Feb. 14, 1928. 1,658,915

W. H. BAYNARD

SEWING MACHINE

Filed March 18, 1924

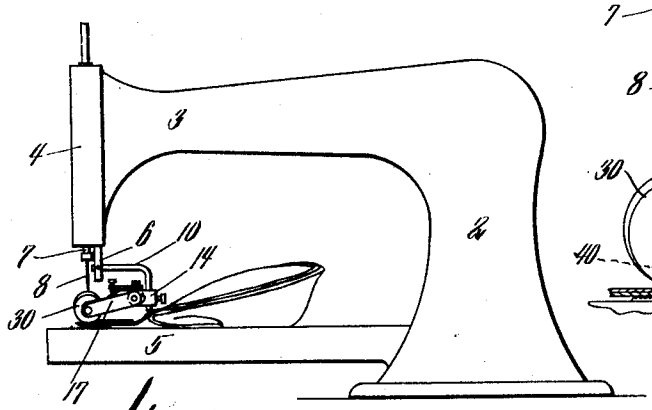


Fig. 1.

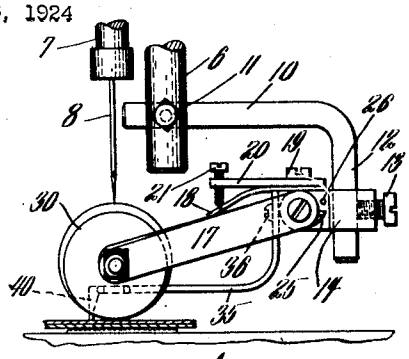


Fig. 2.

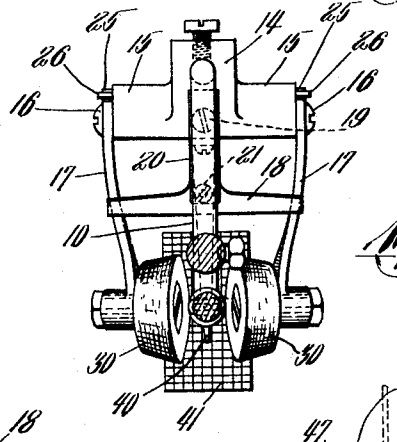


Fig. 4.

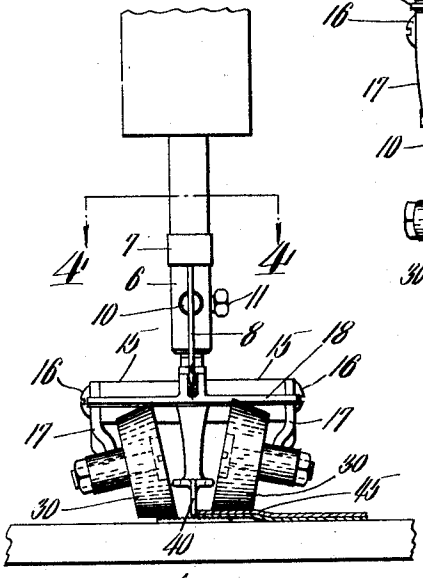


Fig. 3.

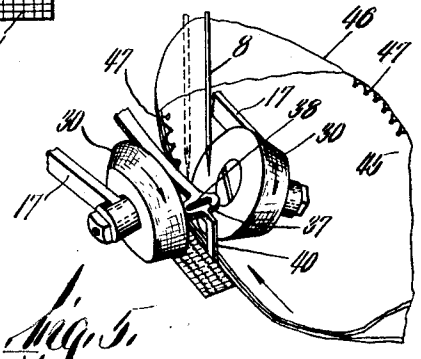


Fig. 5.

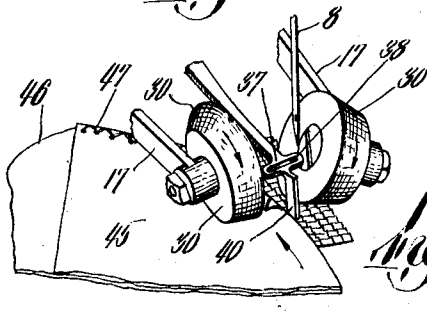


Fig. 6.

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Patented Feb. 14, 1928. 1,658,915

UNITED STATES PATENT OFFICE.

WILLIAM H. BAYNARD, OF BOSTON, MASSACHUSETTS.

SEWING MACHINE.

Application filed March 18, 1924. Serial No. 700,000.

In my Patent No. 1,274,665, granted August 6, 1918, for shoes and method of making the same is disclosed a method of making shoes in which, before the shoe is lasted, a sole lining is stitched at opposite sides to the edges of the upper by means of an over edge or zigzag stitching machine. In presenting the shoe parts to the sewing machine the edges of the parts to be united may be guided by an edge gage, but as such machines are usually constructed the work is passed on one side only of the gage so that the direction of feed is toward the toe on one side of the shoe and away from the toe on the other side. This action is not conducive to best results as it is difficult to insure against the sole lining being skewed with relation to the upper where the parts are united in this manner. It is preferable to stitch on both sides either from or toward the toe, from the toe being the more desirable.

This invention, therefore, relates to a construction whereby an edge gage may function with the work extending on either side thereof, the work holding elements properly cooperating with the work in either position.

In one specific embodiment the edge gage and work holding elements have been incorporated in a presser foot which may be attached to an over edge or zigzag sewing machine in place of the presser foot with which the machine is regularly equipped. Such an embodiment is disclosed in the accompanying drawings in which—

Figure 1 is a front elevation showing the presser foot in position on the sewing machine, the machine being shown diagrammatically.

Figure 2 is a side elevation to an enlarged scale of the presser foot and related parts.

Figure 3 is a front elevation of the same.

Figure 4 is a section on line 4—4 of Figure 3.

Figure 5 is a fragmentary perspective showing the position of the parts when sewing on one side of the shoe.

Figure 6 is a similar view showing the other side of the shoe being sewn.

The sewing machine as shown in Figure 1 comprises a standard 2 having a forwardly extending arm 3 carrying a head 4 for the needle mechanism. Beneath this head 4 is a table portion 5 on which the work is placed in the usual manner. At 6 is indicated the lower end of the presser foot bar and at 7 is indicated the needle bar carrying a needle 8.

The device of the present invention is attached to the lower end of the presser foot bar 6 in place of the usual presser foot with which the machine is ordinarily equipped. As shown it comprises a rearwardly extending rod 10 adjustably fixed to the lower end of the presser foot bar 6 by means of a clamping bolt 11. The rear end of this rod 10 is turned downwardly as at 12 and to this end is clamped, as by means of a set screw 13, a support 14 which is perforated for the reception of the portion 12 of the rod.

This support 14 is laterally extended as shown at 15 (see Figures 3 and 4) and to opposite ends of the extension are pivoted, as by means of screws 16, a pair of forwardly extending arms 17. The forward ends of these arms are normally urged downwardly by means of a T-shaped spring 18, the ends of the cross member of the T resting on the upper edges of the arms 17 and the stem of the T being fixed to the upper face of the support 14. This may be accomplished by means of a screw 19 which also holds in position a rigid bar 20 extending over the stem portion of the spring 18. Through the forward end of this bar 20 is threaded an adjusting screw 21, the lower end of which bears on the upper face of the spring. By this means the spring may be urged downwardly to an adjustable extent to determine the pressure to be exerted on the arms 17. It will be noted that the free ends of the spring rest on the arms 17 so that either end may yield upwardly independently of the other. The arms 17 are limited in their downward swinging movement by means of stop lugs 25 projecting from their rear ends and adapted to engage on stop pins 26 extending outwardly from the extensions 15.

At the forward ends of the arms 17 and substantially in the vibration plane of the needle 8 are journaled the presser foot roll-

ers 30, these rollers being preferably frusto conical and journaled in inclined positions so that their lower faces are horizontal, but their adjacent faces are outwardly and upwardly inclined from the needle. Between these rollers 30 is positioned an edge gage comprising a bar 35 upwardly turned at its rear end where it is fixed as at 36 to the forward face of the support 14. The forward end of the bar 35 is laterally extended as at 37, and through this portion is a slot 38 through which the needle 8 passes in its sewing strokes. Adjacent to the portion 37 and centrally of the length of the slot 38 is a downwardly extending thin fin 40, this fin lying in the direction of feed and forming an edge gage element against either of opposite faces of which the work may be guided. At 41 is shown the usual four motion feed plate of the machine against which the work is pressed by the rollers 30.

The work to be presented to the sewing mechanism, as shown in Figures 3, 5 and 6, comprises a sole lining 45 and a shoe upper 46, as shown the sole lining terminating short of the toes and heels of the shoe. The edges of these shoe elements are brought together and presented to the sewing instrumentalities abutting against either face of the edge gage fin 40, the needle vibrating laterally within the slot 38 during the sewing operation to attach these shoe parts by over edge stitches as shown at 47 in Figures 5 and 6. Where the left hand edge of the material is to be sewed, as shown in Figure 5, the parts engage the right hand face of the fin 40, passing beneath the roller 30 on the corresponding side of the edge gage, the roller on the opposite side being idle, and the work feeding in from the toe end of the shoe. When the opposite edge of the work is to be sewed it is presented beneath the opposite roller 30 and against the opposite face of the edge gage 40, the work progressing in this case also from the toe of the shoe rearwardly. By this means correct placing and fastening of the parts is materially facilitated.

Having thus described an embodiment of this invention it should be evident to those skilled in the art that various changes and modifications might be made therein without departing from its spirit or scope as defined by the appended claims.

I claim:

1. A presser foot for a sewing machine having a laterally vibrating needle, comprising a pair of pivoted arms one at each side of the needle, a roller journaled at the free end of each arm substantially in the plane of vibration of the needle, means for urging said arms in a direction to press the rollers against work, means to limit the extent of movement of said arms by said urging means, and an edge gage between said rollers and against either side of which work may be guided in operative relation to the needle.

2. A presser foot for a sewing machine having a laterally vibrating needle and a presser foot bar which comprises a forwardly extending rod attachable at its rear end to said presser foot bar, a holder clamped to the forward downturned end of said rod, a pair of spaced arms pivoted to said holder at their rear ends, a roller journaled at the forward end of each arm substantially in the vibration plane of the needle, a bar extending forwardly from said holder and between said rollers and having a slot extending laterally thereof through which the needle passes, a fin extending downwardly at the forward end of said bar and against either face whereof work may be guided into operative relation to the needle, and a T-shaped spring arm having its shank portion fixed to said holder and its oppositely extending ends each overlying and resting on one of said arms.

3. A presser foot for a sewing machine having a laterally vibrating needle and a presser foot bar which comprises a forwardly extending rod attachable at its rear end to said presser foot bar, a holder clamped to the forward downturned end of said rod, a pair of spaced arms pivoted to said holder at their rearward ends, a roller journaled at the forward end of each arm substantially in the vibration plane of the needle, a bar extending forwardly from said holder and between said rollers and having a slot extending laterally thereof through which the needle passes, a fin extending downwardly at the forward end of said bar and against either face whereof work may be guided into operative relation to the needle, a T-shaped spring arm having its shank portion fixed to said holder and its oppositely extending ends each overlying and resting on one of said arms, and means for adjusting the pressure of said spring on said arms.

4. A presser foot for a laterally vibrating needle sewing machine comprising a pair of spaced arms pivoted at one end, work pressing elements carried by said arms at opposite sides of the needle, a leaf spring having its ends extending over said arms, a member extending over the central portion of said spring, and a screw threaded through said member and bearing on said spring to adjust the pressure exerted thereby on said arms.

5. A presser foot for a sewing machine having a laterally vibrating needle and a presser foot bar, which comprises a forwardly extending rod attachable at its rear end to said presser foot bar, a holder clamped to the forward down-turned end of said rod, a pair of spaced arms pivoted to said holder at their rearward ends, a roller journaled at the forward end of each arm

substantially in the vibration plane of the needle, a bar extending forwardly from said holder and between said rollers and having a slot extending laterally thereof through which the needle passes, a T-shaped spring arm having its shank portion fixed to said holder and its oppositely extending ends each overlying and resting on one of said arms, and means for adjusting the pressure of said spring on said arms.

In testimony whereof I have affixed my signature.

WILLIAM H. BAYNARD.