

(No Model.)

3 Sheets—Sheet 1.

J. B. HADAWAY.
STITCH SEPARATING AND INDENTING MACHINE.

No. 536,338.

Patented Mar. 26, 1895.

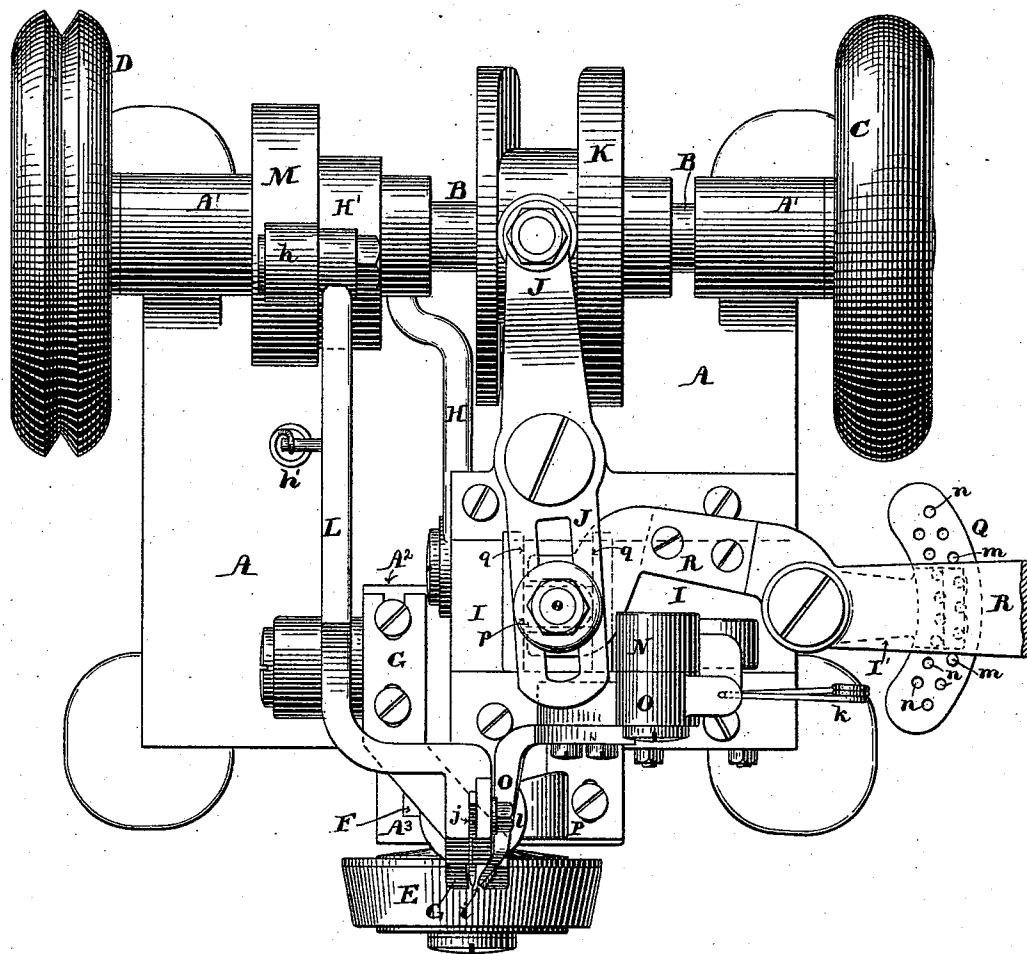


Fig. 1.

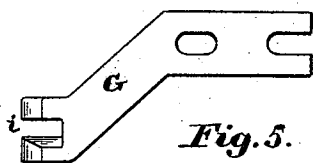


Fig. 5.



Fig. 6.

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H. Theodore Fletcher

Inventor:
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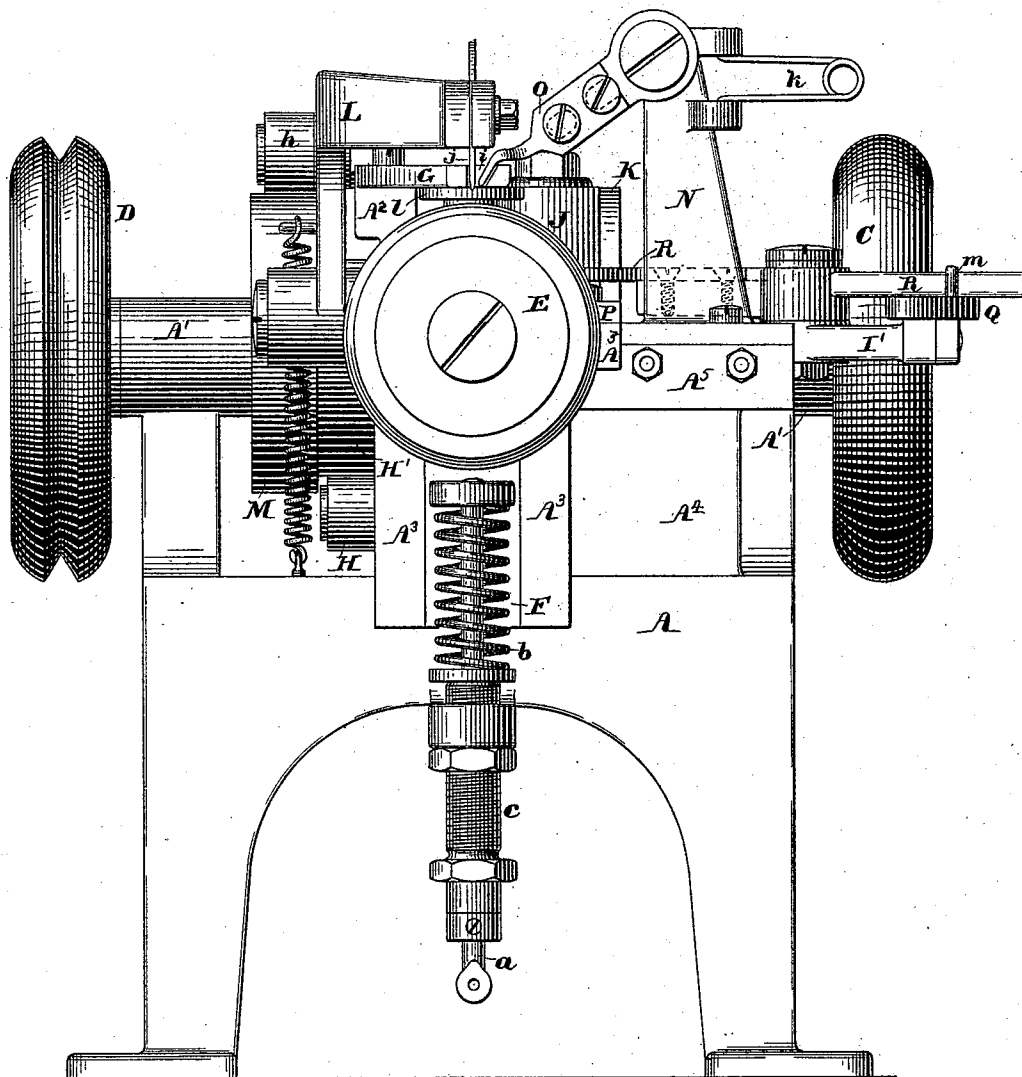


Fig. 2.

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(No Model.)

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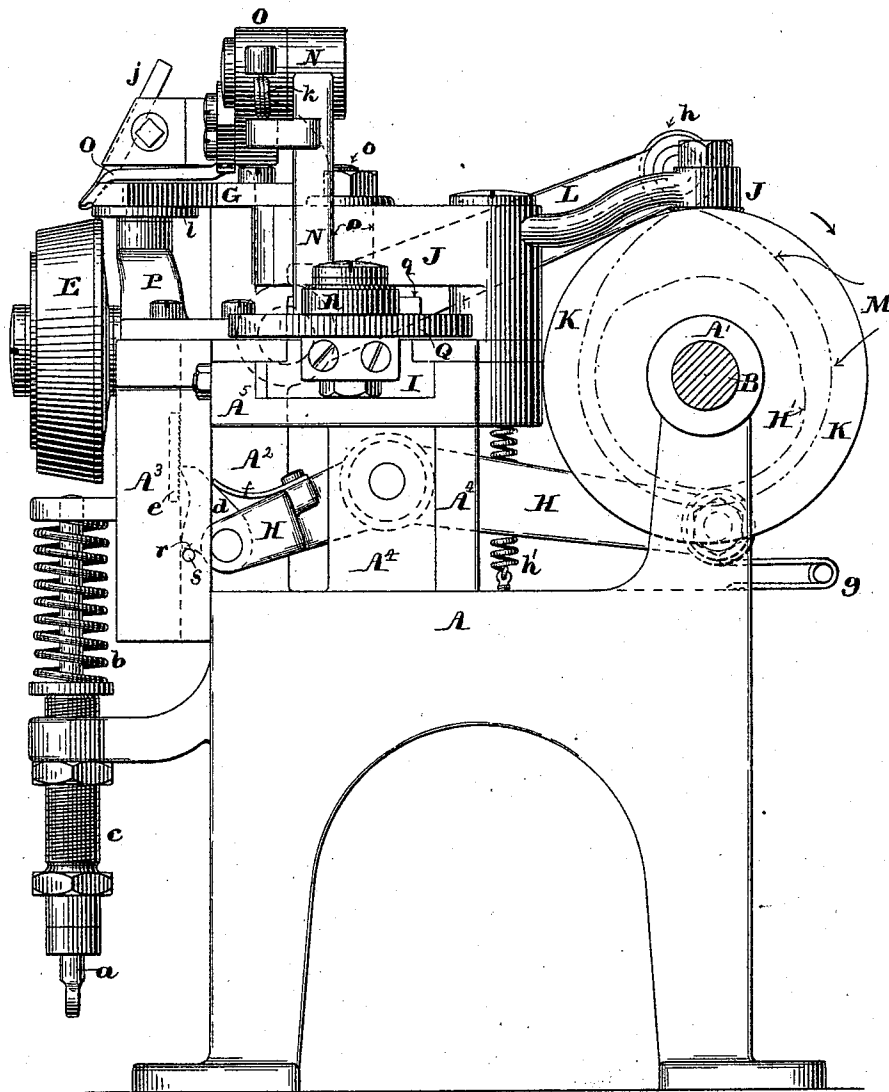


Fig. 3.

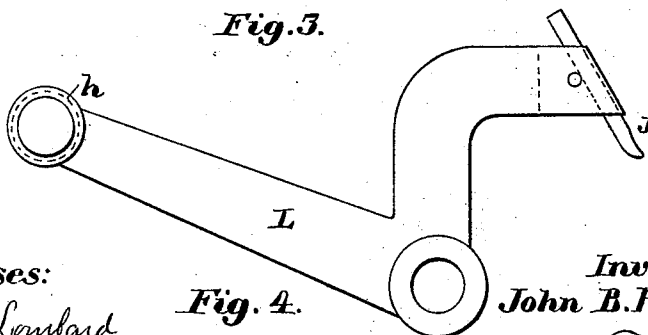


Fig. 4.

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UNITED STATES PATENT OFFICE.

JOHN B. HADAWAY, OF BROCKTON, MASSACHUSETTS.

STITCH SEPARATING AND INDENTING MACHINE.

SPECIFICATION forming part of Letters Patent No. 536,338, dated March 26, 1895.

Application filed September 25, 1894. Serial No. 524,018. (No model.)

To all whom it may concern:

Be it known that I, JOHN B. HADAWAY, of Brockton, in the county of Plymouth and State of Massachusetts, have invented a new and useful Stitch Separating and Indenting Machine, of which the following, taken in connection with the accompanying drawings, is a specification.

My invention relates to stitch separating and indenting machines and it consists in certain novel features of construction, arrangement and combination of parts which will be readily understood by reference to the description of the accompanying drawings and to the claims hereto appended and in which my invention is clearly pointed out.

Figure 1 of the drawings is a plan of a machine embodying my invention. Fig. 2 is a front elevation. Fig. 3 is a side elevation looking toward the right side of Figs. 1 and 2. Fig. 4 is a side elevation of the indenting tool and its carrying lever, and Figs. 5 and 6 are respectively a plan and a side elevation of the upper work support or table.

In the drawings A is the bed of the machine; A', A', the bearings for the cam shaft B.

A³ and A⁴ are upwardly projecting blocks formed integral with the bed A, and A⁵ is a horizontal plate connecting the upper ends of said uprights; C, the hand wheel; D, the driving wheel.

E is the lower work support; F, the vertically movable bar, for carrying said work support, fitted to a groove in the block A³. a is the pendent rod attached to said bar and connected by its lower end to a treadle (not shown).

b is the spring for pressing the bar F and the work support E upward, and c is the threaded sleeve for adjusting the tension of said spring.

G is the upper work support or table.

H is the locking lever carrying at its front end the pawl or pawls d arranged to engage the ratchet plate e set in the back side of the bar F, but shown only in dotted lines in Fig. 3, said pawl being pressed toward said ratchet plate by the spring f. H' is the cam for operating said lever H, and g is a spring for pressing the truck carried by the rear end of said lever H into contact with said cam.

I is the feed slide. J is the cam lever for

reciprocating said slide, and K is a cylinder cam for operating said lever J.

So far the several parts of the machine are constructed, arranged and operate substantially the same as in the machine described in Letters Patent No. 521,978, granted to me June 26, 1894, except as hereinafter mentioned, and therefore need not be further described here.

A² is a stand projecting upward from the bed A, and may be formed integral therewith, or be made separate therefrom and secured thereto, and has secured to its upper end the upper work support or table G, having in its front end the slot i, and in its under surface near its front end the transverse semi-circular groove i' to receive the projecting portion of the line of stitches, when the work is clamped between said table and the lower work support. The stand A² has pivoted to its left vertical side the indenting lever L, made of the form shown in Fig. 4, and carrying at its rear end the truck h which rests upon, and is acted upon by the cam M to vibrate said lever in a vertical plane; said truck being kept in contact with said cam by the tension of the spring h', connected at one end to said lever and at the other end to the bed of the machine, as shown in Fig. 2.

The slide I has formed thereon or secured thereto the upwardly projecting stand N, to the upper end of which is pivoted the feed pawl or point O, made preferably in two parts and secured together, as shown. The working end of the feed pawl O projects into the slot i, in the front end of the upper work support or table G, in an inclined position with its point or lower end, when retracted, just above the under surface of said table and in near proximity to the indenting tool j mounted in the front end of the lever L as shown in Figs. 1, 2, 3, and 4. The right hand side of the slot i is inclined to an angle of about thirty degrees to a perpendicular, and acts upon the pawl to raise it from the work, against the tension of the spring k, when the slide I is moved toward the right of Fig. 2, said spring k serving to press the pawl O down upon the stitch when the slide I is moved toward the left.

P is a gage stand secured to the upper side of the plate A⁵ and carrying at its upper end the fixed or revolving gage l substantially as in my prior patent before cited.

The slide I has formed on its right hand and the extension I' to the end of which is secured the segment or curved stand Q in the upper face of which is formed two curved rows of holes *n n* to receive pins *m* for holding the lever R in its adjusted position. The lever R is pivoted to the upper surface of the slide I and has its inner end forked to embrace the pin *o* connecting the feed lever and the feed slide as a means of adjusting the block *p*, shown only in dotted lines in Fig. 1, and the pin *o* in the groove *q* of the slide I and the slotted arm of the feed lever J respectively, for the purpose of varying the travel of said slide and consequently of the pawl O.

The lever R is shown with a portion of its outer end broken away but its outer arm may be of any suitable length for convenient manipulation by the operator's hand, and may be operated to adjust the travel of the slide, either when the machine is in operation, or in a state of rest.

The operation of my invention is as follows: The several parts of the machine being in the positions shown in the drawings the operator first turns the hand wheel in the direction indicated by the arrow on Fig. 3, a distance equal to about ninety degrees when the indenting tool will be raised to the extreme of its upward movement by the rotation of the cam M and the contraction of the spring *h'* and the lower work support is unlocked by the downward movement of the pawl *d*, as the lever H is moved about its fulcrum-pin, by the contraction of the spring *g*, as the cam H' revolves, and the shoulder *r* of the pawl *d* comes in contact with the pin *s* substantially as in my prior patent. The operator then places his foot on the treadle (not shown) and depresses the work support E against the tension of the spring *b* to a sufficient distance to permit the insertion of the sole edge between said work support E and the table G. He then takes the shoe in his left hand with the heel toward the left and places the tread surface of the sole upon the work support E with the upper surface of the welt beneath the table G at a point at the forward part of the shank and with the edge of the sole bearing against the gage which has previously been adjusted to a position to bring the stitches to be operated upon directly beneath the bulge on the indenting tool *j*, when the foot is removed from the treadle and the tension of the spring *b* presses the welt support E upward to clamp the sole. Now if power be applied to the driving wheel D to revolve the shaft the first effect produced is to move the slide I toward the left the full length of its travel which should be adjusted to a distance equal to about one and one half times the average length of the stitches in the sample of work being operated upon. As the slide I moves toward the left the feed pawl O is moved with it and the spring *k* presses the point of the pawl lightly upon the stitch at the right of the one to be separated until by the continu-

ation of the movement toward the left the point of the feed pawl drops into the space between the stitch it has just been resting upon and the stitch next to the left thereof, and during the remainder of the movement of the slide I toward the left the work will be fed a distance equal to the length of stitch in advance of said feed pawl. When the movement of the slide I and the feed pawl toward the left is completed the point of the feed pawl and the space between the two stitches into which said pawl is pressed by the spring *k* is directly beneath the indenting tool *j*. The next effect produced by the revolution of the cam shaft is to raise the front end of the lever H and cause the pawl *d* to engage the ratchet plate *e*, slightly lift and lock the work support E with the sole edge firmly clamped between it and the table G. When the work is locked in position the feed slide is returned to the extreme of its throw toward the right thereby moving the point of the feed pawl over the first stitch to the right and upon the second and along the same till its motion is completed, and then the indenting tool *j* is forced into the space between the two stitches just left by the feed pawl. The next operation is the raising of the indenting tool to its uppermost position, and then to unlock the lower work support, when a single revolution of the shaft B will have been completed; and these operations will be repeated, in the order named, during each revolution of said shaft until the shoe has been fed around to the forward part of the shank on the side opposite the starting point, when the motion of the shaft will be arrested and the shoe removed from the machine.

In my present invention the intervals between the stitches are located and the work is fed by one tool in the form of a pawl, and the spaces between the stitches are indented by another tool which has only an up and down motion while in the machine described in my prior patent before cited the intervals between the stitches are located and indented and the work is fed by a single tool, but necessarily requiring more complication of parts than my present invention.

What I claim as new, and desire to secure by Letters Patent of the United States, is—

1. In a machine for separating the stitches in boot and shoe soles after the sewing has been completed the combination of a feed pawl constructed and arranged to locate the intervals between the stitches whether of uniform or varying lengths and feeding the work distances corresponding to the varying lengths of the stitches, and a separate tool for indenting the sole between said stitches.

2. In a machine for separating the stitches in boot and shoe soles the combination of a vertically movable work support; a fixed table or support to bear upon the upper surface of the welt and having formed in its front end a slot having one side wall thereof inclined to fit the angle of the feed pawl; a pawl

for locating the intervals between the stitches and feeding the work; and a separate tool constructed and arranged to be moved to and from the work in a vertical plane and indent the sole between said stitches.

3. In a machine for separating the stitches in boot and shoe soles, the combination of a work support to receive the tread surface of the sole; an upper work support or table to rest upon the upper surface of the welt and having a slot in its front end one side wall of which is inclined to permit the passage of the feed pawl; a gage to determine the position of the sole on the work support; a pawl for locating the intervals between the stitches whether of uniform or varying lengths; means having provision for moving said pawl to and fro in the direction of the length of the sole edge; a separate tool for indenting the sole between said stitches and means having provision for moving said indenting tool to and from said sole in a vertical plane.

4. In a machine for separating the stitches in boot and shoe soles the combination of a work support to receive the tread surface of the sole; an upper work support or table to bear upon the upper surface of the welt and provided with a slot in its front end one side wall of which is inclined to serve as a stop for the feed pawl when the work is removed; a gage to determine the position of the sole on the work support; a horizontally reciprocating slide; a pawl carried by said slide and adapted to locate the intervals between the stitches and engage the same to feed the work; a cam and cam lever for reciprocating said slide; a vertically vibrating lever; a cam for operating said lever; and an indenting tool carried by the front end of said lever.

5. In a machine for separating the stitches

in boot and shoe soles, the combination of a work support to receive the tread surface of the sole; an upper work support or table to bear upon the upper surface of the welt; a gage to determine the position of the sole on the work support a horizontally reciprocating slide provided with a transverse groove on its upper side; a rectangular block fitted to and movable endwise of said groove; a cam lever having a vertical longitudinal slot in its front arm; an adjustable fulcrum pin fitted and movable endwise of the slot in said lever and having its lower end set in said rectangular block; a hand lever for adjusting said fulcrum pin; a feed point or pawl carried by said slide for locating the intervals between the stitches and feeding the work; and an independent tool for indenting the sole between said stitches.

6. In a machine for separating the stitches in boot and shoe soles, the combination of a movable work support to receive the tread surface of the sole; an upper work support or table to bear upon the upper surface of the welt, and provided in its front end with a slot for the passage of the feed pawl and with a transverse semi-circular groove in its under side to receive the upwardly projecting portions of the stitches; and means having provision for clamping the sole edge between said table and the movable work support.

In testimony whereof I have signed my name to this specification, in the presence of two subscribing witnesses, on this 20th day of September, A. D. 1894.

JOHN B. HADAWAY.

Witnesses:

N. C. LOMBARD,

WALTER E. LOMBARD.