

J. B. HADAWAY.
MACHINE FOR MAKING IMITATION STITCHES.
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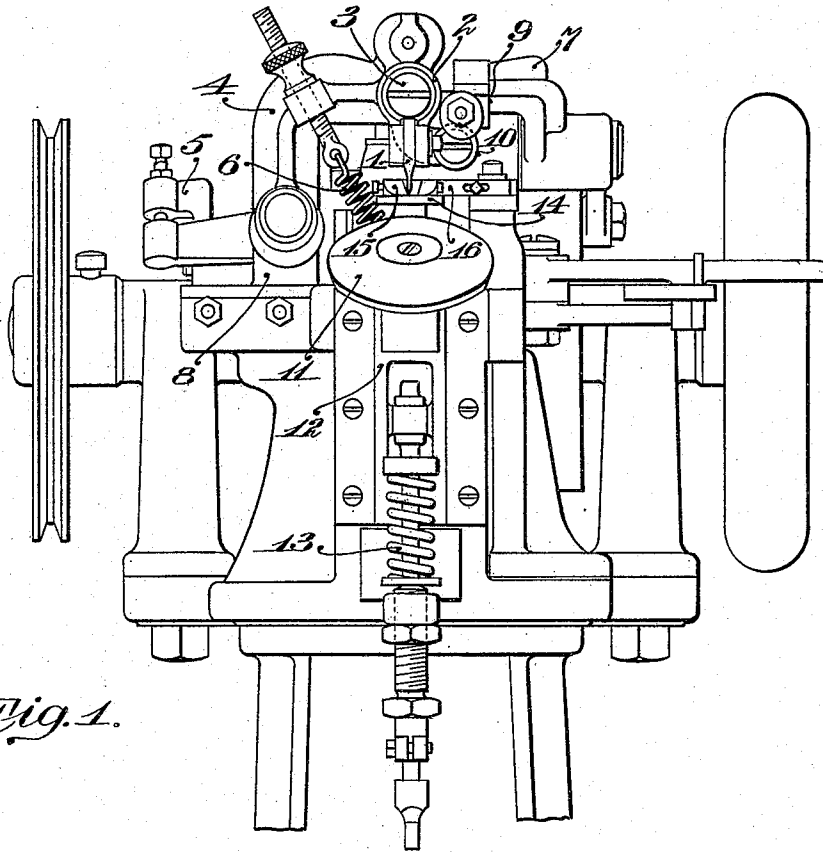


Fig. 1.

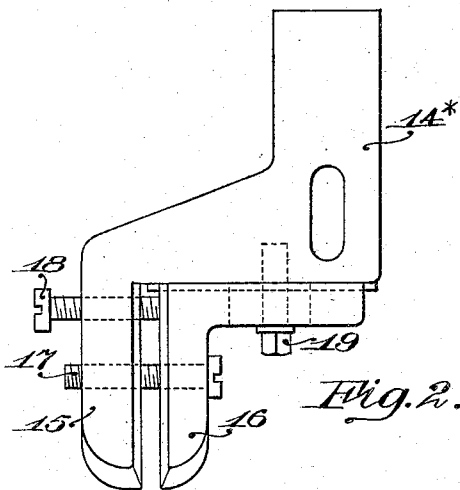


Fig. 2.

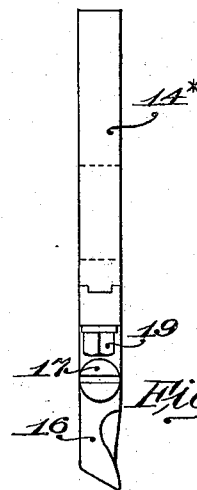


Fig. 3.

Witnesses
Edward S. Day
Alfred H. Aldrich

Inventor
John B. Hadaway
by his Attorneys
Phillips Van Orman & Fish

UNITED STATES PATENT OFFICE.

JOHN B. HADAWAY, OF BROCKTON, MASSACHUSETTS, ASSIGNOR TO UNITED SHOE MACHINERY COMPANY, OF PATERSON, NEW JERSEY, A CORPORATION OF NEW JERSEY.

MACHINE FOR MAKING IMITATION STITCHES.

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Specification of Letters Patent.

Patented Sept. 7, 1909.

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To all whom it may concern:

Be it known that I, JOHN B. HADAWAY, a citizen of the United States, residing at Brockton, in the county of Plymouth and State of Massachusetts, have invented certain new and useful Improvements in Machines for Making Imitation Stitches; 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 machines for making imitation stitches upon the upper surface of the projecting edge of a boot or shoe sole in order to impart a finished and attractive appearance to this portion of the sole similar to that of a boot or shoe provided with an outseam.

The object of the present invention is to provide a machine for making indentations in the upper surface of the projecting edge of the sole of a shoe to form imitation stitches, by which the indentations can be arranged on the surface of a sole at substantially right angles to the edge of the sole and by which the indentations can be accurately spaced any desired distance apart.

With this object in view the invention contemplates the provision of an automatically adjustable indenting tool which is actuated to indent and feed the work, and means independent of the work, acting automatically to adjust the indenting tool to regulate the extent of the feeding movements of the tool.

Broadly considered the invention contemplates any suitable automatic means which will act independently of the work to adjust the tool. The most simple and efficient means which has yet been devised, however, comprises a stop located at one side of the tool and arranged to engage and adjust the tool at the beginning of its feeding movement, and the use of this stop to adjust the tool at the beginning of its feeding movement is considered to be a feature of the invention. This stop limits the movement of the point of the tool in one direction only and in order to properly regulate the extent of the feeding movement of the tool, the tool must be adjusted to limit the movement of the point of the tool in the opposite direction. In its broader aspects this feature of the invention contemplates the provision

of any suitable means for adjusting the tool to produce this result, but preferably the adjustment of the tool to limit the movement of the point of the tool in the opposite direction is effected by means of a stop located upon the opposite side of the point of the tool and arranged to engage and adjust the tool at the completion of its feeding movement.

The invention is intended primarily as an improvement on stitch separating machines adapted to operate upon a finished seam and which comprise an automatically adjustable stitch separating and indenting tool, the adjustment of which, to compensate for stitches of varying lengths, is effected by the engagement of the point of the tool with the stitches, the primary object of the invention being to adapt such machines for operation upon work which is not provided with a seam, to form imitation stitches therein. In carrying out the invention, a stitch separating machine of the class referred to has accordingly been provided with stops located upon opposite sides of the point of the indenting tool and arranged to engage and adjust the tool at each end of its feeding movement to regulate the extent of the feeding movement of the tool. As illustrated in the drawings hereinafter referred to these stops are formed by the jaws of a work support arranged to extend over the upper surface of the work on each side of the indenting tool, the jaws of the support being relatively adjustable toward and from each other to vary the width of the opening between the jaws in which the point of the tool operates. This work support, provided with jaws relatively adjustable toward and from each other to vary the width of the opening in which the point of the indenting tool operates, while primarily intended for use in a stitch separating machine to adapt the machine for making imitation stitches, can also be advantageously used in a stitch separating machine when the machine is used to separate and indent the stitches of a finished seam, as in order to produce the best results when the machine is so used, it is necessary that the opening between the jaws of the work support in which the point of the tool operates should be just wide enough to allow the tool to locate and indent the stitches. Heretofore it has been necessary to provide a number of work supports provided with

openings of different widths between the jaws and to change the work support to adapt the machine for operation upon seams having stitches of different lengths. By the use of the work support above referred to provided with jaws relatively adjustable toward and from each other the provision of a number of work supports is rendered unnecessary as the width of the opening between the jaws of the work support can be adjusted to suit the length of the stitches of the seam which are to be operated upon. It is, therefore, considered that this work support provided with relatively adjustable jaws between which the point of the indenting tool operates constitutes a feature of the invention, whether such work support is used in an imitation stitch machine or in a stitch separating and indenting machine adapted to operate upon a finished seam.

The present invention will be clearly understood from the accompanying drawing in which—

Figure 1 is a view in front elevation of a machine embodying the same in its preferred form; Fig. 2 is a plan view of the work support provided with relatively adjustable jaws forming stops for adjusting the indenting tool to regulate the extent of the feeding movement of the tool, and Fig. 3 is a view in side elevation of the work support shown in Fig. 2.

The machine illustrated in Fig. 1 of the drawings is the stitch separating and indenting machine disclosed in applicant's prior patent No. 543,012, dated July 23, 1895, modified in accordance with the present invention to adapt the machine for making imitation stitches, to which patent reference may be had for a complete illustration and description of the mechanism for actuating the various parts of the machine.

Referring to Fig. 1, the indenting tool is indicated at 1 and is clamped in the lower end of a tool stock 2 pivotally mounted upon a stud 3 projecting laterally from the tool carrying lever 4. The tool stock 2 is capable of an oscillating movement about the stud 3 and is retained in the position to which it is oscillated by friction devices fully illustrated and described in the patent above referred to. The indenting tool is thus supported from the lever 4 so as to allow a lateral adjustment of the tool during the operation of the machine.

In the machine illustrated the indenting tool is utilized both to indent and feed the work, mechanism being provided for moving the tool toward and from the work and for moving it laterally while in engagement with the work. This mechanism is the same as in the machine of the patent above referred to and comprises a lifting lever 5 acting on the lever 4 to raise the tool, a spring 6 acting to press the tool yieldingly

against the work when the lever 4 is released by the lifting lever, a pressure lever 7 acting on the lever 4 to force the tool into the work to form an indentation, a feed slide 8 upon which the lever 4 is mounted and a lever for actuating the feed slide, the pressure lever 7 also acting upon the tool stock 2 through a projection 9 on the end of the lever extending over a roll 10 mounted in an arm projecting laterally from the tool stock.

The work is supported during the action of the tool thereon by a lower work support 11 rotatably mounted upon the upper end of a vertical slide 12. This slide is yieldingly supported by a spring 13 while the work is being fed, but during the indenting movement of the tool is positively held in a slightly raised position by cam-actuated mechanism, the construction and operation of the work support, the slide and the mechanism for supporting and actuating the slide being the same as in the patented machine. An edge guide 14 arranged to bear against the edge of the sole determines the position of the work with relation to the indenting tool.

The mechanism above described is utilized in the patented machine to locate and indent the intervals between the stitches of a finished seam, the indenting tool being automatically adjusted to locate the tool in the stitch intervals and feed the work distances varying with the length of the stitches. In the illustrated embodiment of the present invention this mechanism is utilized to make indentations in the upper surface of the projecting edge of a shoe sole in imitation of the stitches of an outseam and to feed the work uniform distances to space the indentations equal distances apart. This result is accomplished by providing an adjustable stop at one side of the point of the tool arranged to engage and adjust the tool at one end of its feeding movement, a stop at the other side of the point of the tool also being preferably provided arranged to engage and adjust the tool at the other end of its feeding movement. In the embodiment of the invention illustrated in the drawings these stops are conveniently formed by the jaws of an upper work support 14* secured to the frame of the machine and having its jaws arranged to extend over and press upon the work at each side of the point of the indenting tool. The jaw 15 of the upper work support is rigid with the body portion of the work support and extends over the work in advance of the point of the indenting tool. The jaw 16 extends over the work at the rear of the point of the indenting tool and is mounted upon the body portion of the work support so as to be adjustable toward and from the stationary jaw. The movable jaw has a sliding engagement with the body portion of the work support as is clearly

illustrated in Fig. 2, and is adjusted toward and from the stationary jaw by means of adjusting screws 17 and 18, the screw 17 passing through the movable jaw and screwing into the fixed jaw and the screw 18 having a screw-threaded engagement with the fixed jaw and bearing against the stationary jaw. As an additional means for securing the movable jaw in adjusted position a clamping screw 19 is provided passing through a horizontal slot in the movable jaw and screwing into the body portion of the work support. The work support acts in the same manner as the upper work support of the patented machine to limit the upward movement of the lower work support 11, the projecting edge of the shoe sole being held between the two work supports. The jaws 15 and 16 are, however, so arranged that the feeding movement of the point of the tool while in engagement with the work is determined by the width of the opening between the jaws, the tool being adjusted at the beginning of its feeding movement by contact with the adjustable jaw 16, and being again adjusted at the completion of its feeding movement by contact with the stationary jaw 15 unless it has been previously adjusted by the resistance offered by the work to the lateral feeding movement of the tool, and the roll 10 on the tool stock brought into engagement with the projection 9 on the pressure lever.

Briefly described, the operation of the machine is as follows:—Starting with the indenting tool in its lowest position and in its extreme position at the left as viewed in Fig. 1, with the roll 10 in contact with the projection 9 of the pressure lever, the pressure lever is raised and the lifting lever is depressed. The tool carrying lever 4 is thus oscillated to raise the tool from the work. While the tool is in its raised position the feed slide 8 is moved to the right and then the lifting lever is raised to release the tool carrying lever 4. The spring 6 then acts upon the lever 4 to press the tool yielding against the work and the feed slide 8 is moved back and forth short distances. During these movements of the feed slide the side of the tool near its point engages the jaw 16 and the tool stock is moved about the pivot stud 3, the tool being thereby adjusted at the beginning of its feeding movement, so that it stands in an inclined position. The pressure lever is then depressed and acts upon the lever 4 to force the indenting tool into the work, the lower work support in the meantime having been raised a short distance and positively locked against downward movement. The lower work support is then unlocked and the feed slide is moved toward the left to impart a feeding movement to the tool, the work being yieldingly clamped between the lower

and upper work supports during the feeding movement. The resistance offered by the work to the tool during its feeding movement may be sufficient to turn the tool stock about the stud 3 until the roll 10 contacts with the projection 9 on the pressure lever, in which case the tool will be adjusted before it completes its feeding movement. If the resistance offered by the work to the tool is not sufficient to adjust the tool, such adjustment will be effected at the end of the feeding movement by the engagement of the side of the tool with the fixed jaw 15 of the work support. In either case it will be seen that the extent of the feeding movement of the point of the tool will depend upon the width of the opening between the jaws of the work support and that the tool can be caused to make indentations at any desired distance apart by merely adjusting the jaw 16. The extent of the feeding movements imparted to the work can thus be varied as desired without adjusting the mechanism for actuating the feeding slide 8, and the indentations can be spaced any desired distance apart less than the total distance through which the feed slide is moved. As the projecting edge of the shoe sole is fed beneath the indenting tool the work can be turned by the operator so that the indentations extend at right angles to the edge of the sole and present the proper appearance at all portions of the shoe, the toe portion of the shoe being indented in as satisfactory a manner as the other portions.

While the work support provided with jaws relatively adjustable toward and from each other above described is primarily intended to adapt a stitch separating and indenting machine for operation as an imitation stitch machine, it will be apparent to those skilled in the art that this work support can also be advantageously used in the machine when used for separating and indenting the stitches of a finished seam as in such case the width of the opening between the jaws can be adjusted to correspond to the lateral movements which are imparted to the point of the tool and an interchange of work supports provided with openings of different widths avoided when seams having stitches of different length are to be operated upon.

The nature and scope of the invention having thus been indicated and the preferred embodiment of the invention having been specifically described, what is claimed as new, is:

1. A machine for making imitation stitches, having, in combination, a tool carrier, an automatically adjustable indenting tool mounted thereon, means including the tool carrier for actuating the tool to indent and feed the work, and means independent of the work acting automatically to move the

tool on its carrier and thereby adjust the tool to regulate the extent of the feeding movements imparted to the tool, substantially as described.

5 2. A machine for making imitation stitches, having, in combination, an automatically adjustable indenting tool, means for actuating the tool to indent and feed the work, and means for regulating the extent
10 of the feeding movements imparted to the tool comprising a stop located at one side of the point of the tool and arranged to engage and adjust the tool at the beginning of its feeding movement, substantially as described.

15 3. A machine for making imitation stitches, having, in combination, an automatically adjustable indenting tool, means for actuating the tool to indent and feed the
20 work, a stop located at one side of the point of the tool arranged to engage and adjust the tool at the beginning of its feeding movement, and a stop located at the opposite side of the point of the tool arranged to
25 engage and adjust the tool at the completion of its feeding movement, substantially as described.

4. A machine for making imitation stitches, having, in combination, an automatically adjustable indenting tool, means for
30 actuating the tool to indent and feed the work, and means for regulating the extent of the feeding movements imparted to the tool comprising an adjustable stop located at one
35 side of the point of the tool and arranged to engage and adjust the tool at one end of its feeding movement, substantially as described.

5. A machine for making imitation stitches, having, in combination, an automati-

ically adjustable indenting tool, means for
40 actuating the tool to indent and feed the work, and stops relatively adjustable toward and from each other located on opposite sides of the tool and arranged to engage
45 and adjust the tool at each end of its feeding movement, substantially as described.

6. A machine for making imitation stitches, having, in combination, an automatically adjustable indenting tool, means for
50 actuating the tool to indent and feed the work, a lower work support, an upper work support provided with jaws relatively adjustable toward and from each other located
55 on opposite sides of the point of the tool and arranged to engage and adjust the tool at each end of its feeding movement, substantially as described.

7. An upper work support for a sole indenting machine, comprising jaws relatively
60 adjustable toward and from each other and adapted to extend over the work on opposite sides of an indenting tool, substantially as described.

8. A machine for making imitation stitches, having in combination, an automatically adjustable indenting tool, mechanism
65 for actuating the tool to indent and feed the work, and an adjustable stop arranged to engage and move the tool with relation to its actuating mechanism to adjust the tool at
70 the beginning of its feeding movement, substantially as described.

In testimony whereof I affix my signature, in presence of two witnesses.

JOHN B. HADAWAY.

Witnesses:

FRED O. FISH,
ALFRED H. HILDRETH.