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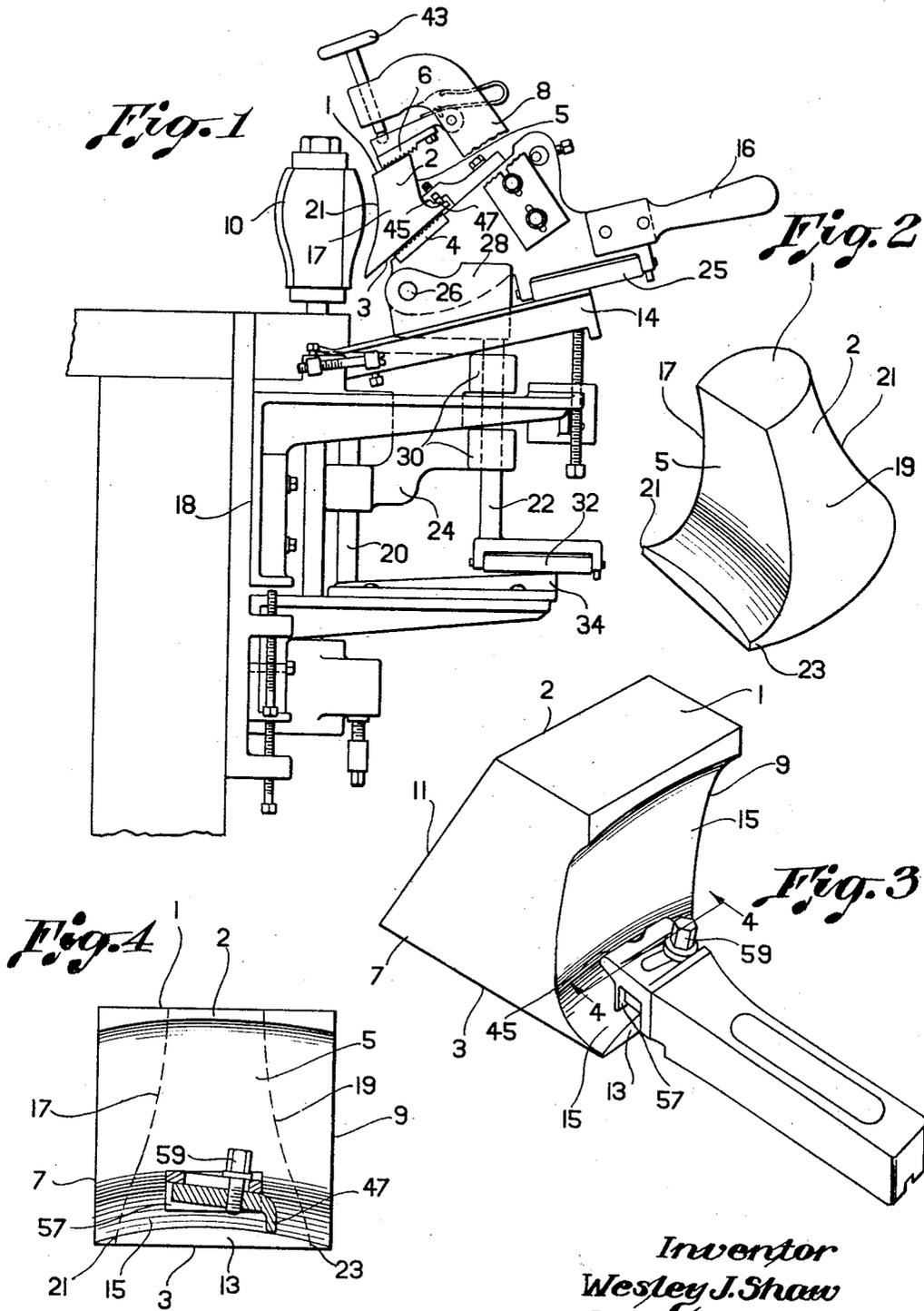
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1,907,678

CENTERING DEVICE FOR HEEL BLOCKS

Filed June 12, 1931

2 Sheets-Sheet 1



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2 Sheets-Sheet 2

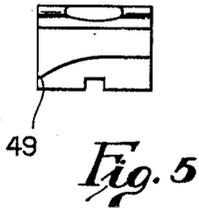


Fig. 5

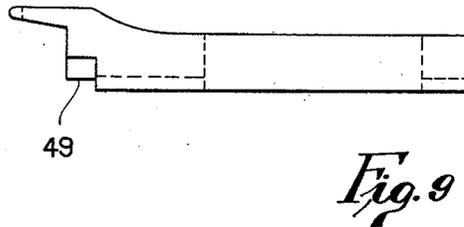


Fig. 9

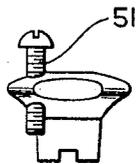


Fig. 6

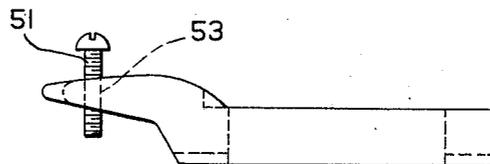


Fig. 10

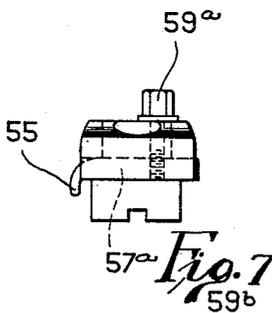


Fig. 7

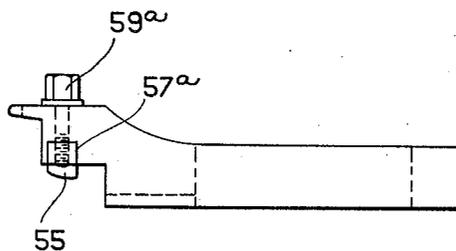


Fig. 11

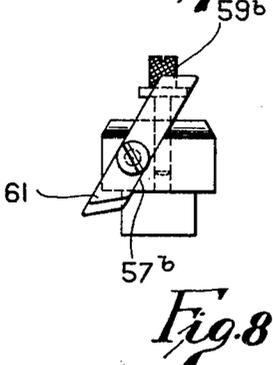


Fig. 8

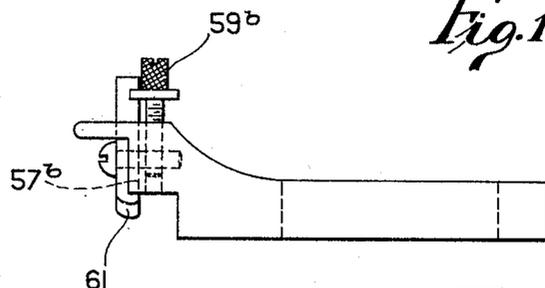


Fig. 12

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UNITED STATES PATENT OFFICE

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CENTERING DEVICE FOR HEEL BLOCKS

Application filed June 12, 1931. Serial No. 543,784.

The present invention, though having features of more general application, is particularly related to centering devices for heel blocks, for use in machines for turning wood heels.

Wood-heel-turning machines comprise a jack adapted to clamp a wood-heel block and to swing along a curved track past a formed rotary cutter to present different portions of the heel blank to the cutter. As is explained in Letters Patent No. 1,678,792, granted July 31, 1928, the shape of the resulting heel is determined by various factors, among them the shape of the cutter and the inclination of the curved track.

When the heel block is of the type provided with a convex shank, it is further necessary to have the heel block laterally centered in the jack, else the shank of the heel block will be thicker at one side than the other after the heel block is turned in the turning machine.

It is accordingly an object of the present invention to provide a new and improved heel-block centering device, such as may be used in the jack of a wood-heel turning machine of the above-described character. Other objects will be explained hereinafter and will be particularly pointed out in the appended claims.

With these ends in view, the invention consists of the improved centering device a preferred embodiment and modification of which are hereinafter described, illustrated in the accompanying drawings, and defined in the appended claims.

The invention will now be described in connection with the accompanying drawings, in which Fig. 1 is a side elevation of a wood-heel turning machine, with the present invention embodied therein; Fig. 2 is a perspective, upon a larger scale, of the heel after it is turned by the machine; Fig. 3 is a similar perspective, illustrating a preferred embodiment of the present invention; Fig. 4 is a section taken upon the line 4-4 of Fig. 3 looking in the direction of the arrows; Figs. 5, 6, 7 and 8 are front views of modified forms of centering de-

vices; and Figs. 9, 10, 11 and 12 are corresponding elevations of the same.

The machine that has been chosen to illustrate the invention is adapted to operate upon wood-heel blocks 2 shaped as shown in Figs. 3 and 4. The tread or top lift surface of the heel block is indicated at 1, the attaching face at 3, the breast at 5, the sides at 7 and 9, and the back at 11. The sides 7 and 9 and the back 11 are shown in Fig. 3, after treatment by the turning machine, the turned sides are shown at 17 and 19 and the turned back at 21 in Fig. 2. Before this turning operation, however, at the time that the heel block is first introduced into the machine, and clamped between the lower and upper jaws 4 and 6 of the jack 8, the heel block has the shape illustrated in Fig. 3 and in full lines in Fig. 4. The breast 5, both before and after turning, is provided with a concave groove surface terminating in a projecting lip, shoulder or shank 13 having a convex surface 15.

As described in the said Letters Patent, different portions of this wood block, held by the jack 8, are presented by the operator to the action of two rotary, turning cutters, one of which is shown at 10. This is effected by the operator swinging the jack over a curved track 14 by means of a handle 16 and a clamp screw 43 grasped by the operator. To this end, the jack 8 is linked to the base 18 of the machine, about vertically disposed pivotal rods 20 and 22, by a link 24. As the curve of the track 14 does not lie in a horizontal plane, provision is made for tilting the jack 8 about a horizontal pivot pin 26. The tilting movement, up and down, is effected automatically by a roller 25 that is attached to the jack 8 engaging the track 14 as the jack is swung by the operator over the track. The pivot pin 26 is carried by an arm 28 that extends out from the upper end of the rod 22. As the rod 22 is vertically movable in bearings 30 of the link 24, the pivot pin 26 is also vertically movable, imparting a corresponding movement to the jack 8. The vertical movement of the rod 22 is effected by a roller 32 that is mounted at the lower end of the rod 22 to

ride over a second curved track 34. As the clamp is swung back and forth about the cutters, the track 34 causes the pivotal point 26 to rise and fall, and the track 14 causes the roller 25 to rise and fall. The resulting movement, in connection with the shape of the cutters, determines the shape of the resulting heel. Further description may be had by reference to the above identified patent. It is understood, of course, that the invention claimed herein is not restricted to the illustrative machine, but is equally applicable to other types of wood-heel-turning and other machines.

The cutting of the sides 7 and 9 by the turning cutters so as to produce the turned sides 17 and 19, naturally results in leaving shoulders 21 and 23 at the sides of the shank 13. If the heel block is not properly centered in the jack 8, these shoulders 21 and 23 will, of course, be of different thickness and the resulting heel will not be symmetrical. Provision is therefore made for automatically centering the heel block upon its supporting jaws 4 at the time that it is introduced into the machine, with the breast 5 against the end of the gage 45, and before the operator has clamped the jaw 6 against the heel top 1 by means of the handle 43.

To this end, the operator slides the heel block over the supporting jaw 4, in a direction from left to right, as viewed in Figs. 3 and 4, keeping the end of the gage or stop 45 in contact with the breast 5, until the convex shank surface 15 engages a projection shown in Figs. 1 and 4 at 47. If the projection 47 is properly adjusted, the heel block will be properly positioned upon the supporting jaw 4 so as to produce shoulders 21 and 23 of equal thickness. Preferably, the projection 47 is carried by, and projects downward from, the breast gage 45.

In Figs. 5 and 9, the breast gage is shown provided with a projection 49 that is fixed. Heel blocks of different widths and having shank surfaces 15 of different convexities will, however, require differently positioned projections such as 47. This result may, of course, be brought about by having a different breast gage, such as illustrated in Figs. 5 and 9, for each different heel block. Preferably, however, the same breast gage may be employed, by making the projection adjustable. Thus, the projection may consist of a screw 51, threaded to move in one direction in a threaded opening 53, as shown in Figs. 6 and 10; or the stop may be adjusted in a direction at right angles to this direction, as illustrated by the projection 55 in Figs. 7 and 11. The projection may, furthermore, become loosened, and this is prevented in connection with the projections 47 and 55 by forming them as metal strips, rectangular in cross section, and sliding in correspondingly shaped guides 57 and 57a

respectively in the breast gage 45, they being clamped in any position of sliding adjustment by clamp screws 59 and 59a. Preferably, the height of the projection above the surface 4 is adjustable in both directions, as is true of the projection 47 (Figs. 1 and 4). This is effected merely by having the guide at an incline, the construction being otherwise as in Figs. 7 and 11. The incline may be gradual, as in connection with the projection 47 in Figs. 3 and 4, or more sharp, as illustrated by the projection 61 of Figs. 8 and 12, which is adjusted by the screw 59b in a guide 57b.

It will be understood that the invention is not restricted to the exact embodiments thereof that are illustrated and described herein, but that modifications and changes may be made therein by persons skilled in the art, and such modifications and changes are considered to be embraced within the appended claims.

What is claimed is:

1. A device for centering a convexly curved article comprising a support upon which the article is adapted to rest in different positions with the convexity of the curve directed away from the support, and means for engaging the convex curve of the article at one side of its highest portion to predetermine the centered position of the article upon the support.

2. A device for centering a heel block having a convex shank comprising a support upon which the heel is adapted to rest in different positions with its attaching face in engagement with the support, and means for engaging the convex surface of the shank at one side of the thickest part thereof to predetermine the centered position of the heel upon the support.

3. A device for centering a heel block having a breast and a convex shank comprising a support upon which the heel is adapted to rest in different positions with its attaching face in engagement with the support, and a stop adapted to engage the breast and provided with means for engaging the convex surface of the shank to predetermine the centered position of the heel upon the support.

4. A device for centering a heel block having a breast and a convex shank comprising a support upon which the heel is adapted to rest in different positions with its attaching face in engagement with the support, a stop adapted to engage the breast and provided with means for engaging the convex surface of the shank to predetermine the centered position of the heel upon the support, and means for adjusting the engaging means.

5. A device for centering a heel block having a breast and a convex shank comprising a support upon which the heel is

adapted to rest in different positions with its attaching face in engagement with the support, a stop adapted to engage the convex surface of the shank to predetermine the centered position of the heel upon the support, and means for adjusting the engaging means toward and from the said convex surface.

6. A device for centering a heel block having a breast and a convex shank comprising a support upon which the heel is adapted to rest in different positions with its attaching face in engagement with the support, a stop adapted to engage the breast and provided with adjustable means for engaging the convex surface of the shank to predetermine the centered position of the heel upon the support, and screw-threaded means for holding the engaging means in adjusted position.

7. A device for centering a heel block having a breast and a convex shank comprising a support upon which the heel is adapted to rest in different positions with its attaching face in engagement with the support, a stop adapted to engage the breast and provided with means for engaging the convex surface of the shank to predetermine the centered position of the heel upon the support, and slidable means for adjusting the engaging means.

8. A device for centering a heel block having a breast and a convex shank comprising a support upon which the heel is adapted to rest in different positions with its attaching face in engagement with the support, a gage member adapted to engage the convex surface of the shank to predetermine the centered position of the heel upon the support, and means for adjusting the engaging means toward and from said support.

9. A heel jack for a heel block having a breast and a convex shank comprising a support upon which the heel is adapted to rest in different positions with its attaching face in engagement with the support, a stop adapted to engage the convex surface of the shank at one side of its thickest portion to predetermine the centered position of the heel upon the support, and means for clamping the heel block in centered position upon the support.

10. A machine for turning a heel block having a breast and a convex shank, having in combination, a cutter and a jack mounted to swing about the cutter to present different portions of the heel block clamped by the jack to the cutter and permit the cutter to turn the heel block, the jack comprising a support upon which the heel is adapted to rest in different positions with its attaching face in engagement with the support, a stop adapted to engage the convex surface of the shank at one side of its thickest por-

tion to predetermine the centered position of the heel upon the support, and means for clamping the heel block in centered position upon the support.

In testimony whereof, I have hereunto subscribed my name.

WESLEY J. SHAW.

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