

J. B. HADAWAY.  
 IMPRESSION OR IMITATION STITCH MACHINE.  
 APPLICATION FILED JUNE 2, 1905. RENEWED JAN. 6, 1911.

999,162.

Patented July 25, 1911.

2 SHEETS—SHEET 1.

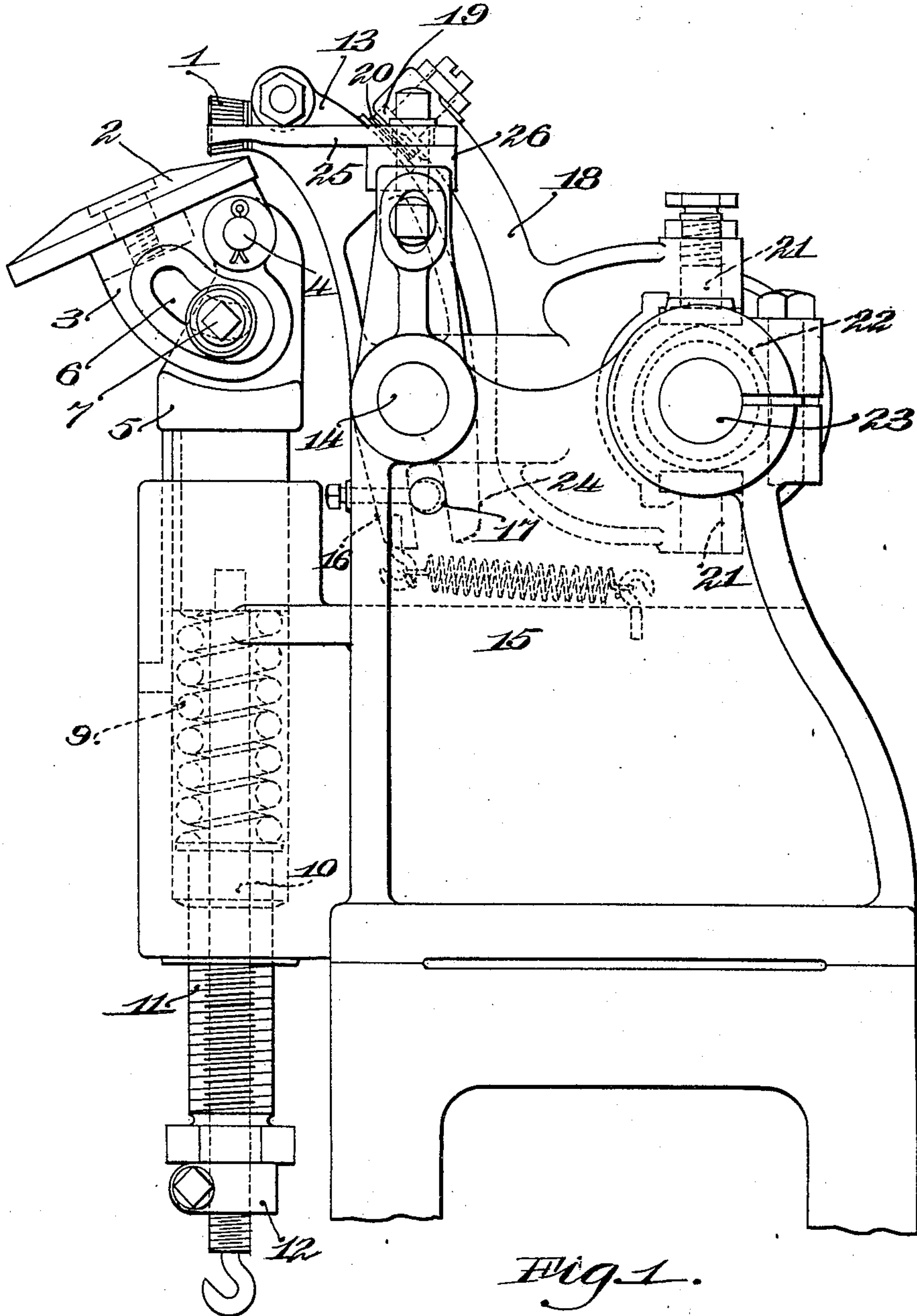


Fig. 1.

Witnesses

Edward S. Day

Alfred H. Hildreth

Inventor

John B. Hadaway

by his Attorneys

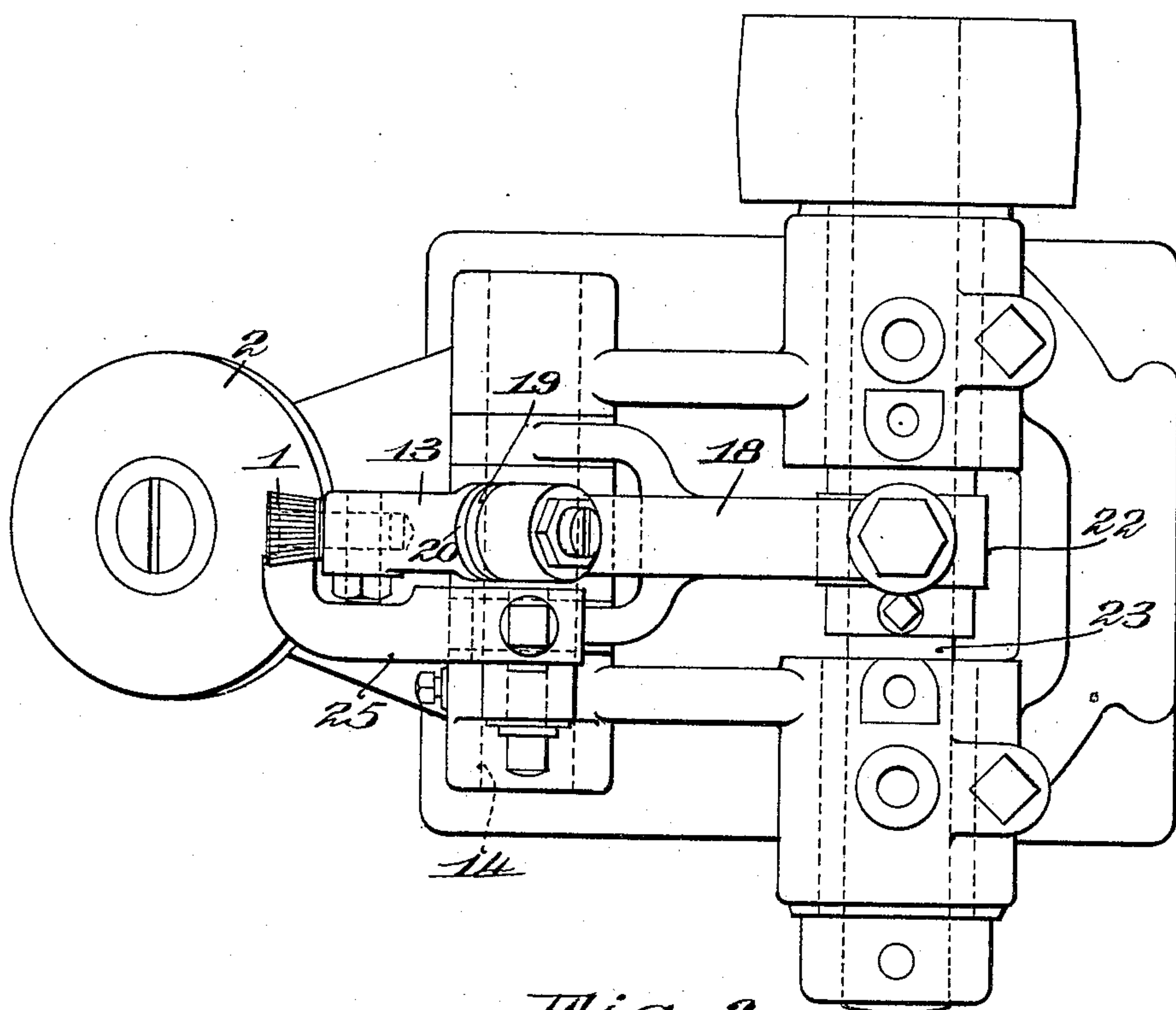
Phillips Van Orman & Visk

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*Fig. 2.*

*Witnesses*  
*Edward S. Day*  
*Alfred H. Hildreth*

*Inventor*  
*John B. Hadaway*  
*by his Attorneys*  
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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.

999,162.

Specification of Letters Patent. Patented July 25, 1911.

Application filed June 2, 1905, Serial No. 263,364. Renewed January 6, 1911. Serial No. 601,243.

*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 adapted to form ornamental indentations in imitation of stitches upon the upper surface of the projecting edge of a shoe sole.

In an application filed by the present applicant May 17, 1905, Serial No. 268,849, an impression or imitation stitch machine is disclosed provided with an indenting wheel mounted to move toward and from the shoe upper in a direction inclined to the upper surface of the projecting edge of the sole, and with mechanism for actuating the wheel to deliver a series of blows in rapid succession upon said surface. In that machine a bodily vibrating movement toward and from the work is imparted to the indenting wheel, the wheel being raised out of contact with the work during each backward movement.

The present invention is designed primarily as an improvement on the machine disclosed in said application and has for one of its objects to provide an improved means for actuating the indenting wheel so that the wheel delivers a series of blows in rapid succession upon the work, but is not raised out of engagement with the work between successive blows, whereby any liability of injury to the work by failure of the teeth of the wheel to register with partially formed indentations during its vibrating movement is avoided.

Other objects of the invention are to provide an impression or imitation stitch machine comprising an indenting wheel which is actuated to deliver a series of blows in rapid succession upon the work, in which the work can be fed more easily than in prior machines, and in which the extent of the movements imparted to the wheel can be varied so as to produce the best results when different indenting tools are used in the machine and when different styles of work and

different qualities of stock are operated upon.

With these objects in view a feature of the present invention contemplates so mounting the indenting wheel that it is adapted to remain in contact with the work and providing mechanism for actuating the wheel while in contact with the work to cause it to move toward the shoe upper in a path inclined to the surface of the work, and to deliver a series of blows in rapid succession upon said surface. After each blow of the wheel the resiliency of the stock causes a backward movement of the wheel, and also a backward movement of the wheel is produced by the feeding movement of the work past the wheel. By the repeated blows of the wheel the resiliency of the stock is overcome and the indentations are gradually brought to the required depth and the desired shape imparted to the material between the indentations. While the indentations are being formed the wheel remains in engagement with the work and is rotated as the work is fed past the wheel so that the teeth remain in the partially formed indentations and the indentations are completed without any liability of injury to the work.

To produce the best results upon all styles of work and all qualities of stock, and also when different indenting wheels are used, it is desirable that means be provided for adjusting the extent of the movements imparted to the wheel, and a feature of the present invention contemplates the provision of such means in a machine in which the indenting wheel is adapted to remain in contact with the work, and is actuated to deliver a series of blows in rapid succession upon the work. This feature of the invention is believed to be broadly new and, except as defined in the claims, is not limited to a construction in which the wheel is mounted to move toward and from the shoe upper in a direction inclined to the upper surface of the sole edge. In the machine hereinafter described this feature of the invention is embodied in a construction in which means having provision for adjustment are provided for limiting the extent of the backward movement permitted to the wheel after each blow. This construction is preferred, as thereby the extent of the movements imparted to the wheel can be ad-



justed without adjusting the mechanism by which the wheel is actuated. Also, the thrust of the work during the backward movement of the wheel can be taken by the wheel so that no additional means for taking this thrust need be provided, and consequently the work can be easily fed past the wheel.

In addition to the features of invention above referred to, the present invention also 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.

A machine embodying the various features of the present invention in their preferred form is shown in the accompanying drawings in which—

Figure 1 is a view in side elevation of the machine, and Fig. 2 is a plan view.

Referring to the drawings, 1 indicates the indenting wheel, which, as is usual in impression or imitation stitch machines, is frusto-conical in shape, and is provided with teeth shaped and spaced to produce the desired form of imitation stitch. This wheel is arranged above a work support 2 upon which the bottom or tread surface of the sole of the shoe rests during the operation of the machine. This work support is constructed and arranged in a well-known manner, being frusto-conical in shape and rotatably mounted upon a stud projecting from a block 3 which is pivotally mounted at 4 upon the upper end of the slide 5. The block 3 is provided with a segmental slot 6 through which a securing bolt 7 passes, whereby the block 3 may be adjusted on the slide 5 to change the angular position of the work-engaging surface of the work support with relation to the adjacent surface of the indenting wheel. The slide 5 is mounted in a vertical guideway in a bracket projecting from the front portion of the machine frame, and is pressed upwardly by means of a spring 9 coiled around a rod 10 and interposed between the lower end of the slide and the upper end of a hollow screw-threaded adjusting sleeve 11. The rod 10 projects downwardly from the slide 5 through the hollow sleeve 11, and is provided below the sleeve with an adjustable stop nut 12 by means of which the upward movement of the slide 5 and work support 2 is limited when there is no work in the machine. A treadle, not shown, is connected to the lower end of the rod 10 by means of which the work support can be lowered when work is to be inserted in the machine.

The construction so far described is substantially the same as that which has heretofore been used in machines of this class.

In the embodiment of the invention illus-

trated in the drawings, the indenting wheel is mounted to rotate freely upon a stud secured in the upper end of a lever 13 which is pivotally mounted upon a shaft 14 in the upper front portion of the machine frame. The lever 13 is mounted to turn freely and is acted upon by a coiled spring 15 connected to an arm 16 projecting below its pivot so that the indenting wheel is yieldingly forced toward the work by the spring. To limit the movement of the indenting wheel toward the work support when no work is in the machine a stop pin 17 is provided adapted to engage the arm 16 of the lever. The indenting wheel is actuated to deliver a series of blows in rapid succession upon the upper surface of the sole of a shoe supported upon the work support 2 by means of a rapidly vibrating lever 18 which is provided at its upper end with an adjustable block 19 arranged to contact with a block 20 on the lever 13. The lever 18 is pivotally mounted upon the shaft 14 by means of two arms extending on each side of the lever 13. The rear end of the lever 18 is forked to form two arms provided with bearing blocks 21 which engage a cam 22 fast upon the driving shaft 23, the upper block 21 being adjustable to take up wear. As shown, the cam 22 is shaped to impart three complete oscillations to the lever 18 during each revolution of the shaft 23. The shaft 23 is rotated at a high rate of speed and thus an extremely rapid vibratory movement is imparted to the lever 18 and through the levers 18 and 13 to the indenting wheel. When no work is in the machine the block 20 remains out of engagement with the block 19 so that the indenting wheel remains stationary. When, however, work is inserted in the machine the indenting wheel is raised and the block 20 is moved back into the path of the block 19 so as to be struck thereby during each oscillation of the lever 18. The lever 18 constitutes a vibrating hammer and its blows are transmitted through the lever 13 and the indenting wheel to the work. After each blow imparted by the indenting wheel to the work the wheel is raised and the lever 13 moved to bring the block 20 into a position to be again struck by the block 19.

In order to vary the extent of the movements imparted to the indenting wheel by the lever 18 the lever 13 is provided with a downwardly projecting arm 24 which is arranged to contact with an eccentric portion of the pin 17 and thereby limit the extent of the upward movement of the indenting wheel and the rearward movement of the lever 13. By rotating the pin 17 the extent of the upward movement permitted to the indenting wheel can be varied as desired and thereby the extent of the movements imparted to the indenting wheel by the lever 18 adjusted to adapt the machine for satisfac-



tory operation with different indenting wheels and upon different styles of work and qualities of stock. During the operation of the machine the spring 9 forces the work against the indenting wheel with sufficient pressure to produce indentations of the desired depth. Since the upward movement of the indenting wheel is positively limited by the stop pin 17 the thrust produced by the spring 9 can be taken at all times by the indenting wheel, and the provision of an upper work support or other means engaging the upper surface of the sole edge is rendered unnecessary. The feeding of the work is therefore resisted only by the lower work support and the indenting wheel so that the work can be easily fed through the machine.

To prevent the end of the indenting wheel from contacting with the shoe upper and to provide a means for guiding the shoe, the machine illustrated in the drawings is provided with a guide the outer end of which is arranged flush with or slightly beyond the end of the wheel. As shown, this guide is secured to a block 26 so as to be adjustable inwardly and outwardly, and the block 26 is secured to the frame of the machine so as to be adjustable vertically. If desired the guide 25 may be adjusted so as to bear upon the upper surface of the sole edge and relieve the indenting wheel of all or a portion of the thrust of the spring 9 during the upward movement of the wheel, it being preferable, however, for reasons hereinbefore stated, that the guide 25 be so adjusted that the upward movement of the wheel is stopped before the upper surface of the sole edge contacts with the guide.

The invention having been thus described, what is claimed is:—

1. An impression or imitation stitch machine, having, in combination, a work support arranged to engage the bottom of the sole of a shoe, an indenting wheel mounted to move toward and from the shoe upper in a direction inclined to the upper surface of the sole edge and remain in contact with said surface, and means for actuating the wheel to deliver a series of blows in rapid succession upon said surface.

2. An impression or imitation stitch machine, having, in combination, a work support arranged to engage the bottom of the sole of a shoe, an indenting wheel mounted to remain in contact with the upper surface of the projecting edge of the sole, means for actuating the wheel to deliver a series of blows in rapid succession upon said surface, and means for adjusting the extent of the movements imparted to the wheel.

3. An impression or imitation stitch ma-

chine, having, in combination, a work support arranged to engage the bottom of the sole of a shoe, an indenting wheel mounted to remain in contact with the upper surface of the projecting edge of the sole, a carrier for the wheel, hammer mechanism acting to deliver a series of blows in rapid succession upon said carrier, and an adjustable stop to limit the movement of said carrier toward the hammer mechanism.

4. An impression or imitation stitch machine, having, in combination, a work support arranged to engage the bottom of the sole of a shoe, an indenting wheel mounted to move toward and from the shoe upper in a direction inclined to the upper surface of the sole edge, and remain in contact with said surface, a lever upon which the indenting wheel is mounted, and a vibrating hammer lever arranged to deliver a series of blows in rapid succession upon the wheel carrying lever.

5. An impression or imitation stitch machine, having, in combination, a work support arranged to engage the bottom of the sole of a shoe, an indenting wheel mounted to move toward and from the shoe upper in a direction inclined to the upper surface of the sole edge and remain in contact with said surface, means for actuating the wheel to deliver a series of blows in rapid succession upon said surface, and means for adjusting the extent of the movements imparted to the wheel.

6. An impression or imitation stitch machine, having, in combination, a work support arranged to engage the bottom of the sole of a shoe, an indenting wheel mounted to move toward and from the shoe upper in a direction inclined to the upper surface of the sole edge and remain in contact with said surface, a carrier for the wheel, hammer mechanism acting to deliver a series of blows in rapid succession upon said carrier, and an adjustable stop to limit the movement of said carrier toward the hammer mechanism.

7. An impression or imitation stitch machine, having, in combination, a work support, an indenting wheel mounted to remain in contact with the work, a lever upon which the indenting wheel is mounted, and a vibrating hammer lever acting to deliver a series of blows in rapid succession upon the wheel carrying lever.

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

JOHN B. HADAWAY.

Witnesses:

FRED O. FISH,  
FARNUM F. DORSEY.

Correction in Letters Patent No. 999,162.

It is hereby certified that in Letters Patent No. 999,162, granted July 25, 1911, upon the application of John B. Hadaway, of Brockton, Massachusetts, for an improvement in "Impression or Imitation-Stitch Machines," an error appears in the printed specification requiring correction as follows: Page 1, line 19, serial number, for "268,849," read 260,849; and that the said Letters Patent should be read with this correction therein that the same may conform to the record of the case in the Patent Office.

Signed and sealed this 5th day of September, A. D., 1911.

[SEAL.]

F. A. TENNANT,

*Acting Commissioner of Patents.*