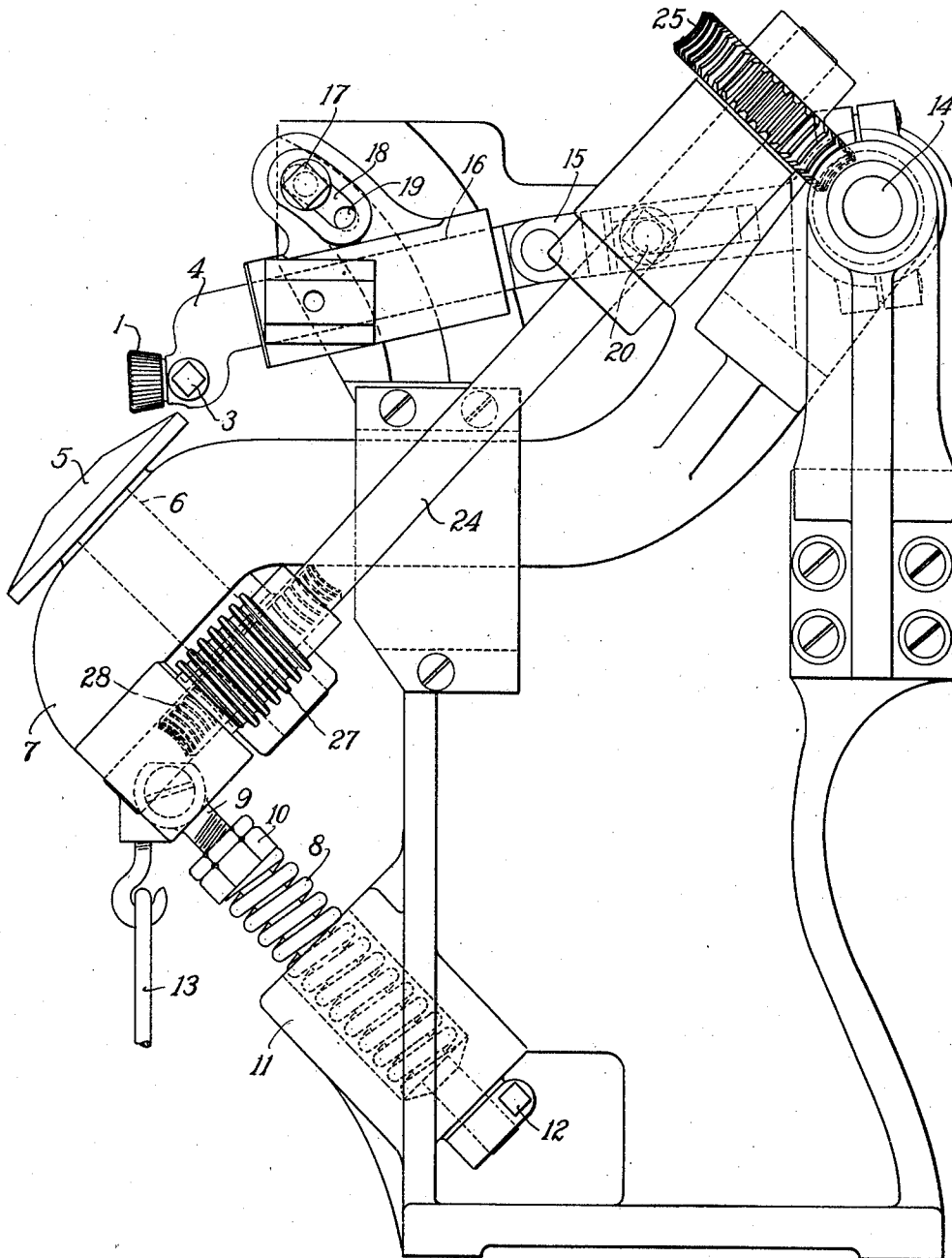


J. B. HADAWAY.
MACHINE FOR MAKING IMPRESSION OR IMITATION STITCHES.
APPLICATION FILED MAR. 22, 1905.

1,003,452.

Patented Sept. 19, 1911.

2 SHEETS—SHEET 1.



WITNESSES
Edward S. Day
James H. Whelan.

FIG. 1.

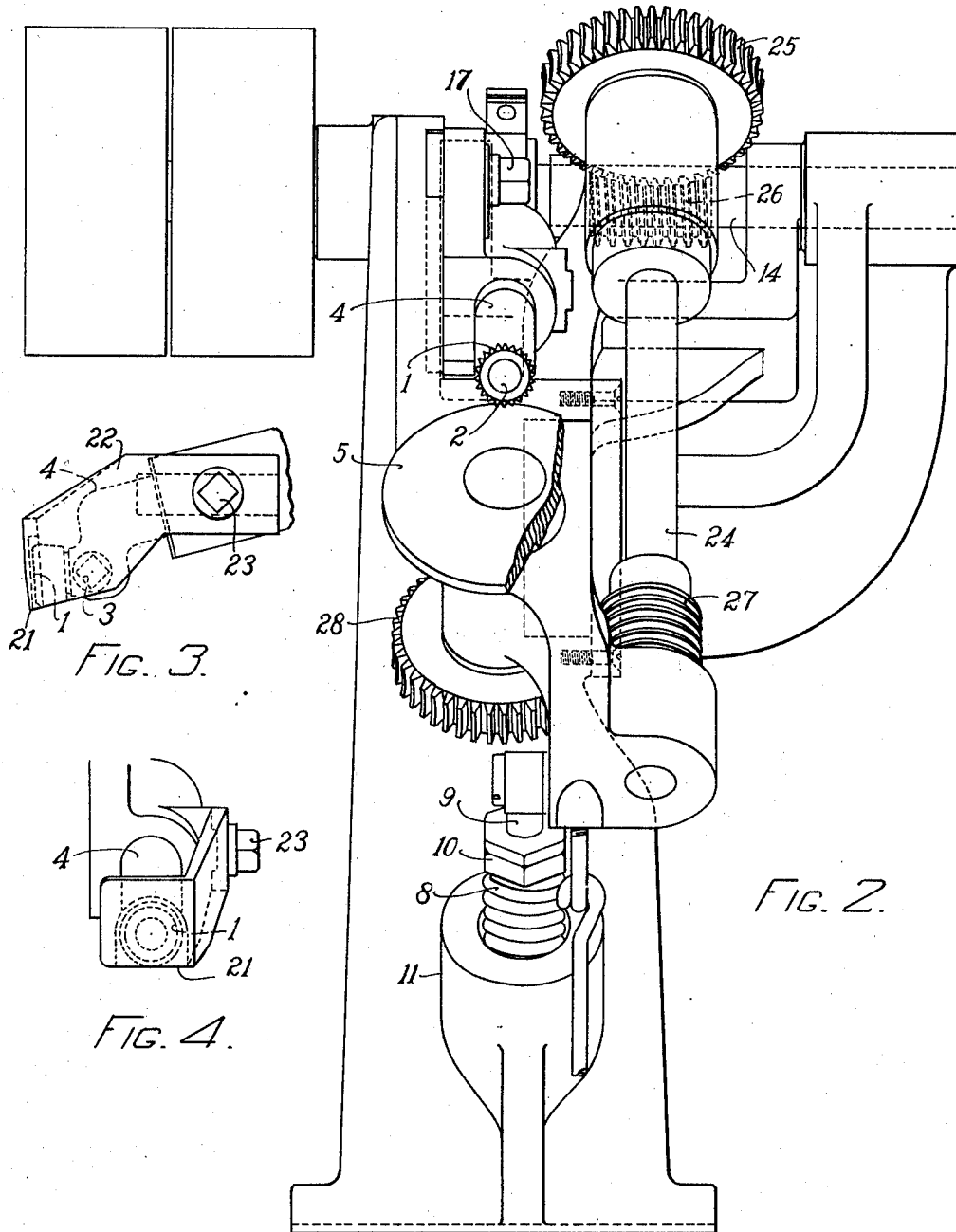
INVENTOR
John B. Hadaway
by his Attorneys
Phillips Van Curen & Fish

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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 IMPRESSION OR IMITATION STITCHES.

1,003,452.

Specification of Letters Patent.

Patented Sept. 19, 1911.

Application filed March 22, 1905. Serial No. 251,383.

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 Impression or 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 impression or imitation stitch machines which are adapted to make ornamental indentations upon the upper surface of the projecting edge of a shoe sole.

The principal object of the present invention is to provide an impression or imitation stitch machine of simple construction and capable of being operated at a high rate of speed by which a permanent shape is imparted to the imitation stitches produced by the machine and by which the crowns of the stitches are highly polished.

Other objects of the present invention are to improve and simplify the construction and arrangement of the various parts of impression or imitation stitch machines and particularly to simplify and improve the construction and arrangement and increase the efficiency of the mechanism for feeding the work to present successive portions thereof to the action of the indenting tool and the means for supporting and adjusting the indenting tool and the guide which determines the position of the shoe with relation to the indenting tool and prevents the tool from coming in contact with the upper.

With these objects in view the present invention consists in the devices, combinations and arrangements of parts hereinafter described and claimed, the objects of which will be apparent to those skilled in the art from the following description.

In the illustrated embodiment of the various features of the present invention hereinafter specifically described the indenting tool is in the form of a wheel provided with peripheral teeth spaced and shaped to pro-

duce the desired form of indentation, and mechanism is provided for vibrating the wheel while in contact with the work lengthwise of the indentations made by the wheel. The work is pressed against the wheel with sufficient force to produce indentations of the desired depth by means of a work support to which a constant movement of rotation is imparted to feed the work past the wheel.

To adapt the machine for operation upon different styles of work means are provided by which the indenting wheel can be adjusted so as to change the angle of the movement of the wheel with relation to the adjacent surface of the work support, this adjustment of the indenting wheel being made about a center substantially coincident with a point at which the tool contacts with the work in order to prevent a displacement of the wheel during such adjustment. The guide for determining the position of the shoe with relation to the indenting wheel and which prevents the wheel from contacting with the shoe upper is arranged adjacent to the wheel and is angularly adjustable with the wheel so that it maintains its proper relative position during the adjustment of the wheel.

While the various features of the present invention are preferably embodied in the construction above referred to and hereinafter specifically described it is to be understood that they are not limited thereto and that, except as defined in the claims, they may be embodied in other constructions and applied to other forms of impression or imitation stitch machines.

The various features of the present invention will be clearly understood from an inspection of the accompanying drawings in which—

Figure 1 is a view in side elevation of an impression or imitation stitch machine embodying the same in its preferred form, the guide which determines the position of the shoe in the machine and which prevents the indenting wheel from coming in contact with the upper being omitted to more clearly show underlying parts, Fig. 2

is a view in front elevation of the machine illustrated in Fig. 1 with a portion of the work support broken away and Figs. 3 and 4 are detail views in side and front elevation respectively, illustrating the construction and arrangement of the guide.

The indenting tool is indicated at 1 as a frusto-conical wheel provided with peripheral teeth of the desired shape. This wheel is mounted to rotate freely upon a stud 2 secured by a set screw 3 in the forward end of a slide 4. The work support is indicated at 5 and is frusto-conical in shape with its conical surface arranged to engage the tread surface of a shoe and support the projecting edge of the sole in position to be acted upon by the indenting wheel. The work support is secured upon the upper end of a shaft 6 mounted to rotate in the forward end of a pivoted frame 7. This frame is acted upon by a spring 8 coiled around a rod 9 and interposed between an adjustable nut 10 on the rod, and a shoulder formed at the lower end of a perforated boss 11 on the frame of the machine, the rod 9 being pivotally connected at its upper end with the forward end of the frame 7 and being provided at its lower end with a stop-collar 12 arranged to contact with the lower end of the boss 11 and limit the upward movement of the frame 7 and work support under the force of the spring 8. A rod 13 connects the forward end of the frame 7 to a foot treadle (not shown) by means of which the frame can be depressed to allow the edge of a shoe sole to be placed in position between the work support and the indenting wheel. When there is no work in the machine the stop-collar 12 limits the upward movement of the frame 7 and prevents the work support from coming in contact with the indenting wheel. After a shoe has been inserted in the machine and the treadle released the spring 8 presses the shoe against the indenting wheel with sufficient force to produce indentations of the desired depth.

The machine illustrated in the drawings is designed to give a permanent shape to the imitation stitches formed by the indenting wheel and to polish the crowns of the stitches, and to this end is provided with means for vibrating the indenting wheel longitudinally of the indentations. These means consist of an eccentric upon a driving shaft 14 mounted in fixed bearings in the rear upper end of the machine frame and a link 15 pivoted at one end to the rear end of the slide 4 and provided at the other end with a strap surrounding the eccentric. The slide 4 is mounted to reciprocate in a support 16 and this support is provided with a segmental rib which is received in a corresponding segmental guide-way on the frame of the machine, as is clearly indicated in Figs. 1 and 2. The support 16 is secured to

the frame of the machine by means of a set screw 17 passing through an elongated slot 18 in the support and screwing into the frame. The support 16 can thus be adjusted on the frame of the machine and thereby the angle of movement of the indenting wheel with relation to the surface of the work support changed as the style or character of the work may require. The slot 18 permits a limited adjustment of the indenting wheel and in order to increase the adjustment a number of screw threaded holes may be formed in the frame of the machine to receive the set screw 17, one of these holes being indicated at 19 in Fig. 1. The segmental rib on the support 16 and the segmental guide-way cooperating therewith are preferably concentric with a point at which the indenting wheel contacts with the work, as thereby an angular adjustment of the support does not displace the indenting wheel bodily so as to necessitate a further adjustment of the indenting wheel or of the work support. The angular adjustment of the support 16, however, raises and lowers the pivotal connection of the link 15 with the slide 4 and tends to move the slide longitudinally so as to displace the indenting wheel endwise. To prevent this result and to enable the indenting wheel to be adjusted endwise as may be desired the link 15 is made in two parts having a sliding connection with each other, as indicated in dotted lines in Fig. 1, and secured together by a set screw 20.

The guide for determining the position of the shoe with relation to the indenting wheel and for preventing the indenting wheel from coming in contact with the shoe upper is indicated at 21 in Figs. 3 and 4 and consists of a thin metal plate extending in front of the indenting wheel in position to contact with the upper. The inner surface of this plate is recessed, as indicated in dotted line in Fig. 3, to receive the end of the indenting wheel, so that the indenting wheel can operate close to the upper, the material of the plate surrounding the recess giving sufficient rigidity to prevent the plate from yielding when the shoe is pressed against the plate. The plate 21 extends at substantially right angles from a plate 22, which is secured to the support 16 by means of a set screw 23 passing through a slot in the plate and screwing into the support. The support 16 is provided with a projecting guide rib which is received in a corresponding slot in the plate 22, so that the guide plate 21 is securely held in the proper position with relation to the indenting wheel. The slot in the plate 22 through which the set screw 23 passes allows the guide plate 21 to be adjusted toward and from the end of the indenting tool.

In the machine illustrated in the draw-

ings the work support is utilized to feed the work to the indenting wheel, mechanism mounted upon the pivoted frame 7 and driven from the driving shaft 14 being provided for rotating the work support.

To allow this mechanism to operate properly notwithstanding the movements of the frame 7, the frame is pivotally mounted concentrically with the axis of the shaft 14, being forked at its rear ends and provided with bearings through which the shaft 14 passes. Between its ends the frame 7 is received in a vertical guide-way in the frame of the machine, which guide-way assists in preventing lateral vibrations of the frame.

The mechanism for actuating the work support consists of a shaft 24 journaled in bearings on the frame 7, a worm gear 25 secured to the upper end of the shaft and meshing with a worm 26 on the driving shaft 14 and a worm 27 secured upon the lower end of the shaft and meshing with a worm gear 28 secured upon the lower end of the shaft 6. The shaft 24 extends at right angles to the axis of the driving shaft 14 and the shaft 6, and as the frame 7 is swung about the axis of the driving shaft the worm gear 25 merely swings about the axis of the shaft without changing its position with relation to the worm 26, so that the worm gear remains in mesh with the worm regardless of the swinging movements of the frame and the work support is continuously rotated.

The operation of the machine illustrated in the drawings has been indicated in connection with the description given above of the construction and arrangement of the various parts and will be readily understood by those skilled in the art without a separate description thereof.

The machine may be used for forming indentations upon the upper smooth surface of the projecting edge of a shoe sole or it may be used to finish and polish imitation stitches previously formed in the edge of the sole.

The machine illustrated and described in the present application is designed particularly for operation upon shoes in which no stitches appear upon the upper surface of the projecting edge of the sole. It is to be understood, however, that certain features of the present invention are equally applicable to impression or imitation stitch machines which are adapted to operate upon shoes provided with an outseam such, for instance, as stitch separating and indenting machines.

The nature and scope of the present invention having been indicated and a preferred form of the invention having been specifically described, what is claimed is:—

1. A machine for making impression or imitation stitches, having, in combination,

a work support, an indenting tool, a driving shaft and mechanism driven by said shaft for vibrating the tool while in contact with the work lengthwise of the indentations made by the tool and for actuating the work support to present successive portions of the work to the action of the indenting tool, substantially as described.

2. A machine for making impression or imitation stitches, having, in combination, a work support, an indenting tool, means for vibrating the tool while in contact with the work lengthwise of the indentations made by the tool, and means for adjusting the tool about a center substantially coincident with a point at which the tool contacts with the work to change the angle of movement of the tool with relation to the adjacent surface of the work support, substantially as described.

3. A machine for making impression or imitation stitches, having, in combination, an indenting tool, a shaft mounted in fixed bearings, a frame pivoted concentrically with said shaft, a rotary work support mounted on said frame, means acting on said frame to yieldingly press the work support toward the indenting tool, a worm on said shaft, a worm gear connected to the work support, and a shaft mounted in bearings on said frame at right angles to the axis of the driving shaft and work support and having secured thereto a worm and a worm gear meshing respectively with the worm gear connected to the work support and the worm on the driving shaft, substantially as described.

4. A machine for making impression or imitation stitches, having, in combination, a work support, a slide, an indenting wheel mounted thereon, a support for said slide, means for reciprocating said slide to vibrate the indenting wheel while in contact with the work lengthwise of the indentations made by the wheel, and means for adjusting the support for said slide about a center substantially coincident with a point at which the wheel contacts with the work to change the angle of movement of the wheel with relation to the adjacent surface of the work support, substantially as described.

5. A machine for making impression or imitation stitches, having, in combination, a work support, an indenting tool, means for adjusting the tool to change the angle of movement of the tool with relation to the adjacent surface of the work support, and means including an adjustable connection for vibrating the tool while in contact with the work lengthwise of the indentation made by the tool.

6. A machine for making impression or imitation stitches, having, in combination, a work support, a slide, an indenting wheel mounted thereon, a support for said slide,

means for reciprocating said slide to vibrate
the indenting wheel while in contact with
the work lengthwise of the indentations
made by the wheel, means for adjusting the
5 support for the slide to change the angle of
movement of the wheel with relation to the
adjacent surface of the work support and
a guide for the shoe mounted on the sup-

port for the slide so as to be adjustable
therewith.

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

JOHN B. HADAWAY.

Witnesses:

FRED O. FISH,
ALFRED H. HILDRETH.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents,
Washington, D. C."