

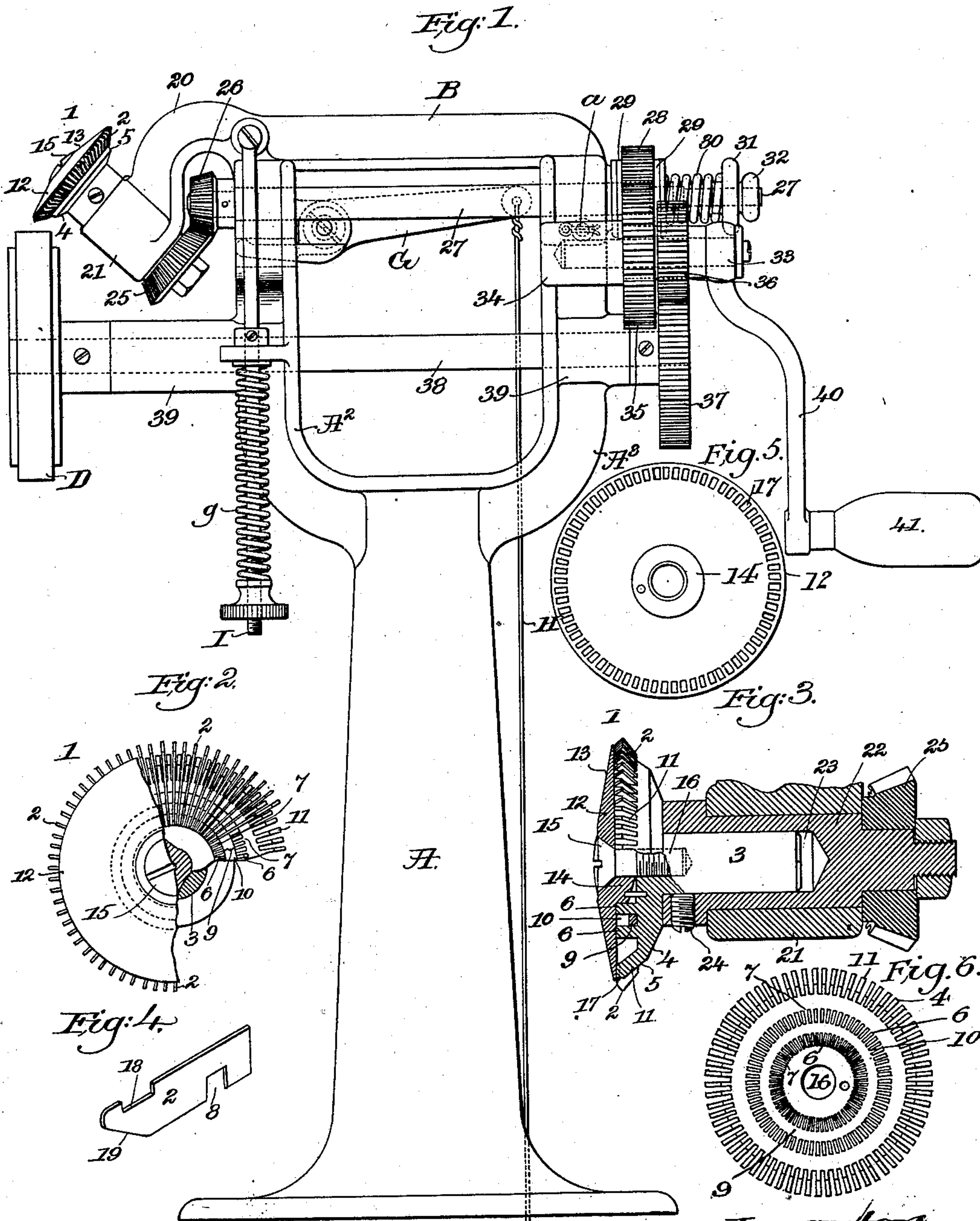
No. 664,405.

Patented Dec. 25, 1900.

J. B. HADAWAY.
STITCH SEPARATING MACHINE.

(Application filed Mar. 22, 1899.)

(No Model.)



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UNITED STATES PATENT OFFICE.

JOHN B. HADAWAY, OF BROCKTON, MASSACHUSETTS.

STITCH-SEPARATING MACHINE.

SPECIFICATION forming part of Letters Patent No. 664,405, dated December 25, 1900.

Application filed March 22, 1899. Serial No. 710,082. (No model.)

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 Stitch-Separating 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 stitch separating and indenting machines, and more particularly to a stitch separating and indenting machine embodying a rotary wheel carrying a plurality of radially-disposed indenting blades or tools arranged to have a movement toward and away from each other as they operate upon the seam for the purpose of accommodating themselves to variations in the length of the stitches, such a machine being disclosed in Letters Patent of the United States No. 548,309, granted to me on the 22d day of October, 1895.

In the patent above referred to the separating-tools are arranged in groups on a shaft and on a series of sleeves, said sleeves being arranged to have a movement relative to each other and the shaft, thereby permitting a relative movement between the several groups of separating-tools for the purpose of enabling such tools to automatically accommodate themselves to variations in the length of stitches.

The objects of the present invention are to produce a rotary stitch-separating wheel of simple form and arrangement and to secure the automatic locating of the working ends of the stitch-separating blades or tools in the spaces between the stitches, whether such stitches be of uniform or varying lengths, by means of the inherent elasticity of such tools, such tools comprising thin blades of steel or other suitable metal mounted in a wheel or carrier and radially disposed therein, each tool being free to spring toward and from the adjacent tools. Thereby the above-suggested result is accomplished.

The present invention therefore consists in the stitch separating and indenting machine

which will be hereinafter described, and more particularly pointed out in the claims.

The present invention is illustrated in the accompanying drawings, wherein—

Figure 1 shows a side elevation of a machine embodying the same. Fig. 2 shows a broken front elevation of the stitch-separating wheel with a portion of the guard-disk broken away to show the arrangement of the stitch-separating tools therein. Fig. 3 shows a longitudinal sectional view through the stitch-separating wheel and its carrier, portions thereof being shown in elevation. Fig. 4 shows a perspective view of one of the stitch-separating blades or tools. Figs. 5 and 6 show, respectively, the inner or adjacent faces of the disks between which the blades are held.

Similar characters of reference will be used to designate corresponding parts throughout the specification and drawings.

In the drawings, A represents a stand or column having the upwardly-projecting arms A² and A³; B, the upwardly-movable carrier for the stitch-separating wheel, pivoted at a to the arm A³ and normally held down by means of the springs g and rods I (one only being shown) and arranged to be raised at times for the insertion and removal of the work by means of the lever G and rod H, connected to a foot-treadle, (not shown,) and D is the work-support, all of which parts, except as hereinafter specified, may be and preferably are the same as corresponding parts in the machine of the patent hereinbefore set forth.

The stitch-separating wheel 1 is provided with a plurality of thin spring separating and indenting blades or tools 2, which, as before explained, are constructed and arranged to spring toward or away from each other during the operation of the machine, and in the illustrated embodiment of the present invention the wheel 1 is constructed as follows: Upon the end of a stem 3 is formed or secured a circular disk 4, which upon the under side is beveled as shown at 5 and upon its front face carries a central hub 6. The hub 6 is provided with a plurality of radial seats or slots 7, into which the inner ends of the separating blades or tools 2 are firmly secured in

any suitable manner and from which they project radially and at uniform distances apart. The working ends of the blades or tools 2 project beyond the periphery of the disk 4, as shown clearly in the drawings.

The method of securing the blades 2 in the hub 6 of the machine of the drawings consists in forming each blade with a notch 8 upon its lower edge and near its inner end, which notch is arranged to engage a ring 9, fitted in a groove 10, formed in the hub 6.

The disk 4 is preferably provided upon its front face and along its peripheral edge with a series of stops 11, interposed between the blades or tools 2, said stops being of less width than the space between the blades, thus permitting the independent springing of the blades toward and from each other, but preventing any undue springing thereof.

A guard-disk 12, having its front face beveled, as at 13, and having upon its under face a circular boss 14, is secured in position covering the blades or tools 2 by means of a screw 15, engaging a threaded opening 16 in the shank 3, the boss 14 fitting into a recess formed in the hub 6. The guard-disk 12 is also preferably provided with projections 17, which fit into the spaces between the stops 11, and the blades or tools 2 are provided along their front edges and near their outer ends with a notch 18, so that the projections 17 may fit into the spaces between the stops 11 without interfering with the free movement of the blades or tools.

As shown in Fig. 4, the working ends of the blades or tools 2 are beveled or inclined in the direction of their width, as at 19, and are also preferably rounded in the direction of their thickness.

The stitch-separating wheel 1 may be mounted to turn loosely by the contact of the stitched surface of the shoe therewith, as said shoe is fed along by the work-supporting feed-wheel D, as in the machine of the patent; but in the present machine I have shown mechanism whereby said wheel is turned, and I have so arranged the mechanism for turning the wheel 1 that it may be permitted to slip if for any reason the rate of movement of the wheel, the movement of the work, and the variation of the length of the stitches should render it necessary in order to insure the correct adjustment of the stitch-separating blades or tools to the stitches of the seam.

On the arm B there is formed a gooseneck or an overhanging bracket 20, which carries an inclined bearing 21, in which is fitted to turn a shaft 22, provided with a bore 23, into which is fitted the shank 3 of the stitch-separating wheel 1, it being secured in said shaft by means of a set-screw 24. The shaft 22 at its lower end carries a beveled gear 25, which is engaged by a beveled gear 26, carried by the outer end of a shaft 27, mounted to rotate in bearings in the movable arm B. Upon the

rear end of the shaft 27 is secured a pinion 28, said pinion being loosely fitted to the shaft 27 and held between friction disks or washers 29, the washers 29 and the pinion 28 being forced in frictional contact with each other by means of a spiral spring 30, one end of which bears against a movable collar 31, held on the shaft 27 by a nut 32. On a short shaft 33, mounted in a suitable bearing 34, are a gear 35, which meshes with the pinion 28, and a pinion 36, which meshes with a gear 37, fixedly secured to the rear end of the shaft 38, mounted to turn in suitable bearings 39 and carrying at its forward end the work-supporting feed-wheel D. The shaft 33 may be turned by any suitable means to impart rotary motion to the shafts 38 and 27, and in the machine of the drawings the said shaft 33 carries a crank 40, having a handle 41, whereby the said shaft may be turned and, through the pinions 36 and 28 and gears 35 and 37, impart a rotary motion to the shafts 27 and 38, and thus rotate the stitch-separating wheel 1 and the work-supporting feed-wheel D in opposite directions.

The operation of my invention is as follows: The work is first inserted by raising the arm B by means of the lever G and rod H against the tension of the springs g, and the edge of the shoe-sole is inserted between the work-support and the stitch-separating wheel with the tread-surface of the sole on the work-support. The arm B is then permitted to be drawn down by means of the springs g, bringing the beveled ends 19 of the stitch-separating tools or blades 2 in contact with the stitched surface of the work. The operator then grasps the handle 41 and imparts a rotary movement to the work-support D and the stitch-separating wheel 1, causing the work to be fed along and the stitch-separating tools to indent the spaces or intervals between the stitches of the seam. As before explained, if the stitches of the seam vary slightly in length the inherent elasticity of the stitch-separating tools or blades 2 will permit the said tools to spring toward and from each other, so that if they should contact with the shoulder or crown of a stitch they may spring off of the same and enter the space therebetween, and thus accommodate themselves to stitches of varying lengths.

Having fully described the construction and mode of operation of my machine, I claim as new and desire to secure by Letters Patent of the United States—

1. In a stitch separating and pricking-up machine, the combination of a revoluble feed-wheel, and a stitch-separating wheel composed of a central hub and a series of thin spring-steel blades set firmly in said hub at uniform distances apart and radiating therefrom, each blade being constructed and adapted to spring independently between its outer end and the hub in which it is set to accom-

modate itself to the varying length of the stitches as set forth.

2. In a stitch-separating machine, the combination with a work-supporting feed-wheel, 5 of a stitch-separating wheel, mechanism to rotate the work-supporting feed-wheel and stitch-separating wheel, and a frictional connection between the stitch-separating wheel and its rotating mechanism, substantially as 10 described.

3. In a stitch-separating machine, the combination with a work-supporting feed-wheel, 15 of a stitch-separating wheel, comprising a plurality of radially-disposed spring blades or tools firmly secured therein, and stops interposed between the blades or tools arranged

to limit their movement toward and from each other, substantially as described.

4. In a stitch-separating machine, the combination with a hub, of a series of radially- 20 disposed spring blades or tools secured therein, the working ends of said blades or tools being permitted to spring toward and from each other to accommodate themselves to variations in the length of stitches, substan- 25 tially as described.

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

JOHN B. HADAWAY.

Witnesses:

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A. E. WHYTE.