More specifically, the grooving element 12 is formed with an interior flange 12^a from which the operative portion of the grooving element projects. This flange portion 12^a is urged against the inner face of the top plate 10^a. When in this position the cutting edges 12^b of the grooving element project slightly above the cutting edge 11' of the opening 11.

A guide plate 16 is mounted upon the top of the top plate 10^a and is formed with an opening 16^a shaped to receive the heel breast covering flap before it is cut down. This heel breast covering flap is indicated by the dot and dash lines 20 in Fig. 4. Located within the top plate 10^a there is the cutting opening 11' which is cooperative with the cutting portion 14^a projecting from the male die. These coacting cutting portions are adapted to cut out the heel portion 20 to have the periphery indicated by the full lines in Fig. 4, and denoted by reference numerals 21.

The grooving element 12 is slidable within the opening 11 and has its periphery formed with an upward projecting portion 12^b forming a wedge or embossing element which is adapted to groove the face of the shoe sole. The outer side of this

projecting element 12b is straight so that the grooving element may operate downwards within the opening 11. The inner side is arranged at an inclination. This inclination controls the shape of the bevel and subsequently the inclination of the edge portion of the tapered shoe sole heel portion 21. In Fig. 5 the shoe sole heel portion 20 is shown being grooved by the grooving element 12. Subsequently, the male and female dies operate to cut off the portions outside of the lines AB and CD. It should be noted that the remaining interior portion then is formed with a beveled edge.

In Figs. 6 and 7 a modification of the invention has been disclosed in which there is a groove element 12' distinguishing from the grooving element 12 in the fact that it is provided with a removable top cup shaped plate 12c held fixedly in position by several screws 12d. This top plate 12c is formed with an upward extending inclined edge portion 12e having one angular bevel on its inner face and a different angular bevel on its outer face. The outer face is in intimate contact with the inclined bevel 12b of the grooving element. When this grooving element is used in the condition shown in Fig. 7 it will produce a tapered edge with the taper at one inclination. If the portion 12c is removed the grooving element will produce a taper of a different inclination.

In Fig. 4 a shoe sole 23 is illustrated with the heel portion thereof split to have the portions 21a and 21b. The portion 21a is in the portion which is adapted to extend along the inner face of the shoe heel. It is therefore necessary that the edges of this portion be fashioned to fit the shoe heel. The male die 14a in cooperation with the opening 11 in the female die cuts off that portion of the sole within the dot and dash lines 20 and outside of the periphery of the full lines indicated by the edge 21. Reference numeral 21c indicates the bevel formed in the manner previously described.

The male die 14 comprises a support 14b upon which the die element 14a is adjustably mounted. There are several holding screws 25 which engage in slots 26 in the die element 14a by which it may be adjusted transversely so as to properly fit the opening 11. Furthermore, the guide plate 16 is provided with several longitudinal openings 27 engaged by holding screws 28 by which it may be adjusted forwards and backwards to a proper position.

This device may be used for punching and tapering the heel breast covering flaps, for wood heels or other heels of cemented or stitched shoes either before or after the sole is secured on the shoe.

While we have illustrated and described the preferred embodiments of our invention, it is to be understood that we do not limit ourselves to the precise constructions herein disclosed and the right is reserved to all changes and modifications coming within the scope of the invention as defined in the appended claims.

Having thus described our invention, what we claim as new, and desire to secure by United States Letters Patent is:—

1. A machine for punching and tapering the heel breast covering portion of shoe soles comprising a female die having an opening formed to the shape of the proposed punched heel covering portion and having a cutting edge, a grooving element mounted within said opening and resiliently urged upwards slightly above said cutting edge, and a male die cooperative with said female die and forcing a shoe heel covering portion against said grooving element and then punching out the periphery of the grooved area to shape the heel covering portion with a bevelled edge, said grooving element having straight outer sides and projecting edges on the inner side which are inclined, and a cup shaped section within said inclined sides having outer sides in intimate contact with the inclined sides and inner sides at a different inclination in relation to the straight sides of said grooving element.

2. A machine for punching and tapering the heel breast covering portion of shoe soles comprising a female die having an opening formed to the shape of the proposed punched heel covering portion and having a cutting edge, a grooving element mounted within said opening and resiliently urged upwards slightly above said cutting edge, and a male die cooperative with said female die and forcing a shoe heel covering portion against said grooving element and then punching out the periphery of the grooved area to shape the heel covering portion with a bevelled edge, said grooving element having straight outer sides and projecting edges on the inner side which are inclined, and a cup shaped section within said inclined sides having outer sides in intimate contact with the inclined sides and inner sides at a different inclination in relation to the straight sides of said grooving element, said cup section being removable for changing the tapering of the finished bevelled edge.

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