

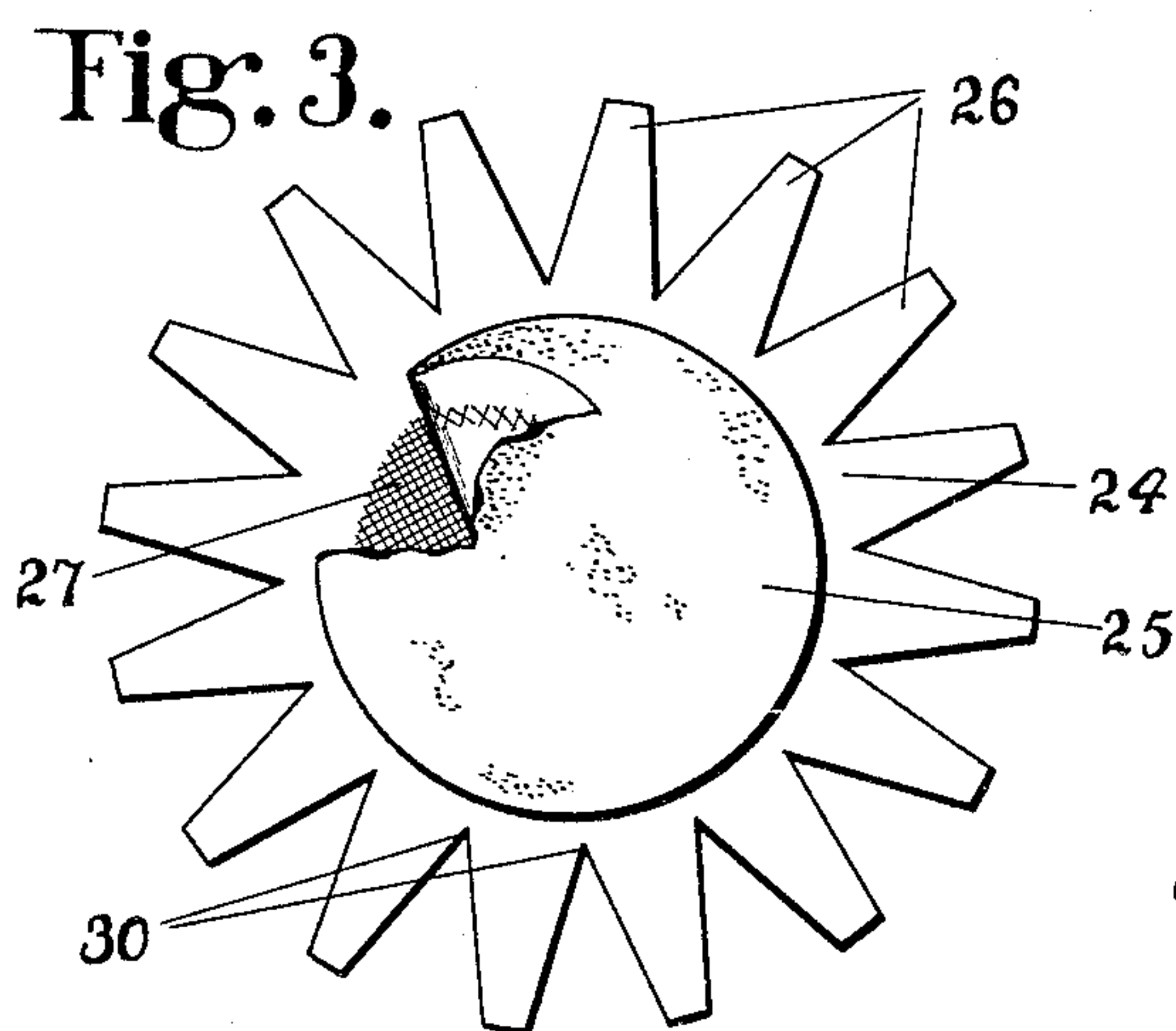
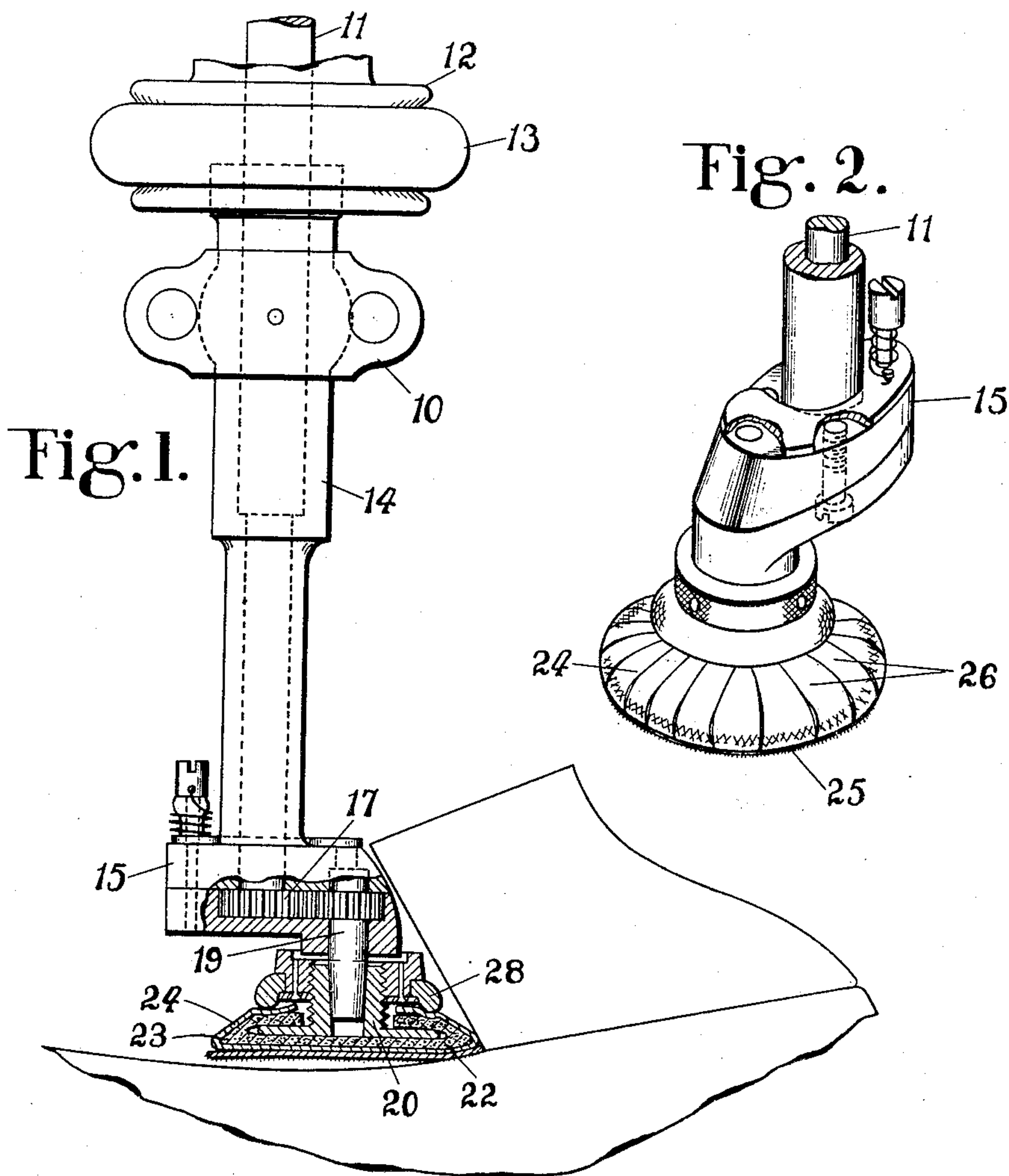
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E. F. HODGKINS

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ABRASIVE COVER

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## UNITED STATES PATENT OFFICE

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## ABRASIVE COVER

Original application filed May 21, 1923, Serial No. 640,490. Divided and this application filed October 21, 1930. Serial No. 490,291.

This invention relates to abrasive covers for buffing tools and is herein disclosed as embodied in an abrasive cover secured upon a rotary buffing tool of the Naumkeag type such as is commonly employed for buffing the shanks of shoes.

Tools of the type above referred to comprise pads which may be formed of resilient material as, for example, in the case of the tool disclosed in United States Letters Patent No. 1,806,626, granted May 26, 1931, upon the application of Edward F. Hodgkins, of which this application is a division. Such tools may also comprise pads adapted to be inflated, for an example of which reference may be had to United States Letters Patent No. 849,338, granted April 2, 1907 upon the application of A. W. Rogers. It will be noted that the tool disclosed in the above-mentioned patent to Rogers has its working face covered with a disk of abrasive sheet material which extends over the peripheral portion of the tool and is clamped upon the rear face thereof. Such a tool is well adapted for operating upon most parts of shoe bottoms. However, in certain types of shoes such as shoes provided with Cuban heels the heel breast surface renders it difficult, and in some cases impossible to operate upon the shank of the shoe all the way up to the heel breast line with a tool of the type disclosed in the above-mentioned Letters Patent No. 849,338, because the abrasive cover of such a tool is drawn tightly over the periphery of the tool and thus tends to curve up and away from the shank of the shoe in the vicinity of the periphery of the tool. Even if it were permissible to press the breast of the heel against the periphery of the tool, the portion of the abrasive cover overlying the marginal portion of the working face of the tool would still be unavailable for application to the shank at a locality adjacent to the heel breast line. Such contact, moreover, is not usually permissible, because in many shoes the heel breast surface would be damaged by the abrasive cover where the latter surrounds the periphery of the tool; for example, the heel breast is often covered with a thin delicate material likely to be cut through or other-

wise marred by contact with the abrasive at the periphery of the tool.

An object of the present invention is to provide an improved cover for a buffing tool of the Naumkeag type which will be free from the above-mentioned difficulty. In accordance with a feature of the invention, the illustrated abrasive disk is attached, not directly to a tool body, but to a non-abrasive carrier which overlies the working face of the tool and surrounds the periphery of the tool body, and the illustrated abrasive disk is attached to the carrier at a locality which lies within and which is spaced from the peripheries, respectively, of the disk of abrasive material and of the tool body. The illustrated tool body is provided with a yieldable working face, and the carrier has a plurality of tabs which are clamped against the rear face of the tool body.

It follows, as a result of the fact that the area of attachment of the abrasive disk to the carrier does not extend all the way to the periphery of the tool body, that the normal flatness of the abrasive disk is not impaired by the tendency of the carrier to be drawn upwardly adjacent to the periphery of the tool body, a tendency which is especially pronounced in the case of tool bodies having a yieldable working surface such as that herein illustrated. The abrasive disk is therefore enabled, and particularly at its marginal portion, to remain flat for presentation to the work, regardless of the fact that the carrier to which the abrasive disk is attached may curve upwardly away from the surface of the work. It also follows, as a result of the fact that the area of attachment of the abrasive disk to the carrier lies within the periphery of the abrasive disk, that the marginal portion of the abrasive disk may be extended as far as desirable to reach into a heel breast corner. It may be noted that this marginal portion of the abrasive disk, being unattached to the carrier, is free from such tension as the carrier is naturally subject to when tightly clamped to the tool body. The marginal portion of the abrasive disk is therefore free to conform to the contour of the work, and while,



indeed, the working surface of the tool body may at times afford a backing for the free marginal portion of the abrasive disk, there will at no time be any danger of the marginal portion of the abrasive disk being drawn away from the surface of the work by the carrier. The relatively small diameter of the cemented area leaves a maximum of flexibility to the marginal portion of the abrasive disk which is especially desirable when working upon shoes having severely arched and transversely curved shanks. The carrier which surrounds the periphery of the tool body, being non-abrasive, may be brought into direct engagement with a heel breast without danger of marring the heel breast surface.

The invention further consists of various features of construction and combinations and arrangements of parts herein shown and claimed, the advantages of which will be apparent to those skilled in the art from the following description, reference being had to the following drawing, in which

Fig. 1 is an elevational view, partly in section, showing a tool equipped with a novel cover in operation upon the shank portion of a shoe;

Fig. 2 is a perspective view of a tool upon which the novel cover is mounted; and

Fig. 3 is a plan view showing a cover, differing in form from that illustrated in Fig. 2, prior to the attachment of the cover to a tool.

Referring to Figs. 1 and 2, a bracket 10 is provided for supporting a shaft 11 driven by a pulley 12 and belt 13 from any convenient source of power. The lower end of a sleeve 14 which is adjustably mounted on the bracket 10 carries a casing 15 in which is journaled a spindle 19. The spindle 19 is driven from the shaft 11 by mechanism 17 housed within the casing 15. Mounted upon the spindle 19 is a tool comprising a flanged support 20 for a rotary pad of yieldable material 22 so supported that the radial face of the pad is free for application to the work. As shown in Fig. 1, the peripheral portion 23 of the pad 22 is relatively thin. The above-described arrangement for mounting and driving the spindle 19 is more fully disclosed and is claimed in the above-mentioned Letters Patent No. 1,806,626. A cover for the pad 22 is provided in the form of a canvas disk 24 the central portion of which overlies the working face of the pad 22. The part of the canvas disk 24 which overlies the working face of the pad 22 is free from creases, folds, discontinuities, or overlapping portions, as clearly shown in Figs. 1 and 3, and, therefore, this part of the canvas disk 24 is inherently even, continuous and of uniform thickness. The canvas disk 24 extends over the periphery of the pad 22 and its marginal portion is serrated to form tabs 26

which are clamped upon the rear face of the tool by means of a nut 28 which is threaded upon the support 20. An abrasive disk 25 of sheet material which, as illustrated, may be substantially co-extensive with the working face of the pad 22, is cemented to the outer surface of the canvas disk 24 by means of a spot of cement 27 (Fig. 3) substantially smaller than the working face of the tool and disposed centrally of the abrasive disk and of the tool. The canvas disk 24 thus constitutes a carrier for the abrasive disk 25, and, inasmuch as the abrasive disk 25 is attached to the carrier 24 over an area which lies within and spaced from the periphery of the abrasive disk, the periphery of the abrasive disk is left free and flexible and unattached to the carrier for application to the work, as would not be the case if adhesive were to be applied fully to the abrasive disk in attaching it to the carrier, which would render the peripheral portion of the abrasive disk very stiff and unyielding. A further advantage of the two-piece construction of the above-described cover resides in the fact that the amount of abrasive material used is very considerably reduced below what would be required if a one-piece cover, similar to the canvas disk 24, were to be cut from a sheet of abrasive material.

It will be noted that in the cover shown in Fig. 2 the serrations which form the tabs 26 extend over the periphery of the tool all the way to the periphery of the abrasive disk 25. In Fig. 3, however, is shown a different form of cover wherein the serrations terminate at points 30 which lie outside of the periphery of the abrasive disk 25, leaving an annular area of the carrier 24 outside of the periphery of the abrasive disk 25 unserrated. As above stated, the illustrated disk 25 is co-extensive with the working face of the tool pad 22. The serrations of the cover shown in Fig. 3 will not, therefore, when this cover is applied to a buffing tool, extend over the periphery of the tool pad, and the relatively thin peripheral portion of the pad will thus be covered by a continuous unserrated portion of the carrier 24. The pad 22 is thus protected from contact with the work, avoiding undesirable friction and possible injury to the pad. The terminations 30 of the serrations illustrated in Fig. 3 are, furthermore, well outside of the periphery of the cemented area 27, leaving an annular unserrated area of the carrier 24 surrounding the cemented area. This annular unserrated area takes up the unequal stresses of the tabs 26 and prevents such inequalities of stress from being transmitted into the abrasive disk 25.

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

1. A rotary buffing tool comprising a tool body of the Naumkeag type, a non-abrasive



carrier of sheet material overlying the working face and surrounding the periphery of said tool body, means for securing said carrier to said tool body, and a disk of abrasive sheet material attached to the outer face of said carrier at a locality which lies within and which is spaced from the peripheries, respectively, of the disk of abrasive material and of the tool body, said abrasive disk being free from direct attachment to that portion of the carrier which is adjacent to the periphery of the tool body, whereby the unattached marginal portion of the abrasive disk is left free from the distorting influence of tension in that portion of the carrier which is adjacent to the periphery of the tool body.

2. A rotary buffing tool comprising a tool body of the Naumkeag type having a yieldable working face, a non-abrasive carrier of inherently even, continuous, flexible sheet material completely covering the working face of said tool body, said carrier extending over and completely covering the periphery of the working face of said tool body and having its marginal portion serrated to form tabs overlying the rear face of said tool body, means for clamping said tabs against the rear face of said tool body, and a disk of abrasive sheet material cemented to the outer face of said carrier over an area concentric with the working face of said tool body, said cemented area having a diameter less than the respective diameters of the working face of said tool body and of said abrasive disk.

In testimony whereof I have signed my name to this specification.

ADDIE L. PRESTON,

*Administratrix of the Estate of Edward F. Hodgkins, Deceased.*