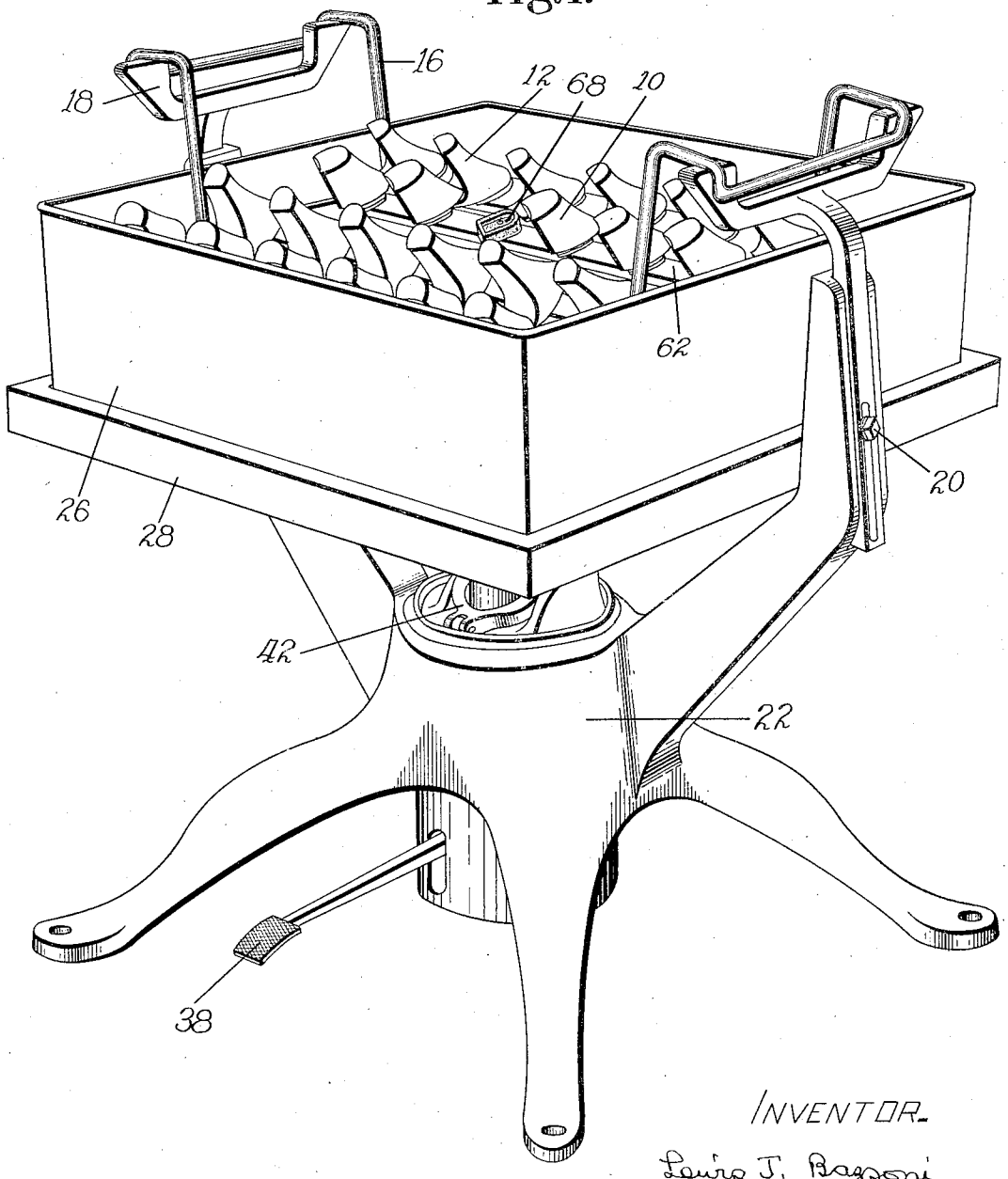
July 23, 1935. L. J. BAZZONI 2,008,780

HEEL COATING MACHINE

Filed April 8, 1931 2 Sheets-Sheet 1

Fig. 1.



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By his Attorney,

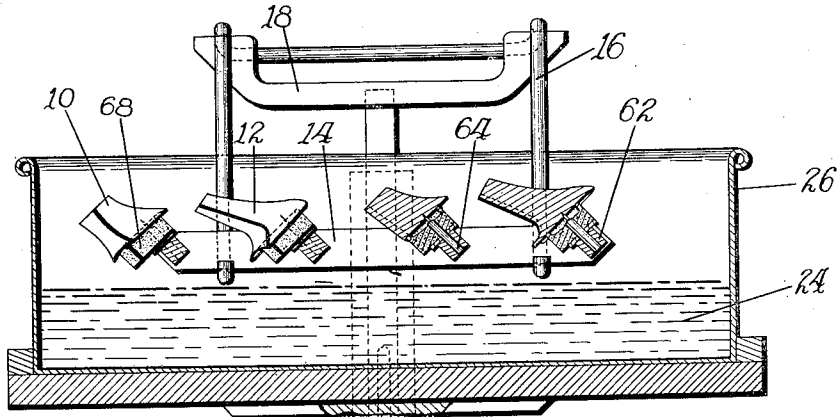
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Fig. 2.



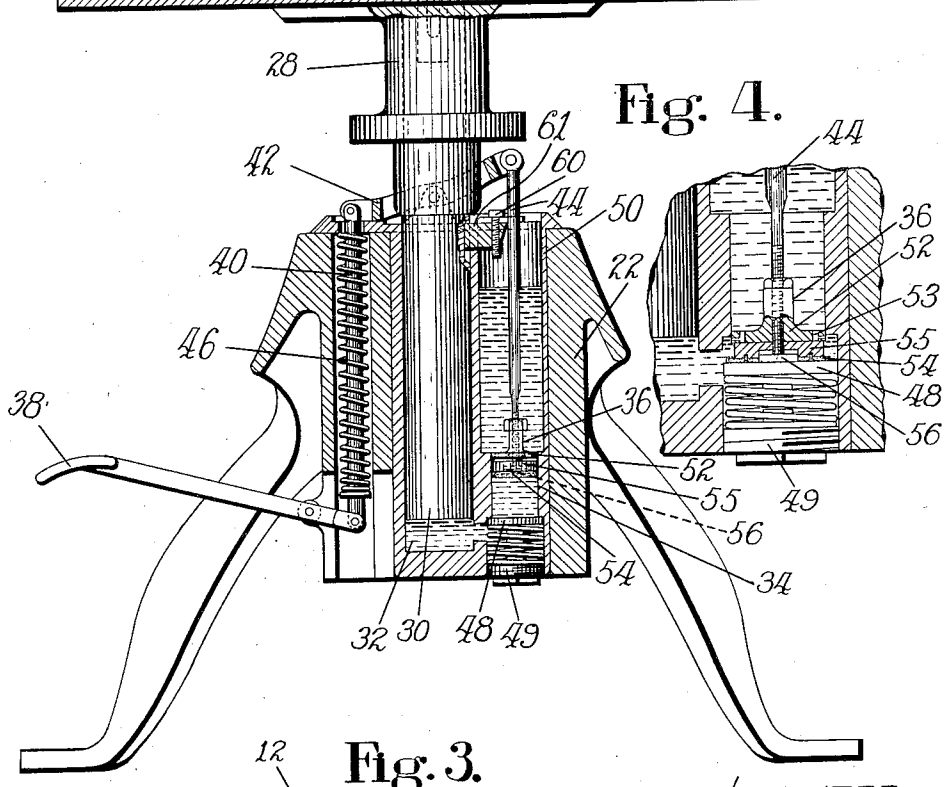
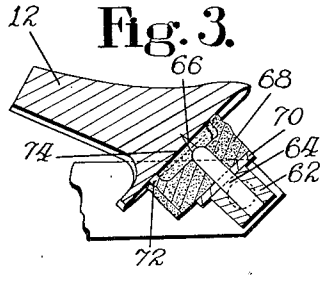


Fig. 4.

Fig. 3.



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UNITED STATES PATENT OFFICE

2,008,780

HEEL COATING MACHINE

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Application April 8, 1931, Serial No. 528,578

11 Claims. (Cl. 91—46)

This invention relates to heel coating and is illustrated as embodied in a machine for coating heels by dipping them.

A very large percentage of women's shoes at the present time are provided with wood heels and it is customary to cover these heels either by painting or lacquering them or else by sticking on a cover of thin material which may be of leather or fabric and which usually matches the upper of the shoe. Obviously the cover applied to the heel must adhere very tightly so it will not become separated during wear of the shoe, and it is customary to apply adhesive to the curved periphery of the heel at least and usually to a portion of the attaching surface and the whole of the breast surface. One convenient way of applying adhesive, hereinafter called cement for convenience, is by dipping the heels and then allowing the surplus to drain off. Preferably the whole of the attaching surface should not be coated because it is customary to mark the size and style of the heel on this surface and the liquid coating may obliterate some of these marks. The wood utilized for making heels for shoes is kiln dried and contains a considerable quantity of air which should be allowed to escape during the period when the heels are immersed in the cement so that no bubbles will form in the coating of the heels after withdrawal. Furthermore, in view of the viscous nature of the cement, great care must be utilized in draining the surplus cement from the heels in order that the coating applied may be uniform over the surface of the heel and without wrinkles or sags.

With a view to satisfying these and other requirements, one object of the present invention is to provide an improved machine for dipping heels by means of which a uniform coating may be applied with a minimum of care upon the part of the operator.

It has been found that the application of a uniform coating is greatly facilitated by positioning a heel in inverted position with one corner of the attaching surface below the rest of the heel, and that the desired object will also be obtained with greater certainty if the heels are withdrawn from the bath of cement very gradually. A feature of the invention, therefore, resides in a heel support for use with a heel dipping machine and arranged to hold the heels in inverted position with one corner of the attaching surface of each of the heels below the other portions of the heels. In the illustrated machine, the heel supports are arranged to hold the heels tilted so that none of their plane surfaces are horizontal and guide members are associated with the holding means to aid the operator in determining the positions of the heels.

The practicability of such a machine and the production which can be obtained depend quite largely upon the facility with which the heels can be mounted upon their supports. Still another feature of the invention consists in a support comprising inclined holding means and displaceable heel engaging means for aiding the operator in mounting heels on the holding means substantially in alinement therewith. As illustrated, this support comprises an upwardly directed retaining member having a sharpened prong upon which a heel may be impaled, and a compressible member surrounding the shank of the retaining member which reacts with a surface of the heel to position the heel on said prong. The illustrated compressible member acts at the same time to protect the central portions of the attaching surfaces of the heels from the application of liquid. In the illustrated machine, the support is made in the form of a rack having a series of bars in which are fixed upwardly directed, inclined retaining points projecting through resilient, heel-shaped blocks. These blocks have upstanding peripheral rims adapted to contact with the attaching surfaces of the heels and to be compressed in the application of the heels to the support.

These and other features of the invention will now be described in the following specification taken in connection with the accompanying drawings, in which

Fig. 1 is an angular view of a heel dipping machine;

Fig. 2 is a vertical section through the center of the machine;

Fig. 3 is a detail sectional view on a larger scale, showing one of the heel supports; and

Fig. 4 is a similar view of the valve mechanism controlling the speed of withdrawal of the heels from the cement.

Heels 10 and 12 are mounted upon a supporting rack 14 which is suspended by means of hooks 16 from yokes 18 adjustably supported by bolts 20 upon a base 22. The cement 24 is carried in a container 26 mounted upon a movable standard 28 having a plunger 30 entering a chamber 32 in the base 22.

There is a sufficient quantity of air in the heels so that bubbles continue to emerge from the immersed heels for something like three minutes and a proper even coating unaffected by air bubbles cannot be applied unless all the air has been

allowed to come out that will. Another matter of great consequence in the coating of heels with viscous material is the control of the speed of withdrawal and this should be regulated to permit the superfluous material to drain from the surfaces of the heels without drying in a coating of uneven thickness. In the application of cements such as are used for coating heels, this period is about six or seven minutes. The illustrated embodiment of the invention provides a hydraulic elevator for raising the container 26 and controlling its downward movements to regulate the speed of withdrawal of the heels from the liquid. To raise the container, there has been provided a pump 34 including a piston 36 adapted to be actuated by a foot treadle 38. The foot treadle is pivoted on the base 22 and connected by means of an upright rod 40 to a ring-shaped rocker 42 the other side of which is pivoted to a piston rod 44. A spring 46 surrounding the rod 40 holds the treadle normally in elevated position. A spring-pressed, one-way valve 48 prevents back flow of the liquid from the chamber 32. Access to this valve and adjustment of the spring pressing againt the valve is provided by a threaded plug 49. Above the pump chamber 34 is a reservoir 50 holding a supply of liquid such as oil. The pump piston 36, as illustrated, comprises a plate or spider 52 having angular passages 53 and a cup-shaped packing 54 secured to a washer 55 loosely held on the piston by a rigid plate 56 attached to the end of the piston rod 44 within the cup-shaped packing 54.

When it is desired to lower the container 26 to withdraw the heels from the cement, the treadle 38 is depressed to bring the piston 36 and especially the plate 56 against the valve 48, as shown in Fig. 4, and allow the oil to return to the reservoir 50 through the passages 53. The speed of withdrawal of the heels is controlled by regulating the degree to which the passages 53 are opened and this, in turn, is regulater by means of a stop 60 which coacts with the rocker ring 42 when the treadle is depressed to limit the downward movement of the piston 36. This stop screw 60 is threaded in a removable block applied to the base, which block performs the additional function of a key for the plunger 30 to prevent rotation of the support 28 with respect to the base 22.

It is quite immaterial whether we are dealing with a Cuban heel 10 or a Louis heel 12. The important thing is to position the heel in inclined, and preferably in an inverted position and such that none of the plane surfaces of the heel are horizontal. The heels are skewed with respect to the rack 14 so that one corner of the attaching surface is lower than the rest of the heel to permit the cement to drain more readily from this corner. The rack 14 comprises a plurality of cross-bars 62 in which are secured inclined, upwardly directed, retaining members 64 (Fig. 3) having a sharpened point or prong 66 adapted to be driven into the heel. Surrounding these retaining members 64 are blocks 68 each having a peripheral contour which is generally U-shaped like a heel (see also Fig. 1) and which are of compressible material, such as sponge rubber, which are backed up by washers 70 and are provided with upstanding peripheral rims 72 substantially even with the ends of the prongs and adapted to contact tightly with the attaching or cup surfaces 74 of the heels, thereby to protect the central portion of each of these surfaces from the application of cement. This prevents the size and style marks on the heel from being covered with cement and hence partially obliterated.

In the use of the machine, the operator will take one of the racks 14 on a bench which, if desired, may be provided with angular ribs (not shown) to back up the bars 62 of the rack and the retaining member 64 thereon and to permit the operator to secure heels on the rack by tapping them lightly against the prongs 66 with the heels extending heightwise in the general direction of the prongs. In this operation the skewed position of the heels shown most clearly in Fig. 1 will be insured by reason of the heel shape of each of the sponge rubber blocks 68 which substantially complements the form of a characteristic feature of the heel, here the peripheral contour of the attaching surface. These blocks, then, will guide the operator by touch in orienting the heels and impel him to position the correspondingly shaped attaching surface of the heel in corresponding position on the block. At the same time, a heel presented to the holder will be guided by touch to a position with its axis substantially aligned with the axis of a prong as the cupped attaching surface of the heel is brought into firm contact with the inclined top surface of the rubber block 68. A light tap of the hammer will then be sufficient to impale the heel on the prong 66 and the upstanding rim 72 of the blocks 68 will serve to position the heel in inclined, inverted position on the rack with none of its plane surfaces horizontal and with one corner of the attaching surface below the rest of the heel. Depression of the treadle 38 to operate the pump 34 will then serve to raise the container 26 to immerse the heels. The container is held in elevated position by the valve 48 and will be retained there for the desired period of approximately three minutes. After this, the operator will step on the treadle 38 and force it down as far as is permitted by the stop screw 60, thus opening the valve 48 and allowing the liquid in the chamber 32 to flow out slowly through the passages 53 under the weight of the cement container and attached parts. This relief may be made as slow or as rapid as is desired, thereby to control the speed of withdrawal of the heels from the liquid. If the heels are withdrawn too fast, the cement on the surfaces of the heels is likely to dry in ridges, whereas if they are withdrawn slowly there will be plenty of opportunity for the surplus cement to drain off as they gradually emerge from the liquid.

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

1. In a machine for dipping heels, a support for inverted heels comprising an upwardly directed retaining member having a sharpened prong and a compressible member surrounding the shank of said retaining member reacting with a surface of a heel tending to push the heel away from the prong and acting to position the heel thereon.

2. A support for inverted heels comprising a frame having a plurality of upwardly directed, inclined retaining points fixed therein and resilient blocks through which said points project, said blocks being adapted to contact with the attaching surface of each of the heels to protect the central portions of said surfaces from the application of cement.

3. A support for inverted heels comprising a frame having a plurality of upwardly directed, inclined points fixed in said frame and substan-

tially heel shaped blocks of a resilient material surrounding the shanks of said points, said blocks being provided with peripheral rims adapted to contact with the attaching surface of each of the heels and to be compressed in the application of the heels to the support thereby to position the heels on the support and to prevent the application of cement to the protected surface.

4. In a machine for dipping heels, a support for inverted heels comprising a plurality of parallel, upwardly directed, inclined heel attaching points and substantially heel-shaped rubber blocks through which said points project, said blocks being mounted on said support in skewed position, to the end that a heel the attaching surface of which is impaled by said points will be positioned with respect to the points by said rubber blocks to bring one corner of the attaching surface lowermost upon the support.

5. In a machine for dipping heels, a heel supporting grid comprising a plurality of parallel, inclined bars, heel attaching points mounted in said bars in inclined, upwardly directed positions, and resilient blocks on said bars through which said points project, said blocks being constructed and arranged to protect the central portion of the attaching surface of each of the heels and to position said heels on said points in skewed, tilted relation to said bars whereby one corner of each of said heels is lowermost.

6. In a machine for dipping heels, a heel support comprising a substantially horizontal frame, means on the frame to hold a heel in a position inclined thereto, and displaceable resilient heel engaging means beside the heel holding means to engage a heel and thereby to aid the operator in mounting the heels on the holding means, said resilient means extending heightwise to meet the heel substantially in the direction of the inclined holding means.

7. In a machine for dipping in a bath of liquid coating material heels having characteristic features of form, a movable frame, a heel support comprising a prong on said frame and inclined to the frame, and a displaceable heel engaging member shaped substantially to complement a characteristic feature of the form of a heel to position it on the prong in skewed relation to the surface of the liquid with one corner of the attaching surface of the heel lowermost.

8. In a machine for dipping heels, a support for a heel, a sharpened prong projecting outwardly from the support, and a heel-shaped resilient member surrounding said prong for engagement with the surface of a heel as the latter is positioned on the prong, thereby to determine the relation of the heel to the prong.

9. In a machine for dipping heels, a support for a heel comprising a sharpened prong and a resilient compressible member having an upstanding peripheral portion surrounding said prong, said compressible member having its outer surface substantially even with the end of the prong and adapted to be compressed to effect a tight engagement with the heel, thereby to protect a portion of a surface of the heel as the latter is driven on to the prong.

10. In a machine for dipping heels, a substantially horizontal support, a series of heel-holding prongs extending upwardly from the support and inclined to the horizontal, and yieldable members surrounding said prongs to assist the operator in correctly positioning heels on the prongs, said members each having a heel engaging surface lying normally beyond the end of the prongs and into contact with which the heels may be brought to determine their angular positions about the prongs before they are impaled thereon.

11. In a machine for dipping heels, a substantially horizontal support, a series of heel-holding prongs extending upwardly from the support and inclined to the horizontal, and depressible members upon the support each surrounding a prong and having a peripheral contour corresponding to the contour of the attaching face of a heel, each of said members being constructed and arranged to engage such face of a heel presented to a prong before the heel is impaled thereon, thereby to determine the position of a loose heel, and yieldable along the prong to allow the heel to be forced on to the prong.

LEWIS J. BAZZONI.