

S. J. WENTWORTH.
STITCH SEPARATOR AND WELT INDENTOR.

APPLICATION FILED JULY 29, 1902.

2 SHEETS—SHEET 1.

Fig. 1.

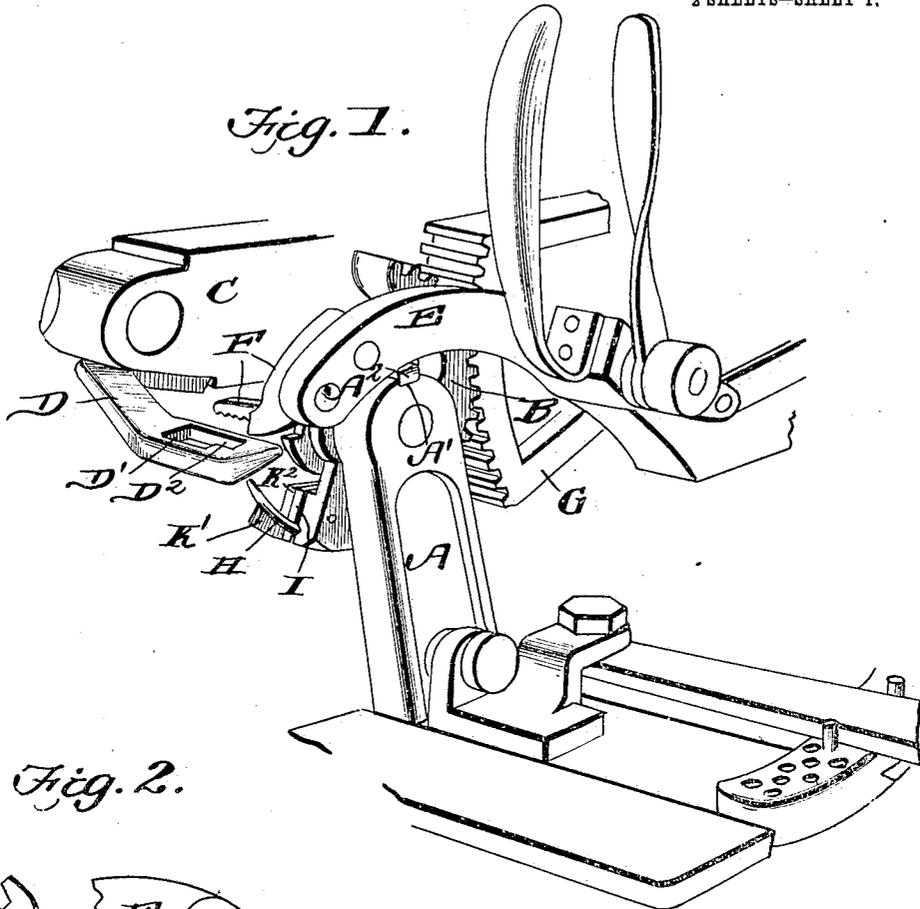


Fig. 2.

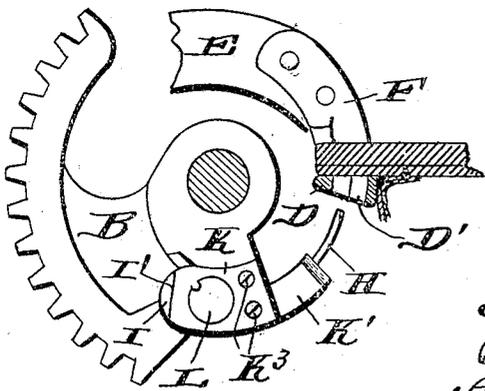


Fig. 3.

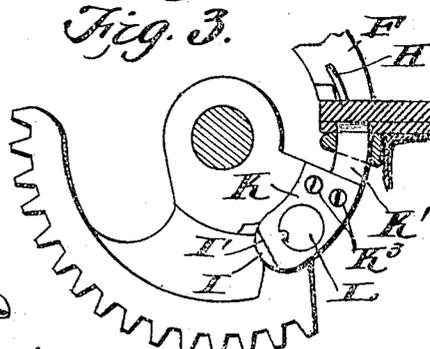
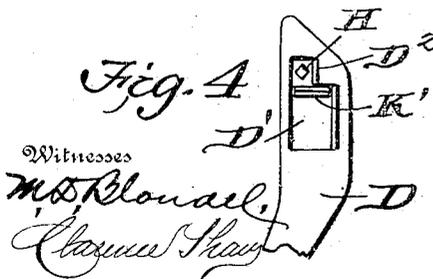
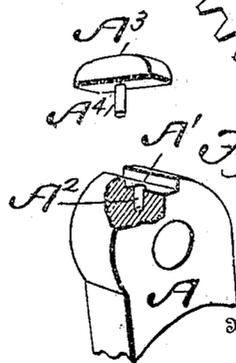


Fig. 4.



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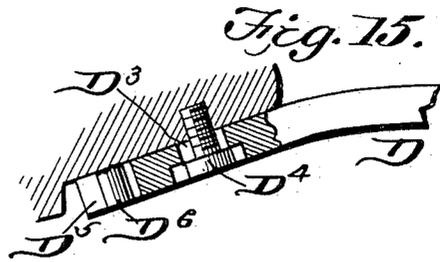
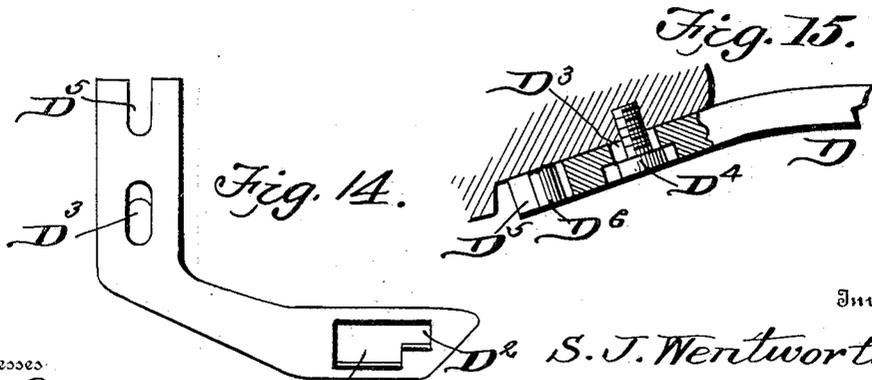
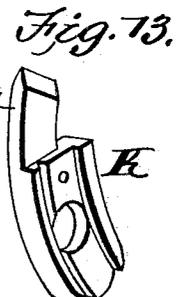
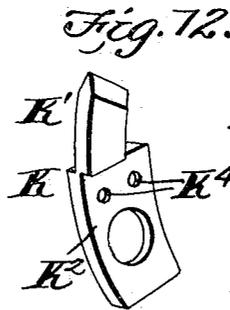
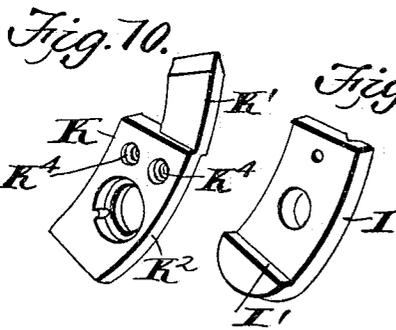
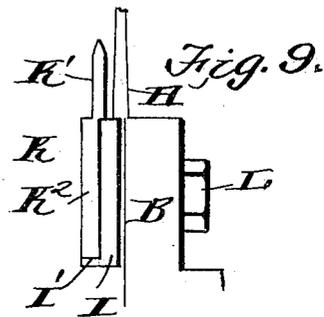
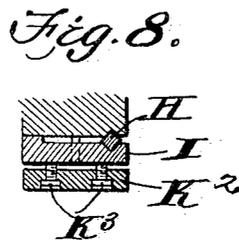
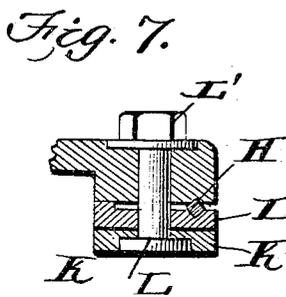
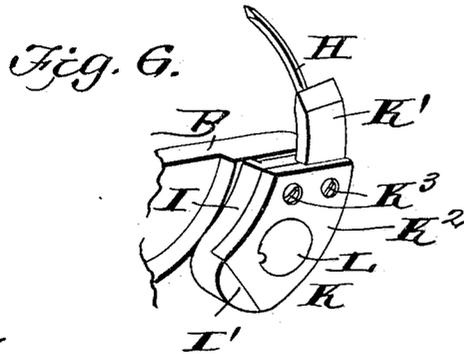
Fig. 5.



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UNITED STATES PATENT OFFICE.

SAMUEL J. WENTWORTH, OF NEWPORT, KENTUCKY.

STITCH-SEPARATOR AND WELT-INDENTOR.

SPECIFICATION forming part of Letters Patent No. 788,003, dated April 25, 1905.

Application filed July 29, 1902, Serial No. 117,482.

To all whom it may concern:

Be it known that I, SAMUEL J. WENTWORTH, a citizen of the United States, residing at Newport, in the county of Campbell and State of Kentucky, have invented a new and useful Stitch-Separator and Welt-Indentor, of which the following is a specification.

This invention relates generally to shoe-sewing machines, and more particularly to certain improvements upon a machine for sewing shoe-soles to the welt, such as the Goodyear rapid outsole-stitcher machine; and the object of such improvements or attachments is to provide for separating the stitches and indenting the welt during the operation of sewing the sole to the welt, such separating and indenting operations also serving to feed the shoe during the sewing operation.

The object of this invention is to provide a simple and convenient device adapted to be readily attached to a rotary boot-stitching machine whereby the indenting and stitch-separating can be performed on said machine in a single operation.

With these objects in view the invention consists, broadly, in attaching a tool to the awl-segment of the said sewing-machines, said tool being adapted to act in unison with the awl, whereby as the said awl is projected through the sole for the purpose of making a hole for the needle the separating and indenting tool is separating the next adjacent stitch which is completed and simultaneously indenting the welt.

The invention consists also in certain details of construction and novelties of combination, all of which will be fully described hereinafter and pointed out in the claims.

In the drawings forming part of this specification, Figure 1 is a perspective view of that portion of a Goodyear welt-machine to which my invention is applied. Fig. 2 is a detail view illustrating the awl-segment in its lowered position, the shoe-sole, welt, and work-table being shown in section. Fig. 3 is a similar view showing the awl in its raised position, said awl being projected through the welt and shoe-sole, said welt and sole and

work-table being shown in section. Fig. 4 is a top plan view of the end of the work-table, illustrating the peculiar form of the throat or opening in said work-table. Fig. 5 is a detail perspective view, partly in section, showing the top of the bracket to which the awl-segment is pivoted and also illustrating a rest-block arranged for contact with the arm carrying the presser-foot. Fig. 6 is a detail perspective view illustrating my improved attachment connected to the awl-cap and showing the relative position of the awl and indenting tool or blade. Fig. 7 is a detail sectional view showing a portion of the awl-segment and awl-cap, awl, and indenting-tool. Fig. 8 is a sectional view showing the manner of adjusting the indenting-tool. Fig. 9 is a front view showing a portion of the awl-segment, awl-cap, and awl and indenting-tool. Fig. 10 is a detail perspective view of the indenting-tool. Fig. 11 is a detail perspective view of the awl-cap especially constructed to receive the indenting-tool. Fig. 12 shows the opposite face of the tool. Fig. 13 shows a modification of the tool. Fig. 14 is a plan view of the work-table. Fig. 15 is a detail sectional view showing the manner of adjusting the said work-table.

While my invention is particularly adapted for use upon the Goodyear rapid outsole-stitcher machine and although I have shown the same applied to the Goodyear machine, it will be distinctly understood that it can be used in connection with any and all other machines operating upon the same general principle.

Referring to the drawings, A indicates the bracket, to which the awl-segment B is journaled, said bracket and segment being constructed and arranged in substantially the same manner as in all Goodyear welt-machines, and the adjustment of this bracket A is accomplished by the mechanism forming part of the said Goodyear welt-machine.

C indicates the forwardly-projecting arm, to which the work-table D is attached, and E is the lever-arm, carrying the presser-foot F. G is the gear-segment, adapted to mesh with

the teeth of the awl-segment for the purpose of moving the said awl-segment backward and forward or up and down, as required.

H indicates the awl, constructed substantially the same as heretofore and is secured to the awl-segment by means of the awl-cap I, said awl-cap having the usual groove, preferably near one edge, for the purpose of receiving the shank of the awl, and a rib or projection at the other edge for engaging with the face of the awl-segment and holding the cap substantially parallel with said face.

The indenting-tool K comprises the blade K' and body portion K² and is rigidly secured upon the side of the awl-cap by means of the stud or bolt L and nut L', which also serves to securely fasten the awl-cap to the segment, and thus secure the awl. The body and blade are preferably formed from a thin flat piece of material and both substantially in the same plane, with their exterior edges continuous and on the same curve.

In practice I prefer to reduce the awl-cap at one side, as shown at Fig. 11, thereby providing a shoulder I', against which the lower end of the body portion K² of the tool K will rest, the apertures in the body portion of the tool and awl-cap registering, so that the bolt or stud can pass therethrough and the tool and awl-cap can be provided with the usual construction of steady-pin for the purpose of preventing any movement of the said parts in case the bolts should become loose.

The indenting-blade is beveled at its upper end, and the said blade is curved on substantially the same arc as the awl H, and, if desired, the tool may sit slightly to one side of the body portion, so as to form a shoulder to rest against the end of the awl-cap and also to bring the said blade closer to the awl. I also propose to provide for the adjustment of the blade to or from the awl by means of set-screws K³, working through apertures K⁴, bearing against the awl-cap, and by adjusting these screws the blade can be adjusted to or from the awl, and by this means the indenting point or end of the blade can be adjusted with exactness so that it will engage the welt at the exact point.

In Fig. 13 I have shown the indenting-tool and awl-cap formed in one piece, as it is obvious that such construction will be just as efficient in operation as the construction illustrated in Figs. 6, 10, and 11. The work-table D has a peculiar construction of throat or aperture D', said throat or aperture being of a length equal to the length of the longest stitch that it is desired to make in the machine, and in addition to this length the said throat or aperture has an extension D² of a less width at one end for the purpose of accommodating the awl, it being understood that during the

sewing operation both the awl and indenting-blade will be projected upwardly through the throat of the work-table, as most clearly indicated in Fig. 3. In this manner a support is afforded for the material nearer the awl than if the extension were not contracted or of a less width than the main portion, and at the same time there is sufficient space afforded for the passage of the blade of the indenting-tool and its lateral movement in feeding the work forward.

The lower arm of the work-table has a longitudinal slot D³, through which the fastening-bolt D⁴ passes, and the extreme end is bifurcated, as shown at D⁵, in which is arranged the guide-pin D⁶. By having the arm slotted longitudinally the work-table can be adjusted so as to remove the line of stitching farther from or nearer to the upper of the shoe. It is obvious that the longitudinal adjustment of this arm must necessarily result in a transverse adjustment of the throat or aperture D', and in this manner the line of stitch can be brought either closer to or farther from the upper of the shoe. Simultaneous with the location of the line of stitch will be the location of the line of indentations. The upper end of the bracket A has a transverse groove A' and also an aperture A², and seated in the groove is a rest-block A³, having a pin A⁴, which enters the aperture, the purpose of said rest-block being to hold the arm E, which carries the presser-foot, slightly elevated, so that when a wide blade of the stitch-separating and indenting tool or device is used the inside end of said blade can pass above the work-table without coming in contact with the presser-foot, as it ordinarily would, and, furthermore, by having the said arm slightly elevated it will be impossible for the indenting-tool to come in contact with the presser-foot in case the machine is operated at a time when there is no sole arranged between the presser-foot and work-table.

The operation of my combined stitch separator and indenter in conjunction with the awl is as follows: The indenting-tool, together with the improved construction of awl-cap, is securely attached to the awl-segment in substantially the same manner as the awl-cap is now attached in the said Goodyear machine and the stitch is formed in identically the same manner as in said machine. When the awl is forced through the welt and sole of the shoe, it is at the extreme right hand of the throat or aperture in the work-table, and at the same time the beveled end of the blade of the indenting-tool is forced or driven above the surface of the work-table and embedded into the welt, the sole of the shoe being firmly held to the work-table by the presser-foot. When the awl is forced to the highest point and the

beveled end of the blade of the tool is embedded in the welt, the presser-foot momentarily releases the sole of the shoe and the awl and tool are carried to the left as far as the length of stitch desired, said length of stitch being regulated by any well-known means and preferably by that common to the said Goodyear machine. The awl and blade are then withdrawn and the curved needle penetrates or passes through the aperture made in said welt or sole by the awl, catching the thread and drawing it through the same and then making a stitch as now accomplished in the Goodyear machine. The awl and indenting-tool then pass to the right, and by an upward movement of the awl-segment the awl is again forced or driven through the welt and sole of the shoe, and the end of the blade, moved upward at the same time, separates the stitch just completed and at the same time indents the welt of the shoe. In this manner the stitches are separated and the welt indented at the same time the sole is sewed to the welt, and it is obvious that the said tool necessarily assists in feeding the shoe, inasmuch as it is in engagement with the welt at the same time the awl is in engagement with the welt and sole. By using the various widths of blades the point of said blade may be so adjusted as to make the indentations between the line of stitching and the upper of the shoe, or it may be so adjusted as to make the indentations on either or both sides of the line of stitching. Furthermore, the point of the blade may be so adjusted and so constructed as to keep the indentations from cutting the lip of the edge of the sole, thereby making the edge of the sole smooth and even.

It is obvious from the drawings that the

awl and the indenter-blade are concentrically curved.

Having thus fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The combination of the awl-segment, awl-cap and welt-indenting and separating tool, said tool comprising the body portion, and the upwardly-curved blade, of the work-table having a throat or aperture adapted to receive the blade of the said tool, the presser-foot and the arm for carrying the same, and a rest-block arranged upon the end of the bracket carrying the awl-segment, whereby the presser-foot is held elevated above the work-table, as and for the purpose set forth.

2. In a rotary boot-stitching machine the combination of a curved awl, a segment to which it is attached, means for rotating the segment, an awl-cap attached to the segment for holding the awl in place and a pricker-blade fast with the cap.

3. In the rotary boot-stitching machine the combination of a curved awl, a segment to which it is attached, means for rotating the segment, an awl-cap for securing the awl to the segment and a curved pricker-blade formed with the cap and concentric with the awl.

4. In a shoe-stitching machine the combination of a segment, means for rotating the segment, an awl-cap attached to the segment, a curved awl and a concentrically-curved pricker-blade or indenter secured to the cap, and means for relatively adjusting the awl and pricker-blade.

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Witnesses:

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