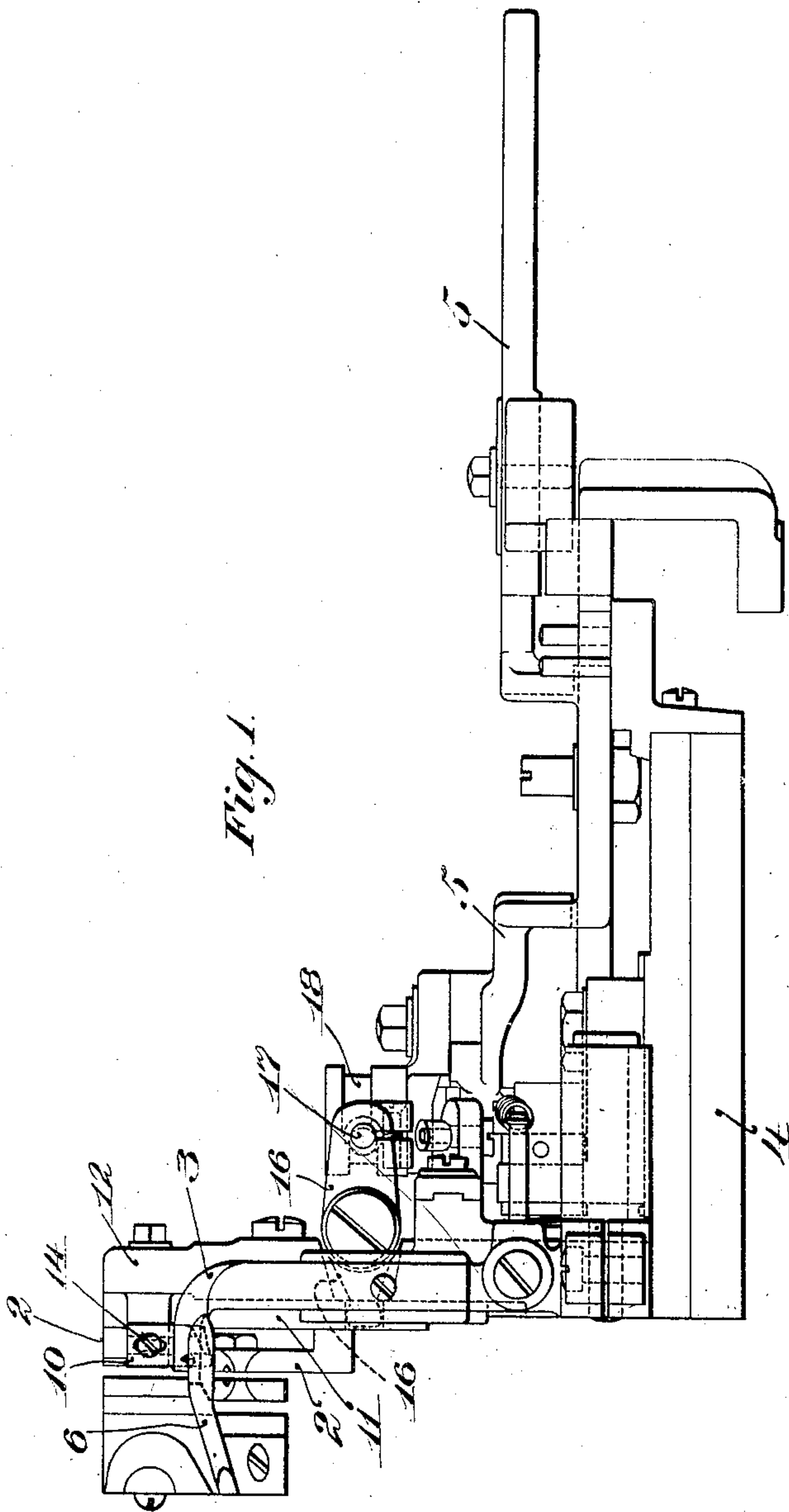


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APPLICATION FILED JAN. 11, 1908.

963,761.

Patented July 12, 1910.  
2 SHEETS—SHEET 1.



*Witnesses:*  
*E. C. Wurdeman*  
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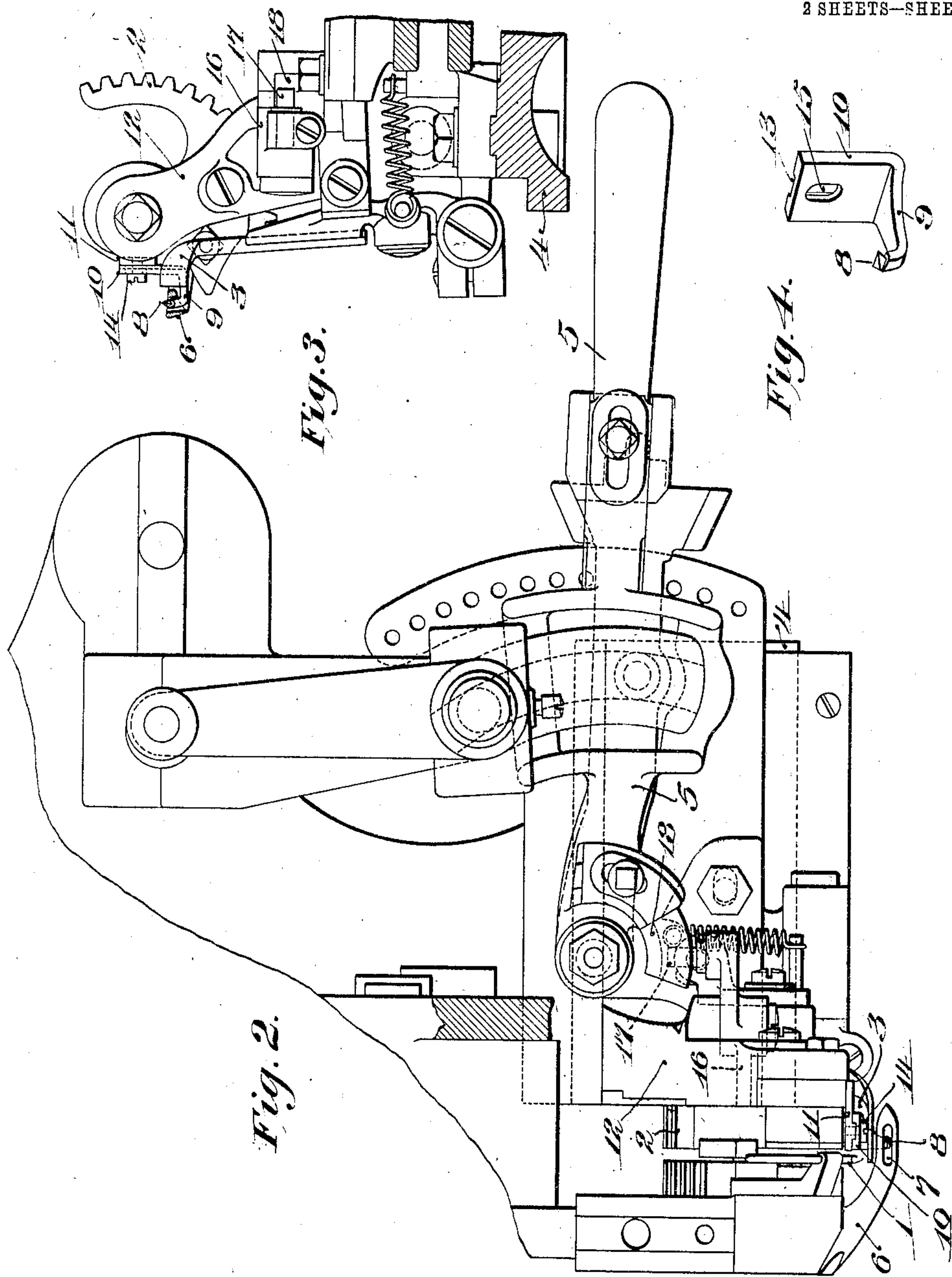
*Inventor:*  
*John B. Hadaway*  
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# UNITED STATES PATENT OFFICE.

JOHN B. HADAWAY, OF BROCKTON, MASSACHUSETTS, ASSIGNOR TO UNITED SHOE MACHINERY COMPANY, OF PATERSON, NEW JERSEY, A CORPORATION OF NEW JERSEY.

SOLE-SEWING MACHINE.

963,761.

Specification of Letters Patent. Patented July 12, 1910.

Application filed January 11, 1908. Serial No. 410,350.

*To all whom it may concern:*

Be it known that I, JOHN B. HADAWAY, 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 Sole-Sewing 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 an attachment for sole sewing machines by which a stitch-receiving groove or channel may be cut in the upper surface of the welt in advance of the needle so that the stitches which secure the outsole and welt can be sunk below the upper surface of the welt at the forepart of the shoe, and the subsequent operation of forming ornamental indentations on the welt can be performed by an ordinary indenting wheel without danger of injuring the stitches of the seam. Welt channeling attachments of this character as heretofore constructed have been provided with a channeling knife which during its operation upon the sole is held in fixed position above the surface of the work support and the channel has been cut by the movement of the welt against the stationary knife during the feed of the shoe. During the feed the work is held but lightly against the work support and variations in the depth of the groove cut by the channeling knife are therefore liable to occur. The resistance offered by the stationary knife also puts additional and objectionable strain upon the feeding devices.

It is accordingly an object of the present invention to provide a welt channeling attachment having its parts so constructed and arranged that the channel may be uniformly and accurately cut, thus insuring the proper sinking of the seam below the surface of the welt with a minimum depth of cut and resulting weakening of the welt.

A further object is to provide a channeling attachment by which the welt may be channeled without putting additional and objectionable strain upon the feeding devices.

With these objects in view one of the principal features of the present invention contemplates so operating the channeling knife that it moves with the work during the feed and in the opposite direction during the in-

tervals between the feeding movements of the work. The channeling knife is preferably thus operated by mounting it upon the feed slide of the machine to which the attachment is applied and so arranging it that it may be projected above the surface of the work support in advance of and in alinement with the needle. With the knife thus mounted it will move forward with the welt during the feed of the work so that it will put no strain upon the feeding devices at this time, and during the return stroke of the feed slide the knife will act to cut the channel in the welt. At this time the work is held firmly clamped against the upper surface of the work support so that the surface of the welt is accurately and firmly positioned against the work support and the channel will therefore be accurately cut to a uniform depth during each return stroke of the feed slide. This manner of mounting the channeling knife also enables the knife to be rigidly supported comparatively close to the cutting point so that there is no danger that the knife support will spring or yield during the cutting and cause an inaccurate forming of the channel. The cutter may also be arranged to work within the usual slot formed in the work support for the passage of the needle and awl so that the welt is accurately supported and positioned on opposite sides of the knife, thus contributing to the uniform action of the knife upon the welt.

The channeling knife may be secured on the feed slide in any suitable manner so far as the broader aspects of the invention are concerned. It is preferred, however, to so mount the knife that it may be withdrawn below or projected above the surface of the work support, and to so connect the knife carrier with the device for operating the gage which is brought into action in sewing about the forepart of the shoe that the knife will be projected above the work support when this gage is moved into operative position, and will be withdrawn below the upper surface of the work support when this gage is withdrawn.

The invention will be readily understood from an inspection of the accompanying drawings, in which—

Figure 1 shows a front elevation of the feed slide of a shoe sewing machine with the present invention applied thereto; Fig. 2 is



a plan view partly in section of the mechanism shown in Fig. 1, together with portions of the shoe sewing machine; Fig. 3 is an end elevation partly in section of the mechanism shown in Fig. 1, looking toward the right, the awl segment being removed; and Fig. 4 is a perspective view of the channeling knife.

As shown in the drawings the invention is applied to a machine such as disclosed in my Patent No. 704,458, dated July 8, 1902, to which reference may be had for a detail description of the construction and mode of operation of the parts which are not hereinafter specifically described.

The curved hook needle 1, the awl segment 2, the edge gage 3, the feed slide 4, the lever 5 for adjusting the feed and moving the edge gage 3 into and out of position to guide the work, are all constructed, arranged and operate in the manner fully disclosed in the patent above referred to. The work support 6 is of the usual construction, and is provided with a slot 7 through which the awl and needle work during the sewing operation, the upper surface of the work support on opposite sides of the slot being in the same plane, so that the welt is accurately supported on opposite sides of the slot.

The present invention is incorporated in the machine by mounting a channeling knife 8 upon the feed slide 4 and arranging the knife so that it may be projected up through the slot 7 in the work support into position where it will act during the return movement of the feed to cut a channel in the face of the welt, the depth of which will depend upon the extent to which the knife projects above the upper surface of the work support.

The channeling knife 8 is formed on the outer upturned end of a knife arm 9 which is provided with a base 10 as clearly shown in Fig. 4. The base of the knife arm is secured to the upper end of a slide 11 which is mounted in suitable guideways formed in the standard 12 of the feed slide. The rear surface of the base 10 is recessed at 13 to receive a guiding rib formed on the upper end of the slide 11, and the knife arm is adjustably secured to the slide by a clamping screw 14 passing through a slot 15 in the base of the knife arm. By means of the clamping screw and slot the knife may be adjusted vertically to vary the depth of the channel cut thereby, and when adjusted the knife arm is held firmly on the slide 11 by the rib engaging the recess 13. The upper end of the slide 11 is arranged back of and adjacent to the work support so that the knife 8 may be carried on a short rigid arm 9 and may be rigidly supported close to the point where the cutting is performed. The knife is thus firmly and rigidly held during the cutting without danger of its yielding or chattering, and with a resulting uniformity

in its action upon the welt. The cutter acts to cut the channel in the welt during the return movement of the feed slide at which time the work is firmly clamped in position with the surface of the welt held firmly and accurately against the surface of the work support and supported upon opposite sides of the groove 7 within which the channeling cutter operates so that the cutting of a channel of uniform depth is insured. The channel is also cut without putting any strain upon the feeding awl, since the cut is effected during the return of the feed slide and while the awl is out of the work.

In order that the channeling knife may be moved into and out of active position at the same times that the edge gage is moved into and out of active position, so that the channeling knife may be out of action while sewing through the shank and may be in action during the sewing about the forepart of the shoe, the knife carrying slide 11 is connected with and by the lever 5 through which the edge gage is operated. The connections between the slide 11 and lever 5 consist of a lever 16, one end of which engages a recess in the slide 11 and the other end of which carries a roll 17 engaging a cam 18 which is secured to the lever 5. The cam 18 is so shaped that when the lever 5 is moved to bring the edge gage 3 into action the lever 16 is operated to raise the knife-carrying slide 11 and project the channeling knife up through the slot 7 and into position indicated in Figs. 1 and 3. When the lever 5 is moved to withdraw the edge gage 3 from active position the cam 18 acts on the lever 16 to move the knife carrying slide 11 downward, and thus withdraw the channeling knife 8 into a position below the upper surface of the work support.

While it is preferred to mount the channeling knife upon the feed slide in the manner shown and described, and to employ the specific construction and arrangement of parts shown and described, it will be understood that this manner of mounting and the specific construction and arrangement of the parts is not essential to the invention in its broader aspects and may be varied as found desirable, and to suit the requirement of the specific construction and arrangement of the parts of the machine to which it is desired to apply the invention.

Having explained the nature and object of the invention and specifically described one form of mechanism in which it may be embodied, what I claim is:

1. A sole sewing machine, having, in combination with stitch forming and work feeding devices, a work support, a channeling knife arranged to cut a stitch-receiving channel in the surface of the welt, and mechanism for moving the knife with the work during the feed and in the opposite direction



during the intervals between the feeding movements of the work, substantially as described.

5 2. A sole sewing machine, having, in combination with stitch forming and work feeding devices a work support, a channeling knife arranged to cut a stitch-receiving channel in the surface of the welt, mechanism for moving the knife with the work  
10 during the feeding movement of the feeding devices and in the opposite direction during the return stroke of the feeding devices, substantially as described.

15 3. A sole sewing machine, having, in combination with stitch forming devices a work support and feed slide, a channeling knife mounted on the feed slide and arranged to cut a stitch-receiving channel in the surface of the welt, substantially as described.

20 4. A sole sewing machine, having, in combination with stitch forming devices, a slotted work support having supporting surfaces on opposite sides of the slot, a feed slide, a channeling knife mounted on the

feed slide and arranged to cut a stitch-receiving channel in the surface of the welt, and means for projecting the knife up through the slot in the work support and withdrawing it below the surface of the work support, substantially as described. 25 30

5. A sole sewing machine, having, in combination with stitch forming devices, a work support, a feed slide, an edge guide, a channeling knife mounted on the feed slide and arranged to cut a stitch-receiving channel  
35 in the surface of the welt, means for moving the edge guide into and out of active position, and for projecting the channeling knife above the surface of the work guide and withdrawing it below said surface, substantially as described. 40

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

JOHN B. HADAWAY.

Witnesses:

FRED O. FISH,

ANNIE C. RICHARDSON.