J. B. HADAWAY.

TACK PULLING TOOL.

APPLICATION FILED JULY 1, 1909.

988,332.

Patented Apr. 4, 1911.

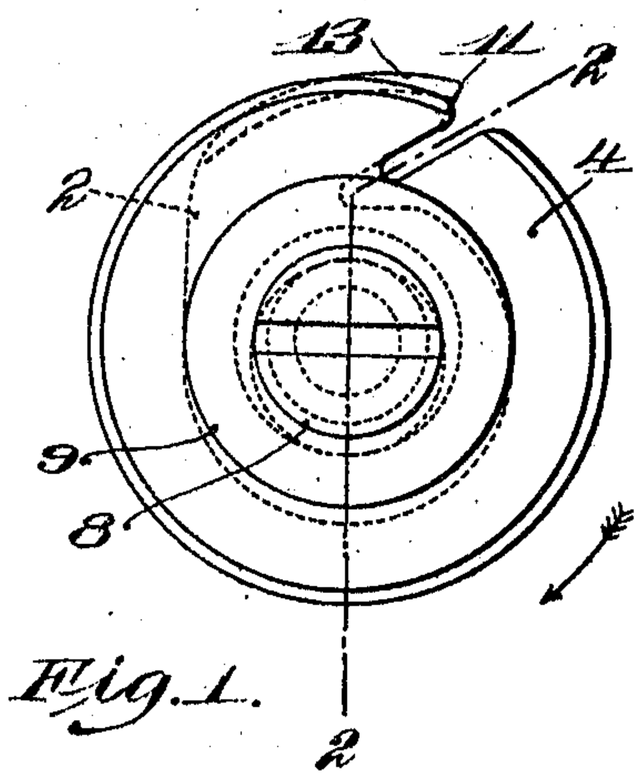

Fig. 1.

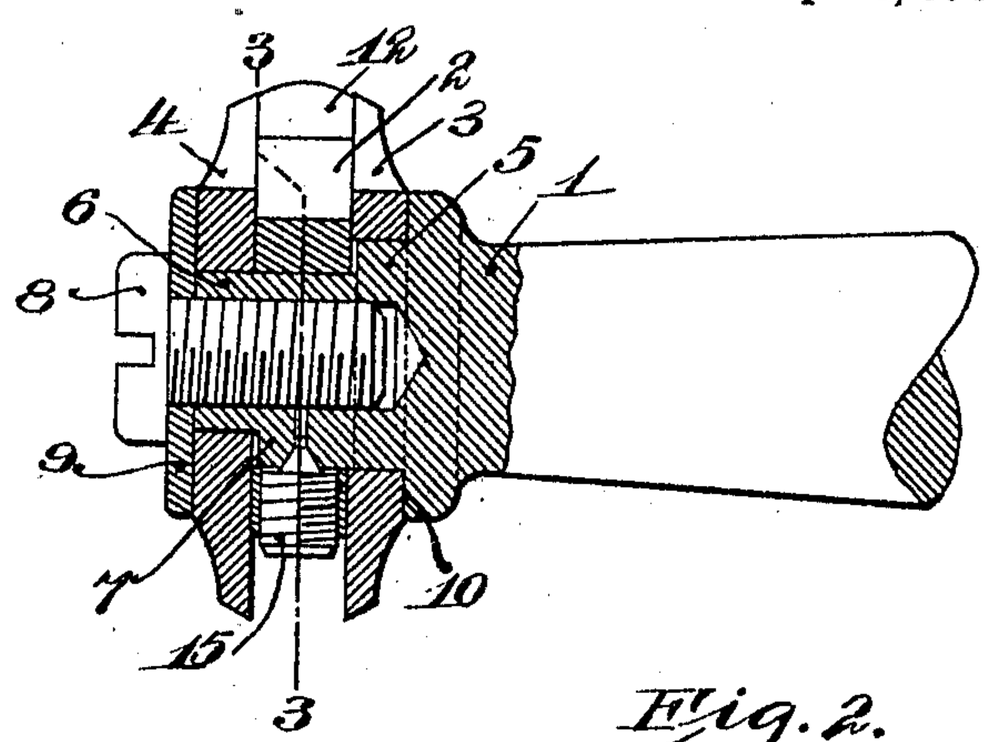

Fig. 2.

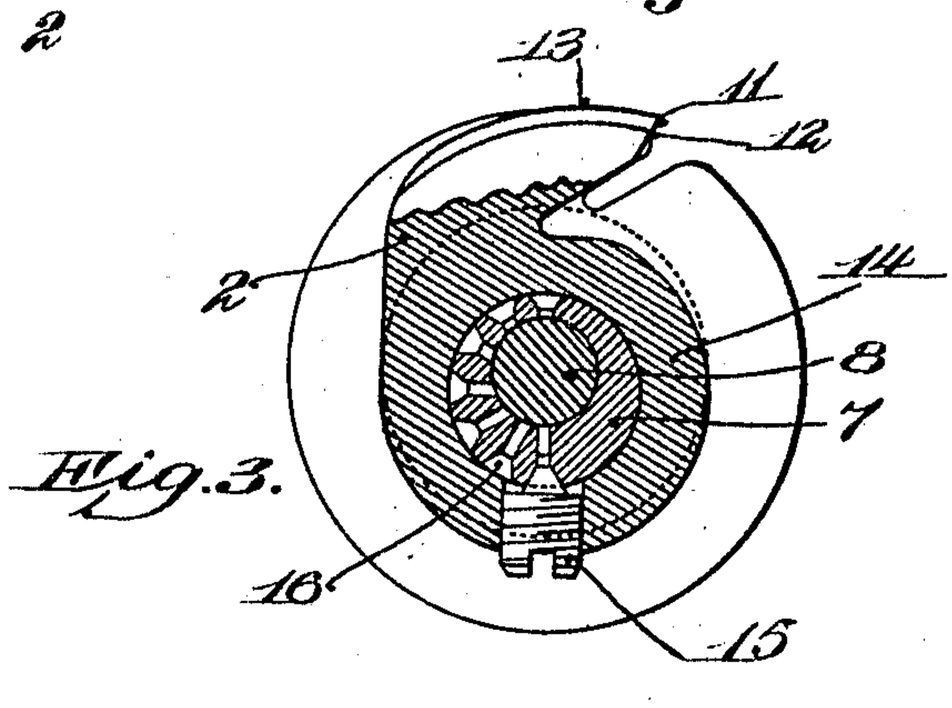

Fig. 3.

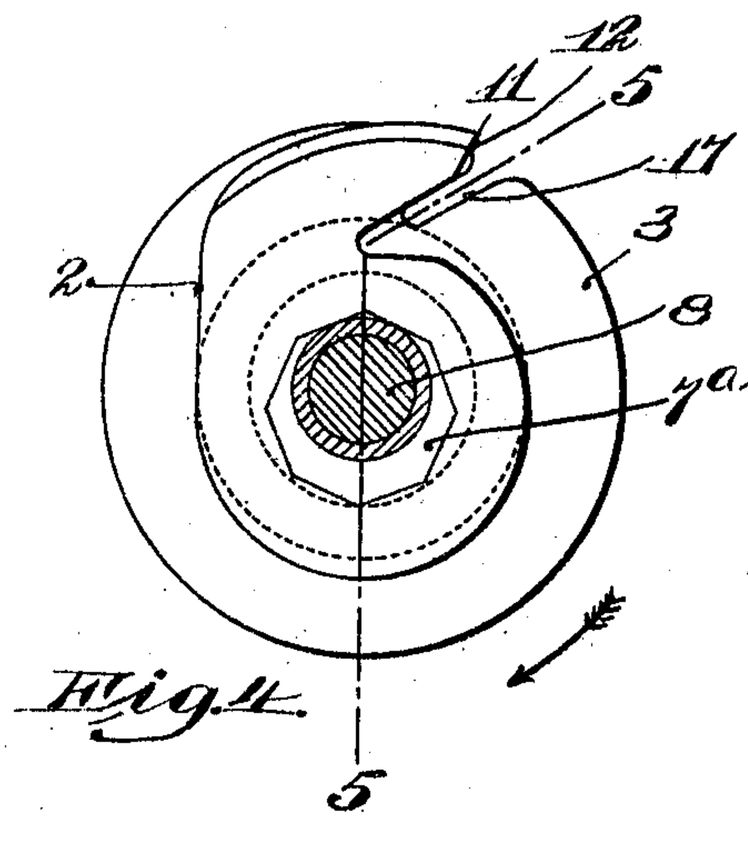

Fig. 4.

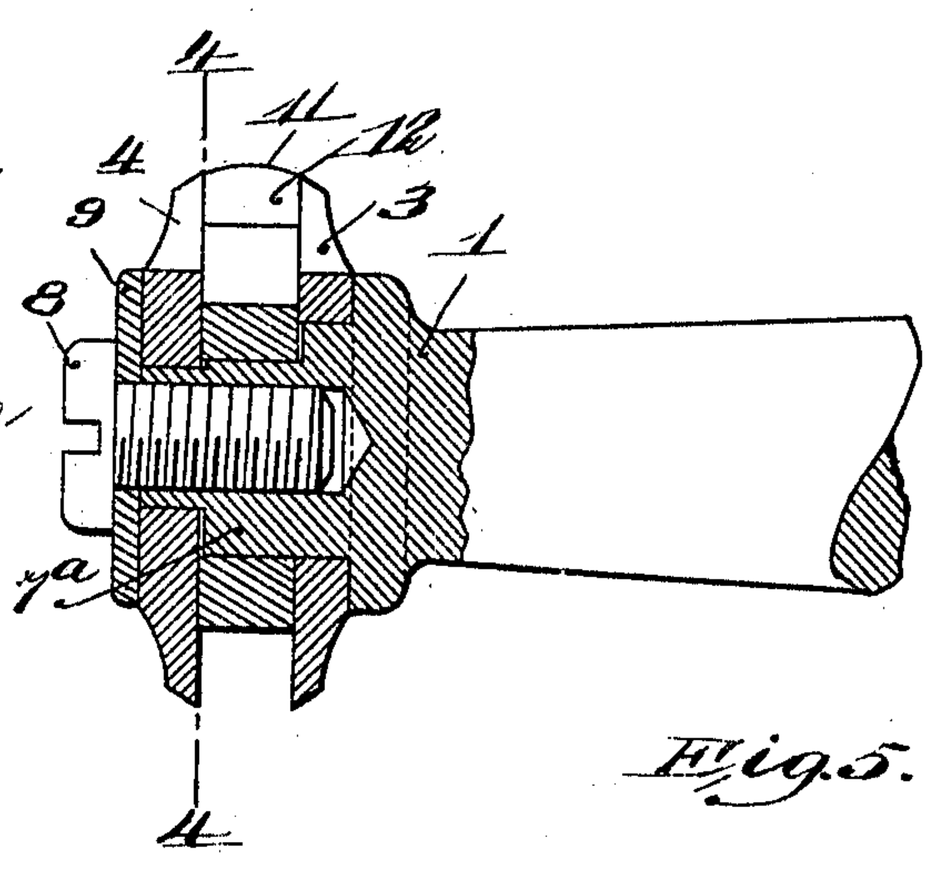

Fig. 5.

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UNITED STATES PATENT OFFICE.

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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.

The 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 engaging blades or edges.

The 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.

To these ends 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 means for adjusting the puller to maintain its edge in proper relation to 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, the spindle or rotary support on which the tack puller and guard flange or flanges are secured is provided with an eccentric support upon which the puller is mounted, and means is provided for securing the tack puller in different positions upon the eccentric support so as to locate the tack engaging edge of the puller at the proper radial distance from the axis of the spindle or rotary support.

The various features of the invention will be readily understood from an inspection of the accompanying drawings, in which—

Figure 1 is a front elevation of a tack pulling tool embodying the invention; Fig. 2 is a sectional elevation on line 2—2, Fig. 1; Fig. 3 is a sectional elevation on line 3—3, Fig. 2; Fig. 4 is a sectional view on line 4—4, Fig. 5, showing a modified form of means for securing the puller in adjusted position upon the eccentric support; and Fig. 5 is a sectional elevation on line 5—5, Fig. 4.

In the construction shown in the drawings the tack pulling tool is carried upon the end of a rotary spindle 1, and comprises generally a tack puller 2 and two guard flanges or disks 3 and 4 secured on opposite sides of the puller. The outer end of the spindle is provided with two concentric bearings or supports 5 and 6 upon which the disks 3 and 4 are mounted, and is also provided with an intermediate support 7 upon which the puller 2 is mounted. The puller and guard disks or flanges are held upon the end of the spindle by means of a clamping screw 8 and washer 9, the parts being firmly clamped between the washer 9 and a shoulder 10 formed on the spindle at the inner end of the bearing 5. The puller 2 is provided with a transverse tack pulling edge 11, and the periphery of the tack puller back of the edge 11 is so shaped that it is eccentric to the axis of the spindle in order to give the clearance requisite for the efficient action of the tack pulling edge upon the tacks.

The tack pulling edge 11 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 periphery of the guard flanges. When the tack pulling edge becomes dulled or nicked by reason of its engagement with the tacks it may be readily removed from the spindle and the edge sharpened by grinding away the front face 12 of the puller. Since the periphery 13 of the puller back of the tack pulling edge is eccentric, the grinding away of the front face gradually brings the edge 11 nearer the axis of the tool, and tends to de-

stroy the proper relation of the edge to the periphery of the guard flanges. The tack pulling edge of the puller is maintained in proper relation to the periphery of the guard flanges by a compensating adjustment of the puller as the face of the puller is ground away. In the construction shown, this adjustment is provided for by arranging the support 7 on which the puller is carried so that it is eccentric to the axis of the spindle and to the peripheries of the guard flanges. Means is also provided for firmly securing the puller in different positions upon the eccentric support to compensate for the variation in the location of the tack pulling edge produced by grinding away the face of the tack puller.

In the construction shown in Figs. 1 and 2, the eccentric support 7 is cylindrical and is engaged by a cylindrical opening formed in the hub 14 of the puller 2. In this construction the puller is secured in the proper position upon the eccentric support by means of a screw 15, the inner end of which is arranged to engage any one of a series of recesses 16 formed in the periphery of the eccentric support 7. As the front face 12 of the tack puller is ground away, the position of the puller on the eccentric support may be successively shifted so that the transverse tack pulling edge of the puller will project the proper distance beyond the peripheries of the guard flanges.

In Figs. 4 and 5 a modified form of means for securing the puller in different adjusted positions upon the eccentric support is shown. In the construction shown in these views the eccentric support 7^a is polygonal, and the hub of the puller is provided with a correspondingly shaped opening. With this construction the position of the puller upon the eccentric support may be readily shifted to maintain the tack pulling edge of the puller in proper relation to the periphery of the guard flanges, and the puller is firmly held against rotation when in any adjusted position by the engagement of the hub of the puller with the polygonal eccentric support.

One or both of the flanges may be provided with openings 17 arranged to register with the front face of the tack pulling tool so that any leather or other matter collecting in front of the tack pulling edge of the puller during the operation may be readily pushed out from between the flanges through the openings.

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 I claim 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 for adjusting the puller to maintain its edge in proper relation to the periphery of the flange as the front face of the puller is ground away, substantially as described.

2. A rotary tack pulling tool, having, in combination, a spindle, an eccentric support on the spindle, a puller having a transverse tack pulling edge adjustably secured on the eccentric support, and a guard flange at one side of the puller, substantially as described.

3. A rotary tack pulling tool, having, in combination, a spindle, two concentric supports and an intermediate eccentric support on the end of the spindle, guard flanges mounted on the concentric supports, and a tack puller adjustably mounted on the eccentric support and provided with a transverse tack pulling edge and an eccentric periphery back of the tack pulling edge, substantially as described.

4. A rotary tack pulling tool, having, in combination, a spindle, a concentric guard flange on the end of the spindle, an eccentric support on the end of the spindle, a puller provided with a hub surrounding the eccentric support and also provided with a transverse tack pulling edge and an eccentric periphery back of said edge, and means for securing the tack puller in different positions upon the eccentric support, substantially as described.

5. A rotary tack pulling tool, having, in combination, a spindle, an eccentric support on the spindle, a puller having a transverse tack pulling edge adjustably secured on the eccentric support, means for positively locking the puller in position on the support, and a guard flange at one side of the puller, substantially as described.

6. A rotary tack pulling tool, having, in combination, a spindle, a concentric guard flange on the end of the spindle, an eccentric support on the end of the spindle, and a puller provided with a hub surrounding the eccentric support and with means for positively locking the puller in different positions upon the support, substantially as described.

In testimony whereof I affix my signature, in presence of two witnesses.

JOHN B. HADAWAY.

Witnesses:
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N. D. MCPHAIL.