Jan. 6, 1931. A. F. COOK 1,787,615

WOOD HEEL MAKING

Filed May 2, 1928 2 Sheets-Sheet 1

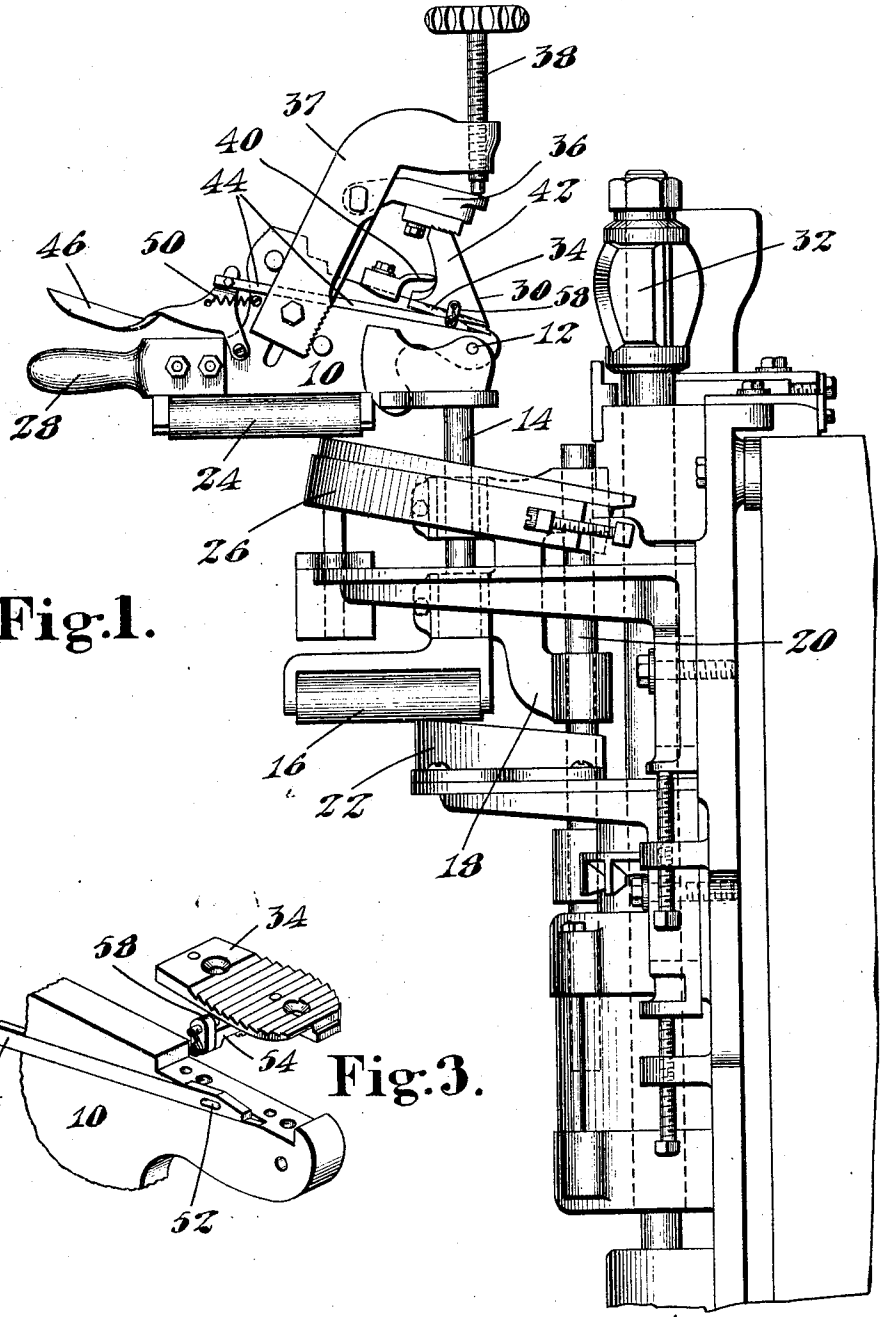



Fig.1.




Fig.3.

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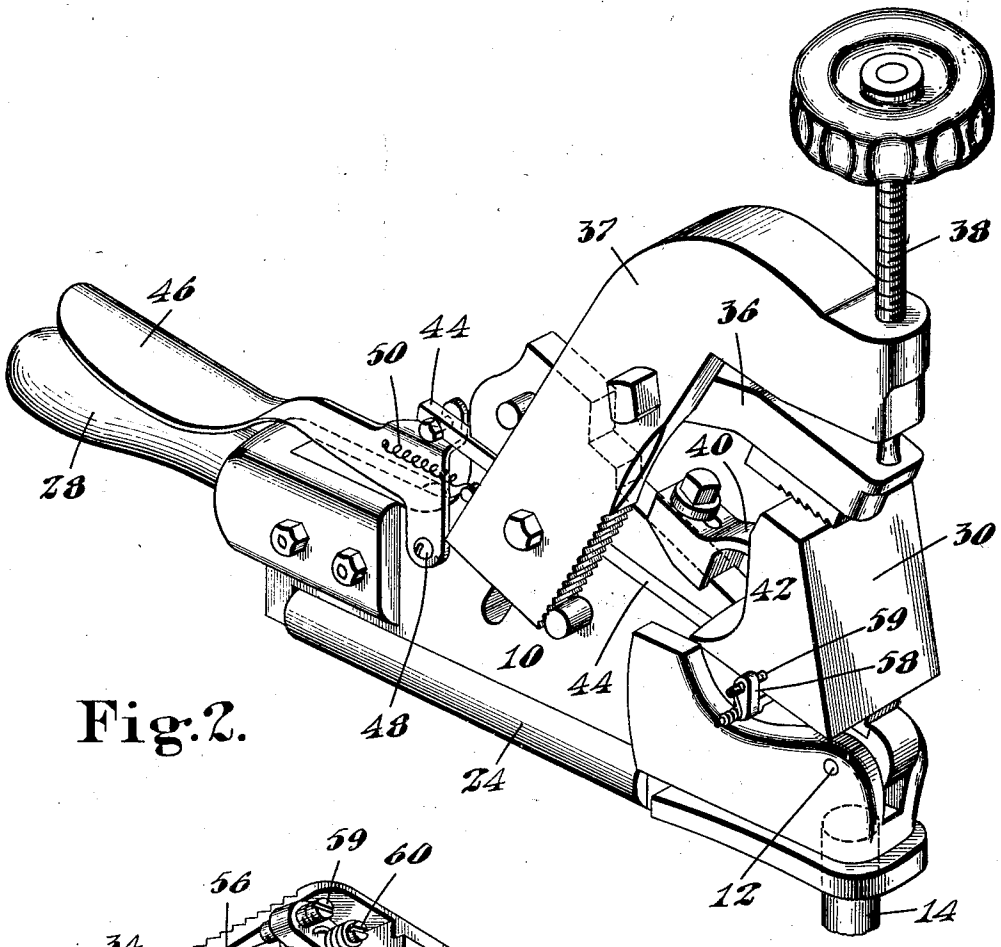



Fig. 2.

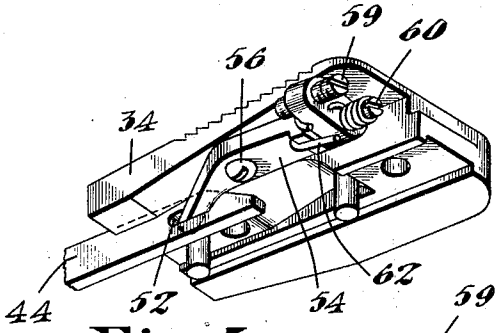



Fig. 5.

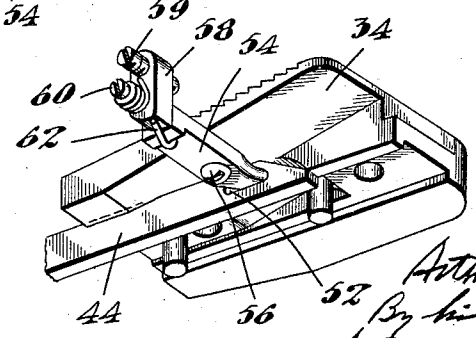



Fig. 4.

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# UNITED STATES PATENT OFFICE

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## WOOD-HEEL MAKING

Application filed May 2, 1928. Serial No. 274,583.

This invention relates to machines for and methods of making heels and is illustrated, in its machine aspect, as embodied in a wood heel turning machine of the type disclosed in United States Letters Patent No. 220,920, granted Oct. 28, 1879, on the application of Henderson and Paine.

Machines of this type are provided with rotary cutters and a jack for holding a heel blank, the blank, having a previously formed breast surface, being swung past one of the cutters by the jack to make a cut around one side of the heel blank from breast to back and then swung past the other cutter to cut similarly around the other side of the blank. It has been customary to clamp the heel blank in the jack by its top lift and heel seat surfaces and to gage the blank by a gage at its breast surface only, to leave the lateral and rear surfaces of the blank free for turning by the cutter. Such a gage affords no certainty of lateral positioning of the blank, this being entirely a matter of the operator's judgment. Under some conditions this circumstance has resulted in inferior work inasmuch as the lateral surface thus formed on the blank sometimes lacked proper relationship to other surfaces formed thereon. This was especially true in the case of Cuban heels, in which the previously formed breast groove is vertical, and a slight lateral displacement of the blank in the heel turning machine would put the side and breast surfaces hopelessly out of proper relationship.

Objects of this invention are to provide an improved machine for making heels and an improved method of gaging heels for a shaping operation whereby to insure the definite and positive positioning of the heel blank so that the surface formed by that operation shall be positively and definitely located relatively to another surface of the heel.

Accordingly, I have provided a heel cutting machine having a gage for a heel blank surface which is to be treated in the machine and which, preferably and as illustrated, is removable from operative position after its gaging function has been accomplished. In the illustrated machine the gage is pivoted to swing away from a lateral or side surface of the heel blank after the gaging has been performed, being swung downwardly to a position entirely below the lower surface of the heel blank to facilitate the treatment of the gaged lateral surface by the cutter.

The invention will be understood from the following description of a preferred machine in which it is embodied and by means of which its method may be practised, taken in connection with the accompanying drawings, in which

Fig. 1 is a side elevation showing as much of the machine as is necessary to an understanding of the invention;

Fig. 2 is a perspective view of the jack;

Fig. 3 is an exploded view of the side gage mechanism;

Fig. 4 is a detail showing the side gage in operative position; and

Fig. 5 is a detail similar to Fig. 4 but showing the side gage in inoperative position.

As to much of its construction the illustrated machine is like that shown in the Letters Patent referred to. The machine comprises a jack 10 pivoted at 12 on the top of a shaft 14 which has a roller 16 on its lower end and is pivotally and slidably mounted in a swinging bracket 18, pivoted on a shaft 20 at the front of the machine. The roller 16 rides on a so-called lower cam track 22 and the jack itself is provided with a roller 24 which rides on a so-called upper cam track 26, as the jack is swung by a handle 28 to carry a heel blank 30 past a cutter 32 to shape a lateral surface of the blank.

The heel blank is clamped in the jack between a plate 34 fixed in the jack, and a pivoted clamping member 36 mounted in an overhanging arm 37 and forced against the blank by a screw 38. The breast surface of the heel blank is gaged from a breast gage 40. The construction so far described is well known.

As already pointed out, it is advisable to gage the heel blank in the jack from a side face 42, as well as from its breast face, and since the cutter 32 is to trim the side face 42 it is necessary to provide for the removal of the gage from operative position.

To provide for the removal of the side gage,

a rod 44 is slidably mounted in a slot in the jack frame 10, and has a loose pivotal connection with a bell crank shaped handle 46, pivoted on the jack frame at 48. The rod 44 can thus be pulled in and out by operating the handle 46. A spring 50 tends to hold the handle in raised position with the rod 44 pushed forward. The rod extends under the base plate 34 and has an elongated hole 52 in its end, into which hole extends the end of a lever 54 pivoted at 56 on the plate 34. Sliding movement of the rod 44 will turn the lever 54 on its pivot 56.

The side gage 58, having an adjustable gaging pin 59 for contacting with the side face 42 of the blank 30, is pivotally mounted on a screw 60 which is mounted in the end of the lever 54, and is normally held in operative position (Fig. 4) with its end against a stop pin 62 by a spring 64 wound around the screw 60 and having its free end in a hole in the gage 58. The gage can turn counterclockwise, as seen in Fig. 4, against the spring pressure through an angle of 90° or more, until the side of the gage comes into contact with the stop 62 (Fig. 5).

As will be seen from an inspection of Figs. 4 and 5, the movement of the rod 44 to the left will turn the lever 54 under the plate 34, dragging the gage 58 with it, the gage being forced to rotate counterclockwise on the screw 60 by the dragging of its adjustable gaging pin 59 against the side face 42 of the blank until it is free of the blank and being then dragged under the blank and under the plate 34. The side face 42 of the blank is then clear of all obstruction to the operation of the cutter 32.

As stated above, the invention also comprises the novel method of making wood heels which consists in gaging the heel blank from the breast and a side surface and then forming the lateral surface of the heel.

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

1. In a heel shaping machine, a cutter, a jack for holding a heel blank and moving it past the cutter to form a heel surface on the blank, and a gage mounted on the jack arranged to engage that surface of the blank which is to be treated by the cutter, said gage being movable out of the path of the cutter after its gaging function has been performed and prior to the action of the cutter.

2. In a heel turning machine, a cutter, a jack arranged to rotate a heel blank therein against the cutter to trim the side and rear surfaces of the heel blank, and a gage carried by the jack arranged to engage one of said side surfaces of the heel blank prior to the operation of the cutter.

3. In a heel turning machine, a cutter, a jack arranged to rotate a heel blank therein against the cutter, and a gage carried by the jack and arranged to engage a lateral surface of the heel blank, said gage being movable out of the path of the cutter after its gaging function has been performed and prior to the action of the cutter.

4. In a wood heel turning machine, a cutter, a jack for a heel blank, said cutter and jack being relatively rotatable to cause the cutter to treat successive parts of the side and rear surfaces of the blank progressively, and a gage carried by the jack and arranged to engage a side surface of the heel blank.

5. In a wood heel turning machine, a cutter, a jack for a heel blank, said cutter and jack being relatively movable to cause the cutter to treat successive parts of the lateral and rear periphery of the blank progressively, said jack having a breast gage constructed and arranged to position the blank in the jack, and a gage arranged to engage a lateral surface of the heel blank to position the blank laterally in the jack.

6. In a wood heel cutting machine, a cutter, a jack for a wood heel blank, said cutter and jack being relatively movable to cause the cutter to treat successive parts of the lateral and rear periphery of the blank progressively, and two gages mounted on the jack arranged to engage angularly related surfaces of the heel blank to locate it properly in the jack, one of the said faces being that face which is to be treated by the cutter, and the gage engaging said face being movable out of the path of the cutter after its gaging function has been accomplished.

7. In a wood heel cutting machine, a cutter, a jack arranged to clamp a heel blank and to rotate it relatively to the cutter to cause the cutter to treat progressively successive portions of the side and rear surfaces of the heel blank, and a pivotally mounted gage arranged to contact with a side surface of the blank and to be swung away therefrom after the blank has been gaged.

8. In a wood heel cutting machine, a cutter, a jack arranged to clamp a heel blank, the jack and cutter being constructed and arranged for rotation to cause the cutter to treat progressively successive portions of the side and rear surfaces of the heel blank, and a pivotally mounted gage arranged to contact with a side surface of the blank and to be swung away therefrom after the blank has been gaged.

9. In a wood heel cutting machine, a jack arranged to clamp a heel blank, and a pivotally mounted gage arranged to contact with a lateral surface of the blank and to be swung downwardly away therefrom after the blank has been gaged.

10. In a wood heel turning machine, a jack arranged to clamp a heel blank, a side gage pivoted on the jack and arranged to contact with a side of a heel blank in the jack, a stop, the gage having a surface arranged to con-

tact with the stop when the gage is in operative position, and a spring for holding the gage in operative position against the stop.

11. In a wood heel turning machine, a jack arranged to clamp a heel blank, a side gage pivoted on the jack and arranged to contact with a lateral surface of a heel blank in the jack, a stop, the gage having a surface arranged to contact with the stop when the gage is in operative position, and a lever for operating the gage.

12. In a wood heel turning machine, a jack arranged to clamp a heel blank, a side gage pivoted on the jack and arranged to contact with a lateral surface of a heel blank in the jack, a stop, the gage having a surface arranged to contact with the stop when the gage is in operative position, a lever for operating the gage, and a link connecting the lever and the gage.

13. In a wood heel turning machine, a jack arranged to clamp a heel blank, a side gage pivoted on the jack and arranged to contact with a side of a heel blank in the jack, a stop, the gage having a surface arranged to contact with the stop when the gage is in operative position, a lever for operating the gage, and a link connecting the lever and the gage, there being a pin and slot in the connection between the link and one of the said elements connected thereby.

14. In a wood heel turning machine, a jack arranged to clamp a wood heel blank, a gage arranged to contact with a lateral surface of a blank in the jack, and means for moving the gage downwardly to a position entirely below the heel blank to facilitate treatment of the gaged lateral surface of the blank.

15. In a wood heel turning machine, a jack arranged to clamp a wood heel blank, a gage attached to the jack and arranged to contact with a lateral surface of a blank in the jack, and means for moving the gage downwardly to a position entirely below the lower surface of the heel blank to facilitate treatment of the gaged lateral surface of the blank.

16. In a wood heel turning machine, a jack arranged to clamp a wood heel blank, a gage pivoted to the jack and arranged to contact with a lateral surface of a blank in the jack, and means for turning the gage downwardly to a position entirely below the lower surface of the heel blank to facilitate treatment of the gaged lateral surface of the blank.

17. In a wood heel turning machine, a cutter arranged to trim a lateral surface of a wood heel blank, a jack arranged to clamp the wood heel blank and to turn it past the cutter to form the lateral surface, a lever pivoted on the jack, a gage mounted on the lever and arranged to gage the said lateral surface of the blank, and means for turning the lever to move the gage away from the said lateral surface to permit the cutter to operate thereon.

18. In a wood heel turning machine, a jack arranged to clamp a wood heel blank, a cutter arranged to trim a lateral surface of a blank in the jack, a lever pivoted on the jack, a gage mounted on the lever and arranged to gage the said lateral surface of the blank, and means for turning the lever to move the gage downwardly away from the said lateral surface to permit the cutter to operate thereon.

19. In a wood heel turning machine, a jack arranged to clamp a wood heel blank, a cutter arranged to trim a lateral surface of a blank in the jack, a lever pivoted on the jack, a gage mounted on the lever and arranged to gage the said lateral surface of the blank, and means for turning the lever to move the gage to a position entirely below the said lateral surface to permit the cutter to operate thereon.

20. In a wood heel jack, a heel blank support, means to open and close said jack relative to said support, and a side gauge for a heel blank on said support, said gauge being movable to operative and inoperative positions relative to said support.

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

ARTHUR F. COOK.