

956,971.

A. E. JOHNSON.
INSEAM TRIMMING MACHINE.
APPLICATION FILED AUG. 5, 1909.

Patented May 3, 1910.
2 SHEETS—SHEET 1.

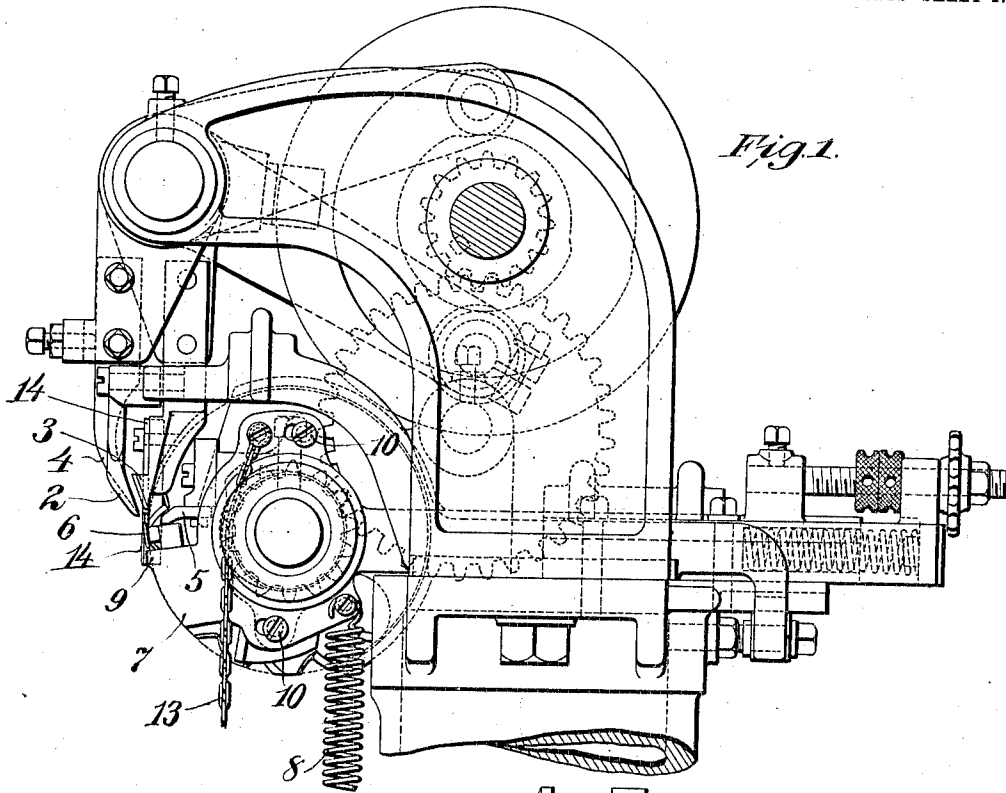


Fig. 1.

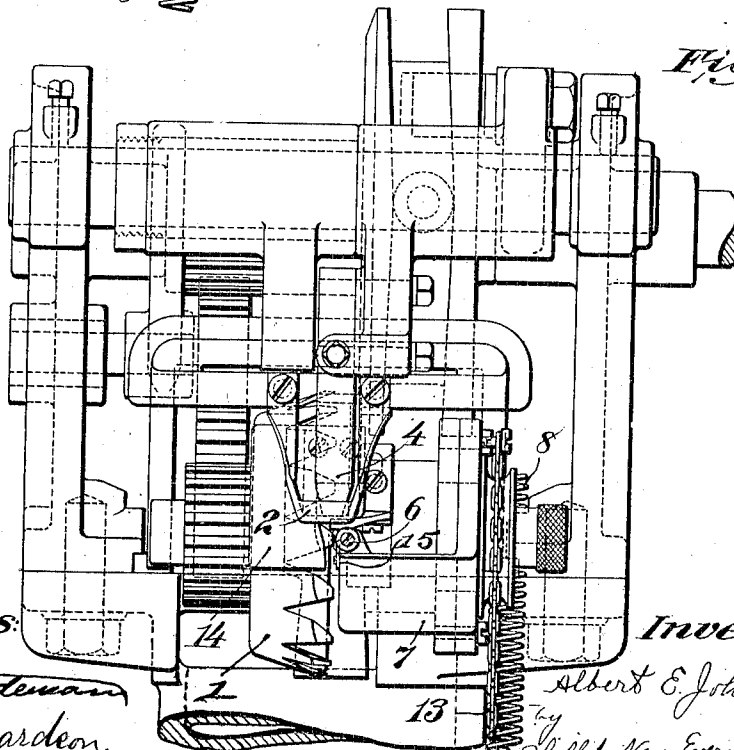


Fig. 2.

Witnesses:

E. W. Burdeman
A. C. Richardson

Inventor:

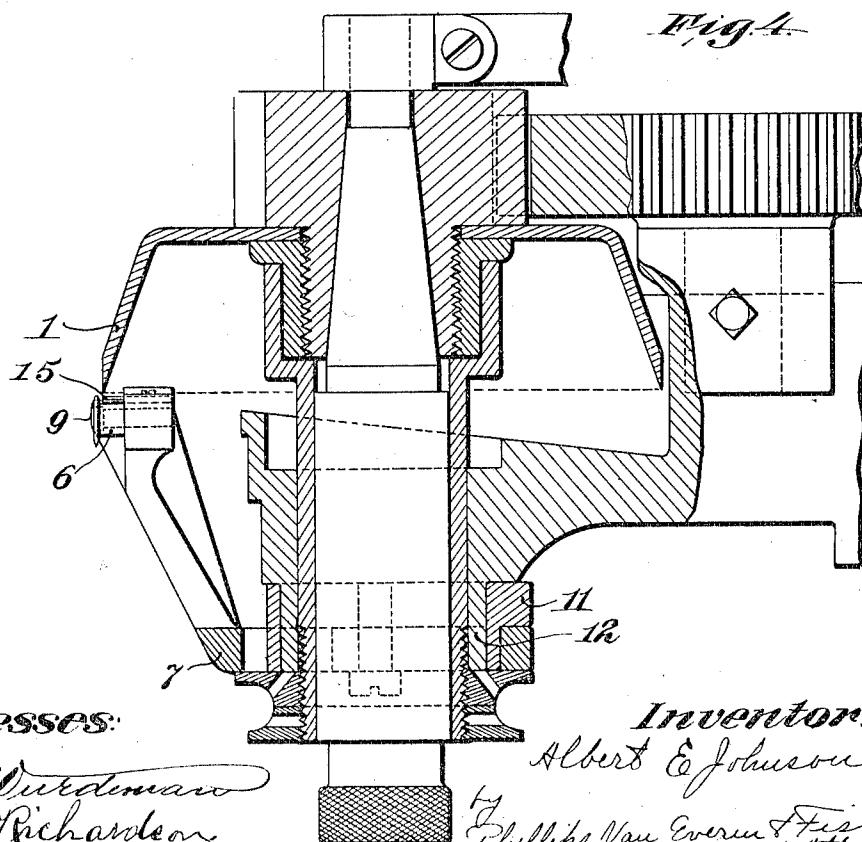
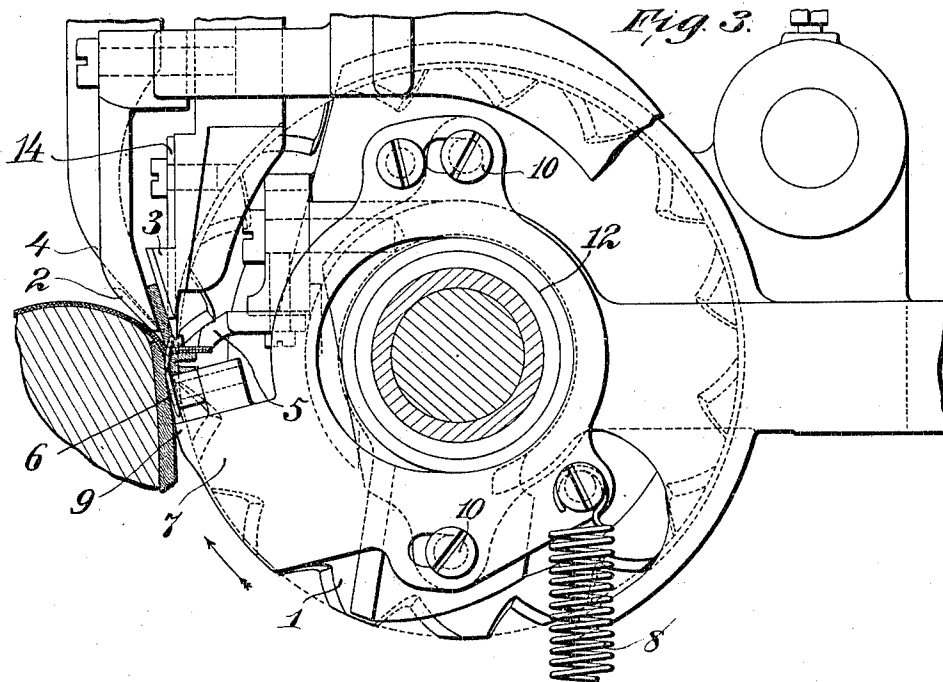
Albert E. Johnson
by *Phillips Van Everen Fish*
Attys.

956,971.

A. E. JOHNSON.
INSEAM TRIMMING MACHINE.
APPLICATION FILED AUG. 5, 1909.

Patented May 3, 1910.

2 SHEETS—SHEET 2.



Witnesses:

Edvardson
A. C. Richardson

Inventor:

Albert E. Johnson

By *Phillips Van Everen & Fish*
Attys

UNITED STATES PATENT OFFICE.

ALBERT E. JOHNSON, OF BEVERLY, MASSACHUSETTS, ASSIGNOR TO UNITED SHOE MACHINERY COMPANY, OF PATERSON, NEW JERSEY, A CORPORATION OF NEW JERSEY.

INSEAM-TRIMMING MACHINE.

956,971.

Specification of Letters Patent.

Patented May 3, 1910.

Application filed August 5, 1909. Serial No. 511,424.

To all whom it may concern:

Be it known that I, ALBERT E. JOHNSON, a citizen of the United States, residing at Beverly, in the county of Essex and State of Massachusetts, have invented certain new and useful Improvements in Inseam-Trimming 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 invention relates to inseam trimming machines, and more particularly to machines adapted for use in trimming the in-seams of welted shoes.

The invention is intended primarily as an improvement on the machines disclosed in the patents to French & Meyer, No. 558,379, April 14, 1896, No. 590,831, September 28, 1897, and Selby, No. 788,796, May 2, 1905, but is also applicable to other inseam trimming machines.

The machine disclosed in the patents above referred to is provided with a crease guide against which the operator holds the shoe as it is fed through the machine, and with a fixed sole gage arranged to engage the sole inside of the channel lip and to cooperate with the crease guide in positioning the inseam with relation to the trimming knife. Owing to the variation in the thickness of the in-seams of different shoes, and to the variations in the thickness of different parts of the inseam in the same shoe, it has been impracticable to so adjust the sole gage that it will engage the inner surface of the lip when the shoe is properly held against the crease guide, and unless the operator exercises extreme care in holding the shoe firmly up against the crease gage as he manipulates and guides the shoe during the trimming operation, the shoe is liable to be so displaced as to bring the stitches of the seam into the path of the cutter. In the case of machines provided with the welt engaging guide of the Selby patent a displacement of the shoe with relation to the crease guide is also liable to disengage the edge of the welt from the guide, so that the seam is moved in against the cutter sufficiently to cut into the stitches of the seam.

It is the object of the present invention to provide means particularly applicable to the machines of the French & Meyer and Selby patents, but also capable of use in other in-

seam trimming machines, whereby the shoe may be readily manipulated and guided by the operator to closely trim the seam without danger of injury thereto, and without requiring any special care and skill on the part of the operator.

To this end one feature of the invention contemplates the provision in an inseam trimming machine of relatively yielding crease and channel guides arranged to cooperate in properly positioning the inseam with relation to the trimming knife during the feed of the shoe past the knife. With this construction the guides may yield relatively in accordance with the thickness of the inseam, so that the shoe is held firmly against the crease gage by continuous engagement of the channel guide with the lip of the insole, and may be readily manipulated by the operator to trim the inseam close to the line of stitches without danger of cutting into the stitches. Broadly considered, this feature of the invention contemplates the provision of any suitable means for enabling the crease and channel guides to yield relatively to each other in accordance with the thickness of the inseam held between them. It is preferred, however, to so mount the channel guide that it is forced yieldingly against the lip of the insole and continuously presses a fixed crease guide firmly into the crease between the upper and welt of the shoe. In embodying this form of the invention in a machine provided with a cylindrical trimming knife, it is also preferred to so mount the yielding channel guide that its movement is substantially concentric with the axis of the cutter, since with this construction the movement of the channel guide relatively to the crease guide in operating upon varying thickness of inseam does not materially alter the position of the inseam with relation to the knife edge, and a more uniform trimming of the seam is secured.

A further feature of the invention contemplates the provision in an inseam trimming machine provided with crease and channel guides for engaging the crease and lip of a welted shoe, of a guard arranged beyond the point of operation of the trimming knife in the direction of feed for limiting the tipping of the shoe toward the knife. By these guides and guard the shoe is engaged close to the point of operation of

the cutter upon the seam, and its movements are so controlled that the operator may readily manipulate the shoe to uniformly trim the seam close to the line of stitches without danger of injury thereto.

In addition to the features above referred to, the invention also includes certain further combinations and arrangements of parts hereinafter described and claimed, whereby the operation of in-seam trimming machines may be rendered more certain and reliable.

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

Figure 1 is an end view of an in-seam trimming machine embodying the features of the invention in their preferred forms; Fig. 2 is a front elevation of the machine shown in Fig. 1; Fig. 3 is an enlarged detail view showing a shoe in position to be acted upon by the instrumentalities of the machine; and Fig. 4 is a horizontal sectional view through the axis of the trimming knife.

The machine illustrated in the drawings, except as hereinafter described, is the same in the general construction, arrangement and mode of operation of its parts as the machine disclosed in the patents to French & Meyer and Selby hereinbefore referred to.

As shown in the drawings, the machine is provided with a cylindrical trimming knife 1, crease guide 2, and with a four-motion feed consisting of the rear two-motion feed jaw 3 and the front four-motion feed jaw 4 which are arranged to feed the work by engagement with the welt. The machine is also provided with a guard 5 arranged to bear upon the edge of the welt. These parts are constructed and arranged as in the machine disclosed in the French & Meyer and Selby patents, with the exception that the welt engaging faces of the crease guide and feed jaws are arranged at an incline to the plane of the shoe sole when in position in the machine.

In embodying the present invention in the machine of the French & Meyer and Selby patents, a yielding channel guide is arranged below the crease guide in position to engage the lip of the insole and hold the shoe firmly up against the channel guide while the shoe is being passed through the machine. In the specific construction shown, the channel guide is in the form of a small roll 6 carried upon a support 7 which is mounted to turn about the axis of the trimming knife, and is forced in a direction to press the roll firmly against the lip of the insole by a spring 8. During the operation of the machine the channel guide is held in continuous engagement with the lip of the insole, and holds the shoe firmly up against the crease guide, so that displacement of the shoe with relation to the crease gage is prevented. The channel guide also engages the

sole close to the seam, and cooperates with the crease guide in preventing sufficient inward movement of the sole to carry the stitches of the seam into the path of the trimming knife. The channel guide also maintains the seam in proper position for the engagement of the guide 5 with the inner edge of the welt, so that this guide acts to prevent the drawing action of the knife from displacing the seam so as to cut into the stitches. By mounting the yielding channel guide so that it swings about the axis of the trimming knife, the movement of the guide in accommodating itself to variations in the thickness of the in-seam of a shoe does not change its relation to the cutting edge of the knife, and consequently the seam will be trimmed at a uniform distance from the line of stitches.

As shown, the support 7 is so formed that its front face projects slightly beyond the surface of the cutter, and the edge of the support is arranged in close proximity to the edge of the cutter, so that the front of the support acts as a guard for the edge of the cutter below the channel guide. The front face of the support is also so formed that it will engage the sole directly below the roll 6, as indicated at 9, and thus act as a gage for engaging the sole inside the channel guide. This gage prevents the engagement of the sole with the lower part of the channel roll so that the roll may rotate freely while in engagement with the lip and with the sole at the base of the lip. The support for the channel engaging roll is secured by means of screws 10 to a plate 11 which is mounted to turn freely upon a bearing 12 concentric with the axis of the knife 1. The screws 10 pass through slots in the support 7, so that the support may be adjusted upon the plate 11 to change the position of the channel guide with relation to the cutting edge of the knife to vary the depth of the cut, or to compensate for the grinding away of the cutter. In order that the channel guide may be conveniently depressed against the tension of the spring 8 in inserting and removing the work, the support 7 is connected by means of a chain 13 with a treadle (not shown.) A clearing plate 15 may be provided for keeping the roll 6 free of shreds of leather or fiber which are liable to collect on the roll as it travels along the channel, especially in operating upon soles which are reinforced with fabric.

In addition to the yielding channel guide for holding the shoe continuously against the crease guide, the machine is also provided with a guard plate 14 arranged over the front of the knife and beyond the cutting edge of the knife in the direction of feed. This plate extends below the crease guide, and is arranged to limit the inward movement of the shoe toward the knife. The

guard plate is preferably secured to the rear feed jaw 3 so that it reciprocates in the line of feed. With this construction the guard plate is caused to move forward and away from the cutting point in the direction of the feed, and will act efficiently to prevent sufficient inward tipping of the shoe to cause injury to the inseam, and will also act efficiently in preventing the knife from drawing the seam inward so as to give it a concaved surface in passing about the toe.

While it is preferred to employ the specific construction and arrangement of parts shown and described, it will be understood that this construction and arrangement are not essential to the broader features of the invention, and that except as defined in the claims the invention is not limited to any particular construction and arrangement of the various parts of an inseam trimming machine.

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

1. An inseam trimming machine, having, in combination, a trimming knife, and relatively yielding crease and channel guides for continuously engaging the crease and lip of a welted shoe to position the shoe with relation to the trimming knife, substantially as described.

2. An inseam trimming machine, having, in combination, a trimming knife, a crease guide arranged to enter the crease between the upper and welt of a welted shoe, and means for continuously pressing the guide into the crease during the trimming operation, substantially as described.

3. An inseam trimming machine, having, in combination, a trimming knife, a crease guide arranged to enter the crease between the upper and welt of a welted shoe, and a yielding guide arranged to engage the lip of the insole and continuously hold the shoe against the crease guide, substantially as described.

4. An inseam trimming machine, having, in combination, a cylindrical trimming knife, a crease guide arranged to enter the crease between the upper and welt of a welted shoe, a channel guide mounted to move in an arc substantially concentric with the axis of the cutter, and means for holding the channel guide against the lip of the insole during the trimming operation, substantially as described.

5. An inseam trimming machine, having, in combination, a trimming knife, and means for guiding a shoe comprising a roll for

engaging the channel of the insole and a sole gage arranged to engage the sole inside of the channel roll, substantially as described.

6. An inseam trimming machine, having, in combination, a trimming knife, a crease guide arranged to enter the crease between the upper and welt of a welted shoe, a channel guide, and a guard arranged to engage the shoe beyond the cutting point of the trimming knife, substantially as described.

7. An inseam trimming machine, having, in combination, a trimming knife, a crease guide arranged to enter the crease between the upper and welt of a welted shoe, a yielding channel guide, and a guide arranged to bear upon the edge of the welt, substantially as described.

8. An inseam trimming machine, having, in combination, a trimming knife, a crease guide arranged to enter the crease between the upper and welt of a welted shoe, a channel guide, a guide arranged to bear upon the edge of the welt, and a guard arranged to engage the shoe beyond the cutting point in the direction of feed, substantially as described.

9. An inseam trimming machine, having, in combination, a trimming knife, and means for guiding a welted shoe comprising a reciprocating guard arranged to engage the shoe beyond the cutting point of the knife in the direction of feed, substantially as described.

10. An inseam trimming machine, having, in combination, a trimming knife, and means for guiding a welted shoe comprising a guard arranged to engage the shoe beyond the cutting point of the knife in the direction of feed, and means for reciprocating the guard in the direction of feed, substantially as described.

11. An inseam trimming machine, having, in combination, a trimming knife, a crease guide arranged to enter the crease between the upper and welt of a welted shoe, a roll arranged to engage the channel of the insole, and a spring pressed support carrying said roll, substantially as described.

12. An inseam trimming machine, having, in combination, a trimming knife, a crease guide arranged to enter the crease between the upper and welt of a welted shoe, a roll arranged to engage the channel of the insole, and a yielding support for said roll provided with a sole engaging surface, substantially as described.

ALBERT E. JOHNSON.

Witnesses:

IRA L. FISH,
ANNIE C. RICHARDSON.