March 17, 1942. R. W. CUMMINGS 2,276,469

FINISHING WHEEL

Filed April 27, 1939

Fig.1.

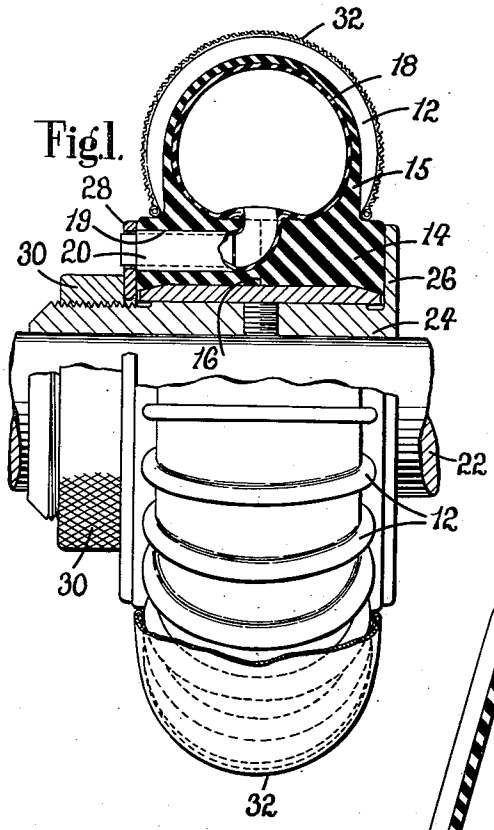


Fig.2.

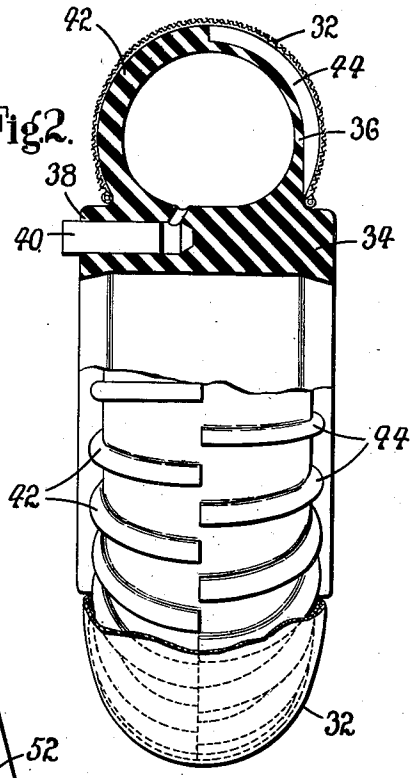
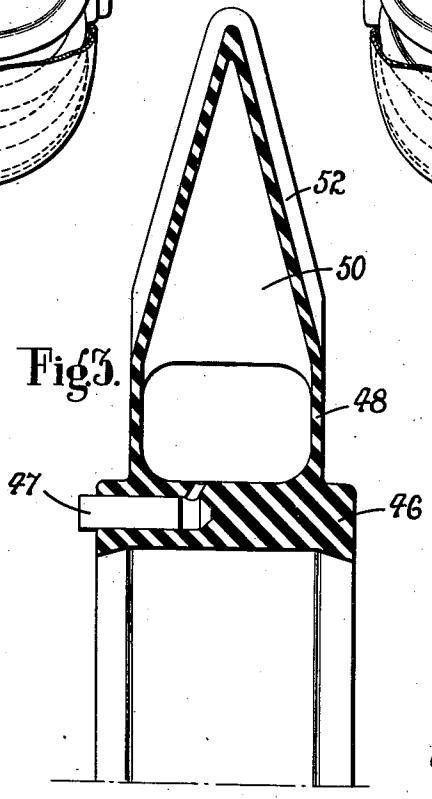


Fig.3.



INVENTOR
Roy W. Cummings
By his attorney
Victor Cobb.

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FINISHING WHEEL

Roy W. Cummings, Beverly, Mass., assignor to United Shoe Machinery Corporation, Borough of Flemington, N. J., a corporation of New Jersey

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6 Claims. (Cl. 51—192)

This invention relates to a finishing wheel for waxing or polishing parts of boots and shoes. After the heel of a shoe, for example, has been scoured a thin coating of wax is usually applied by a heated burnishing tool and the wax is then spread and worked into the surface of the heel by means of a rotary finishing wheel or brush mounted on the power-driven shaft of a finishing machine. It has heretofore been proposed to spread the wax by means of a finishing wheel comprising an inflatable pad having a smooth peripheral surface which is encased in a covering of cloth such as flannel, canvas or the like. However, in practice the surface of the cover was found to have an objectionable scouring effect, portions of the heel being wiped clear of the wax when the operator did not move the heel past the pad rapidly enough.

It is an object of my invention to provide an improved finishing wheel pad which will obviate the above difficulties, and to this end my improved pad is provided with spaced ribs forming an uneven peripheral surface which produces a bumping effect as the pad operates upon a work surface. This bumping effect reduces the dragging or scouring action of the pad cover on the work surface to an unobjectionable amount and also reduces the strain on the pad cover, thereby greatly improving the quality of the work and appreciably lengthening the life of the cover.

With the above and other objects in view, the invention will now be described with reference to the accompanying drawing and will be pointed out in the appended claims.

In the drawing,

Fig. 1 is an elevational view partly in section of a finishing wheel having a ribbed pad which illustrates one form of my invention;

Fig. 2 is an elevational view partly in section showing another form of my invention, and

Fig. 3 is a sectional view showing my invention embodied in a pad of tapering cross section.

When using a finishing wheel pad having a ribbed type of uneven surface for operating on different types of work, such as shoe heels and bottoms, it is found that different rib arrangements are desirable to meet the conditions presented by the different work surfaces. For example, it is desirable to have a relatively rigid pad for operating on heels for men's shoes where there is little variation in the slope of the outer heel surface, while for work on heels for women's shoes a more flexible pad is desired so that it can conform readily to the greater variation in the vertical slope of the outer heel surface, and for operating on shoe bottoms a pad of tapering cross section is desired so that the operation can be carried out in corners such as the corner at the base of the heel breast. There is illustrated by way of example, and will now be described, ribbed pads which have been found to be well adapted for the different types of work mentioned above.

There is shown in Fig. 1 an example of a finishing wheel embodying the more rigid type of pad which is desired on work such as heels for men's shoes. This pad consists of a casing composed of a base 14 and a tubular portion 15 having spaced transverse ribs, or projections, 12 extending completely across its outer peripheral surface and extending therebeyond. In addition to producing a bumping action as the surface of the pad passes over a work surface, the ribs 12, which, as shown, are narrow and spaced apart circumferentially by distances several times greater than their width or height, will also reinforce the casing and make it much more rigid than it would be without them. The pad is inflated by an inner tube 18 which is inserted into the tubular portion 15 through a slit 16 in the base 14, the base having formed therein an opening 19 for the reception of the usual inner tube valve 20. The pad is connected to the rotary shaft 22 of a finishing machine by a collar 24 which is fast to the shaft 22 and which grips the sides of the base 14 between an integral upstanding flange 26 and a plate 28 which is held against the opposite side of the base 14 by a nut 30 threaded on the collar 24. The pad is encased by a covering 32 of any suitable material such as flannel, canvas or the like, closely conforming thereto, as shown.

In Fig. 2 is shown an example of a finishing wheel embodying a more flexible type of pad which has been found desirable for work upon heels of women's shoes. This pad consists of an airtight casing composed of a base 34 and a tubular portion 36, the base having an opening 38 communicating with the tubular portion and arranged for the reception of a valve 40 through which the casing may be inflated. Formed on the periphery of this pad are spaced ribs, or projections, 42, 44 which extend from a point adjacent the base 34 about the side walls to the middle of the casing. As shown, the ribs on one side of the casing are offset circumferentially from the ribs on the other side so that there will be an appreciable amount of the relatively thin outer portion of the casing between the ends of adjacent ribs with the result that a much more

flexible pad is provided which will conform itself readily to the varying contour of heels for women's shoes while affording the desired bumping effect. A covering **32** similar to the one shown in Fig. 1 is used to encase the pad.

The pad shown in Fig. 3 has been found to be well suited for operation upon surfaces such as shoe bottoms. This type of work calls for a pad which can operate in corners such as those formed at the base of the heel breast and for that reason the pad is elongated and tapers into a point. The pad consists of an airtight casing having a base **46** in which is mounted a valve **47**, and an elongated tubular portion **48**. The tubular portion is stiffened by spaced internal ribs **50** and is further strengthened by transversely extending external ribs, or projections, **52** which are spaced about its periphery like the ribs **12** on the pad shown in Fig. 1 and produce the desired bumping action when the pad operates on a work surface. When in use, this pad is encased in a covering similar to the ones shown on the pads in Figs. 1 and 2.

If desired, the casings shown in Figs. 2 and 3 may be inflated by an inner tube in the manner disclosed in Fig. 1 or, conversely, the casing shown in Fig. 1 may be made as a self-contained inflatable unit in the manner disclosed in Figs. 2 and 3.

In my improved pad the spaced ribs form an uneven working surface which causes the finishing wheel to produce a distinct bumping effect on the surface of the work piece that obviates the scouring action of the pad cover and greatly improves the ability of the finishing wheel to spread and work the wax into the surface of the work piece. The bumping effect also reduces the drag on the cover, thus lessening the strain thereon and increasing the life of the cover. Also, it has been found, with my improved ribbed pad, that the cover creeps around during use and in this way the wear is uniformly distributed throughout the entire working surface of the cover. The resilient character of the inflatable body portion on which the ribs are supported permits the ribs to yield so that the working surface of the finishing wheel conforms to the contour of the particular work piece being treated, and, by suitable variation of the air pressure in the pad, the operator can nicely regulate the amount of yield of the wheel to satisfy his particular touch.

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

1. A finishing wheel comprising an inflatable pad having spaced ribs extending part way across its periphery and arranged to produce a bumping effect on a work piece.

2. A finishing wheel comprising an inflatable pad having spaced ribs on each side wall extending part way across its periphery and arranged to produce a bumping effect on a work piece, the ribs on one side wall being offset circumferentially from those on the other side wall.

3. A finishing wheel comprising a resilient inflatable pad having a plurality of narrow transverse ribs on its outer peripheral surface and extending therebeyond, said ribs being spaced apart circumferentially of the pad by distances several times greater than their width to produce a bumping effect when the wheel operates upon a work piece, and a flexible cover extending over the outer surface of the pad and said ribs.

4. A pad for a finishing wheel comprising a resilient inflatable body portion having an uneven working surface formed by a plurality of ribs on its exterior surface, said ribs being spaced apart by distances several times greater than their width for causing the pad to produce a bumping effect on a work piece.

5. A finishing wheel pad adapted to be mounted on the power-driven shaft of a machine for finishing shoe parts comprising a resilient body portion having an outer surface provided with a plurality of transverse ribs extending outwardly beyond said outer surface and spaced apart circumferentially of the pad by distances several times greater than their width, said ribs forming, together with said outer surface of the body portion of the pad, an uneven working surface on the pad and operating to produce a bumping effect on a shoe part when the pad is in use.

6. A finishing wheel pad adapted to be mounted on the power-driven shaft of a machine for finishing shoe parts comprising a resilient body portion having an outer surface provided with a plurality of transverse ribs extending outwardly beyond said outer surface and spaced apart circumferentially of the pad by distances several times greater than their height, said ribs forming, together with said outer surface of the body portion of the pad, an uneven working surface on the pad and operating to produce a bumping effect on a shoe part when the pad is in use.

ROY W. CUMMINGS.