

A. OLSON.
 IMPRESSION OR IMITATION STITCH MACHINE.
 APPLICATION FILED MAY 11, 1906.

1,040,393.

Patented Oct. 8, 1912.
 3 SHEETS-SHEET 1.

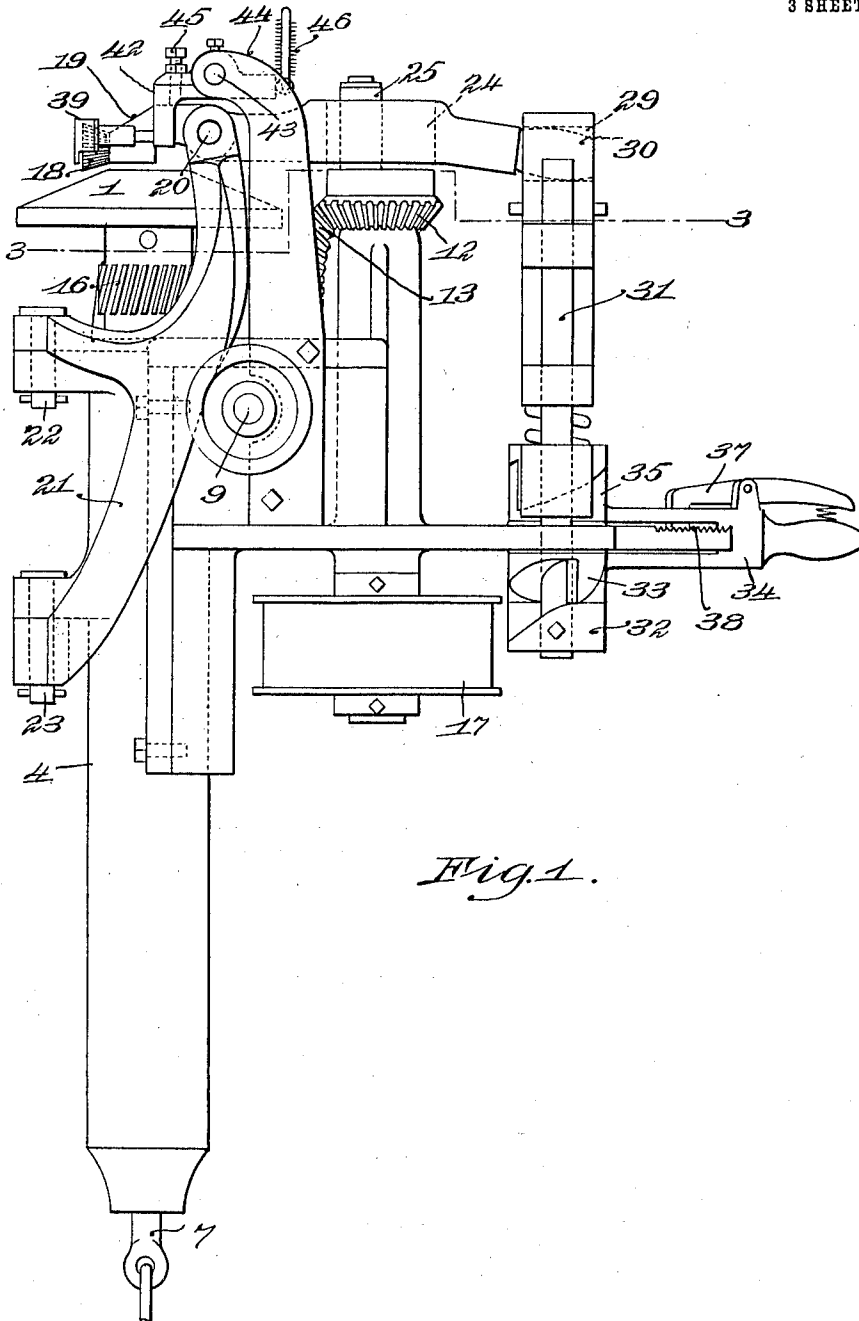


Fig. 1.

Witnesses

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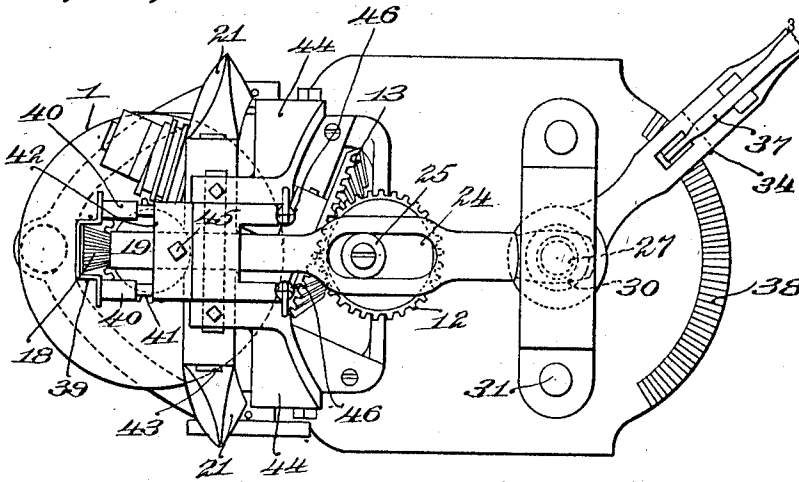


Fig. 2

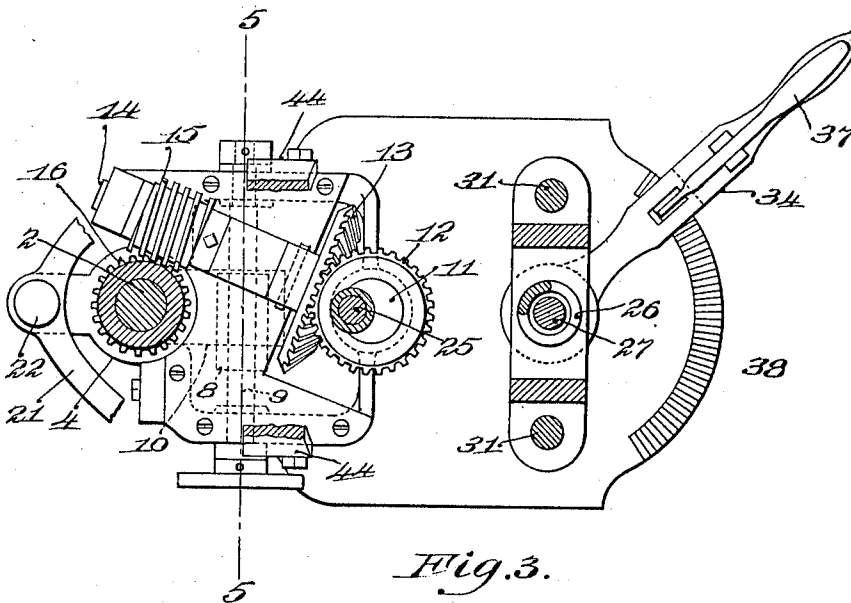


Fig. 3.

Witnesses

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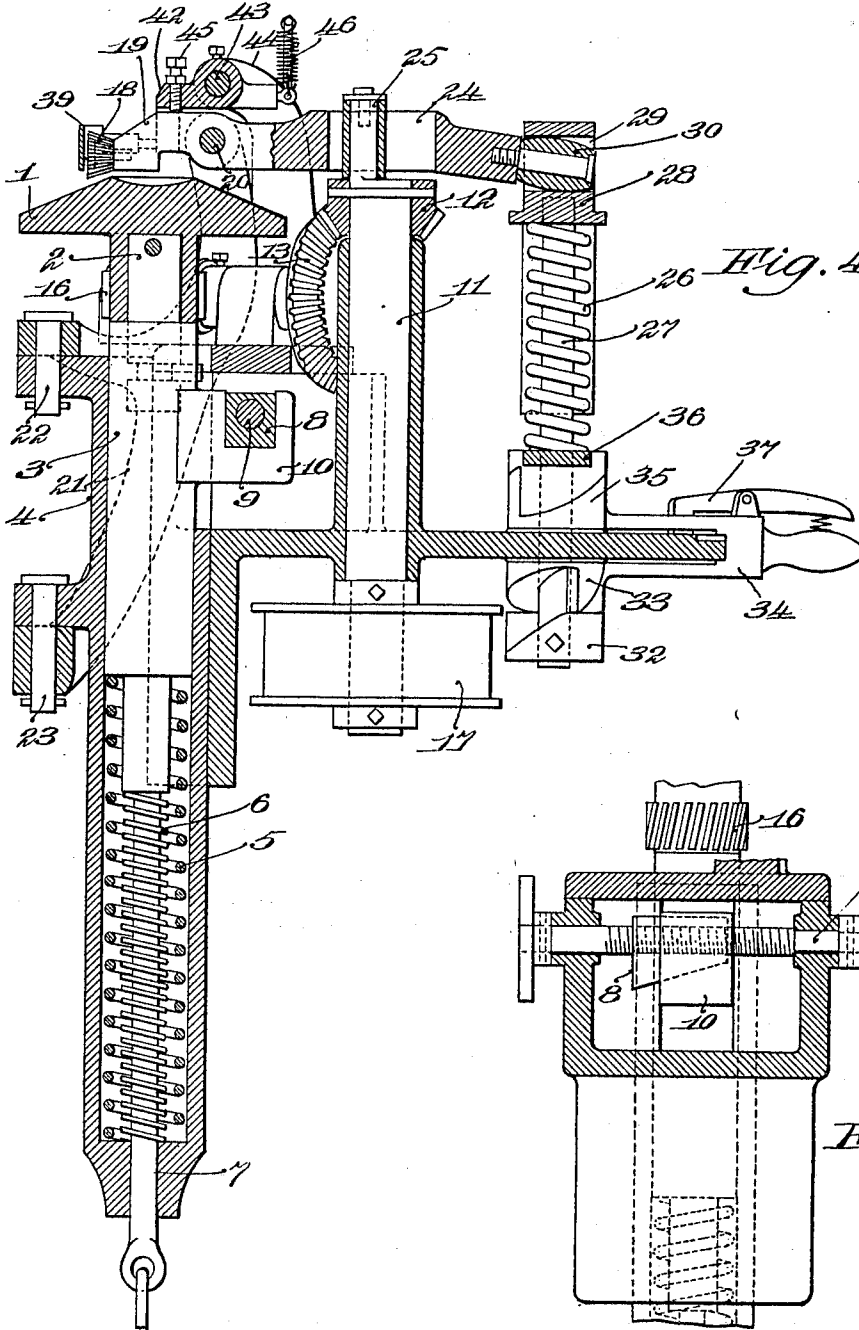
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UNITED STATES PATENT OFFICE.

AUGUST OLSON, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR TO UNITED SHOE MACHINERY COMPANY, OF PATERSON, NEW JERSEY, A CORPORATION OF NEW JERSEY.

IMPRESSION OR IMITATION STITCH MACHINE.

1,040,393.

Specification of Letters Patent.

Patented Oct. 8, 1912.

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To all whom it may concern:

Be it known that I, AUGUST OLSON, a citizen of the United States, residing at Philadelphia, in the county of Philadelphia and State of Pennsylvania, 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, said indentations extending transversely across the upper surface of the sole from points near the shoe upper to the outer edge of the sole.

An object of the present invention is to provide a machine of the class above referred to with improve means for actuating the indenting tool, whereby permanent indentations, accurately shaped, can be made in the upper surface of the shoe sole in a rapid and satisfactory manner, and the crowns of the imitation stitches formed by the indentations can be given the desired shape and finish and arranged in an accurate and regular manner about the shoe.

Another object of the invention is to provide an improved means for securing the desired amount of pressure between the tool and the work to adapt the machine for satisfactory operation upon work of different thicknesses.

Another object of the invention is to provide a machine of the class referred to with an improved guard for protecting the shoe upper from injury during the operation of the indenting tool.

Other objects of the invention are in general to improve the construction and mode of operation of the various parts of impression or imitation stitch machines.

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

The various features of the present invention will be clearly understood from an in-

spection 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 their preferred form; Fig. 2 is a plan view of the machine illustrated in Fig. 1; Fig. 3 is a sectional plan view taken on the line 3—3 of Fig. 1; Fig. 4 is a central vertical section of the machine and Fig. 5 is a detail sectional view taken on the line 5—5 of Fig. 3.

Referring to the drawings 1 indicates a work support, frusto-conical in shape, and arranged with its conical surface in position to engage the tread surface of a shoe sole and support the shoe in position to be operated upon by the indenting tool. The work support is secured to a stud 2 mounted to rotate freely in the upper end of a spindle 3 which is mounted in a vertical guideway in a bracket 4 secured to the main frame of the machine. The spindle 3 is supported upon coiled springs 5 and 6 located in a recess in the bracket 4 beneath the spindle. These springs are of sufficient strength to hold the work support 1 raised during the operation of the machine to cause indentions of the desired depth to be formed in the shoe sole. To enable the work support to be depressed when it is desired to insert work in the machine, a rod 7 is provided, which projects downwardly from the spindle 3 through the coil spring 6 and is connected at its lower end to a foot treadle. The upward movement of the spindle 3 and the work support is limited by an adjustable stop in the form of a wedge 8, which wedge has a screw-threaded engagement with an adjusting screw 9 and is received in a slotted projection 10 from the spindle 3.

In the machine illustrated in the drawings the work support 1 is utilized to feed the work, a constant movement of rotation being imparted to the work support from a vertical shaft 11 through bevel gears 12 and 13, a horizontal shaft 14, a worm 15 upon the shaft 14 and a worm gear 16 formed on the hub of the work support and meshing with the worm 15. The shaft 11 is driven by means of a belt passing over a pulley 17 secured to the lower end of the shaft.

The indenting tool of the machine illustrated in the drawings is indicated at 18, and consists of a frusto-conical wheel provided

with teeth shaped and spaced to produce the desired form of indentation. This wheel is mounted to rotate freely on the forward end of a lever 19 and is arranged above the work support 1 in position to act upon the upper surface of the projecting edge of a shoe sole supported thereon. The lever 19 is pivotally mounted at 20 upon a frame 21 which is pivotally mounted at 22 and 23 upon the barcket 4 so as to be capable of an oscillating movement about a vertical axis which is substantially perpendicular to the plane of the supporting surface of the work support 1. The rear arm of the lever 19 is provided with a slot 24 which is engaged by a crank pin 25 projecting from the upper end of the shaft 11, the construction being such that during each revolution of the shaft 11, the lever 19 and the frame 21 in which it is mounted, are oscillated about the axis of the pivots 22 and 23, and an oscillating movement about this axis in a plane substantially parallel to the plane of the work is imparted to the indenting wheel 18. The work support 1 is rotated at a low rate of speed as compared with the speed of the shaft 11 and consequently a plurality of oscillating movements are imparted to the indenting wheel while each portion of the work is passing beneath the wheel. At each oscillation of the wheel the tooth in engagement with the work displaces the stock on each side of the indentation, widening the indentation and compacting the stock so as to form permanent and highly finished stitch crowns. As will be apparent from an inspection of Fig. 2, the inner or smaller end of the indenting wheel has a greater amplitude of movement than the larger or outer end, and thus displaces the stock to a greater extent, so that the indentations are widened at the outer edge of the sole and the material forming the imitation stitch crowns more closely compacted. This action of the indenting wheel produces stitch crowns of substantially uniform width and facilitates the indenting operation while the toe portion of the shoe is being operated upon.

The indenting wheel is forced against the work with sufficient pressure to produce indentations of the desired depth by means of a spring 26, coiled around a rod 27 and acting upon a frame 28, which is provided with a slot 29, which receives a roll 30 mounted upon the rear end of the lever 19. The frame 8 is mounted to slide upon vertical guide rods 31 secured in the frame of the machine, and its upward movement under the force of the spring 26 is limited by a stop collar 32 secured to the lower end of the rod 27, which rod projects downwardly from the frame 28 through the base plate of the machine frame. To enable the indenting wheel to be adjusted toward and from the work support to accommodate stock of different

thicknesses, the stop collar 32 on the lower end of the rod 27 is provided with cam surfaces which co-act with cam surfaces upon the hub 33 of an adjusting lever 34, which lever is pivotally mounted upon the rod 27. To maintain the same tension on the spring 23 for all adjustments of the indenting wheel, the lever 34 is provided with a second hub 35 above the base plate of the machine frame, and this hub is provided with cam surfaces arranged to coöperate with cam surfaces on a cross-head 36 mounted to slide upon the rod 27 and rods 31, which cross-head 36 supports the lower end of the spring 26. To secure the lever 34 in any position to which it may be adjusted, it is provided with a locking latch 37 adapted to engage any one of a series of notches 38 upon the rear edge of the base plate of the machine frame.

The guard for protecting the shoe upper from injury by the outer end of the indenting wheel is indicated at 39, and consists of a thin plate extending in front of the outer end of the wheel. The plate is supported in position by means of sleeves 40 which receive studs 41 projecting from a lever 42. To maintain the guard in the proper position with relation to the indenting wheel when the indenting wheel is adjusted, the lever 42 is pivotally mounted at 43 upon arms 44 secured to the frame of the machine, and is provided with a stop screw 45 which is pressed against the upper surface of the forward end of the lever 19 by means of coiled springs 46 acting upon the rear end of the lever 42. The guard 39 is thus caused to move with the lever 19 when the lever is actuated to adjust the position of the indenting wheel. By adjusting the stop screw 45 the guard 39 can be raised or lowered with relation to the indenting wheel to bring it into any desired position.

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

The nature and scope of the present invention having been indicated and a machine embodying the various features thereof in their preferred form having been specifically described, what is claimed is:—

1. An impression or imitation stitch machine, having, in combination, a work support, an indenting wheel, a carrier for the wheel adjustable toward and from the work support, a guard for the shoe upper, a carrier therefor mounted independently of the wheel carrier and movable therewith during its adjustment, and a spring to hold the guard carrier in contact with the wheel carrier.

2. An impression or imitation stitch ma-

chine, having, in combination, a work support, an indenting wheel, a spring for forcing the indenting wheel toward the work support, a stop to limit the movement of the wheel under the force of the spring and means for simultaneously adjusting the stop and spring for operation upon stock of different thicknesses.

3. An impression or imitation stitch machine, having, in combination, a work support, an indenting wheel, a lever upon which the wheel is mounted arranged to permit movement of the indenting wheel toward and from the work support, and means for oscillating the lever about an axis substantially perpendicular to the plane of the work and located in proximity to the outer end of the indenting wheel.

4. An impression or imitation stitch machine, having, in combination, a work support, an indenting wheel, a spring for forcing the wheel toward the work support, and means for adjusting the wheel toward and from the work support while maintaining the spring at a constant tension.

5. An impression or imitation stitch machine, having, in combination, a work support, an indenting wheel, a carrier upon which the wheel is yieldingly mounted to move toward and from the work support, and means for oscillating the carrier about an axis substantially perpendicular to the

plane of the work and located in proximity to the outer end of the indenting wheel.

6. An impression or imitation stitch machine, having, in combination, a work support, an indenting wheel, a spring pressed lever upon which the wheel is mounted arranged to permit movement of the indenting wheel toward and from the work support, a carrier for the lever and means for oscillating the carrier about an axis substantially perpendicular to the plane of the work and located in proximity to the outer end of the indenting wheel.

7. An impression or imitation stitch machine, having, in combination, a work support, an indenting wheel, a lever upon which the wheel is mounted arranged to permit movement of the indenting wheel toward and from the work support, a carrier for the lever mounted to oscillate about an axis substantially perpendicular to the plane of the work and located in proximity to the outer end of the indenting wheel, an actuating shaft and connections between the shaft and the lever acting to oscillate the lever carrier.

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

AUGUST OLSON.

Witnesses:

HANS WENIGER,
GEORGE H. HORNSBY.