Oct. 26, 1954 H. V. GOREHAM 2,692,567

PLATFORM COVER STRIP GUIDE FOR SHOE MACHINES

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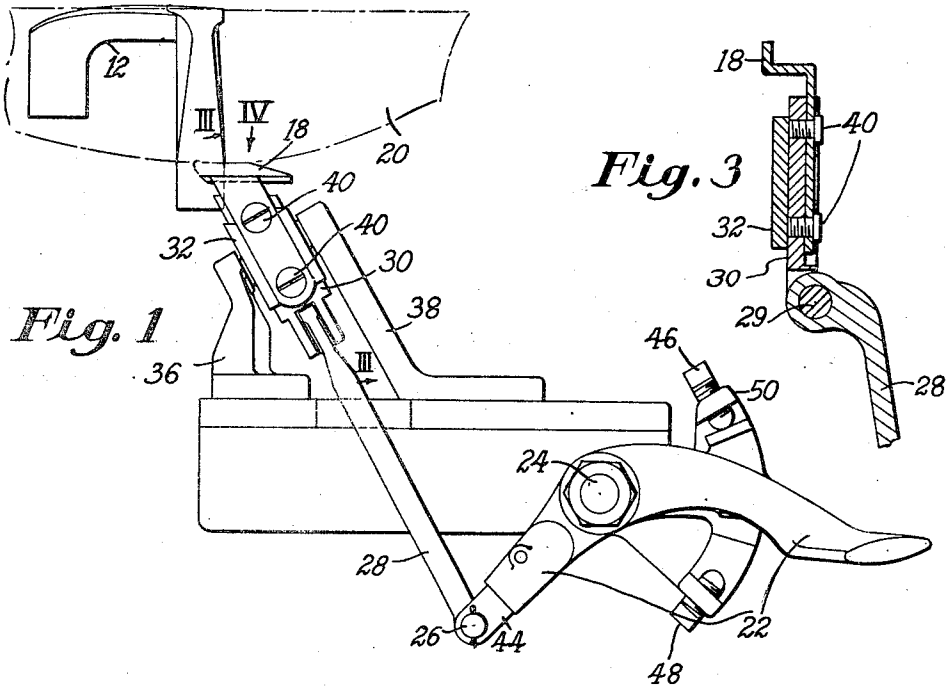


Fig. 1

Fig. 3

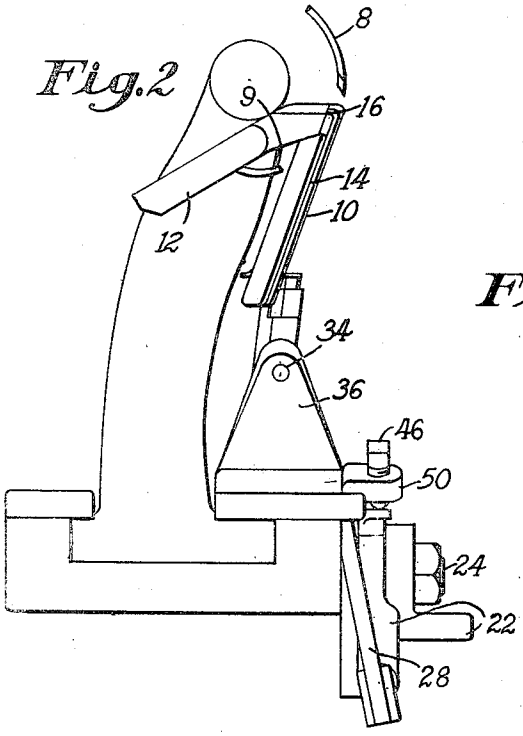


Fig. 2

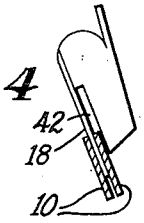
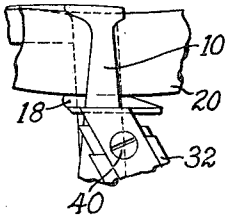


Fig. 4

Fig. 5



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PLATFORM COVER STRIP GUIDE FOR SHOE MACHINES

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Claims priority, application Great Britain October 5, 1951

4 Claims. (Cl. 112—52)

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This invention relates to improvements in machines for manufacturing shoes of the Veldtschoen type in which a variable width platform cover strip is sewn to the out-turned margin of an upper and to a sole or like member, the platform cover strip being thereafter turned down about the edges of the upper and sole to cover the edge of a platform applied to the sole.

Where the platform later to be covered by the down-turned platform cover strip includes a wedge heel, it is a customary practice to use a relatively narrow platform cover strip from one-half to three-quarters of an inch wide, around the forepart of the shoe and a wider cover strip up to 2'' wide, around the waist and heel end portions. In order to construct a shoe having a platform cover strip with portions which vary in width as above indicated, it has been a practice to use a guide which has a slot equal in overall length to the wider portion of the strip which is to extend around the waist and heel portions of the shoe and to provide means for reducing the width of the slot automatically or for compensating in other ways for variations in width. Where strip portions of uniform qualities are available, such guides are convenient and effective but if cover strip material is employed which is irregular in stiffness, weight or in tendency to curl, difficulties in guiding the strip frequently are encountered. Cover strip guides of the automatic width reducing or compensating type are disclosed in co-pending applications for United States Letters Patent Ser. No. 204,709, filed January 6, 1951, now Patent No. 2,640,448, in the name of Maurice Roberts and Serial No. 280,120, filed April 2, 1952, in the name of Alfred M. Bentley.

One of the objects of the invention is to provide improvements in a simple and convenient guide for attaching or sewing to a shoe a platform cover strip having portions which vary in width, arranged to be adjusted conveniently entirely by a readily operated hand control.

Consistent with the objects of the invention, a stitching or other similar shoe part fastening machine is provided with a platform cover guide, formed integrally with a work support, having a slot, the overall length of which is greater than the width of that portion of a platform cover strip which it is desired to sew around the thicker waist and heel portions of a wedge heel shoe, the slot being provided with an end wall or abutment which is arranged to occupy a relatively fixed position with respect to the sewing point so that, by engagement of the abutment with an

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edge of the platform cover strip, it directs that edge to the desired location with respect to the sewing point, and a manually controlled finger extending into the slot engages the opposite edge of the platform cover, by means of which the operator may adjust the effective length of the slot in accordance with the widths of the different portions of the platform cover strip, the finger being guided without deviation along the slot entirely by the side walls thereof. Prior attempts to provide manual control of an edge guide finger for a wrapper strip, shiftable during operation of a fastening machine on which a cover strip guide is mounted, have been unsuccessful from a practical standpoint, partly because of the limited space for operating connections about the operating point of the machine and partly because of space limitations about the guide slot, the guide for the strip ordinarily being formed with relatively thin sheet metal side walls which are subject to easy flexure and unreliable control of a cover strip where attempts are made to provide close confinement of the strip in the guide slot through the use of a sliding guide finger. With the use of a sliding finger guided other than by direct contact with the side walls of the slot, there is a tendency for the finger to pinch the cover strip against the side walls of the slot as the strip moves along the slot, particularly where the side walls of the slot are flexed and caused to deviate to any appreciable extent from the line of movement of the finger. By employing a finger guided only by the side walls of the slot, the finger may be of sufficient thickness to fill the width of the slot without possibility of pinching the strip between the side walls and the finger, there being no necessity for excessive clearance between these parts nor tendency for the finger when so guided along the slot to deviate from the direction of the slot side walls. Other advantages of guiding a manually controlled finger by the side walls of a strip guide slot as the finger moves toward and from an abutment at one end of the slot, include ease and effectiveness in operation of the finger and simple light weight manually actuated connections which are subject to little or no tendency to crumple a cover strip or to act in an irregular manner under manual control.

In its preferred form the platform cover guide is arranged with the major portion of its length extending somewhat forwardly and approximately at right angles in a lateral direction to the work engaging surface of the work support against which the parts operated upon are

clamped and the edge guide finger is mounted for sliding movement at an angle to the length of the slot so that it moves more deeply into the slot when guiding a relatively narrow portion of cover strip and so that it withdraws at least partially out of the slot at that side of the slot toward which the cover strip approaches as a relatively wider portion of cover strip is being sewn. With such arrangement a greater support is given to a relatively wide cover strip portion in advance of the guide slot and less support is given to a relatively narrow cover strip portion, the wider strip having greater ratio of flexibility to its weight or rigidity. Accordingly, with a wide strip of the same quality of material, there is greater tendency for the strip to become displaced or crumpled as it moves into the guide, but since the edge engaging finger is moved out of the slot as a relatively wide strip portion approaches, a greater support is provided for the wider strip portion in advance of the slot. With a narrower strip, less support is required in advance of the guide slot and a more secure engagement with the internal abutment in the guide is obtained by a direct upward pressure of the finger on the cover strip.

These and other features of the invention together with the advantages to be obtained thereby, as hereinafter described and claimed, will readily be apparent from the following detailed description taken in connection with the accompanying drawings in which:

Fig. 1 is a view in front elevation of so much of a shoe sewing machine embodying the invention, as is required for a complete understanding of its construction and mode of operation, the figure indicating the positions of the parts while operating on a wide portion of a cover strip;

Fig. 2 is a view in left side elevation of the parts of the machine illustrated in Fig. 1;

Fig. 3 is a sectional detailed view on a somewhat enlarged scale taken along the line III—III of Fig. 1;

Fig. 4 is a sectional plan view of the guide slot and edge engaging finger of the machine illustrated in Fig. 1 looking in the direction of the arrow IV in that figure; and

Fig. 5 is a detail view of the cover guide shown in Fig. 1 indicating the position of the guide finger while operating upon a narrow portion of a cover strip.

The illustrative embodiment includes a curved, hook needle outsole stitching machine of the type known as the British No. 4 Rapid Stitching Machine. In an application for United States Letters Patent, Serial No. 193,144, filed October 31, 1950, in the names of C. H. James and Fred Ricks, there is disclosed a machine of the kind just referred to arranged for sewing a platform cover strip to the upper and sole member or a sock lining of a Veldtschoen type shoe and for simultaneously trimming away an unwanted marginal portion from a platform previously applied to the shoe. Besides the needle, indicated at 8, the machine is equipped with a work feeding awl 9 and the other usual stitch forming devices common to an outsole stitcher. This machine is provided with a platform cover guide which serves to direct a cover strip of uniform width to the sewing point in such a manner that a curved needle, in sewing the strip to the shoe, strikes through the strip close to one edge thereof.

Referring more particularly to the drawings, such a platform cover guide is replaced by one

which, for convenience and for providing a more compact arrangement in the machine, comprises relatively thin parallel sheet metal side walls 10 connected integrally with a work support 12, providing a strip-receiving slot 14 which is generally similar to the slot of the guide 78 in the last mentioned application, in that it has a main portion extending downwardly, and also a portion at its upper end bent more or less horizontally over the work engaging and clamping surface of the work support 12. A rear wall or abutment 16 in the horizontal slot portion constitutes the guiding surface by which the margin of a platform cover strip is accurately positioned just before it reaches the point of operation of the needle. The lower end of the slot is shown herein as being open but it may be closed so long as the overall length of the slot is greater than the widest portion of a platform cover strip to be operated upon.

To press the strip edgewise against the abutment 16 there is fitted for sliding movement within the slot 14 a shiftable strip edge engaging finger having a substantially horizontally disposed portion 18 arranged to extend into the slot and to engage a lower edge of a platform cover strip 20 (see Figs. 1 and 5) as it passes through the guide. The finger is arranged to be movable along the slot without deviation from the slot side walls so that the effective length of the slot may be shifted at the will of the operator to a position corresponding to the width of the cover strip while being sewn to the shoe. The finger is guided for movement by direct contact with the walls 10 of the guide slot in a manner to be described and is coupled by an appropriate linkage to a conveniently operated hand lever 22 pivotally mounted on a stud 24 carried by the frame of the machine in such manner that there is no tendency for the finger to crumple or pinch the strip against the walls of the guide slot. The lever 22 has an arm which is pivotally connected at 26 with a link 28, the other end of which is pivotally connected by a pin 29 (Fig. 3) to a bifurcated lower end portion of a slide 30. The slide 30 is received within an inclined guideway formed in a supporting block 32 which is pivotally mounted by means of pins, one of which is shown at 34 (Fig. 2) in brackets 36, 38 secured to the machine frame.

To enable the edge engaging finger to be guided entirely by the side walls of the slot 14, the guideway therefor is mounted for swinging movement transverse to the length of the guide slot and to the plane of its side walls. For this purpose the pivot axis of the pins 34 extends at an angle to the length of the guideway in the block 32. The finger has a shank secured by screws 40 to the slide 30 and to assist in easy sliding movement of the finger along the slot of the guide, the finger is formed with an open ended slot 42 (see Fig. 4) within which the front side wall of the guide enters.

To enable the hand lever 22 to move vertically without affecting the transverse movement of the guideway for the finger, the hand lever is coupled with the pivot 26 through a universal or swivel joint comprising a socket in the lever and a pin (not shown) in the socket projecting from a clevis 44 which supports the pivot 26.

In sewing a platform cover strip to a shoe, difficulties are encountered in guiding the strip to the sewing point as a result of the thin flexible nature of the strip and the tendency of the strip to crumple or draw away from the sewing point

with a twisting motion along portions of abrupt curvature of the shoe. This difficulty is more pronounced when relatively inexpensive leather materials are used. Crumpling of the strip in the guide retards proper progress of the strip and if the guide is formed by a slot having an abutment against which one edge of the strip is pressed, the other edge of the strip may become pinched between the side walls of the guide and a member engaging the strip to press it toward the abutment. Furthermore, tension may be impressed upon the edge of the strip not entering the seam in a manner tending to draw it away from the sewing point with a clockwise twisting action. Such twisting action is most troublesome when wider portions of the strip are being sewn to the heel end of a shoe.

It is evident from the illustrations of Figs. 1 and 5 that the guideway block 32 for the shiftable edge engaging finger is inclined with respect to the vertical length of the slot in the strip guide so that the finger portion 18 moves to the left laterally into the slot of the guide as the finger is shifted upwardly toward the abutment 16, and moves out of the slot toward the approaching portion of the strip as it moves downwardly away from the abutment. After moving into the slot the finger insures close confinement for the narrow portion of the strip, the twisting tendency for the narrower portion being much less than with the wider portion of the strip.

To insure smooth application of strip confining pressure against the lower edge of the strip toward the abutment 16 while a relatively wide portion approaches the right side of the slot 14 under the pull of the feeding devices, the position of the finger at the right after being shifted downwardly, applies upward pressure to the strip at a location where the twisting tendency is most readily offset. By guiding the finger portion 18 directly by the side walls of the guide, close contact between the finger and the side walls may be obtained so that the tendency to pinch the lower edge of the strip between the finger and the side walls is eliminated (see Fig. 1).

In use the guide will occupy the same general relation in the machine as the platform cover guide referred to in the James and Ricks application noted above, although in the present machine it is connected integrally with the work support 12. A sufficient length of platform cover strip 20, for example with a width of ¾" (Fig. 5), to extend around the forepart of a shoe to be operated on, is cut off from a length of suitable material and has united to it, so that their edges along which they are to be stitched to the shoe abut or overlap slightly with a length of wider material (Fig. 1) appropriate both in length and in width to extend around the waist and heel portions of the shoe. Alternatively the platform cover strip may be cut from a length of material as a single piece, but having portions of different widths.

To operate on one pair of shoes the narrower portion of the cover strip is first threaded into the slot 14 of the guide, the finger is positioned so as to correspond, and the sewing is commenced at the forepart adjacent to the forward portion of the waist at one side of the shoe. The cover strip then is sewn around the forepart and, as the forward portion of the waist at the opposite side of the shoe approaches the sewing position, the operator will move the finger downwardly to lengthen the slot in accordance with

the width of the wider portion of the cover strip. In sewing a platform cover strip to the other shoe of the pair a start will be made with the wider portion of strip, the length of the slot in the guide being adjusted accordingly, and the sewing operation will proceed around the heel portion of the shoe first. Then as the sewing proceeds and the narrower portion of strip arrives at the guide the operator will raise the finger to shorten the effective length of the slot and to direct effectively the narrow portion of the platform cover into the sewing point.

The hand lever 22 for adjusting the finger in the slot 14 of the guide has associated with it adjustable stop screws 46 and 48 threaded in lugs formed on a bracket 50 secured to the machine frame. The stop screws are arranged to limit movement of the lever 22 in opposite directions by engagement with lugs on the lever. With this arrangement the operator may readily change over the position of the finger from one position to the other without particular attention to the amount of movement he is effecting in the finger. The stops can thus be set initially to suit a cover strip for a particular run of work.

The nature and scope of the invention having been indicated and a particular embodiment having been described, what is claimed is:

1. A machine for fastening the marginal portions of a shoe upper, a sole and a platform cover strip having fastening devices, work clamping means including a work support and a presser foot acting toward and from the work support, a cover strip guide located in advance of the point of operation of the fastening devices and formed of relatively thin sheet metal walls forming a slot of a length equal to the widest portion of the cover strip operated upon and provided with an internal abutment at one end of the slot to direct one edge of the strip into the path of operation of the fastening devices and a strip edge guide finger mounted for sliding movement along the slot toward and from the abutment to press the strip edgewise against the abutment, in combination with a guideway in which the edge guide finger is slidable, pivoted for swinging movement transverse to the length of the guide slot to enable the sliding movement of the finger to be directed by the side walls of the slot without deviation along the length of the slot.

2. A machine for fastening the marginal portions of a shoe upper, a sole and a platform cover strip having fastening devices, work clamping means including a work support and a presser foot acting toward and from the work support, a cover strip guide located in advance of the point of operation of the fastening devices and formed of relatively thin sheet metal walls forming a slot of a length equal to the widest portion of the cover strip operated upon and provided with an internal abutment at one end of the slot to direct one edge of the strip into the path of operation of the fastening devices and a strip edge guide finger mounted for sliding movement along the slot toward and from the abutment to press the strip edgewise against the abutment, in combination with a guideway in which the edge guide finger is slidable, pivoted for swinging movement transverse to the length of the guide slot to enable the sliding movement of the finger to be directed by the side walls of the slot without deviation along the length of the slot, said guideway being inclined at an angle to the length of the slot in the strip guide to cause the finger to

move into and out of the slot as it is moved toward and from the abutment at the end of the slot.

3. A machine for fastening the marginal portions of a shoe upper, a sole and a platform cover strip having fastening devices, work clamping means including a work support and a presser foot acting toward and from the work support, a cover strip guide located in advance of the point of operation of the fastening devices and formed of relatively thin sheet metal walls forming a slot of a length equal to the widest portion of the cover strip operated upon and provided with an internal abutment at one end of the slot to direct one edge of the strip into the path of operation of the fastening devices and a strip edge guide finger mounted for sliding movement along the slot toward and from the abutment to press the strip edgewise against the abutment, in combination with a guideway in which the edge guide finger is slidable, pivoted for swinging movement transverse to the length of the guide slot to enable the sliding movement of the finger to be directed by the side walls of the slot without deviation along the length of the slot, said guideway being inclined at an angle to the length of the slot in the strip guide to cause the finger to move into the slot as it is moved toward the abutment at the end of the slot and out of the slot as it is moved away from the abutment.

4. A machine for fastening the marginal portions of a shoe upper, a sole and a platform cover strip having fastening devices, work clamping means including a work support and a presser

foot acting toward and from the work support, a cover strip guide located in advance of the point of operation of the fastening devices and formed of relatively thin sheet metal walls forming a slot of a length equal to the widest portion of the cover strip operated upon and provided with an internal abutment at one end of the slot to direct one edge of the strip into the path of operation of the fastening devices and a strip edge guide finger mounted for sliding movement along the slot toward and from the abutment to press the strip edgewise against the abutment, in combination with a guideway in which the edge guide finger is slidable, pivoted for swinging movement transverse to the length of the guide slot to enable the sliding movement of the finger to be directed by the side walls of the slot without deviation along the length of the slot, said guideway being inclined at an angle to the length of the slot in the strip guide to cause the finger to move into the slot as it is moved toward the abutment at the end of the slot and out of the slot as it is moved away from the abutment, the movement out of the slot being toward the strip as it approaches the guide.

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