May 9, 1933. G. GODDU **1,908,416**

SEWING MACHINE

Filed May 27, 1931 2 Sheets-Sheet 1

Fig. 1

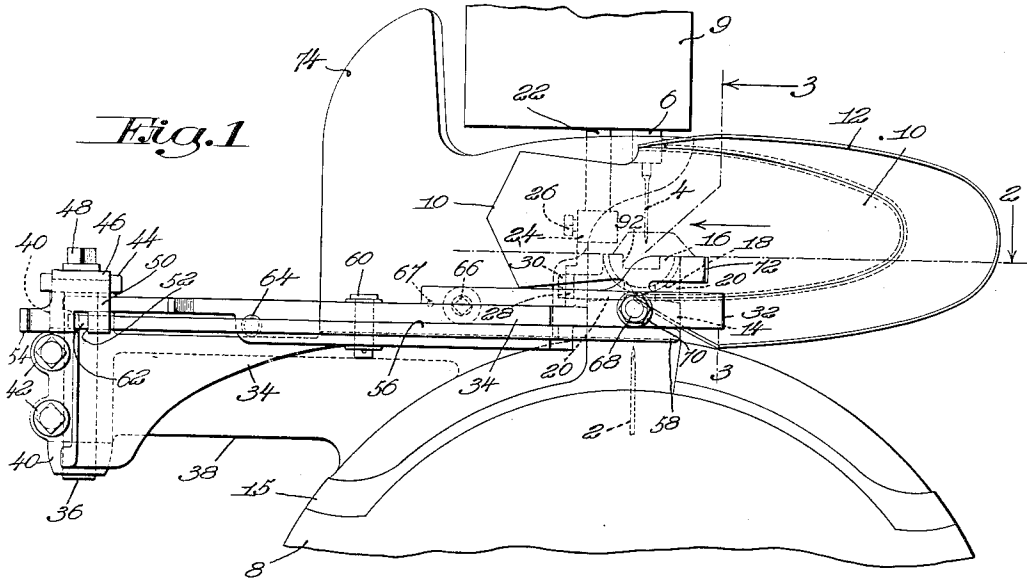

Fig. 2

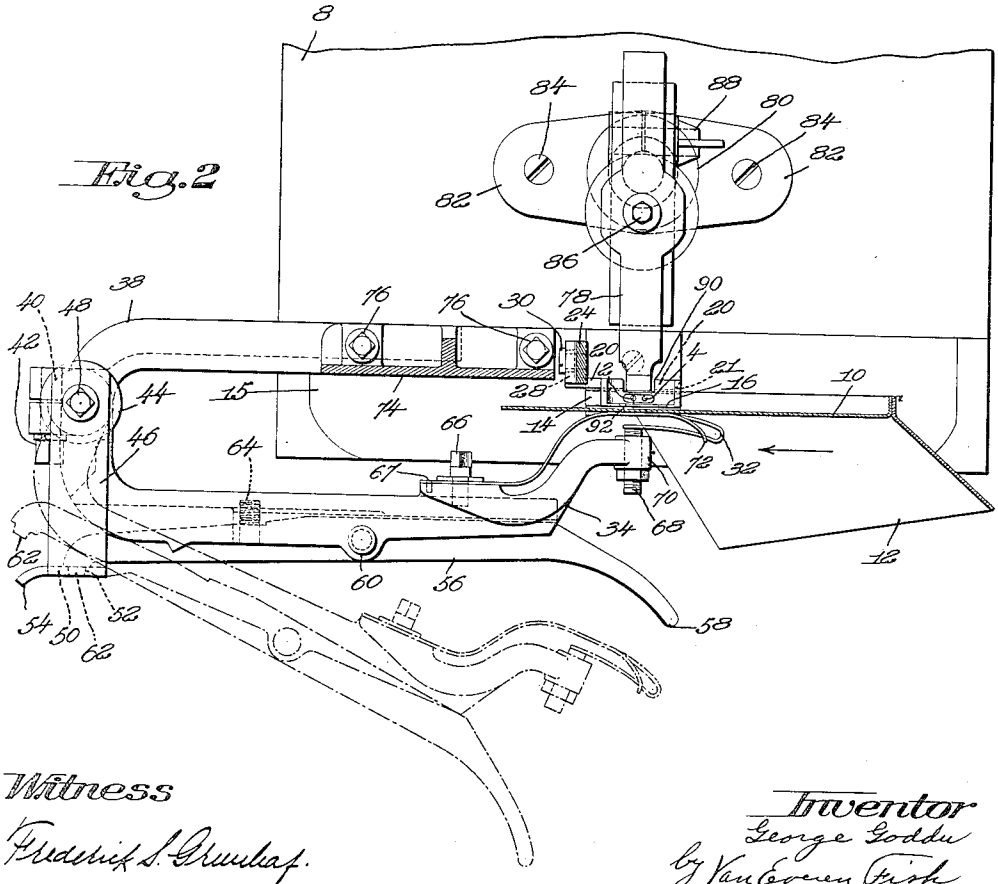

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Fig. 3

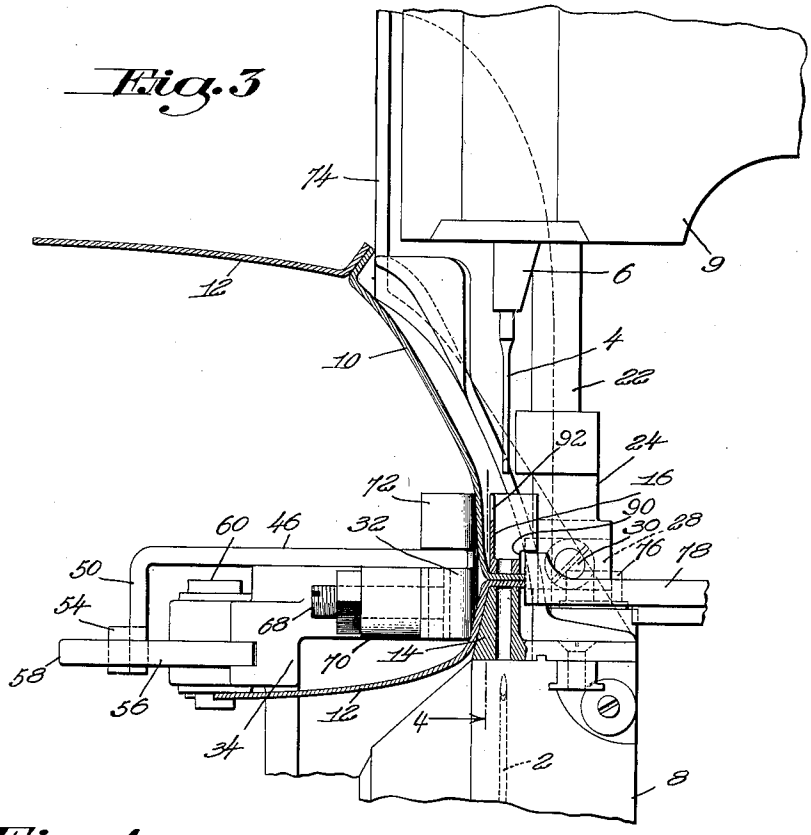


Fig. 4

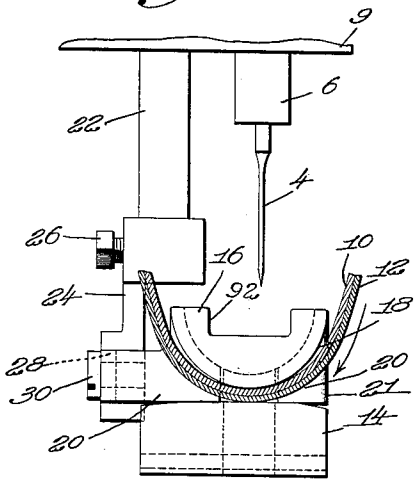
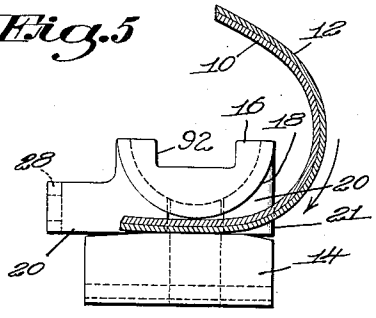


Fig. 5



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UNITED STATES PATENT OFFICE

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SEWING MACHINE

Application filed May 27, 1931. Serial No. 540,252.

This invention relates to sewing machines and is herein disclosed as embodied in a machine constructed to facilitate the sewing together of the top or tongue piece and side part or vamp of an imitation moccasin or moccasin type shoe.

The formation of the seam uniting the top piece and vamp of a moccasin type shoe is made difficult by the character and shape of the seam and by the tendency for the parts to separate or become disarranged. The top or tongue piece of a moccasin type shoe is similar to that of an ordinary moccasin and the side part or vamp, instead of being separately shaped and stretched to extend entirely around the bottom of the shoe, is a flat U-shaped part adapted to be curved with its inner marginal portions superposed on the marginal portions of the top piece. Proper shaping of the upper and toe portions results to a considerable degree, from the relative positioning of the parts during stitching. The additional sole part or parts are secured to the completed upper in any suitable manner, as in the welt, stitch-down or McKay shoes.

The object of the present invention is to provide a sewing machine by which the top piece and vamp of such a shoe can readily be secured together by a moccasin seam in a reliable and uniform manner without requiring the services of an operator of more than the average skill and ability.

With the above object in view, the present invention contemplates, in a sewing machine having a work support and a work clamping presser foot, the provision of a lateral yielding presser at one side of the work support, acting to thrust the superposed marginal portions of the top piece and vamp of a moccasin type shoe between the work engaging surfaces of the work support and presser foot. In the construction hereinafter specifically described, this presser comprises a reversely curved spring strip fixed to a work supporting horn and yieldingly acting along its central part to maintain the work in position.

In order to assist the placing of the work in proper sewing position to start the machine, the horn is movably mounted on the frame of the machine and a manual member is provided for moving and locking the horn in fixed position with the yielding presser in engagement with the work. An edge gauge may be employed further to aid in properly locating and guiding the parts as the seam progresses.

Another feature of the invention contemplates providing a work guide plate at one side of and between the lateral presser and the stitch-forming devices for shielding the top piece and vamp against injury by the moving parts and for directing the feeding movements during the formation of the seam. By providing a guide at the rear and the yielding presser in front of the work, a more uniform and reliable operation results.

Other features include the use of a semi-cylindrical work engaging surface on the presser foot and providing radially extending rear shoulders for strengthening the presser foot and assisting in guiding more evenly the marginal portions of the top piece and vamp. A better effect is produced by thus shaping the presser foot to approximately conform to the central curvature of the toe portion of the moccasin seam.

The present invention also consists in certain devices, combinations and arrangements of parts, hereinafter described and claimed, the advantages of which will be obvious to those skilled in the art from the following description, taken in connection with the accompanying drawings, in which Fig. 1 is a view in front elevation showing the relation of the stitch forming and work supporting devices in a machine embodying the invention, parts of the supporting casing and frame having been broken away; Fig. 2 is a plan view in section, along the line 2 of Fig. 1; Fig. 3 is an enlarged sectional view in side elevation along the line 3—3 of Fig. 1; and Figs. 4 and 5 are detail views, in front elevation, on the same scale, of the work clamping parts, to illustrate the relative positions taken by the work during different portions of its travel, along the line 4 of Figure 3.

In the drawings, the invention is illus-

trated as embodied in a sewing machine which, except as hereafter indicated, is similar to the wax thread sewing machine disclosed in the U. S. patent to Campbell, No. 253,156, granted January 31, 1882. This machine is a straight hook needle machine having its thread handling devices constructed and arranged to form a lockstitch. The hook needle of the machine is indicated at 2 and the awl at 4.

The needle enters the work from below and the awl from above in accordance with the action of the operating mechanism. A feeding movement is intermittently imparted to the work by lateral movements of an awl actuating bar 6 while the awl is in engagement with the work. A main bed casing 8, and a head 9, with a connecting neck form the frame of the machine.

The parts so far described and other stitch forming and work feeding devices with their actuating mechanisms are the same as in the machine of the patent above referred to.

In embodying the present invention in the illustrated machine, a work support, a presser foot and a cooperating lateral yielding presser, including a swinging presser horn for supporting and maintaining the presser in position, have been provided to enable the machine to be utilized in sewing together the top piece and vamp of a moccasin type shoe. The top or tongue piece and vamp or side part are indicated at 10 and 12, respectively, in proper relation preliminary to the formation of the seam uniting their superposed marginal portions. The parts may be attached to each other in any suitable temporary manner to prevent displacement before entering the machine, the portions intermediate the margins diverging from each other at an obtuse angle.

The work support of the machine is indicated at 14 and consists of an upstanding, perforated block formed integrally with a portion of a shuttle enclosing race plate 15, suitably attached to the main casing 8. The front face of the work support is slightly inclined to form a guiding surface for the vamp. The presser foot 16 is formed with a semi-cylindrical face 18 and radially extending shoulders 20 at the rear. A slot or other clearance opening in the face may be provided for the needle and awl. The curvature of the face 18 approximately conforms to the central curvature of the toe portion of the moccasin seam, as shown in Fig. 4 so that a better guiding effect will be produced. The lateral edge of one shoulder 20, opposing the direction of feed may be beveled as at 21 to prevent abrasing the edge of the seam and the shoulders project below and beyond the rear edge of the work support when no work is in the machine.

The presser foot is attached to the lower end of the presser foot operating rod 22, acting in timed relation to the other stitch forming parts to release the work during the feeding movements imparted by the awl. The presser-foot is connected to the rod 22 through an intermediate connection 24 slipped over the end of the rod 22 and clamped by means of a set screw 26. An extension 28 from one of the shoulders 20 is adjustably slidable with the lower end of the intermediate connection 24 by loosening an adjusting screw 30 passing through a slot in the extension 28 and into threaded engagement with the connection 24. This arrangement permits forward and rearward movement of the presser foot to adjust properly the position with respect to the line of stitching.

The lateral yielding presser 32, in the case of the present machine, is formed as a reversely curved spring strip fixed to a work supporting horn 34 which is pivotally mounted on the machine at 36. The pivot 36 is vertically arranged to permit lateral swinging movement of the horn 34 and is mounted in a bracket extension 38 formed integrally with the race plate 15. The pivot 36 passes loosely through outside lugs 40 of the horn 34 and fits a slotted passage formed in an enlargement at the end of the bracket 38. The pivot 36 is clamped in place in the bracket 38 by means of bolts 42 threaded into bracket 38 and acting to grip the pivot pin by closing the slot in the passage. The upper end of the pivot 36 is formed with an enlarged head 44 for supporting a locking bracket 46 fastened thereto by a bolt 48. Relative rotation between the pivot and bracket is prevented by shoulders formed on the head of the pivot. The outer end of the locking bracket 46 is provided with a downwardly turned flange 50 having a locking slot 52 and a forwardly curved lip 54.

The horn 34 may be swung horizontally about the pivot 36 by a manually operated lever 56 having a handle portion 58. The lever is pivotally mounted at 60 in a slot formed in the horn 34 and is provided with the locking lug 62 at its end adjacent the pivot 36. As the horn 34 is swung into position with the yielding presser in engagement with diverging portions of the top piece and vamp, locking lug 62 strikes the lip 54 and, riding along the inner surface, engages the slot 52 in the locking bracket 46 to prevent release of the horn. A continuous outward movement of the handle 58 operates in a similar way to withdraw the locking lug 62 and release the horn 34. The lever 56 is tensed to locking position by a compression spring 64. By this arrangement, the horn may positively be fixed in position with the presser in yielding engagement with the work or may be swung clear to permit adjustment of the work in operative relation to the machine.

The reversely curved spring strip 32 for

yieldingly engaging the work is fixed to the presser horn 34 by a bolt 66 and is prevented from rotation about the bolt by a pin 67. The other end of the strip, being reversely curved, is backed by an adjusting screw 68 passing through a lug 70 on the terminal of the horn. The vamp 12 is thrust into frictional engagement with the front work engaging face of the work support by strip 32. The top piece is supported loosely between the front face of the presser foot and a short finger 72 extending upwardly and to one side from the strip 32. The top piece 10 in this position, indicated in Fig. 3, between the finger 72 and the presser foot does not interfere with the releasing and gripping movements of the presser-foot during the formation of the seam.

In order further to insure that the work will not interfere with the moving parts of the stitch forming devices and to direct the feeding movements, a work guide plate 74 extends at one side of and between the lateral presser and stitch forming devices. This plate is mounted on the top surface of the extension bracket 38 by bolts 76 passing through a lower angular base portion of the guide plate. The shape of the guide plate is such that the work is shielded against injury by the moving parts of the stitch forming devices and is directed in its movements during stitching.

The proper distance of the line of stitching from the superposed edges of the top piece and vamp is effected by the use of an edge gauge 78 adjustably mounted upon a supporting standard 80, having lugs 82 attached by screws 84 to the main casing 8 of the machine, this arrangement being similar to the arrangement of the edge gage and adjustable supporting post disclosed in the U. S. patent to Wilson, No. 847,714, granted March 19, 1907. The edge gage may be adjusted forwardly and rearwardly by loosening a set screw 86 and vertical adjustment may be obtained by releasing a thumb nut 88. In sewing a seam close to the edge, as is desirable in the formation of a moccasin type seam, the work engaging face of the edge gage is adjusted to lie close to the needle and awl passages in the work support and presser foot. A portion of the presser foot is, therefore, cut away at 90 to accommodate the work engaging face of the edge gage. The upper edge of the presser foot may also be cut away at 92 to prevent interference with the awl actuating bar 6 during its feeding movements.

Before operating the machine, the work may be adjusted in the position shown in Fig. 1 while the presser 32 is swung outwardly (see dot-dash lines, Fig. 2) so as to provide easy manipulation. As soon as the presser-foot is released, the work will be held in position and the presser 32 then swung inwardly to act against the diverging portions of the top piece and vamp tending to thrust the superposed marginal portions between the work engaging surfaces of the work support and presser foot during stitching. Proper inward pressure is obtained by adjusting the screw 68 to thrust more or less against the reversely bent end of the spring strip. Along the straight portion of the seam, the marginal portion of the vamp will lie in substantial engagement with the entire upper surface of the work support, but as the central curvature at the toe portion of the seam is reached, the parts will not lie parallel to the work support but will approach the curvature of the presser foot and be guided thereby as illustrated in Figs. 4 and 5.

The nature and scope of the invention having been indicated, and a construction embodying the several features of the invention having been specifically described, what is claimed is:

1. A sewing machine for uniting the top piece and vamp of a moccassin type shoe having, in combination, stitch forming devices, a work support, and a presser foot for clamping the superposed marginal portions of the top piece and vamp in position to be operated upon by the stitch forming devices and a lateral yielding presser in front of the work support acting against diverging portions of the top piece and vamp to thrust said superposed marginal portions between the work engaging surfaces of the work support and the presser foot.

2. A sewing machine for uniting the top piece and vamp of a moccasin type shoe having, in combination, stitch forming devices, a work support and a presser foot for clamping the superposed marginal portions of the top piece and vamp in position to be operated upon by the stitch forming devices, a movable horn adapted to be held in fixed position and a lateral yielding presser mounted on said horn at one side of the work support, acting against diverging portions of the top piece and vamp to thrust said superposed marginal portions between the work engaging surfaces of the work support and presser foot.

3. A sewing machine for uniting the top piece and vamp of a moccasin type shoe having, in combination, stitch forming devices, a work support and a presser foot for clamping the superposed marginal portions of the top piece and vamp in position to be operated upon by the stitch forming devices, a work supporting horn and a reversely curved spring strip fixed to the work supporting horn and acting along its central part yieldingly against diverging portions of the top piece and vamp to thrust said superposed marginal portions between the work support and the presser foot.

4. A sewing machine for uniting the top piece and vamp of a moccasin type shoe hav-

ing, in combination, stitch forming devices, a work support and a presser foot for clamping the superposed marginal portions of the top piece and vamp in position to be operated upon by the stitch forming devices, a laterally yielding presser movable into and out of operative position in front of the work support and acting against diverging portions of the top piece and vamp to thrust said superposed marginal portions between the work support and presser foot, a lock for holding the presser in fixed position, and means mounted to move with the presser to engage or disengage the presser with the work and to move independently of the presser to operate the lock.

5. A sewing machine for uniting the top piece and vamp of a moccasin type shoe having, in combination, stitch forming devices, a work support and a presser foot for clamping the superposed marginal portions of the top piece and vamp in position to be operated upon by the stitch forming devices, a lateral yielding presser in front of the work support, acting against diverging portions of the top piece and vamp to thrust said superposed marginal portions between the work engaging surfaces of the work support and the presser foot, and an edge gauge at the rear of the work support.

6. A sewing machine for uniting the top piece and vamp of a moccasin type shoe having, in combination, stitch forming devices, a work support and a presser foot for clamping the superposed marginal portions of the top piece and vamp in position to be operated upon by the stitch forming devices, a lateral yielding presser in front of the stitch forming devices, acting against diverging portions of the top piece and vamp to thrust said superposed marginal portions between the work engaging surfaces of the work support and presser foot, and a work guide plate at one side of and between the lateral presser and the stitch forming devices for shielding the top piece and vamp against injury from the moving parts and for directing the feeding movement thereof during the formation of the seam.

7. A sewing machine for uniting the top piece and vamp of a moccasin type shoe having, in combination, stitch forming devices, a work support and a presser foot for clamping the superposed marginal portions of the top piece and vamp in position to be operated upon by the stitch forming devices, said presser foot having a semi-cylindrical work engaging surface with radially extending rear shoulders for guiding the marginal portions of the seam, and a lateral yielding presser at one side of the work support acting against diverging portions of the top piece and vamp to thrust said superposed marginal portions between the work engaging surfaces of the work support and the presser foot.

8. A sewing machine for uniting the top piece and vamp of a moccasin type shoe having, in combination, stitch forming devices, a work support and a presser-foot for clamping the superposed marginal portions of the top piece and vamp in position to be operated upon by the stitch forming devices, a work supporting horn pivotally mounted at one side of the work support, a lateral yielding presser movable with said horn into operative position in front of the work support with the presser acting against diverging portions of the top piece and vamp to thrust said superposed marginal portions between the work support and presser-foot, a lock for holding the horn in fixed position, and a lock actuating lever mounted to move with the horn to swing the presser to and from engagement with the work and having a limited independent movement on the horn to actuate the lock.

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

GEORGE GODDU.