Oct. 28, 1947. F. K. PFEIFFER ET AL 2,429,894

HEEL COVER TURNING MACHINE

Filed Feb. 20, 1946 2 Sheets-Sheet 1

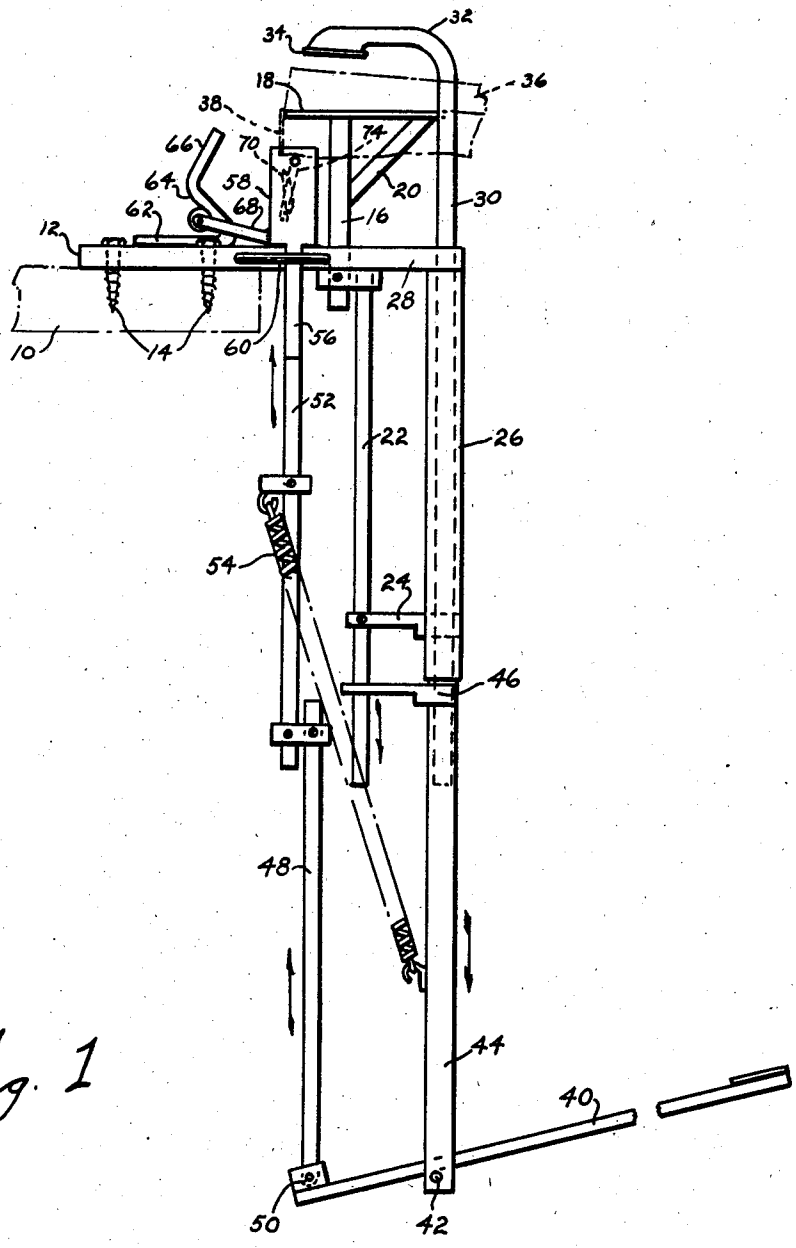


Fig. 1

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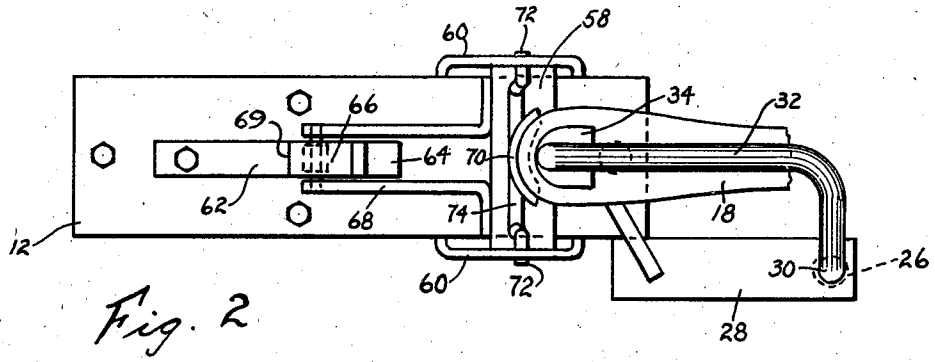


Fig. 2

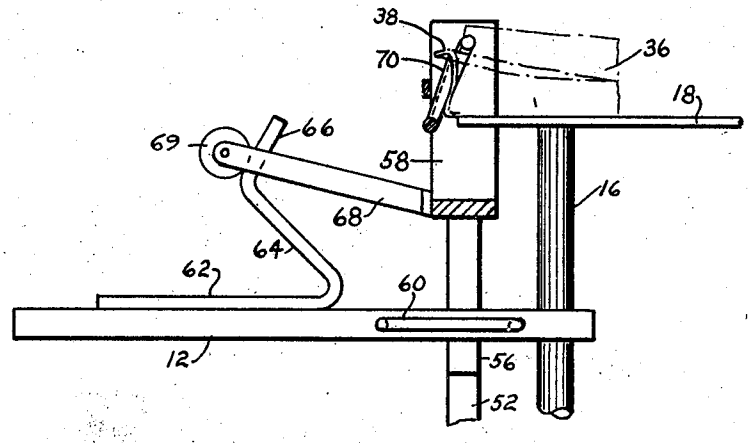


Fig. 3

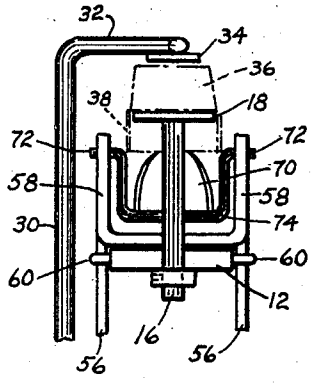


Fig. 4

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UNITED STATES PATENT OFFICE

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HEEL COVER TURNING MACHINE

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11 Claims. (Cl. 12—1)

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This invention relates to heel cover turning machines and more particularly to machines for applying a heel cover to a heel by wiping a cover, already attached to a shoe at the insole, over the heel to the outsole area.

Objects of the invention include the provision of a fixed support for a shoe including an insole, heel, and a depending heel cover attached to the shoe at the insole, a movable clamp for the shoe, a freely swinging wiper element conforming in general to the shape of the heel, a bracket supporting the swinging wiper, and means to impart a generally arc shaped travel to the bracket in a direction to bring the wiper from beneath the heel to impinge and move the depending heel cover up and over the heel to cover the latter.

Other objects and advantages of the invention will appear hereinafter.

Reference is to be had to the accompanying drawings, in which

Fig. 1 is a view in side elevation of a device embodying the invention and showing the shoe in place in broken lines;

Fig. 2 is an enlarged top plan view;

Fig. 3 is an enlarged view in side elevation, parts being omitted; and

Fig. 4 is an enlarged end view of the device as shown in Fig. 2.

In Fig. 1, the character 10 indicates a bench, table, or the like having a plate 12 secured thereto by fasteners 14. A standard 16 rises from the table 10 in normally fixed but adjustable relation thereto, and a shoe supporting plate 18 is secured in horizontal relation thereon. A brace 20 may be used if desired. Depending from plate 12 there is a rod 22 secured in fixed relation, said rod having a bracket 24 thereon secured to a cylinder 26, the latter also depending from the plate 12.

Fig. 2 shows an extension on plate 12 providing for an offset arrangement of the cylinder 26, the latter slidably receiving a rod 30 having an offset neck 32 terminating in a presser plate 34 directly over the left hand of plate 18 as shown in Figs. 1 and 2. The offset provides space for the operator to easily and quickly place a shoe 36 in inverted relation on plate 18, the heel of the shoe being located under the plate 34. It is to be noted that plate 18 conforms generally to the shape of the insole of the shoe or shoe platform, the insole contacting this plate, and having a depending skirt 38, this skirt being the heel cover which is to be applied to the heel.

Rod 30 is lowered by means of a treadle 40 bearing on a pin 42 on an extension 44 of rod 30 and

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a bracket 46 helps guide the extension 44 in its vertical movement. Treadle 40 is pivoted at one end to a link 48 as at 50. Link 48 is adjustably secured to a link 52, the latter rising to the plate 12 and serving as an anchor for a spring 54 normally yieldingly maintaining the clamp 34 and its supporting rod in raised position as in Fig. 1. Rods 48 and 52 are pivotable as a unit on pin 50. This construction provides that clamp 34 descends to clamp the heel of the shoe upon depression of the treadle, but when the heel is clamped, rod 30 can no longer descend and rods 48 and 52 must thereupon rise. Removal of pressure from the treadle raises the clamp 34 and lowers the rods 48 and 52.

Rod 52 is bifurcated at its top to extend to both sides of plate 12, see character 56. This is best shown in Fig. 4. A U-shaped bracket 58 open at the top is supported on members 56 and moves therewith and with rod 52. Guides 60 limit the swinging movement of these parts. It is to be noted that spring 54 also serves to yieldingly maintain bracket 58 in its Fig. 1 position.

A cam 62 is secured to rise from plate 12, and this cam comprises a run 64 leading upwardly away from the bracket 58 and a run 66 extending upwardly but reversely to run 64. An arm 68 fast to the bracket 58 is provided with a roller 69 kept to the cam by the spring. Obviously, as rods 48, 52, and bracket 58 rise under influence of the treadle, the rods and bracket assume an upward movement on a vertical arc or substantially so, from the position of Fig. 1 to that shown in Fig. 3.

Swinging freely in the bracket 58 there is an upright wiper element 70 mounted to swing on ends 72 of a support 74, the ends 72 being pivoted in the upstanding arms of the bracket. The wiper is concave at the right side as seen in Fig. 2 and convex at the opposite side, and is convergent upwardly along curved lines, see Fig. 4, and of course the wiper moves with bracket 58 on the arc above described, but tilts or swings as occasion demands, relative to the bracket.

The wiper is located at its lowermost and most retracted position when there is no pressure on the treadle. The shoe being positioned on plate 18, the skirt or heel cover 38 depends in a position to the left of the wiper and as the latter rises on the aforementioned arc, the skirt or heel cover is impinged upon by the convex surface of the wiper and pivots therewith in a generally upward direction about the point of securement of the heel cover to the insole. At the same time the upper edge of the wiper folds the heel cover as the wiper

progresses to the insole so that the heel cover is "wiped" onto the heel surface. This wiping action is very close to the heel and makes a smooth heel cover surface on the heel because the concave surface of the wiper conforms to the heel, and also because the wiper is freely swingable and thus closely follows the heel surface. Since the cover is closely wiped onto the heel surface, the cover stays put, and when the treadle is released, the wiper moves away from the heel back down the same arc, to again come to rest as shown in Fig. 1, ready for the next shoe.

Having thus described our invention and the advantages thereof, we do not wish to be limited to the details herein disclosed, otherwise than as set forth in the claims, but what we claim is:

1. Heel cover turning machine comprising a shoe support, a clamp therefor, a movable heel cover wiper bracket normally disposed below the support, means to raise said bracket, a fixed cam to constrain the bracket to a curved path in its upward movement, a heel cover wiper on the bracket, and means providing for free swinging movement of the wiper on the bracket.

2. The machine of claim 1 wherein said wiper is provided with a concave surface facing the shoe support.

3. The machine of claim 1 wherein said wiper is provided with a convex surface facing away from the support.

4. Heel cover turning machine comprising a shoe support, a U-shaped movable bracket, a wiper element dependently pivoted in the arms of the U for free swinging movement therein, and a fixed cam moving the bracket and wiper in an arc in a plane generally normal to the shoe support, during movement of the bracket.

5. Heel cover turning machine comprising a support, a shoe support thereon, a movable clamp to clamp a shoe to the shoe support, a movable member, a heel cover wiper on the member, resilient means connected to the member and clamp tending to move the member and the clamp away from the shoe support, and means to move the member toward the shoe support on an arc.

6. A heel cover turning machine comprising a shoe support, a movable member, means to move the latter upwardly, an upright concavo-convex wiper element dependently pivoted on the member, the latter being normally disposed so that the wiper is located below the support and close to but slightly inwardly spaced from an edge of the support, a cam moving the member outwardly and then inwardly relative to said edge so that said wiper element may engage a depending skirt on a shoe on the support and raise the skirt to wipe the same over a part of the shoe, the outward and inward movement occurring during movement of the member.

7. The machine of claim 6 wherein said wiper element is freely swingable on the member to follow the contour of the shoe part to be covered.

8. Apparatus of the class described comprising a support, a pair of vertically movable rods thereon, one rod being swingable, a spring connecting the rods and tending to move the same in opposite directions, a treadle pivoted to the swingable rod and a bearing point for the treadle on the other rod, a clamp on the said other rod and a swinging heel wiper on the swingable rod, a shoe support, said clamp cooperating therewith to clamp a shoe thereon, and means to constrain the swingable rod to an arc-like motion as the latter rises under influence of the treadle.

9. The machine of claim 8 wherein the wiper is provided with a concave surface facing the shoe support.

10. The machine of claim 8 wherein the wiper is provided with a concave surface facing the shoe support and an opposite convex face.

11. Apparatus for turning heel covers comprising a support for the heel, a movable bracket, means to move the bracket relative to the heel, a concavo-convex wiper element freely swingable on the bracket, the latter being normally disposed so that the wiper is in a position to contact a cover on the heel and means to move the bracket from the heel and in cycle back toward the heel during operation of said first named means, so that the wiper may turn the cover over the heel, the second named means comprising a fixed cam.

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