J. B. HADAWAY.

IMPRESSION OR IMITATION STITCH MACHINE.

APPLICATION FILED JULY 18, 1904.

1,003,450. **Patented Sept. 19, 1911.**

3 SHEETS—SHEET 1.

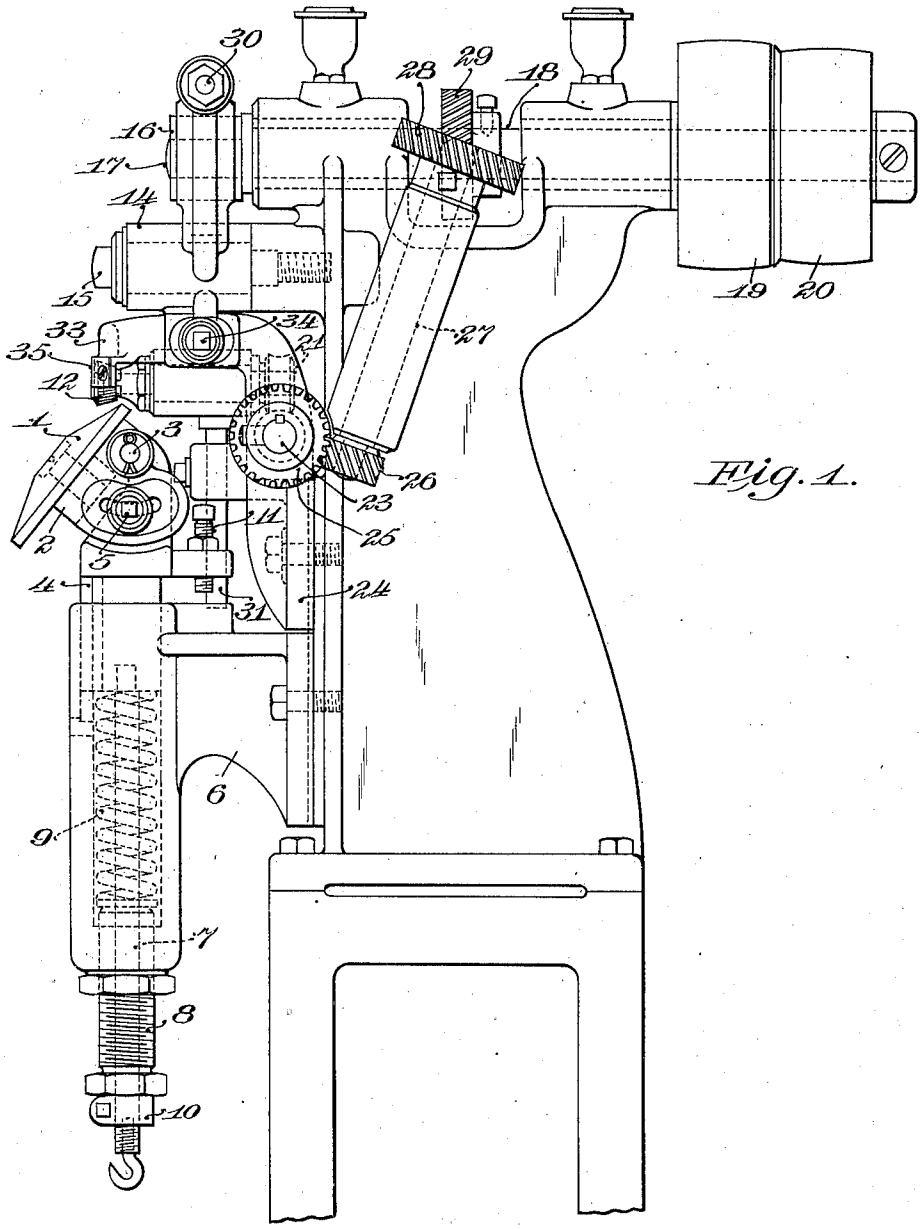

Fig. 1.

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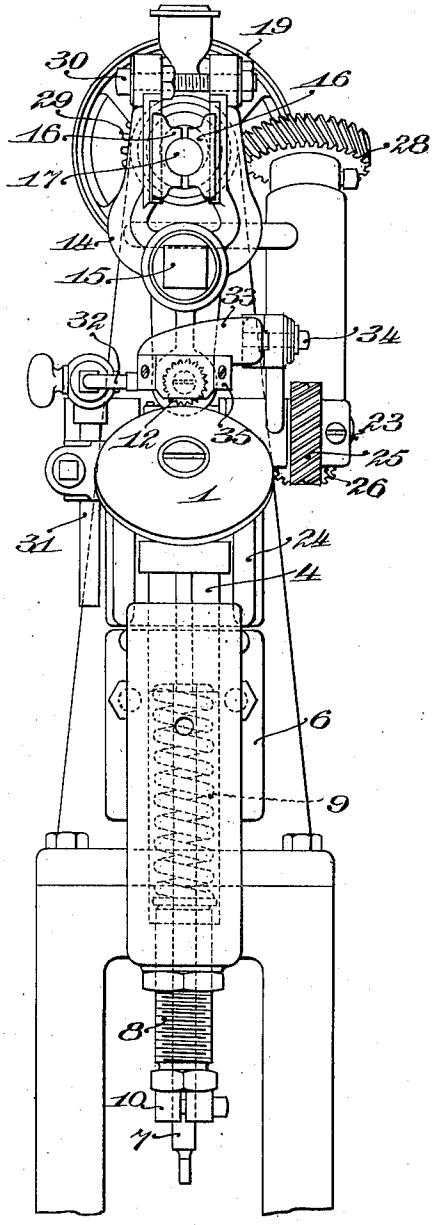

Fig. 2.

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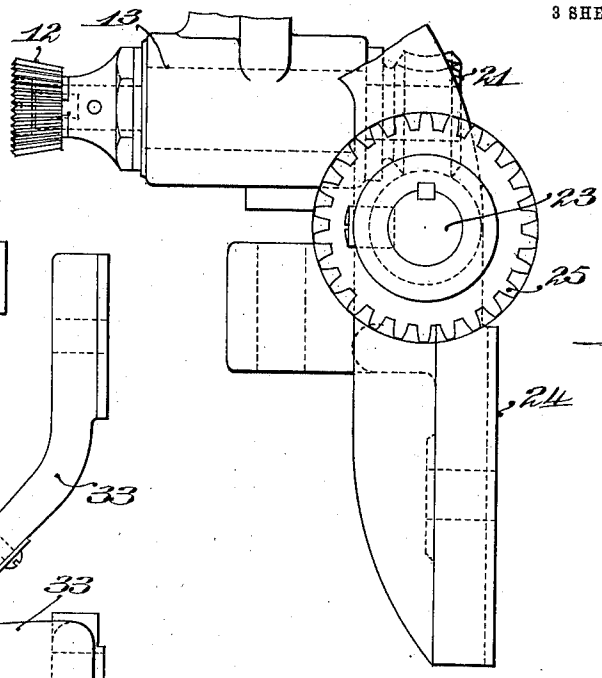

Fig. 3.

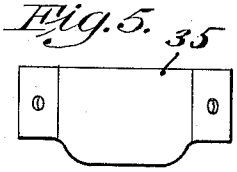

Fig. 5.

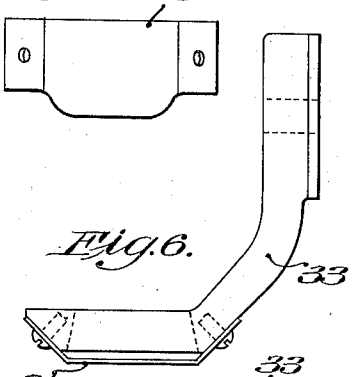

Fig. 6.

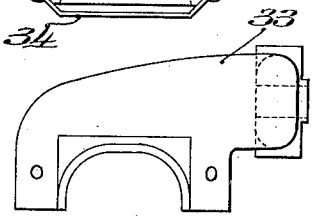

Fig. 7.

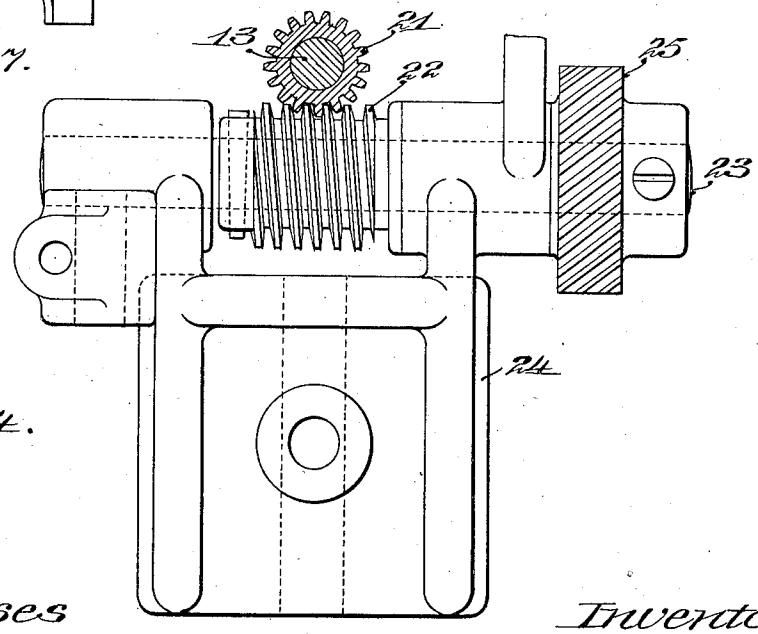

Fig. 4.

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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.

IMPRESSION OR IMITATION STITCH MACHINE.

1,003,450. Specification of Letters Patent. **Patented Sept. 19, 1911.**

Application filed July 18, 1904. Serial No. 216,970.

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 Impression or Imitation Stitch Machines; 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 used in the manufacture of boots and shoes to form ornamental indentations upon the upper surface of the projecting edge of the sole.

More particularly the present invention relates to impression or imitation stitch machines which comprise a rotary indenting wheel provided with teeth so shaped and spaced as to produce the desired form of indentation.

The present invention consists in certain constructions, arrangements and combinations of parts hereinafter described and claimed, tending to simplify and improve the construction and operation of machines for making imitation or impression stitches.

The 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. Fig. 2 is a view in front elevation of the machine illustrated in Fig. 1. Fig. 3 is a detail view in side elevation illustrating the indenting wheel and a portion of the mechanism for actuating the same. Fig. 4 is a detail view in front elevation of the parts illustrated in Fig. 3, the indenting wheel shaft and the pinion on the rear end of the shaft being shown in section. Fig. 5 is a detail view in front elevation of the guard plate which extends in front of the indenting wheel and prevents the wheel from coming in contact with the upper of the shoe being operated upon. Fig. 6 is a plan view of the wheel guard with the guard plate attached thereto, and Fig. 7 is a view in front elevation of the wheel guard illustrated in Fig. 6 with the guard plate removed.

1 indicates the work support upon which the tread surface of the sole of the shoe being operated upon is supported. As illustrated, this work support is frusto-conical in shape and is rotatably mounted upon a stud set in a block 2 pivotally mounted at 3 in the upper end of a slide 1. The block 2 is provided with flanges extending on each side of the upper end of the slide 4, and one of these flanges is provided with an arc shaped slot as illustrated in Fig. 1 through which a securing bolt 5 passes. The block 2 can thus be adjusted about its pivot 3 to change the angle of inclination of the surface of the work support in contact with the shoe so that the shoe can be properly presented to the indenting wheel.

The slide 4 is mounted in a vertical guideway in a bracket 6 secured to the front portion of the machine frame. From the lower end of the slide a rod 7 projects downwardly through a sleeve 8 having a screw threaded engagement with the lower end of the bracket 6. A spring 9 surrounds the rod 8 and is interposed between the lower end of the slide 4 and the upper end of the sleeve 8. The spring normally holds the slide 4 and the work support mounted thereon raised and is sufficiently strong to force the work against the indenting wheel so as to cause the teeth of the wheel to indent the work to the desired depth. By adjusting the sleeve 8 in the bracket 6 the tension of the spring 9 can be regulated as desired. When there is no work in the machine the upward movement of the slide and work support is limited by a stop collar 10 adjustably secured to the lower end of the rod 7 and arranged to engage the lower end of the sleeve 8. A suitable rod or chain (not shown) connects the lower end of the rod 7 with a foot treadle the depression of which lowers the slide 4 and work support 1 to enable work to be inserted in the machine. The downward movement of the slide and work sup-

port are limited by means of an adjustable stop screw 11 mounted in the slide 4 and arranged to engage the upper surface of the bracket 6.

The indenting wheel is indicated at 12 and is rigidly secured upon the forward end of a shaft 13 journaled in the lower end of a lever 14. The indenting wheel is frusto-conical in shape and is located above the work support 1 in position to bear upon the upper surface of the edge of a shoe sole supported thereon. The lever 14 is pivotally mounted upon a horizontal stud 15 projecting from the front portion of the machine frame, and is formed at its upper end with two arms between which two sliding blocks 16 are mounted. In these blocks a bearing is formed which is engaged by an eccentric pin 17 on the forward end of a driving shaft 18 mounted in bearings in the upper portion of the machine frame. The shaft 18 is provided with fast and loose belt pulleys 19 and 20 and during the operation of the machine is rotated constantly by means of a belt passing over the fast pulley. Through the eccentric pin 17 and blocks 16 an oscillating movement is imparted to the lever 14 and the indenting wheel 12 is moved bodily back and forth in the direction of the feed. The lower end of the lever 14 moves through a comparatively short arc so that the indenting wheel is vibrated in substantially a horizontal plane. Upon the rear end of the shaft 13 upon which the indenting wheel 12 is mounted is rigidly secured a pinion 21 which meshes with a worm 22 secured upon a horizontal shaft 23 mounted in bearings in a bracket 24 bolted to the front portion of the machine frame above the bracket 6. To the outer end of the shaft 23 is secured a skew gear 25 which meshes with a skew gear 26 upon the lower end of a shaft 27 mounted in bearings on the machine frame and arranged at an angle to the vertical. At its upper end the shaft 27 is provided with a skew gear 28 which meshes with a skew gear 29 secured upon the driving shaft 18. Through the gearing above described a constant rotation is imparted to the worm 22 during the operation of the machine.

The movements which are imparted to the indenting wheel are produced by the oscillations of the lever 14 and the rotation of the worm 22, the pinion 21 upon the indenting wheel shaft 13 remaining constantly in mesh with the worm 22 and being rolled back and forth thereon as the lever 14 oscillates and at the same time being given a movement of rotation by the rotation of the worm. The pinion 21 is so proportioned with relation to the indenting wheel 12 that the movements imparted to the wheel cause it to roll back and forth over the work and at the same time to feed the work continuously through the machine at a uniform rate of speed. The operation of the indenting wheel is precisely the same as if the indenting wheel were mounted to rotate loosely so as to be turned by the contact of its teeth with the work and were rolled back and forth over the work while the work was being fed at a uniform rate of speed through the machine.

In order to take up wear between the arms of the upper end of the lever 14 and the blocks 16 the arms are connected at their upper ends by means of an adjusting bolt 30 as illustrated in Fig. 2.

It is desirable in machines to which the present invention relates to provide means for heating the indenting wheel. Accordingly the machine illustrated in the drawings is provided with a gas pipe 31, as indicated in Fig. 2, which is secured by a clamp to the bracket 24 and is provided with a jet pipe 32 extending in close proximity to the indenting wheel shaft at the rear of the indenting wheel.

In order to protect the operator from injury and also to prevent the indenting wheel from coming in contact with and marring the upper of the shoe being operated upon a guard 33 is provided which is secured to the bracket 24 by means of a bolt 34 as indicated in Fig. 1, so as to be adjustable horizontally. This guard which is illustrated separately in Figs. 6 and 7, is provided with a recess in which the indenting wheel is received, the guard extending on both sides and over the top of the wheel. Upon the forward end of the guard 33 a guard plate 35, shown separately in Fig. 5, is secured, which extends in front of the indenting wheel in a position to bear against the upper of a shoe when inserted in the machine.

The nature and scope of the invention having been indicated and a machine embodying the 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 wheel and mechanism acting automatically to roll the wheel back and forth over the work and to actuate the wheel to feed the work during its rolling movements, substantially as described.

2. A machine for making impression or imitation stitches, having, in combination, a work support, an indenting wheel and mechanism acting automatically to roll the wheel back and forth over the work and to actuate the wheel to impart a continuous feeding movement to the work, substantially as described.

3. A machine for making impression or imitation stitches, having, in combination, a work support, an indenting wheel, a pinion

rigidly connected with the wheel, a worm meshing therewith, means for moving the pinion back and forth over the worm to cause the wheel to roll back and forth over the work, and means for rotating the worm to cause the wheel to feed the work, 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.