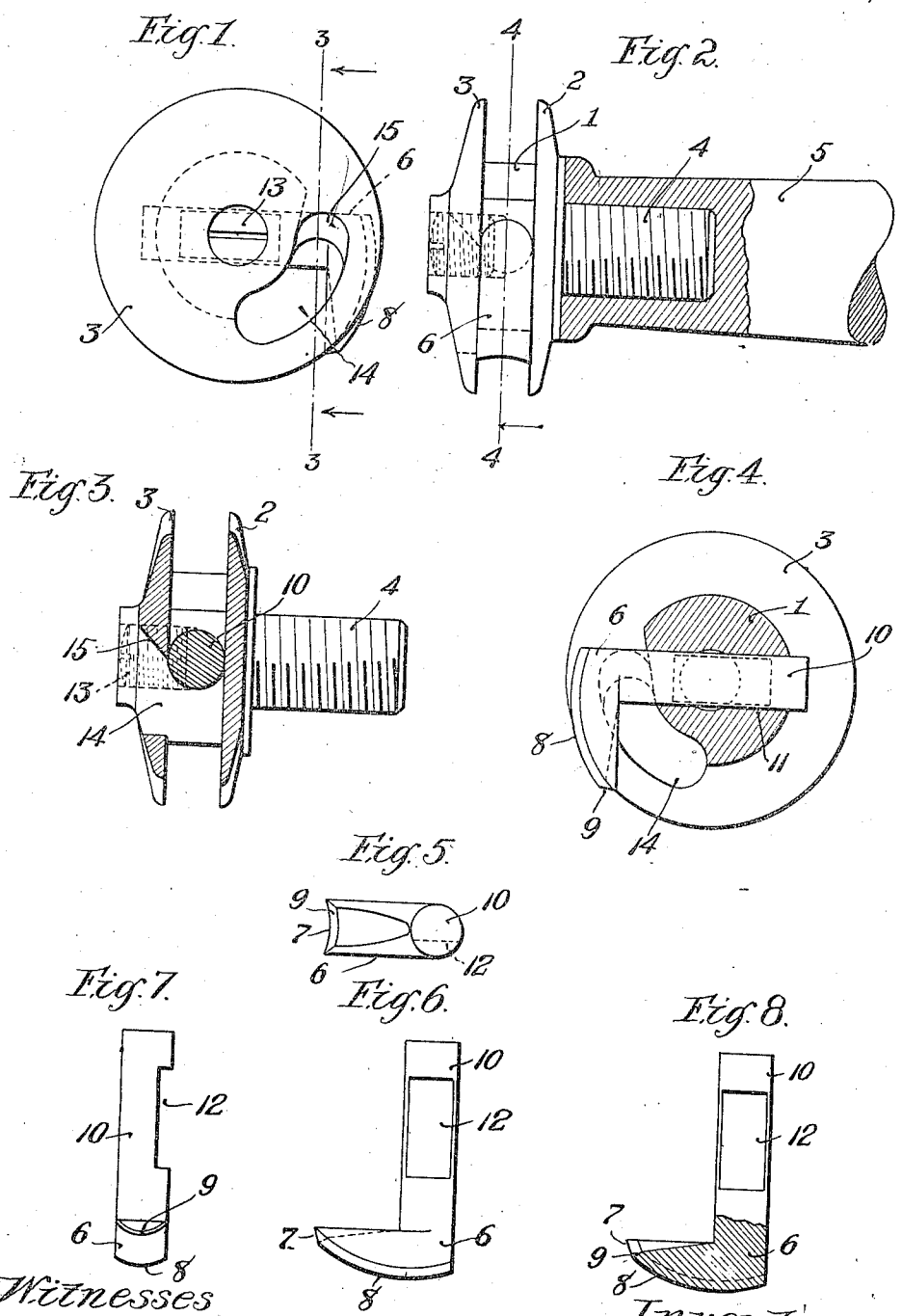


J. B. HADAWAY.
TACK PULLING TOOL.
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995,670.

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Witnesses
S. M. Rheem.
Thomas G. Ogden

Inventor
J. B. Hadaway
by his Attorneys
Phillips Van Eosen & Fish
by Fred C. Fish

UNITED STATES PATENT OFFICE.

JOHN B. HADAWAY, OF SWAMPSCOTT, MASSACHUSETTS, ASSIGNOR TO UNITED SHOE MACHINERY COMPANY, OF PATERSON, NEW JERSEY, A CORPORATION OF NEW JERSEY.

TACK-PULLING TOOL.

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To all whom it may concern:

Be it known that I, JOHN B. HADAWAY, a citizen of the United States, residing at Swampscott, in the county of Essex and State of Massachusetts, have invented certain new and useful Improvements in Tack-Pulling Tools; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to machines for pulling tacks from lasted shoes and more particularly to that class of tack pulling machines in which the tacks are acted upon and extracted by a rotary tool having one or more transverse tack pulling blades or edges.

One object of the invention is to provide a tack pulling tool of this character with a tack puller, the tack engaging edge of which may be readily repaired and sharpened, and may also be maintained in proper relation to the guard flange or flanges with which these tools are usually provided, as the front face of the puller is gradually removed or ground away by the repeated sharpening of the puller.

In accordance with this object, one feature of the invention contemplates the provision in a rotary tack pulling tool provided with one or more guard flanges for engaging the sole of a shoe, of a tack puller provided with an eccentric periphery back of its transverse tack pulling edge and permitting adjustment to maintain its edge in proper relation with the guard flange as the front face of the puller is ground away in repeatedly sharpening the edge of the puller.

In accordance with the broader features of the invention, any suitable means may be provided for enabling the puller to be adjusted and secured in adjusted position so as to bring the tack pulling edge of the puller in proper relation to the work engaging guard flange.

In the simplest and most efficient form of the invention which has been devised, two guard flanges are provided, although one may be omitted, these flanges being formed as a solid spool which may be attached to a spindle or rotary support, and the hub of this spool between the flanges is drilled through on a chord, preferably diametrically, thus forming an aperture in which the puller may be adjustably secured by its

shank. With this construction, as the tack engaging edge of the puller is ground away, the proper relation between it and its co-operating guard flange or flanges may be maintained by a simple longitudinal adjustment across the axis of the spindle.

It is desirable that means be provided to prevent clogging of the tool during its operation and heretofore this has been accomplished by providing one or both of the flanges with a slot extended inward from its perimeter arranged to register with the front face of the tack pulling tool but, as is well known to those skilled in the art, it is also desirable that the continuity of the perimeter of the guard flange or flanges should remain unbroken.

Another object of the invention is to provide a tool which will permit a ready ejection of any materials gathering in front of the puller which would tend to clog its operation but at the same time will preserve the continuous bearing surface of the guard flange or flanges.

In accordance with this object another feature of the invention contemplates the provision of an opening in one or both of the guard flanges to permit leather or other matter collecting in front of the tack pulling edge of the puller, during its operation, readily to be pushed out, but located within the outer margin of the flange so that the continuity of its perimeter remains unbroken.

Other features of the invention will appear from the following description and will be definitely pointed out in the appended claims.

The preferred form of the invention is illustrated in the accompanying drawings in which—

Figure 1 is an end elevation of the tool; Fig. 2 is a side elevation of the tool with the supporting spindle partly broken-away to show how the tool is mounted in its end; Fig. 3 is a side elevation of the tool removed from its supporting spindle and showing the flanges and puller in section on the line 3—3 of Fig. 1; Fig. 4 is a transverse section on the line 4—4 of Fig. 2; and Figs. 5 to 8 are details of the puller.

In the embodiment of the invention illustrated in the drawings, the tack pulling tool consists of a spool-shaped member comprising a hub 1 and side flanges 2 and 3 pro-

vided with a threaded shank 4 extending axially from one side of the spool and adapted to be threaded into one end of a rotary spindle 5. The flanges 2 and 3 are in the form of disks and form guard flanges for the tack puller 6 which is located between them. The puller 6 is provided with a transverse tack pulling edge 7 and the periphery 8 of the tack puller back of the edge 7 is so shaped that it is eccentric to the axis of the spindle in order to give the clearance required for the efficient action of the tack pulling edge upon the tacks. This edge should project slightly beyond the periphery of the guard flanges in order that it may dig under the embedded head of an insole tack and pull it from the shoe without injury to the sole when the sole is held firmly against the perimeters of the guard flange.

When the tack pulling edge becomes dulled or nicked by reason of its successive engagements with the tacks, it is removed from the head 1 and its edge sharpened by grinding away the front face 9 of the puller. Since the periphery 8 of the puller back of the tack pulling edge is eccentric, the grinding away of the front face gradually brings the edge 7 nearer the axis of the tool and tends to destroy the proper relation of the edge to the perimeters of the guard flanges. The tack pulling edge of the pullers is maintained in proper relation to the perimeters of the guard flanges by a compensating adjustment of the puller as the face of the puller is ground away.

In the preferred construction the puller is provided with a shank 10, preferably cylindrical for a purpose which will hereinafter appear, which is slipped into an aperture 11 drilled through the hub 1 on a chord thereof, preferably a diameter. One side of the shank 10 is slabbed-off, as at 12, and the puller is held in any desired position of adjustment across the axis of the spindle 5 by means of a set screw 13 threaded into a suitably located opening formed in the flange 3. The set screw 13 holds the puller firmly in different positions in the hub 1 to compensate for the variation in the location of the tack pulling edge produced by grinding away the face of the tack puller. As this face is ground away the position of the puller in the aperture 11 of the hub 1 may be successively shifted so that the transverse tack pulling edge of the puller will project the proper distance beyond the perimeters of the guard flanges. It will be obvious to those skilled in the art that the construction just described provides for a quick and accurate adjustment in the simplest manner.

It is desirable that there be provision in tools of this character for ejecting waste material, such as pieces of leather or other matter collecting in front of the tack pulling edge of the puller during its operation, to

prevent clogging and stopping an effective operation of the tool. It is also desirable that the perimeters of the guard flanges which rest upon the sole of the shoe remain unbroken so as to provide a firm bearing at all times, and by reason of the smooth continuous surface presented to the shoe sole prevent its being injured by marring. To this end one or both of the flanges may be provided with an opening 14 therethrough within the margin of the flange registering with the heel of the puller and through which the waste materials may be ejected. The end of this opening adjacent the heel of the puller is beveled, as shown at 15, and this beveled end with the rounded side of the shank 10 of the puller acts in the nature of a chute to assist in the easy egress of the materials.

Having explained the nature and object of the invention and specifically described one form of tack pulling tool in which it may be embodied, what is claimed as new, is:—

1. A rotary tack pulling tool, having, in combination, a puller provided with a transverse tack pulling edge and an eccentric periphery back of said edge, a guard flange at one side of the puller, and means permitting adjustment of the puller across the axis of rotation of the tool, substantially as described.

2. A rotary tack pulling tool, having, in combination, a rotary spindle having a hub at one end provided with an aperture drilled therethrough on a chord thereof, a puller having a transverse tack pulling edge adjustably secured by its shank in said aperture and a guard flange at one side of the puller, substantially as described.

3. A rotary tack pulling tool, having, in combination, a rotary spindle having a hub at one end, a puller having a transverse tack pulling edge projecting from the hub, and a guard flange at one side of the puller having an opening therethrough but within the margin of the flange arranged to register with the heel of the puller, substantially as described.

4. A rotary tack pulling tool, having, in combination, a puller provided with a transverse tack pulling edge and an eccentric periphery back of said edge, and a guard flange at one side of the puller provided with an opening for the ejection of waste materials, said opening having its end at the heel of the puller beveled outwardly to assist the materials in passing out, substantially as described.

5. A rotary tack pulling tool, having, in combination, a spindle having a hub at one end, a puller, having a transverse tack pulling edge and a cylindrical shank, projecting from the hub, and a guard flange at one side of the puller provided with a slot cut there-

through for the ejection of waste materials, said slot having its end at the heel of the puller beveled outwardly forming substantially a continuation of the rounded shank of the puller to assist the materials in passing out, substantially as described.

6. A rotary tack pulling tool, having, in combination, a rotary spindle, a spool at one end thereof comprising a hub and two flanges, a puller provided with a transverse tack pulling edge adjustably mounted in a diametrical aperture in the hub, and one of said flanges having a slot cut therethrough for

the ejection of waste materials, substantially as described.

7. A rotary tack pulling tool, having, in combination, a hub, two guard flanges having continuous perimeters, a puller having a transverse tack pulling edge between said flanges, and provision for ejecting waste material sidewise from between the flanges, substantially as described.

JOHN B. HADAWAY.

Witnesses:

CHESTER E. ROGERS,
LAURA M. GOODRIDGE.