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MACHINE FOR FINISHING HEELS

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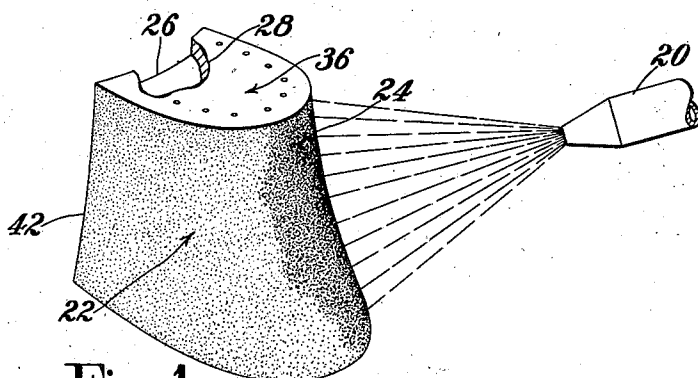


Fig 1

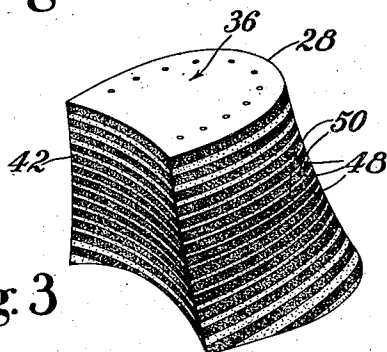


Fig 3

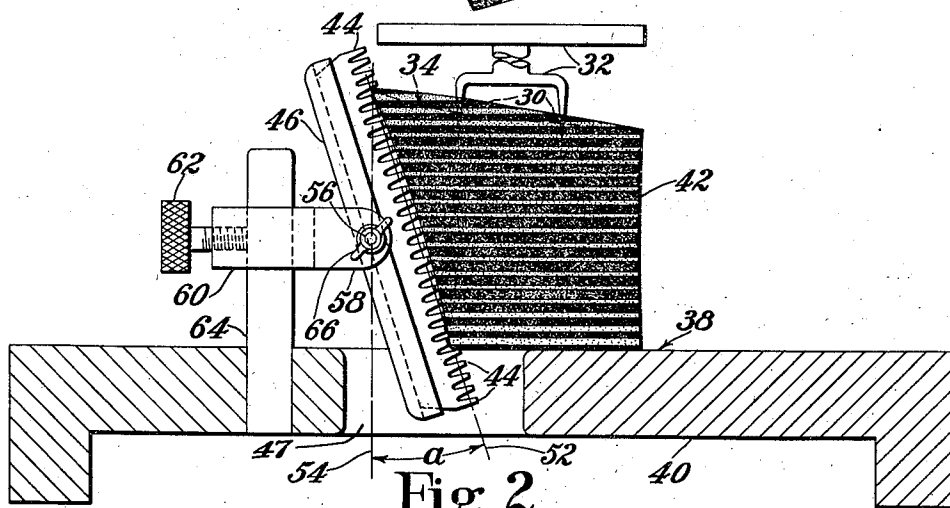


Fig 2

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MACHINE FOR FINISHING HEELS

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4 Claims. (Cl. 91—53)

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This invention relates to shoe machinery and is illustrated as embodied in an apparatus for use in finishing heels.

Built-up leather heels, because of their high cost, are not commonly applied to low-priced shoes. Moreover, with the present restrictions limiting the use of leather and other suitable materials commonly used in the manufacture of built-up heels, it has been increasingly difficult to obtain an adequate supply of such heels. It is an object of the present invention to provide an apparatus by the use of which wood heels which resemble and can be used in place of built-up leather heels can be manufactured at a low cost so as to be available for attachment to low-priced shoes.

The illustrative wood heel has a peripheral surface which has a coating of alternating relatively light and dark bands which are arranged approximately parallel to the tread face of the heel and impart to said heel the appearance of a built-up leather heel.

In its method aspect the invention comprises applying to the peripheral face of the wood heel a primary coating, for example, lacquer of a light brown shade, applying to said face, after the primary coating has dried, a visibly contrasting secondary coating, for example, a dark brown oil stain, and wiping portions from said secondary coating, while the same is still wet, to provide bands of secondary coating material, which bands are approximately parallel to the tread face of the heel, thus exposing intermediate bands of the primary coating, the bands together forming alternating light and dark brown stripes which impart to the heel the appearance of a built-up leather heel.

In order to wipe the portions of the secondary coating from the heel as above described, there is provided, in accordance with a feature of the present invention, an illustrative apparatus comprising a fixed table having a surface constructed and arranged to be engaged by the tread face of the heel, and a tool having a series or row of flexible teeth extending above and disposed at an angle to the heel engaging face of the table, said tool being mounted for pivotal movement upon a holder with relation to the table in order that the tool may be rocked by pressure of the heel against it in accordance with the changing pitch angle of the heel being striped. The amount of pressure necessary to cause the tool to pivot on its holder may be varied by the provision of a thumb nut which is threaded onto a fulcrum screw supporting the tool upon the

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holder. The holder may be adjusted into different positions above the table so as to vary the position of the pivot screw above the heel supporting surface of the table, the holder usually being so adjusted that the fulcrum screw is arranged approximately in alignment with the center of pressure exerted against the tool by the heel. The heel may be conveniently moved past the tool, as above described, by the use of a work gripper having two prongs which are inserted into the attaching face of the heel preparatory to stripping the same.

The various features of the invention will be understood and appreciated from the following detailed description read in connection with the accompanying drawings, in which

Fig. 1 is a perspective view of a heel to which a primary light brown coating has been applied and which is in the process of having applied to it a secondary dark brown coating;

Fig. 2 is a side elevation, partly in section, of an apparatus by the use of which portions of the dark brown coating applied to the heel illustrated in Fig. 1 may be removed to give the heel the appearance of a built-up leather heel; and

Fig. 3 is a perspective view of the heel after it has been striped by the use of the apparatus illustrated in Fig. 2.

As shown in the drawings, a spray gun 20 is used to apply primary and secondary coatings 22, 24, respectively, to the rear, side and breast faces of a wood heel block 26 and to a top-lift 28 nailed to the block. Any one of the above-mentioned faces may be defined as forming part of a peripheral face of the heel. The illustrative primary coating 22 is light brown lacquer which, for example, may comprise nitrocellulose or cellulose acetate in a solvent of acetone with a suitable drier. After the primary coating 22 has dried thoroughly, the secondary coating 24, which is dark brown oil stain, is applied to the first coating, the stain, for example, comprising burnt umber, asphaltum, or other ground pigment in turpentine or kerosene. If desirable, a mahogany dye in alcohol may be used in place of the above-mentioned oil stain.

While the secondary coating 24 is still wet, prongs 30 of a work gripper 32 are inserted in the attaching face 34 of the heel by the operator, who then places the heel with its tread face 36 in engagement with a surface 38 of a stationary table 40 and with one of its breast edges 42 in engagement with a series or row of rubber teeth 44, for example, of a tool 46 the lower end of which extends into a slot 47 formed in the table. With

the heel thus positioned, the operator turns the same while forcing its peripheral face with a moderate amount of pressure against the teeth 44 of the tool 46 so as to cause said teeth to remove material from the secondary coating to produce spaced bands 48 of secondary coating material, which bands are approximately parallel to the tread face 36 of the heel, thus exposing intermediate bands 50 of the primary coating 22. The bands 48 and 50 together form alternating light and dark brown stripes which are approximately parallel to the tread face 36 of the heel and impart to said heel the appearance of a built-up leather heel.

The pitch angle α of the heel, which angle may be defined as the angle formed between a straight line 52 which passes through the upper and lower ends of the heightwise extending elements of the peripheral face of the heel and a line 54 drawn from the upper end of said element at right angles to the tread face 36 of the heel, varies in different sizes and/or styles of heels and changes along different portions of the peripheral face of the same heel. In order that the teeth 44 of the tool 46 shall be flexed to approximately the same extent and thereby form stripes or bands which are of fairly uniform width, it is desirable that the tool 46 pivot slightly under pressure of the heel in accordance with the pitch angle α of the portion of the peripheral face of the heel which is being forced against the tool. Accordingly, the tool 46 is pivoted upon a fulcrum screw 56 extending through aligned bores in somewhat flexible bifurcations 58 of a holder 60 which is secured by a screw 62 to an upstanding post 64 fixed to the table 40. The fulcrum screw 56 has threaded onto it a thumb nut 66 by the provision of which the desired amount of frictional resistance between the tool and its holder may be varied.

The operator usually starts the striping operation at one breast edge 42 of the heel and continues around the heel until the same breast edge has been reached, or, in cases where it is not desired to stripe the breast of the heel, the operator, after presenting the side and rear faces of the heel to the tool, discontinues the striping operation at the other breast edge of the heel.

As the heel is forced against and rotated past the teeth 44 of the tool 46, the width of each of the stripes may vary to some extent in accordance with the amount of flexing of the teeth. It will thus be appreciated that such stripes may not be of exactly uniform width. Such effect may be desirable, since the exposed edges of the lifts of built-up leather heels often are not exactly uniform in width.

It is desirable that the center of pressure exerted by the heel against the tool 46 shall be about the same height above the surface 38 of the table 40 as is the fulcrum screw 56. Accordingly, the holder 60 may be conveniently raised or lowered into different operative heightwise positions above the table 40 through the provision of the screw 62 in order to accommodate heels of different heights.

When the pitch angle α of the peripheral face of the heel is approximately uniform around the

heel, as in some types of slipper heels, the tool may be secured in a fixed position with its teeth arranged usually approximately at right angles to the surface 38 of the table, the arrangement being such that there is no rocking or tilting of the tool while the heels are being striped.

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

1. In an apparatus for use in finishing the peripheral surfaces of wood heels, a table having a surface constructed and arranged to be engaged by the tread end of a heel, a tool having a series of flexible teeth, and means for supporting the tool for pivotal movement under pressure of the heel about an axis extending generally parallel to and spaced from the surface of the table to permit the tool to swing in accordance with the pitch angle of the portion of the heel being forced against the tool.

2. In an apparatus for use in finishing the peripheral surfaces of wood heels, a table having a surface constructed and arranged to be engaged by the tread face of a heel, a tool having a series of flexible teeth, a holder arranged above said surface of the table, means for supporting the tool upon the holder for pivotal movement about an axis arranged generally parallel to and spaced from said surface, and means for initially adjusting the holder toward or away from the table.

3. In an apparatus for use in finishing the peripheral surfaces of wood heels, a table having a surface constructed and arranged to be engaged by the tread face of a heel, a tool having a series of flexible teeth, a holder, means for pivotally supporting the tool upon the holder with said series extending above and adjacent to said surface of the table and for securing the tool to the holder with frictional resistance against free movement, and means for varying the amount of frictional resistance between the tool and the holder.

4. In an apparatus for use in finishing the peripheral faces of wood heels, a table having a surface constructed and arranged to be engaged by a tread face of a heel, a tool having a row of flexible teeth shaped and arranged to be engaged by a peripheral face of the heel, a slot formed in the table through said surface, and means for pivotally supporting said tool for movement with relation to the table with an end portion of said row of teeth arranged in said slot and adapted to tilt further into or out of the slot in accordance with the pitch angle of the peripheral face of the heel being operated upon.

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