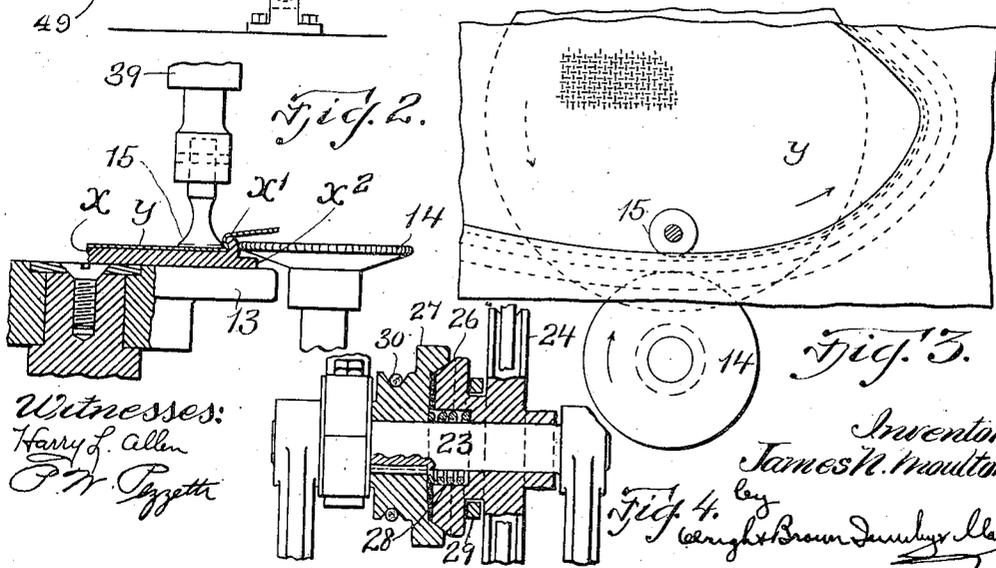
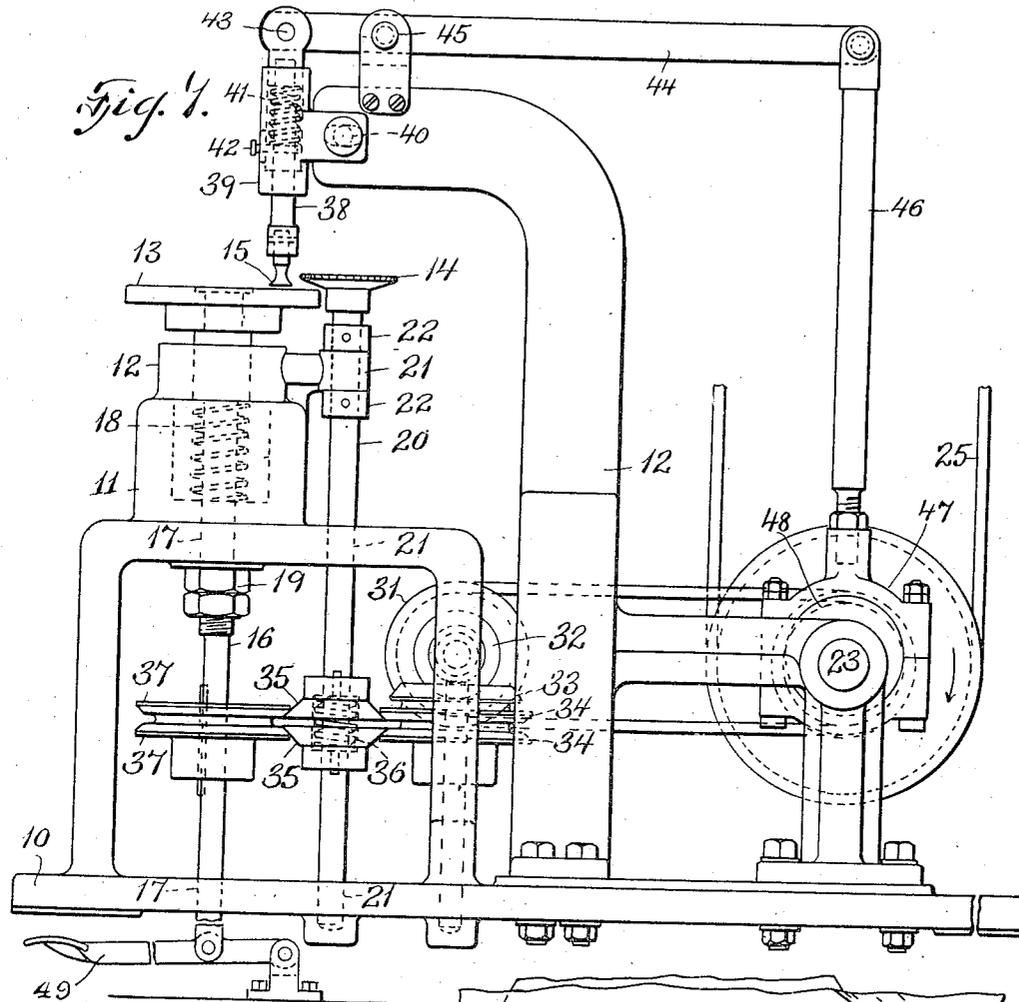


J. N. MOULTON.  
 MACHINE FOR PREPARING INSOLES.  
 APPLICATION FILED OCT. 26, 1911. RENEWED JULY 8, 1915.

1,154,716.

Patented Sept. 28, 1915.



Witnesses:  
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Fig. 4.  
 by  
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# UNITED STATES PATENT OFFICE.

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MACHINE FOR PREPARING INSOLES.

1,154,716.

Specification of Letters Patent. Patented Sept. 28, 1915.

Application filed October 26, 1911, Serial No. 656,949. Renewed July 8, 1915. Serial No. 38,781.

*To all whom it may concern:*

Be it known that I, JAMES N. MOULTON, a citizen of the United States, and resident of Haverhill, in the county of Essex and State of Massachusetts, have invented certain new and useful Improvements in Machines for Preparing Insoles, of which the following is a specification.

This invention relates to machines for preparing gem insoles. To those skilled in the art it is well known that a gem insole is formed with a stitch-receiving rib or lip which is turned up and covered by reinforcing material, such as canvas or duck, which is caused to adhere by cement. A common fault in insoles of this type is that the reinforcing material is not always pressed snugly into the angles where the stitch-receiving lip joins the sole portion.

The object of the present invention is to provide a machine for operating upon the reinforcing material to press it snugly into the angles so as to form a sharply defined lip.

The invention embodies cooperative members adapted to engage respectively the inner and outer sides of the lip, and a third member for engaging the opposite side of the sole to hold the sole in operative position. One of the lip-engaging members has a movement for feeding the work, and the other has a reciprocatory movement toward and from the feeding member for pressing the reinforcing material into the angle of the lip. The reciprocatory member also operates with the third member on the opposite side of the sole to press the reinforcing material against the flat face of the sole.

Other features of the invention are illustrated by the accompanying drawings and are hereinafter described and claimed.

On the drawings, which illustrate one form in which the invention may be embodied: Figure 1 represents a side elevation. Fig. 2 represents a similar elevation, partly in section and on a larger scale, of the instrumentalities which engage the work. Fig. 3 represents a horizontal section slightly above the work. Fig. 4 represents a vertical section, partly in elevation, of clutch mechanism whereby the speed of the feeding member may be varied.

The same reference characters indicate the same parts wherever they occur.

The framework in which the several mechanisms are mounted comprises a base 10, an

upper portion 11, and an overhanging bracket 12.

A work support is indicated at 13, a feeding member at 14, and a scoring tool at 15. The work support is mounted at the upper end of a vertically movable shaft 16 whereby it is movable toward and from the scoring tool 15. The shaft is mounted in bearings 17 and is normally raised by a spring 18. A nut 19 threaded on the shaft is adapted to engage a face of the frame portion 11 to determine the upper position of the shaft. The shaft is driven by means hereinafter described, and the work support is affixed in any suitable manner to the shaft so as to partake of rotary motion.

The feeding member 14 is illustrated in the form of a disk whose rim is adapted to engage the outer side of the lip  $x'$  of the insole  $x$ . The rim of the disk is preferably roughened in order to avoid slipping on the work. The disk is affixed to a spindle 20 which is mounted to rotate in bearings 21. Collars 22 affixed to the spindle engage the frame to prevent vertical movement.

The power shaft is indicated at 23. Rotation is transmitted from the power shaft to the disk 14 and work support 13 to cause them to rotate continuously. The drawings illustrate friction driving mechanism, which is provided instead of positively driven mechanism in order to permit a reduction of speed when the toe of the insole is passing the scoring tool. A pulley 24 loosely mounted upon the shaft 23 is continuously driven by a belt 25. This pulley is provided with a frusto-conical clutch member 26 which is adapted to engage and drive a complementary clutch member 27 which is keyed to the shaft. A spring 28 interposed between the members 26 and 27 normally holds them apart so that the member 26 may rotate continuously without driving the member 27. A manually operative controller 29 engaging the member 26 is adapted to move the said member into driving engagement with the member 27. The controller may be connected in any suitable manner with a treadle (not shown).

The clutch member 27 is grooved to receive a belt 30, said belt passing over a pulley 31. This pulley is provided with a small friction bevel gear 32 which drives a similar friction gear 33. The gear 33 drives a friction gear comprising two oppositely beveled

- flanges 34. The flanges 34 are engaged respectively by friction bevel gears 35 splined upon the spindle 20. A spring 36 compressed between the gears 35 forces them apart into driving engagement with the flanges 34. The gears 35 likewise engage beveled flanges 37 of a gear splined upon the shaft 16. The flanges 37, 37 are similar to those indicated at 34, 34.
- The scoring tool 15 is flared at its end so as to be adapted to press the reinforcing material  $y$  into the angle of the lip  $x'$ , as shown by Fig. 2. This tool is carried by a plunger 38 mounted in a guide member 39. The guide member has a pin-and-slot connection 40 with the overhanging bracket 12. A spring 41 contained in the guide member 39 normally depresses the plunger with relation to said member. The spring surrounds the plunger and is compressed between a portion of the guide member and a pin 42 extending through the plunger. The upper end of the guide member is pivotally connected, as indicated at 43, with a lever 44. The fulcrum of the lever is indicated at 45. The lever is connected by a rod 46 with an eccentric strap 47. The strap 47 engages an eccentric 48 which is keyed or otherwise affixed to the driving shaft 23.
- When the machine is in operation, the guide member 39 is oscillated through a short arc about its fulcrum 40, thus causing the scoring tool 15 to vibrate toward and from the feeding disk 14. When the insole is in operative position, the lip  $x'$  stands between the tool 15 and the feeding disk 14, while the opposite side of the sole is engaged by the support 13. The movement of the tool 15 toward and from the feeding disk presses the reinforcing material into the angle of the lip. The disposition and operation of the guide member 39 causes an increase of spring tension when the tool is moved toward the feeding disk 14, and a corresponding decrease of tension when the tool is moved away from the feeding disk. In order to keep the work in operative relation to the feeding disk when the tension of the spring 41 is increased, the spring 18 which raises the work support 13 is preferably stronger than the spring 41 which acts upon the scoring tool. For the purpose of removing and inserting the work, the member 13 may be depressed by a treadle such as that indicated at 49. The margin of the reinforcing material may be left in the position shown by Fig. 2, for the purpose of pressing the material into the angle behind the lip. The sole may thereafter be subjected to a second operation for pressing the reinforcing material against the outer side of the lip and into the angle between the lip and the feather  $x''$ . The margin of the reinforcing material will, in the latter instance, pass under the rim of the feeding disk 14.
- I claim:
1. In a machine for preparing insoles, cooperative members one of which is adapted to tuck the reinforcing material into the angle behind the lip, and the other to engage the opposite side of the sole, means for causing said members to act with continuous, varying pressure upon the sole, and driven means for feeding the sole. 70
  2. In a machine for preparing insoles, cooperative members one of which is adapted to tuck the reinforcing material into the angle behind the lip, and the other to engage the opposite side of the sole, a feeding member engaging the outer side of the lip opposite said tucking member, and means for causing said tucking member to act continuously upon the sole with varying pressure and to move to and from engagement with the lip. 75
  3. In a machine for preparing insoles, a work support, a member adapted to tuck the reinforcing material into the angle behind the lip of the insole, means for feeding the insole, and means for causing said tucking member to bear continuously upon the flat part of the sole behind the lip, and to move thereon toward and from the lip, said means being adapted to increase the pressure of said tucking member when it moves toward the lip, and to decrease the pressure when said member moves away from the lip. 80
  4. In a machine for preparing insoles, a rotatable work support, a member adapted to tuck the reinforcing material into the angle behind the lip, a rotatable feeding member adapted to engage the outer side of the lip, means for driving said work-support and feeding member frictionally and continuously, and pressure means for causing said tucking member to bear continuously upon the flat part of the sole behind the lip, said pressure means being adapted to alternately increase and decrease the pressure of said tucking member and move said member toward and from the lip. 85
  5. In a machine for preparing insoles, a work-support, a member adapted to tuck the reinforcing material into the angle behind the lip, a member for engaging the outer side of the lip to brace the work against the stress of said tucking tool upon the lip, and means for moving said tucking member toward and from the lip and for holding the same continuously against the flat part of the sole. 90
  6. In a machine for preparing insoles, a member for engaging the outer side of the lip to brace the latter, a member for tucking the reinforcing material into the angle behind the lip, means for moving said tucking member toward and from said lip-bracing member to tuck the reinforcing material as specified, said tucking member being mounted to yield transversely of its tuck- 95

ing movement, and means for engaging the  
opposite side of the sole from said tucking  
member, said means and said tucking mem-  
ber cooperating to maintain continuous  
5 clamping pressure upon the sole and rein-  
forcing material.

In testimony whereof I have affixed my  
signature, in presence of two witnesses.  
JAMES N. MOULTON.

Witnesses:

W. P. ABELL,  
W. B. WESCOTT.