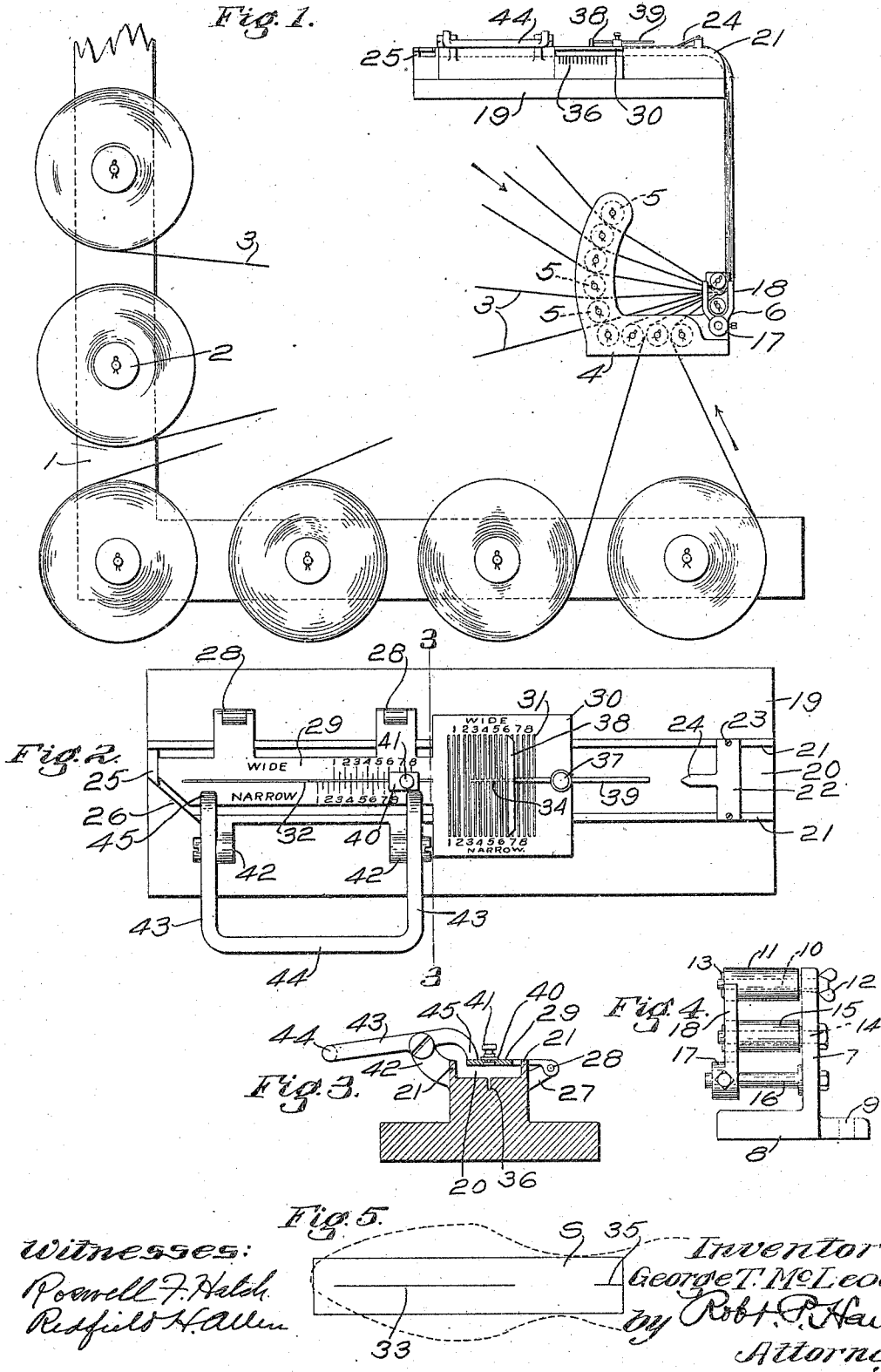


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MACHINE FOR CUTTING AND SLITTING INSOLE REINFORCING STRIPS.
APPLICATION FILED SEPT. 29, 1909.

957,990.

Patented May 17, 1910.



UNITED STATES PATENT OFFICE.

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MACHINE FOR CUTTING AND SLITTING INSOLE-REINFORCING STRIPS.

957,990.

Specification of Letters Patent.

Patented May 17, 1910.

Application filed September 29, 1909. Serial No. 520,114.

To all whom it may concern:

Be it known that I, GEORGE T. McLEOD, a citizen of the United States, residing at Dedham, in the county of Norfolk and State of Massachusetts, have invented an Improvement in Machines for Cutting and Slitting Insole-Reinforcing Strips, of which the following description, in connection with the accompanying drawings, is a specification, like characters on the drawings representing like parts.

The invention to be hereinafter described relates to cutting and slitting devices for insole linings.

As well known by those skilled in the art, it is usual to reinforce insoles of boots and shoes by means of a piece of fabric or canvas which may be cemented thereto and its edge portions tucked into the channel formed by the usual upturned channel lip. As pointed out in an application filed April 15, 1909, Serial No. 490,160, the dimensions of the fabric or canvas reinforce have been such as to practically cover the entire surface of the insole, although the essential function of the fabric is to reinforce that portion of the insole designed to receive the fastening means which unite the insole to other portions of the shoe structure, any projecting edge portion of the fabric being cut away. Said application also described an invention, and claimed it broadly, whereby the waste incident to the old manner of reinforcing insoles was avoided, the characteristics of which invention were embodied in a reinforcing strip made narrower than the width of the insole and slitted so that the portions adjacent to or on opposite sides of the slit might be separated or spread so as to reinforce that part of the insole primarily intended to be strengthened. The present invention has to do with means for cutting and slitting the reinforcing fabric or canvas referred to in said application, and will best be understood from the following description and accompanying drawings of a form of means embodying the salient features of the invention.

In the drawings:—Figure 1 is a side view of an apparatus for carrying the invention into practical effect, parts of the supporting rack for the canvas rolls being broken away; Fig. 2 is a top or plan view of the cutting and slitting table; Fig. 3 is a section on the

line 3—3, Fig. 2; Fig. 4 is a front detail view of the collector for assembling a plural number of strips in proper relative position for presentation to the cutting table; and Fig. 5 is a plan view of a fabric or canvas reinforcing strip after it has been produced by the present invention.

The fabric or canvas from which the reinforcing pieces are to be cut is or may be preferably of uniform or standard width and less than that of the insoles which are to be reinforced. Long strips of such material are first coated on one side with an adhesive or cement and after drying sufficiently are wound on suitable reels or spools.

A series of reels or spools 2, Fig. 1, each containing a roll of the reinforcing fabric or canvas 3, are suitably supported in a frame 1, said frame, in the present form of the invention, being indicated as angular in shape, though, of course, any suitable frame containing any suitable number of rolls of the fabric or canvas strip may be employed.

Disposed in suitable relation to the supporting frame 1 is a collection frame 4, Fig. 1, provided with a series of guide rolls 5 over or between which the several strips of fabric or canvas pass, as indicated in Fig. 1, to a collector 6. The collector 6 is indicated in detail in Fig. 4 and preferably comprises a standard 7 rising from a base piece 8 which may be secured by a lug 9 and suitable bolt connections passing therethrough to the collection frame 4.

Projecting from the standard 7 is a stud shaft 10 at the top thereof, on which is mounted a guide roller 11, said shaft 10 being preferably connected to the standard 7 by means of a thumb screw 12, whereby it may be readily detached from the standard 7 for introduction of the strips of fabric or canvas, as indicated in Fig. 1, the outer end of the stud shaft 10 being preferably provided with a pin 13 or other suitable means for retaining the guide roller 11 thereon. Secured to the standard 7 below the stud shaft 10 is another stud shaft 14 which, like the shaft 10, has mounted thereon a guide roller 15, the construction being such that the several plies of fabric or canvas passing over the guide rolls 5 of the collection frame may be passed between the guide rolls 11 and 15 and thus collected in proper position for presentation to the cutting table.

Projecting laterally from the standard 7 below the guide roller 15 is a pin 16 to the outer end portion of which is secured the hub 17 having the upwardly extending guide arms 18 which, as indicated in Fig. 1, preferably embrace the outer portions of the guide rolls 11 and 15. By adjusting the hub 17 on its supporting stud 16, the arms 18 and hub 17 may properly guide the assembled strips of fabric or canvas into proper assembled relation for presentation to the cutting table, as will be readily understood.

The cutting table, one form of which is indicated in Fig. 2, comprises a base portion 19 which may be suitably supported on a bench or other sustaining means and is preferably provided with a trough or guide way 20 formed by longitudinally extending side members 21, Fig. 2.

Spanning the guide trough 20 is a retainer 22, Fig. 2, preferably secured by screws 23 or otherwise to the side members 21, said retainer having a forwardly projecting prong or finger 24 adapted to engage with the top of the assembled strips of fabric or canvas which are passed beneath to thereby maintain them in proper place and prevent the ends of the several pieces of fabric or strips retreating from the trough 20 after the operator has severed the reinforcing sole portions, such as S, Fig. 5.

At the end of the trough 20 opposite the retainer 22 is a stop 25 against which the forward ends of the assembled strips bear when they are drawn forward into cutting position, a cutaway portion 26 being provided near the stop 25, so that the hand of the operator may arrange the ends of the assembled strips in proper relation with the stop 25. Hinged or pivotally connected to suitable supporting arms 27 at 28, Figs. 2 and 3, is a clamp or cover plate 29, which, when in operative position, as indicated in Figs. 2 and 3, is adapted to overlies and rest upon the assembled strips of canvas or fabric beneath.

In the present embodiment of the invention, the clamp or cover plate 29 has its rear or severing portion 30 preferably somewhat wider than the main body of the clamp or cover plate, said rear or severing portion 30 being provided with transverse slits 31 extending the full width of the trough or guideway 20, the construction being such that when the clamp or cover plate is in position as indicated in Figs. 2 and 3, a knife may be passed down any one of the slits 31 and sever appropriate lengths of reinforcing sole pieces from the assembled strips.

Extending longitudinally of the clamp or cover plate 29 to the left of the rear or severing portion 30 thereof is a slot 32 also adapted to have passed therethrough a suitable cutter or knife to form the slit 33 in

the forepart portion of the reinforcing strip when applied to the shoe sole, as indicated in Fig. 5. Likewise extending longitudinally of the rear or severing portion 30 of the clamp or cover plate is another longitudinal slot 34 permitting the passage of a knife or cutter for the formation of a slit 35 in the reinforcing strips near the heel portion of a shoe sole, as indicated in Fig. 5. Likewise extending longitudinally in the trough or guideway 20 of the table is a slot 36 corresponding to the slots 32 and 34 to accommodate the point of the cutter or knife.

In order to determine the length of the reinforcing strip corresponding to different sizes of shoe soles, consideration must be taken of the fact that since the reinforcing strip S is to be separated at its slitted portions more or less, as set forth in application Serial No. 490,160 hereinbefore mentioned, therefore for wide soles greater length of canvas reinforcing strip must be provided than for the more narrow soles and likewise the length of the longitudinal slits 33 and 35 will vary. In order to readily meet this condition, the clamp or cover plate 29 is provided with suitable marks on its rear or severing portion indicating the particular location of cut corresponding to a wide and to a narrow sole, as indicated in Fig. 2. Mounted on the rear or severing portion and secured thereto by a suitable set screw 37 is a gage edge 38 having a stem 39 by which said gage edge may be adjusted to the particular number indicating the length of reinforcing strip either in case of wide or narrow soles. Similarly, the longitudinal slot 32 is provided with a series of size marks, one for wide and the other for narrow shoe soles, and a gage 40 secured to the clamp or cover plate 29 by a suitable clamp screw 41 may be moved to proper position in accordance with the character of sole being treated.

When the cover or clamp plate 29 is turned down upon the assembled strips of fabric or canvas, it is desirable that it be held in this position while the operator passes his knife transversely and then longitudinally of the assembled strips. To this end there is pivoted on suitable supporting brackets 42 a clamping member 43 having a hand grip portion 44 and bearing in portions 45, which latter are adapted to contact with and press upon the clamp or cover plate 29, as will be clearly apparent from Figs. 2 and 3, the construction being such that the operator may with one hand pull upward upon the hand grip 44 of the clamp and with the other hand may pass his knife through the appropriate slots for slitting and severing the assembled strips.

What is claimed is:

1. In a machine for severing and slitting insole reinforcing strips, the combination of 130

a table having a guideway, gaging means for locating the fabric or canvas in said guideway, and a cover or clamping plate adapted to rest upon and hold the fabric or

ting a slit longitudinally of the severed reinforce, and a retaining finger for holding the ends of the severed strips.

7. In a machine for severing and slitting insole reinforcing strips, the combination of a table having a guideway, a retaining finger adjacent one end of the guideway, a stop for the end of the fabric or canvas at the opposite end of the guideway, a clamp or cover plate hinged to the table and provided with transverse openings and a longitudinal slit for the passage of a knife, a presser for holding the clamp or cover plate on the fabric or canvas during the cutting operation, and gaging means for determining the position of the severing cut and the extent of the longitudinal slit.

8. In a machine for severing and slitting insole reinforcing strips, the combination of a collector for collecting a series of strips into proper relative position, a table, a gage thereon for positioning the ends of the strips, and a clamping plate having transverse openings for the passage of a knife in cutting the required length of reinforce for a shoe sole and a longitudinal opening for the passage of a knife in cutting a slit longitudinally of the severed reinforce.

9. In a machine for severing and slitting insole reinforcing strips, the combination of a table having a guideway, a retaining finger disposed above the guideway, a gage or stop, a clamp or cover plate having a rear or severing portion provided with a series of transverse slots for the passage of a cutter in cutting the required length of strip and a front or longitudinal slitting portion having a longitudinal slot, and a gage to determine the length of the longitudinal slit to be made in the strip.

10. In a machine for severing and slitting insole reinforcing strips, the combination of a table having a guideway, a retaining finger disposed above the guideway, a gage or stop, a clamp or cover plate having a rear or severing portion provided with a series of transverse slots for the passage of a cutter in cutting the required length of strip, a longitudinal slot and a front or longitudinal slitting portion having a longitudinal slot, and a gage to determine the length of the longitudinal slit to be made in the strip.

11. In a machine for severing and slitting insole reinforcing strips, the combination of a collection frame provided with guides for a series of strips, a collector for assembling the strips in proper superposed relation as they are delivered from said guides, a table over which the assembled strips are passed, and a cover plate having a series of transverse slots for the passage of a knife in severing the proper length of strips and a longitudinal slot disposed centrally of the cover plate for the passage of a knife in

2. In a machine for severing and slitting insole reinforcing strips, the combination of a table, a gage thereon for positioning the ends of the strips, and a clamping plate having transverse openings for the passage of a knife in cutting the required length of reinforce for a shoe sole and a longitudinal opening for the passage of a knife in cutting a slit longitudinally of the severed reinforce.

3. In a machine for severing and slitting insole reinforcing strips, the combination of a table, a gage thereon for positioning the ends of the strips, a clamping plate having transverse openings for the passage of a knife in cutting the required length of reinforce for a shoe sole and a longitudinal opening for the passage of a knife in cutting a slit longitudinally of the severed reinforce, and gaging means to determine the position of the transverse and longitudinal cuts.

4. In a machine for severing and slitting insole reinforcing strips, the combination of a table or support, means for positioning fabric or canvas thereon, a cover or clamp plate adapted to rest upon the fabric or canvas and having a series of transverse openings for the passage of a knife, a gage movable to said openings in determining the length of reinforce to be cut, said cover or clamp plate having also a longitudinal slit or opening between its ends for the passage of a knife, and a gage for determining the length of the longitudinal slit.

5. In a machine for severing and slitting insole reinforcing strips, the combination of a table or support, means for positioning fabric or canvas thereon, a cover or clamp plate adapted to rest upon the fabric or canvas and having a series of transverse openings for the passage of a knife, a gage movable to said openings in determining the length of reinforce to be cut, said cover or clamp plate having also a longitudinal slit or opening between its ends for the passage of a knife, a gage for determining the length of the longitudinal slit, and a presser for engaging the cover or clamp plate and holding it on the fabric or canvas.

6. In a machine for severing and slitting insole reinforcing strips, the combination of a table, a gage thereon for positioning the ends of the strips, a clamping plate having transverse openings for the passage of a knife in cutting the required length of reinforce for a shoe sole and a longitudinal opening for the passage of a knife in cut-

forming a longitudinal slit centrally of the strips.

12. In a machine for severing and slitting insole reinforcing strips, the combination
5 of a collection frame having a series of guides for a series of strips, a collector having a removable edge guide permitting the ready insertion of the strips in assembled relation, a table over which the strips are
10 passed, and a cover plate hinged to the table and provided with transverse and longitudinal slots for the passage of a knife in cutting desired lengths of strips and slitting them longitudinally.

13. In a machine for severing and slitting insole reinforcing strips, the combination of
15 a table or support for the material to be cut and slit, transverse and longitudinal cutting guides for directing a cutter in severing a length of material for an insole reinforcing
20 strip and longitudinally slitting the same, and gaging means for the transverse and longitudinal cutting guides to determine the length of strip to be cut and the length of
25 the longitudinal slit to be made in the severed strip.

14. In a machine for severing and slitting insole reinforcing strips, the combination of
30 a table or support for the material to be cut and slit, a cover or clamping plate for holding the material on said table or support while being cut, transverse and longitudinal cutting guides for directing a cutter in severing a length of material for an insole re-
35 inforcing strip and longitudinally slitting the same, and gages for determining the length of the strip and the length of the longitudinal slit in the strip.

15. In a machine for severing and slitting
40 insole reinforcing strips, the combination of a table or support, means for guiding a reinforcing strip to said table or support to be

cut, a gage to determine the length of reinforcing strip to be cut, and gaging means to
45 determine the length of the longitudinal slit to be cut in the strip.

16. In a machine for severing and slitting insole reinforcing strips, the combination of
50 a table or support for sustaining the strips while being cut, guiding means for collecting a plurality of strips and directing them to said table in superposed relation, transverse guiding means for directing a cutter in severing a length of said superposed materials for insole reinforcing strips, and longitudinal
55 guiding means for a cutter in forming a longitudinal slit in the strips.

17. In a machine for severing and slitting insole reinforcing strips, the combination of
60 a table or support for the material to be cut into strips and slit, a gage to determine the length of the reinforcing strip to be cut, and gaging means to determine the length of the longitudinal slit to be cut in the strip.

18. In a machine for severing and slitting
65 insole reinforcing strips, the combination of a table or support for sustaining the strips while being cut, guiding means for collecting a plurality of strips and directing them to said table in superposed relation, a gage
70 for positioning the ends of the strips on said table, transverse guiding means for directing a cutter in severing a length of said superposed materials for insole reinforcing strips, and longitudinal guiding means for
75 a cutter in forming a longitudinal slit in the strips.

In testimony whereof, I have signed my name to this specification, in the presence of two subscribing witnesses.

GEORGE T. McLEOD.

Witnesses:

JEANNIE K. BETTON,
BEULAH A. HOLDEN.