

1,025,549.

R. W. THOMSON.
FINISHING MACHINE.
APPLICATION FILED JAN. 11, 1905.

Patented May 7, 1912.

2 SHEETS—SHEET 1.

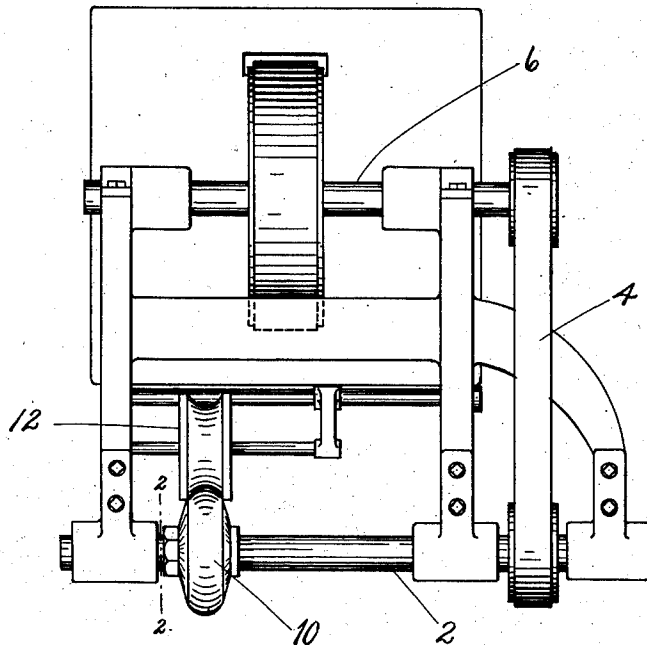


FIG. 1.

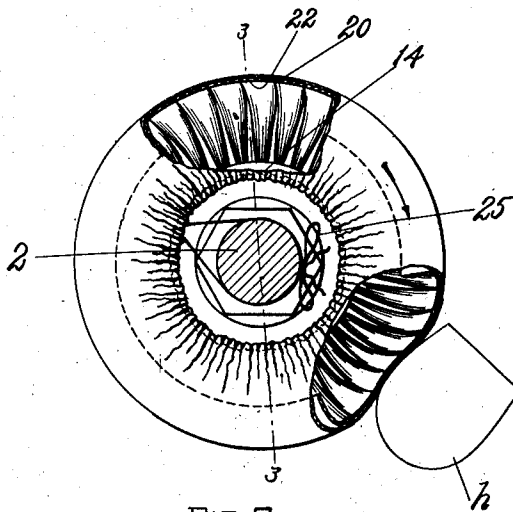


FIG. 2.

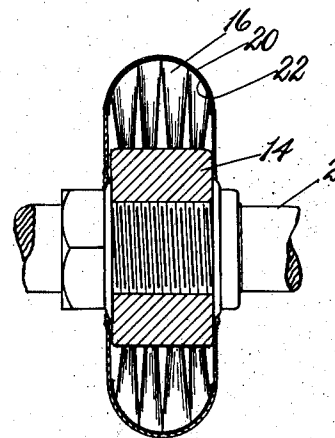


FIG. 3.

WITNESSES.

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2 SHEETS-SHEET 2.

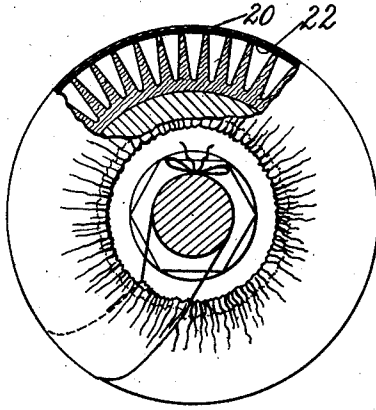


FIG. 4.

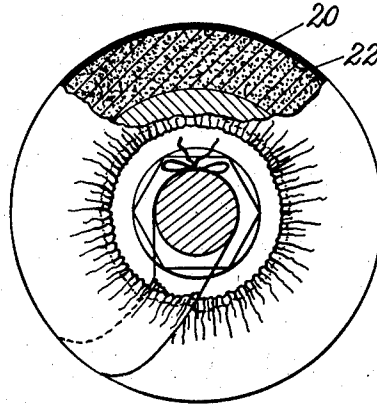


FIG. 5.

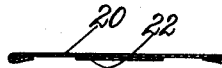


FIG. 7.

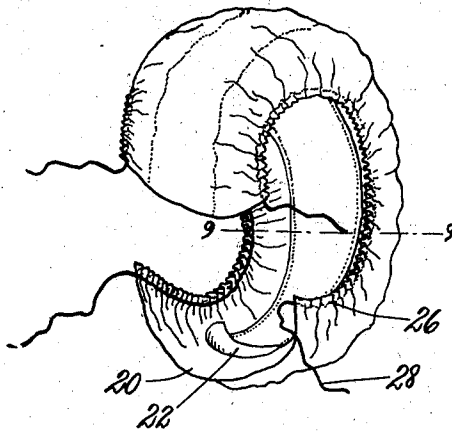


FIG. 8.

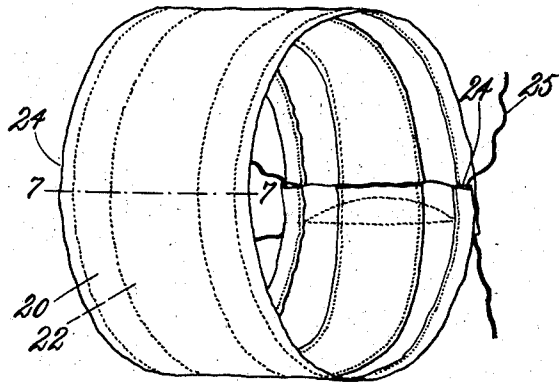


FIG. 6.

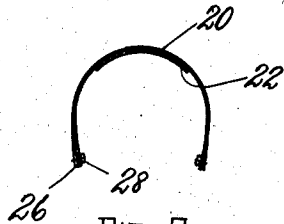


FIG. 9.

WITNESSES.

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UNITED STATES PATENT OFFICE.

ROBERT W. THOMSON, OF LYNN, MASSACHUSETTS, ASSIGNOR TO UNITED-XPEDITE FINISHING COMPANY, OF BERWICK, MAINE, A CORPORATION OF MAINE.

FINISHING-MACHINE.

1,025,549.

Specification of Letters Patent.

Patented May 7, 1912.

Application filed January 11, 1905. Serial No. 240,599.

To all whom it may concern:

Be it known that I, ROBERT W. THOMSON, a citizen of the United States, residing at Lynn, in the county of Essex and Commonwealth of Massachusetts, have invented certain Improvements in Finishing-Machines, of which the following description, in connection with the accompanying drawings, is a specification, like reference characters on the drawings indicating like parts in the several figures.

This invention relates to machines for finishing boots and shoes and particularly to the work-rubbing rolls or members of such machines, and has for its purpose to provide an improved cover for the body portion of the roll or work member of a finishing machine. The body portion of the work member may be of any usual or suitable construction. One form of work member in common use comprises a circular brush, while other forms in general use have a suitable hub and a cushion of soft felt or corrugated rubber, and in some instances pneumatic cushions are used. The body portion of the work member, whatever its particular construction, is intended to form a yielding support or carrier for the cover which constitutes the work-rubbing face of the work member and has to be renewed frequently. The cover is formed of sheet material, usually textile fabric, having the desired characteristics for use in the finishing operation.

Other features of the invention, including certain details of construction and combinations of parts, will be hereinafter described and pointed out in the claims.

Figure 1 of the drawings is a plan view of a heel-finishing machine equipped with a work member embodying my invention. Fig. 2 is a side elevation, partly in section, of the work member shown in Fig. 1 and illustrates one form of my improved cover. Fig. 3 is a sectional view on the line 3—3 of Fig. 2. Fig. 4 is a side elevation, partly in section, of a work member comprising a body portion having a corrugated rubber rim and provided with another form of my improved cover. Fig. 5 is a side elevation, partly in section, of a work member comprising a body portion having a felt rim and provided with my improved cover. Fig. 6 is a perspective view of the form of cover which I prefer to use with the work

member shown in Figs. 2 and 3. Fig. 7 is a sectional view on the line 7—7 of Fig. 6. Fig. 8 is a perspective view of the form of cover which I prefer to use upon the rolls shown in Figs. 4 and 5. Fig. 9 is a sectional view on the line 9—9 of Fig. 8.

In the heel-finishing machine shown in Fig. 1, a shaft 2 supports the work member 10 and is driven by a belt 4 from a pulley on a driving shaft 6. The work member is shown as acted upon by a rotary device 12 which may be a conveyer for delivering wax to the work member.

The work member illustrated in Figs. 2 and 3 comprises a circular brush having a hub 14 and radially projecting bristles or other filamentous elements 16. The brush is provided with one form of my improved cover, which may be made of strong textile fabric, such, for instance, as canvas. The cover is wider than the working face of the brush so that it may be fitted down over the sides of the brush and be secured in position by contracting its edge, portions, as shown most clearly in Fig. 2. The cover comprises two or more layers, and as herein shown consists of a main strip 20 and a second or additional strip 22, herein termed the "reinforcing strip," which preferably is secured to the main strip by stitching or otherwise. This strip may also be properly designated a "wear-receiving" or "friction" strip, since it receives the wear of the bristles and is also subject to the "drag" of the bristles necessary to drive the cover. The reinforcing strip may well be narrower than the main strip, as it is only essential that it extend over the portion of the main strip which is subjected to wear in the use of the work member. The reinforcing strip may be, however, the same width as the main strip if desired. The reinforcing strip may be of the same material as the main strip or it may be of any other material suitable for the acting face of a finishing wheel.

For use with a work member comprising a circular brush I prefer to form the cover as an endless band, as is shown in Fig. 6, because it is found in practice that if the ends are not so connected the workman, in applying a cover, is likely to draw it too tightly about the brush, bending the bristles more than is necessary with a consequent liability of injuring the brush. The edge

portions of the cover conveniently are provided with hems or loops 24 to receive a drawing cord or gathering string 25 for contracting the side portions of the cover to draw them closely about the sides of the brush, as shown in Figs. 2 and 3.

Preferably the band constituting the cover will be made somewhat smaller than the circumference of the brush so that it is necessary in applying the cover to the brush to bend the bristles from their normal, radial position in the manner indicated in Fig. 2. When the cover is in place it holds the bristles in the position to which they have been bent and it engages the bristles with sufficient friction to reduce the tendency of the cover to slip or creep around the brush when the work is being acted upon. A work member having bristles held in an inclined position by the cover has a more elastic working face than one in which the bristles project radially and abut squarely against the cover. This is illustrated in Fig. 2 where a heel is shown against the work member and it is seen that the bristles are normally under tension tending to straighten them out and that the pressure of the work bends the bristles still farther in the direction of their initial inclination. The ends of the bristles wear the cover from its inside quite rapidly and it is found that this wear is reduced by making the cover smaller than the brush so that the bristles will engage against the cover at an inclination to the surface of the cover instead of perpendicularly to it.

For use with a work member which comprises a felt or rubber roll I prefer to employ a cover such as is shown in Fig. 8, the ends of which are not connected. In applying such a cover to the work member it is wrapped around the roll and the ends overlapped, as shown in Figs. 4 and 5. Covers which are to be wrapped around a roll may conveniently have their edge portions permanently plaited or gathered, as shown at 26 in Fig. 8, the plaits or gathers being secured by a line of stitches, or in any other desired way. A fastening string 28 may be attached to the cover by the same line of stitches which secures the plaits, the ends of the string being free and adapted to be knotted around the shaft of the machine, as shown in Figs. 4 and 5, for holding the cover in place. Preferably and as shown, the attaching string will extend the full length of the plaited edge portion of the cover, being sewed thereto. With this arrangement the strings may be drawn tightly for securing the cover without danger of ripping the seam which holds the plaits.

The reinforcing strip of a cover which is to be wrapped around a roll will preferably be of less length than the outer strip, as shown in Fig. 8, to avoid unnecessary thick-

ness on the portion of the roll at which the ends of the cover are overlapped.

In view of the tendency of a brush to wear the cover from the inner side and in order to produce a better appearance the cover herein illustrated as embodying the invention has the reinforcing strip applied to the inner side of the main strip, but it is to be understood that it is also within the invention to apply the reinforcing strip to the outer side of the main strip. Also if desired a plurality of reinforcing strips may be employed and the several strips arranged as preferred.

A work member provided with a reinforced cover presents a firmer and better working surface than does a work member having a cover of a single thickness of material. It has been found that reinforced covers can be manufactured at a cost only slightly greater than the cost of an ordinary cover, and that especially if the reinforcement extends only over the working face or edge of the work member the period of usefulness of the cover is increased in much greater proportion than is its cost. It is also obvious that in the use of the improved covers there is an economy of time effected because of the less frequent necessity for removal of worn-out covers and application of new ones. Another advantage of this invention when applied to machines in which wax is employed is that the amount of wax wasted in worn-out covers is greatly reduced because the improved cover absorbs little or no more wax than the ordinary cover and lasts much longer.

Having fully described my invention, I desire to claim and secure by Letters Patent of the United States:—

1. As a new article of manufacture, a removable cover for a work-rubbing roll, comprising a band adapted to encircle the roll and constructed with permanently contracted edge portions adapted to fit over the sides of the roll.

2. As a new article of manufacture, a cover for a work-rubbing roll, comprising a band adapted to encircle the roll, said band being formed with permanently contracted edge portions, and fastening means permanently attached to said contracted edge portions for securing the cover to the roll.

3. The combination with a brush having radial bristles, of a cover therefor comprising a band smaller than the circumference of the brush arranged to hold the bristles in a bent position and a wear-receiving reinforcing strip secured permanently to one face of the cover.

4. As a new article of manufacture, a removable cover for a work rubbing roll, comprising a band adapted to encircle the roll and provided with a longitudinal reinforcing strip sewed to the inner face of the

band, said band being permanently gathered along its edges to contract its edge portions for adapting the band to fit over the sides of the roll.

5 5. The combination with a brush mounted for rapid rotation, of a removable cover therefor comprising a band adapted to encircle the brush, said band being wider than the working face of the brush and having
10 its edge portions permanently gathered to fit over the sides of the brush, and a reinforcing strip of less width than the band

permanently attached to one face of the band whereby different thicknesses of the cover are respectively subjected to the wear 15 caused by the work and that produced by the brush.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

ROBERT W. THOMSON.

Witnesses:

ARTHUR L. RUSSELL,
WELLS L. CHURCH.
