

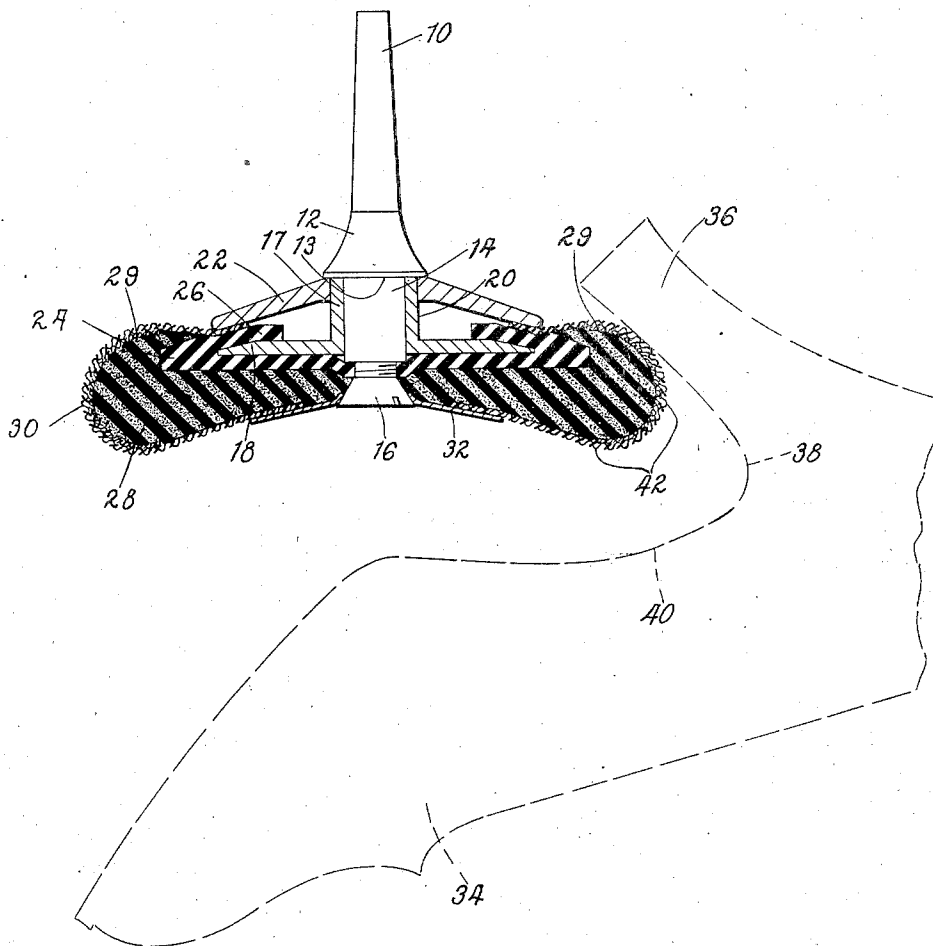
Jan. 7, 1941.

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2,227,588

FINISHING TOOL

Filed April 18, 1939



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UNITED STATES PATENT OFFICE

2,227,588

FINISHING TOOL

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Application April 18, 1939, Serial No. 268,624
In Great Britain May 3, 1938

4 Claims. (Cl. 15—230)

This invention relates to tools for performing finishing operations and is herein illustrated and described as embodied in a rotary tool adapted to polish wax surfaces on the bottoms and heels of shoes. Machines for finishing shoe bottoms are sometimes provided with a circular pad arranged upon the lower end of a driven spindle and heated so as to enable the pad to distribute wax upon the sole and heel breast portions of a shoe.

It is an object of the present invention to provide an improved tool of this character. In accordance with a feature of the invention the pad, together with a polishing cover, is clamped centrally to a rigid disk carried upon the end of a rotary spindle, the marginal portions of the pad and cover surrounding the periphery of the rigid disk and being secured in position relatively to the spindle. The composite pad herein shown includes a pad section of sponge rubber which is normally flat but which upon being centrally clamped to the tool body assumes a dished shape suitable for the performance of its operation. Such deformation of the pad serves also to impart a desirable tension to the finished cover.

These and other features of the invention comprising certain arrangements and combination of parts will be described in the following specification and pointed out in the claims.

The drawing shows a side view partly in section of the improved tool, together with the outline of part of a shoe being operated upon.

The tool comprises a tapered spindle 10 adapted to fit into an internally tapered end of a driven shaft. Near its lower end the spindle 10 has an enlargement 12 which terminates in a shoulder 13. Between the shoulder 13 and the adjacent end of the spindle is a cylindrical portion 14 upon which is slidably mounted a hub 17 of metal or other suitable rigid material. The hub 17 has a flange in the form of a disk 18 coaxial with the spindle 10. Over the outer face of the disk 18 is fitted a circular pad section 24 of molded vulcanized rubber having an inwardly projecting flange 26 on its upper side which can be elastically extended to allow the pad section 24 to be applied to the disk 18. The pad section 24 thus covers the outer face of the disk 18 and also surrounds the periphery of the disk. Adhesively attached to the pad section 24 is a circular pad section 28 of sponge rubber which covers the outer face of the pad section 24 and also surrounds the periphery of the pad section 24, the two pad sections together mak-

ing up a composite pad. The pad section 28 may be reinforced around its periphery by a band of thin woven canvas 29 cemented thereto. The outer face of the pad section 28 is fitted with a replaceable polishing cover 30 which in the illustrated tool is composed of knitted cotton cloth. This cover extends around the periphery of the pad 28.

For securing the central portions of the cover 30 and the composite rubber pad to the spindle 10 and also for securing the disk 18 to the spindle there is provided a clamping member in the form of a dished washer extending over the central portion of the working face of the pad section 28 and partly over the cover 30. Clamping pressure is exerted through this washer by means of a screw 16 threaded axially into the end of the spindle 10. Slidably mounted on the hub 17 is a disk or frusto-conical plate 22 the marginal portion of which is engaged by the marginal portion of the cover 30 which extends over the flange 26 of the inner rubber pad section 24. It is evident that tightening of the screw 16 will thus not only secure the central portions of the pad sections to the spindle but will also cause the margin of the disk 18 to exert a clamping pressure through the flange 26 and through the margin of the cover 30 against the margin of the disk 22, which clamping pressure is sustained by the shoulder 13 of the spindle. The sponge rubber pad section 28 is normally flat. The compression of the central portion, however, serves to impart to it the dished form shown in the drawing, rendering it particularly suitable for operations upon shoes and insuring that the washer 32 and the head of the screw 16 will not come into contact with the work. Such deformation of the pad tends likewise to draw the margin of the knitted cover 30 downwardly, thereby imparting a desirable tension to the cover.

The drawing shows the tool in operation upon a shoe 34 fitted with a Louis heel 36. The shoe is shown applied to the right-hand side of the tool as is usual and is in position for the breast face of the heel to be treated by the upper marginal part of the cover 30 supported by the corresponding upper marginal part of the pad section 28. The lower breast portion 38 of the heel that merges into the shank portion of the shoe and that part 40 of the sole itself will be treated by the lower marginal part of the tool indicated by the reference character 42.

Although the illustrated tool is herein disclosed as provided with a knitted cover suitable for wax

polishing, it is to be understood that the invention is also applicable to other types of finishing covers or covers which may have abrasive properties.

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

1. A finishing tool comprising a rotary spindle, a disk of rigid material carried by and coaxial with said spindle, a circular pad of yieldable material having an inner face against one face of said disk, a cover for the outer face of said pad composed of sheet material suitable for performing a finishing operation, said cover surrounding the periphery of said pad, means for securing the marginal portion of said cover in position relatively to the spindle, and clamping means for securing the central portions of the cover and the pad in position relatively to the spindle, and for compressing the central portion of the pad and for tensioning the cover.

2. A finishing tool comprising a rotary spindle, a disk of rigid material carried by and coaxial with said spindle, said disk having an outer face and an opposite inner face, a circular rubber pad having an inner face against the outer face of said disk and having an opposite outer face, said pad extending beyond the periphery of said disk, a cover for said outer face of said pad composed of sheet material suitable for performing a finishing operation, said cover surrounding the periphery of said pad, a screw clamp threaded axially into an end of said spindle for exerting pressure through the central portion of said cover and thence through the central portion of said pad to secure the central portions of the cover and the pad in position relatively to the disk, and a circular clamping plate on said spindle engageable with the marginal portion of said cover to sustain clamping pressure exerted through the pad and thence through the cover by the inner face of said disk to secure the marginal portions of the cover and the pad in position relatively to said disk.

3. A finishing tool comprising a rotary spindle having a shoulder adjacent to one end thereof,

a rigid disk having a hub surrounding said spindle between said end and said shoulder, said disk having an inner face directed toward said shoulder and an outer face directed away from said shoulder, a circular pad of rubber comprising an inner section of relatively solid texture covering the outer face of and surrounding the periphery of said disk and an outer section of sponge rubber covering the outer face of and surrounding the periphery of said inner section, a cover for the outer face of said sponge rubber section composed of sheet material suitable for performing a finishing operation, said cover surrounding the periphery of said sponge rubber section, a screw clamp threaded axially into the end of said spindle for exerting pressure through the central portion of said cover and thence through said hub against said shoulder to clamp the central portion of the cover, the central portions of said pad, and the hub in position relatively to the spindle, and a circular clamping plate surrounding said hub and bearing against said shoulder and having its marginal portion arranged to sustain a clamping pressure exerted by the disk through the marginal portions of the solid rubber section and of the cover when the screw clamp is tightened, thereby securing the marginal portions of the cover and the solid rubber section in position relatively to the spindle.

4. A finishing tool comprising a rotary spindle, a circular pad of normally flat sponge rubber, a cover for one face of and for the peripheral portion of said pad composed of sheet material suitable for performing a finishing operation, a clamp for compressing the central portion of said pad and for securing the central portions of the pad and of the cover coaxially in position relatively to said spindle, and means for securing the marginal portion of said cover relatively to said spindle, the central compression of said pad operating to impart a dish form to the pad and to tension the cover.

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