

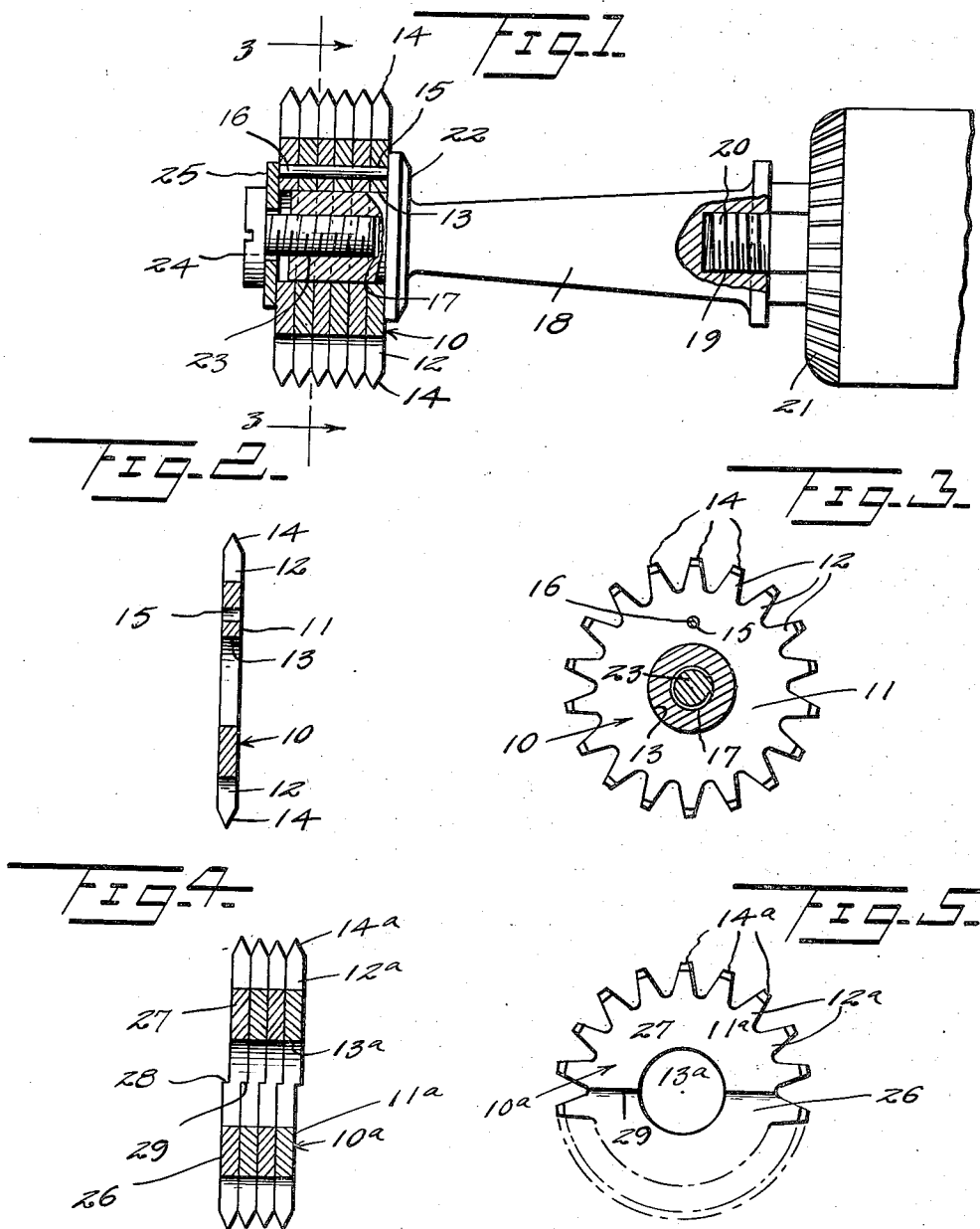
May 21, 1940.

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2,201,899

SHOE REPAIRING MACHINE

Filed March 15, 1939



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UNITED STATES PATENT OFFICE

2,201,899

SHOE REPAIRING MACHINE

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Application March 15, 1939, Serial No. 262,063

3 Claims. (Cl. 69—1)

This invention relates to shoe repairing machines, and more particularly to an attachment for use with a repair machine for grooving or roughing one side of a piece of leather, such as a shoe sole in order to provide a sufficiently rough surface so that two pieces of leather may be firmly and adhesively secured together.

An object of this invention is to provide a leather grooving means which may be detachably secured to the present parts of a shoe repair machine, the grooving means taking place of the steel brush at present provided on the repair machine.

Another object of this invention is to provide a plurality of roughing blades of substantially star-shape and means for securing the blades in face abutting relation so as to hold the blades against rotation relative to each other.

A further object of this invention is to provide a stem or handle and blades detachably mounted on the stem or handle, the blades being provided with interengaging means so as to hold the blades against rotation relative to each other.

A further object of this invention is to provide a blade means for forming parallel grooves in the surface of a piece of leather, the blade means being provided with keen edges parallel with the opposite faces of the blades so that only a relatively small amount of material will be cut out of the surface of the leather to provide a base for an adhesive to firmly secure the leather on another piece of leather or other suitable surface.

To the foregoing objects and to others which may hereinafter appear, the invention consists of the novel construction, combination and arrangement of parts as will be more specifically referred to and illustrated in the accompanying invention, wherein is shown an embodiment of this invention, but it is to be understood that changes, variations and modifications may be resorted to which fall within the scope of the invention as claimed.

In the drawing:

Figure 1 is a detail side elevation partly in longitudinal section of a grooving means constructed according to an embodiment of this invention,

Figure 2 is a vertical section of one of the grooving blades,

Figure 3 is a sectional view taken on the line 3—3 of Figure 1,

Figure 4 is a vertical section of a modified form of blade, and

Figure 5 is a detail front elevation of a blade shown in Figure 4.

Referring to the drawing, and first to Figure

1, the numeral 10 designates generally a grooving blade comprising a disc-like body member or plate 11 provided with an axial opening 13. The outer edge of the body member or plate 11 has formed integral therewith a series of closely related radially disposed frusto tapered arms 12 each having its outer end terminal portion oppositely inwardly beveled on its opposite faces to an extent to form a sharp outer end edge portion 14 which is disposed in a line extending between, parallel to and spaced from the opposite faces of the said arm 12. The edge portions 14 are of arcuate contour and arranged in a circular row disposed coaxially with the opening 13. The said oppositely beveled end terminal portions are of V-form. An edge portion 14, in connection with the oppositely inwardly beveled end terminal portion with which it is correlated will provide a substantially V-shaped groove in the surface of the leather when the blade acts on the latter, and as the said keen edge portions 14 of the blade may be caused to successively act on the leather, the V-groove can be made continuous and of any desired length. The body member or plate 11 is provided with a relatively small opening 15 outwardly of the central opening 13 and when a number of these blades 10 are disposed in face abutting relation as shown in Figure 1, a locking pin 16 is adapted to extend through aligned openings 15 so as to thereby hold the blades against rotation relative to each other. The central opening 13 is provided for the passage of a mount for the blade.

If desired, the grooving blades 10 may be mounted on a stud 17 which is carried by a driven shaft 18. This shaft 18 is provided at one end thereof with a threaded recess or socket 19 within which the projecting end of a rotatable driving spindle 20 therefor is adapted to engage. At the present time the spindle 20 has an edging blade 21 secured thereto and forms a part of the present structure of the repair machine.

The shaft 18 is provided with an annular flange 22 at the inner end of the stud 17 and against which the innermost of the blade members 10 is adapted to abut. The stud 17 is provided with a threaded opening 23 in which a headed screw or bolt 24 is adapted to engage. A washer 25 is interposed between the head of the screw or bolt 24 and the outermost of the blades 10 so as to frictionally hold the blades 10 against rotation relative to the stud 17.

In Figure 4 there is disclosed a modified form of blade structure wherein a blade member 10^a is disclosed, the blade 10^a including a disc-like

body member or plate 11^a having integral with its outer edge a series of closely related radially disposed frusto-tapered arms 12^a, each having its outer end terminal portion oppositely inwardly beveled on its opposite faces to an extent to form a sharp outer end edge portion 14^a which is disposed in a line extending between, parallel to and spaced from opposite faces of the arm 12^a. The edge portions 14^a are arranged in a circular row disposed coaxially with an axially arranged opening 13^a in the body member 11^a. The latter is formed of a pair of semi-circular portions 26, 27 disposed in offset relation and forming shoulders 28, 29 on opposite sides of the body member 11^a at the horizontally diametric center of the latter.

In the present instance, the offset portions or shoulders 28 and 29 are substantially positioned through the diameter of the blade 10^a so that a number of these blade members may be disposed in face abutting relation with the offset portions of one blade interlocking or interengaging with the offset portions of an adjacent blade so as to thereby hold the blades against rotation relative to each other. The blade member 10^a may be formed by stamping the blade from a sheet of metal and as many of these blade members 10^a may be disposed in face abutting relation as are considered necessary or desirable for the shoe sole grooving operation. The blade member 10^a may be mounted on the present shaft or spindle with the shoe edging blade at present forming part of the repair machine, or if desired, the blades 10^a may be mounted on a handle similar to the handle or extension 18 and then mounted on the heel trimming shaft now forming a part of the shoe repair machine.

In the use and operation of this blade structure as many of the blades 10 or 10^a are disposed in face abutting relation as are considered necessary or up to the capacity of the spindle or shaft they are mounted on and at the time of the mounting thereof, the pin 16 is mounted in the aligned pin openings 15. The washer or plate 25 is of such a diameter as to engage against one end of the pin 16, and the flange 22 has a sufficient diameter so that the opposite end of the pin 16 will engage thereagainst. In this manner the pin 16 will not fall out or work out of the pin openings 15 during the use of the grooving device. The shoe sole is placed against the blade members 10 or 10^a and moved therealong, so that a plurality of relatively shallow grooves of substantially V-shaped construction are provided in the surface of the leather.

With a shoe sole grooving device as hereinbefore described, the blades will not become clogged with the fibers as is the case with the steel brush at present in use. The rotation of the nested blades will also act as a means to blow out the loosened fibers which are then picked up by the suction device forming part of the repair machine.

These blade members when they become dull may be readily sharpened so that these blades will last for a considerably longer period of time than a steel brush and the blades may

also be used more strenuously than a steel brush without affecting the structure of the blades. Where a steel brush is used extreme pressure on the brush will cause the strands of the brush to bend and in this manner the efficiency of the brush is reduced. In addition to this, the outer ends of the strands forming the brush soon become rounded off and the efficiency of the steel brush is impaired, requiring the replacement of the brush whereas with a roughing device formed of blades as hereinbefore described when the blades become dull they may be readily sharpened through the use of a file or other abrasive means which will reestablish keen edges 14.

What I claim is:

1. In a leather grooving means, a bodily revolvable group of abutting stationary blades, each including a disc-like axially apertured body portion having integral with its outer edge a series of closely related radially disposed frusto-tapered arms of like form each having its outer end terminal portion oppositely inwardly beveled to form it with a sharp outer curved cutting edge portion disposed on a line extending between and spaced from opposite faces of the arm with which the edge portion is correlated, the said oppositely inwardly beveled end terminal portion being of V-form, the apertures of said body portions providing for the mounting of the group on a revolving means for the latter, and said blades having correlated inherent means to prevent the shifting of one blade of the group relative to an adjacent blade on the revolving of the group.

2. In a leather grooving means, a bodily revolvable group of abutting stationary blades, each including a disc-like axially apertured body portion having integral with its outer edge a series of closely related radially disposed frusto-tapered arms of like form each having its outer end terminal portion oppositely inwardly beveled to form it with a sharp outer curved cutting edge portion disposed on a line extending between and spaced from opposite faces of the arm with which the edge portion is correlated, the said oppositely inwardly beveled end terminal portion being of V-form, the apertures of said body portions providing for the mounting of the group on a revolving means for the latter, and the body portion of each blade being formed of a pair of parts disposed in offset relation with respect to the other, the said offset parts of said body portions being so correlated to prevent the revolving of one blade relative to an adjacent blade on the revolving of said group.

3. In a leather grooving means a blade including a disc-like axially apertured body portion having integral with its outer edge a series of closely related radially disposed frusto-tapered arms of like form each having its outer end terminal portion oppositely beveled to provide it with a sharp outer cutting edge portion disposed on a line extending between and spaced from opposite faces of the arm, said body portion being formed of a pair of semi-circular parts disposed in offset relation.

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