

F. E. BECKMAN.
GROOVING DEVICE FOR SHOE SEWING MACHINES.
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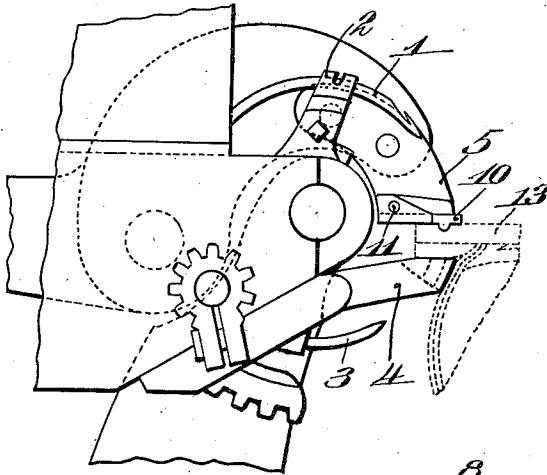


Fig. 1.

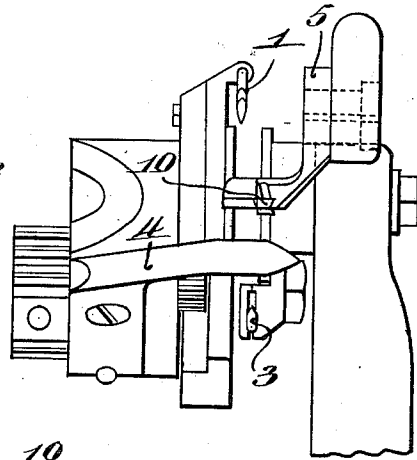


Fig. 2.

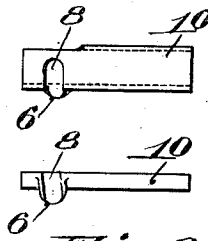


Fig. 3.

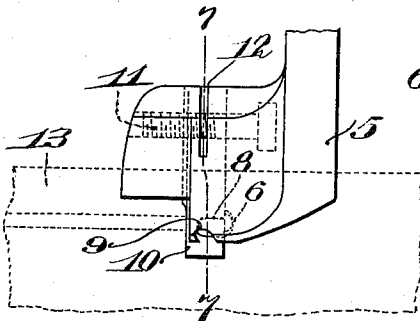


Fig. 4.

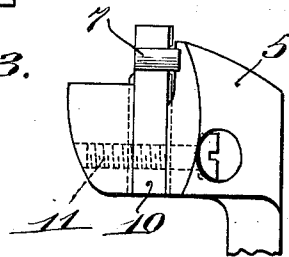


Fig. 5.

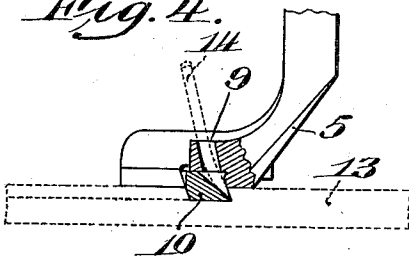


Fig. 6.

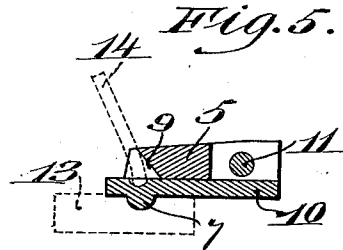


Fig. 7.

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UNITED STATES PATENT OFFICE.

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GROOVING DEVICE FOR SHOE-SEWING MACHINES.

1,030,767.

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To all whom it may concern:

Be it known that I, FRANK E. BECKMAN, a citizen of the United States, residing at Haverhill, in the county of Essex and State of Massachusetts, have invented certain new and useful Improvements in Grooving Devices for Shoe-Sewing Machines; 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 present invention relates to an improved grooving device for outsole sewing machines and it is intended primarily for use on work "stitched aloft", that is, on work in which the stitches of the outseam show on the tread surface of the sole although it may be used to advantage on work provided with a light channel in which case the grooving device will act to form a groove near the inner edge or bottom of the channel.

The object of the present invention is to provide an outsole sewing machine with a device which will remove a skiving or strip of leather from the tread surface of the sole so as to form a groove to receive the stitches and which will be so constructed and arranged as not to interfere with the operation of the other parts of the machine and which will direct the strip of leather away from the sole in such a manner that the strip will not be entangled with the thread or be engaged by the needle, awl, or other moving parts of the machine.

With the above object in view the present invention contemplates the provision in a sole sewing machine of a grooving knife arranged to act just in advance of the needle to form a groove in the tread surface of the sole to receive the line of stitches, together with means for directing the strip of leather removed by the knife away from the sole at an angle to the direction of feed. In the preferred form of the invention the grooving knife is provided with a suitably shaped cutting edge to form a groove of the desired shape and is provided with a strip deflecting surface adjacent the cutting edge. Preferably also the part of the machine upon which the grooving knife is mounted

is also provided with a deflecting surface which, in effect, forms a continuation of the deflecting surface on the knife. In the construction hereinafter described as embodying the invention in the best form which has yet been devised, the grooving knife is mounted upon the presser foot of the machine and the deflecting surfaces of the knife blade and presser foot act to direct the strip of leather removed from the sole upwardly and forwardly so that it passes in front of the circular path of movement of the needle without any liability of being engaged by the needle or awl or of being entangled with the thread.

The present invention will be clearly understood from an inspection of the accompanying drawings in which—

Figure 1 is a view in side elevation of a portion of a well known outsole sewing machine with the preferred form of the invention applied thereto. Fig. 2 is a view in front elevation of the parts illustrated in Fig. 1. Fig. 3 shows two views of the grooving knife detached from the machine one view being a plan and the other a side elevation. Fig. 4 is a top plan view of the presser foot and grooving knife. Fig. 5 is a bottom plan view of the presser foot and grooving knife. Fig. 6 is a view in front elevation of the presser foot and grooving knife with the grooving knife and a portion of the presser foot shown in section on a vertical plane passing through the center of the knife edge and Fig. 7 is a detail sectional view of the presser foot and grooving knife taken on the line 7—7, Fig. 4.

As illustrated in the drawing, the invention is shown as applied to the outsole sewing machine disclosed in the patent to French and Meyer, No. 473,870, 1 indicating the curved hook needle of the machine, 2 the needle guide, 3 the awl, 4 the work support and 5 the presser foot.

The cutting edge of the grooving knife is indicated at 6 and is formed upon a semi-cylindrical projection 7 of the body of the knife. The cutting edge of the knife is thus semi-circular in shape and will cut a groove in the tread surface of the shoe sole which is semi-circular in cross section. To deflect the strip which is severed from the

sole by the cutting edge of the knife an inclined deflecting surface 8 is provided on the knife which extends upwardly from the cutting blade at an angle of 45° or more to the surface of the sole. Above the deflecting surface 8 the presser foot 5 is provided with a recess 9, the walls of which form a continuation of the deflecting surface 8 and one of the walls of the recess 9 is inclined, as indicated in Fig. 7, so that the strip of leather severed from the sole is not only directed upwardly away from the surface of the sole but also forwardly. The shape and arrangement of the deflecting surfaces of the knife and presser foot are such that the strip removed from the sole by the knife is directed upwardly at nearly right angles to the surface of the sole and is also directed forwardly outside of the circular path of the needle.

In the construction illustrated in the drawing the body of the grooving knife is in the form of a plate 10 and is shaped to fit in a groove formed in the lower face of the presser foot. The knife is held in the presser foot by means of a clamping screw 11, the presser foot being slotted at 12 so as to form a clamp which may be actuated by the screw 11 to clamp the knife in position. By loosening the screw 11 the grooving knife may be adjusted transversely to the direction of feed to bring it into the proper position with relation to the needle.

The manner in which the groove is formed in the tread surface of the sole, and the manner in which the strip is removed from the sole, is clearly shown in Figs. 1, 6 and 7, in which 13 indicates the outsole of a shoe being operated upon and 14 the strip of material which is being removed from the sole to form a groove.

The nature and scope of the present invention having been indicated and the pre-

ferred form of the invention having been specifically described, what is claimed is:—

1. An outsole shoe sewing machine, having, in combination, stitch forming devices including a curved hook needle, a work support, a presser foot arranged to engage the tread surface of the sole, a grooving knife mounted on the presser foot in advance of the needle in position to form a groove in the tread surface of the sole to receive the stitches, and means for directing the strip of leather removed by the knife upwardly and forwardly outside of the circular path of the needle.

2. An outsole shoe sewing machine, having, in combination, stitch forming devices including a needle, a work support, a presser foot arranged to engage the tread surface of the sole, and a grooving knife mounted on the presser foot in advance of the needle in position to form a groove in the tread surface of the sole to receive the stitches, said knife and presser foot being provided with deflecting surfaces to direct the strip of leather removed by the knife away from the sole at an angle to the direction of feed.

3. An outsole shoe sewing machine, having, in combination, stitch forming devices including a curved hook needle, a work support, a presser foot arranged to engage the tread surface of the sole, a grooving knife mounted on the presser foot in advance of the needle in position to form a groove in the tread surface of the sole to receive the stitches, said knife and presser foot being provided with deflecting surfaces to direct the strip of leather removed by the knife upwardly and forwardly outside of the circular path of the needle.

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