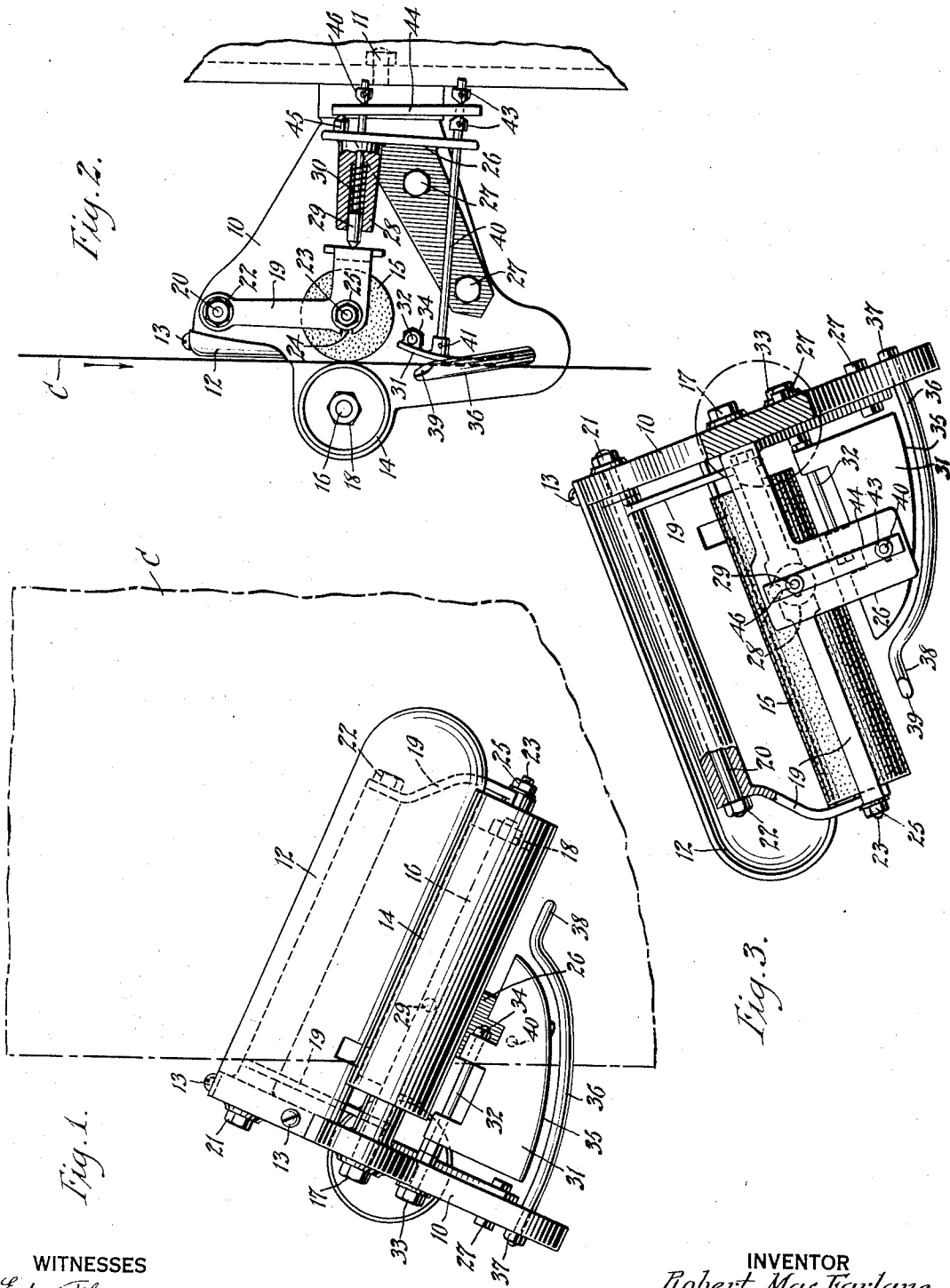


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R. MacFARLANE
CLOTH FEEDER AND GUIDER

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WITNESSES
Edw. Thorpe
Chris Feinde

INVENTOR
Robert MacFarlane
BY
Munn, Anderson, Stanley, Foster & Liddy
ATTORNEY

UNITED STATES PATENT OFFICE

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CLOTH FEEDER AND GUIDER

Robert MacFarlane, Biltmore, N. C., assignor to
Sayles Biltmore Bleacheries, Inc., Biltmore,
N. C., a corporation of Rhode Island

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This invention relates to improvements in devices for feeding and guiding cloth to maintain the cloth straight in normal width and under a desired normal tension, while being fed to a ten-
5 tering machine and various other cloth-handling machines.

The invention consists in the improved mechanical features hereinafter fully described and illustrated in the accompanying drawing, in
10 which

Figure 1 is a side view of a device embodying the features of the invention and shown in use;

Fig. 2 is an end view and part section of the device;

15 Fig. 3 is a rear view and part section of the device.

It is to be understood that in feeding and guiding the cloth a pair of similar devices will be used, said devices being disposed, respectively, to
20 engage the opposite side edges of the cloth as it is being fed. In the drawing only one device is illustrated and will be hereinafter described. The device will include suitable means for attaching the same to the machine with which the device
25 works, such means being shown in the drawing, consisting of a plate 10, which carries suitable fastening elements or bolts 11 to bolt or secure the same to a selected part of the machine. A top cloth-guide plate 12 is secured to the plate
30 10, as at 13, and extends laterally therefrom, the upper and outer edge of the plate being well rounded so that the cloth may readily pass over or be guided by the plate 10. Use is made of a pair of cloth-feed and guide rolls 14 and 15, which
35 cooperate with each other to feed and guide the cloth. The roll 14 is mounted to rotate on a fixed axis provided by a shaft 16 secured at one end, as at 17, to the plate 10, and extending laterally with respect thereto. The roll 14 is held in place
40 on the shaft by a nut 18. The roll 14 is freely rotatable on the shaft 16 and is made of metal, preferably brass. A mounting 19 is supported for swinging movement on a shaft 20, secured, as at 21, to the plate 10 and extending laterally
45 therefrom. The mounting 19 is freely swingable on the shaft 20. The roll 15 is rotatably supported in the mounting 19 on a shaft 23, whose opposite ends are received in slots 24 in the mounting, the shaft being held against displacement by washers and nuts 25. The axis of the
50 shaft 20 is parallel to the axis of the shaft 23, and the former is disposed above the latter. It will be apparent that the roll 15 is adjustable as applied to the mounting 19 and removable therefrom. The roll 15 consists of a core having a

cylindrical surface made of resilient material, preferably rubber. The mounting 19 supports the roll 15 for movement toward and away from the roll 14 in cooperative relation with respect thereto. A bracket 26 is secured, as at 27, to the
60 plate 10, and has secured thereto or formed integral therewith a barrel 28. A plunger 29 extends through the barrel 28 and is slidable with respect thereto. A coil expansion spring 30 is arranged in the barrel 28 and has one end there-
65 of in contact with the plunger 29, and its opposite end in contact with the barrel 28. The spring 30 functions to constantly urge the plunger 29 toward the mounting 19 in contact therewith so as to yieldingly hold the roll 15 in a position in which
70 it cooperates with the roll 14 to feed and guide the cloth, designated by the letter C. A tension member 31 is arranged below the rolls 14 and 15 and is mounted for pivotal or swinging movement on a shaft 32 secured to the base, as at 33. The
75 member 31 is held in place on the shaft by a nut 34. The member 31 is in the form of a curved or arcuate plate, or, in other words, the member is curved in profile. The member 31 is substantially triangular in shape and has a curved edge
80 35. A cloth guide in the form of a rod 36 is secured to the plate 10, as at 37, in relation to the tension member 31, and said rod 36 is curved complementary to the curved edge 35 of the tension member 31. The shaft 32 on which the tension
85 member 31 swings, is disposed parallel to the axis of the rolls 14 and 15. The rod 36 has a terminal 38, which is beveled, as at 39, to readily accommodate the cloth. Means is provided to cause the plunger 29 to move against the action of the
90 spring 30, to allow the mounting 19 to swing and the roll 15 to move away from the cloth when the cloth under abnormal tension exerts pressure on the tension member 31, causing movement of the latter. This result is accomplished most sat-
95 isfactorily by reason of the cloth passing between the curved edge 35 of the member 31 and the curved rod 36, in conjunction with the abnormal tension on the cloth. The said last means consists of a rod 40, having one end secured to the
100 tension member 31, as at 41, and its opposite end having spaced beveled members or collars 43 fixed thereto. The rod 40 extends through a hole in the bracket 26. A lever 44 has a fixed fulcrum
45 on the bracket 26, said fulcrum 45 being dis- 105 posed at one end of the lever, and the opposite end having a hole therethrough to receive the rod 40, so that said end may be disposed between the members or collars 43. The lever also has a hole or slot to accommodate the plunger 29. The 110

plunger has a member or collar 46 fixed thereon to cause the plunger to move in response to the operation of the lever.

In use the device is disposed so that the axes of the rolls 14 and 15 are disposed at an angle with respect to a horizontal plane. The cloth C is passed between the rolls 14 and 15 and also between the curved edge 35 of the tension member 31 and the curved rod 40. The roll 15 will be urged by the spring 30 in a position to cooperate with the roll 14 to feed and guide the cloth downwardly, as indicated by the arrow in Fig. 2. When for any reason the cloth is under or is subjected to an abnormal tension, or in other words, when the cloth is tensioned or stretched causing a reduction in its width, the tension member 31 will be subjected to pressure by the cloth, causing the member 31 to swing, and through the intervention of the rod 41 and lever 44, cause the plunger to move rearwardly. This will withdraw pressure on the mounting 19, thereby allowing the roll 15 to yield from its cooperative relation with respect to the roll 14 so as not to act on the cloth C. When the cloth has regained its normal tension and width, pressure will be withdrawn from the tension member 31, and as a consequence the spring 30 will function to cause the plunger to bear on the mounting 19, and thus move the roll 15 to a proper feeding and guiding relation with respect to the roll 14. The spring 30 also will cause the tension member 31 to bear against the cloth, through the intervention of the collar 46, lever 44, one of the rollers 43, and the rod 40.

What is claimed is:

1. A cloth feeder and guider including a pivoted mounting and cloth feed and guide roll carried thereby, a pivoted tension member acted broadside on by the cloth, the pivot of the mounting being parallel to the pivot of the tension member, means constantly acting on said mounting to urge said roll in contact with the cloth, and means actuated by said tension member to actuate said first means, to allow the roll to move out of feeding contact with the cloth, when the cloth, under abnormal tension, exerts pressure on said tension member causing the pivotal movement of the latter.

2. A cloth feeder and guider including a movable mounting and cloth feed and guide roll carried thereby, the mounting being movable on an axis parallel to the axis of the guide roll, a movable tension member having a curved edge acted on by the cloth, means which guides the cloth in contact with said curved edge, means constantly acting on said mounting to urge said roll in contact with the cloth, and means actuated by said tension member to actuate said first means, to allow the roll to move out of feeding contact with the cloth, when the cloth, under abnormal tension, exerts pressure on said tension member causing movement of the latter.

3. A cloth feeder and guider including a pivoted mounting and cloth feed and guide roll carried thereby, the pivot of the mounting being above said guide roll and disposed parallel to the axis of the roll, a movable tension member having a curved edge acted on by the cloth, a fixed curved rod which guides the cloth in contact with said curved edge, said tension member and

rod being disposed below said mounting, means constantly acting on said mounting to urge said roll in contact with the cloth, and means actuated by said tension member to actuate said first means, to allow the roll to move out of feeding contact with the cloth, when the cloth, under abnormal tension, exerts pressure on said tension member causing movement of the latter.

4. A cloth feeder and guider including a pivoted mounting and cloth feed and guide roll carried thereby, a pivoted tension member acted broadside on by the cloth, the pivot of the mounting being parallel to the pivot of the tension member, a spring pressed plunger constantly acting on said mounting to urge said roll in contact with the cloth, and means actuated by said tension member to actuate said plunger, to allow the roll to move out of feeding contact with the cloth, when the cloth, under abnormal tension, exerts pressure on said tension member causing movement of the latter.

5. A cloth feeder and guider including a movable mounting and cloth feed and guide roll carried thereby, a movable tension member acted on by the cloth, a barrel fixed with respect to said mounting, a plunger extending through said barrel and having sliding movement with respect thereto, a spring within the barrel and having one end in contact with the plunger and its opposite end in contact with the barrel to cause the plunger to bear on the mounting and thus urge said roll in contact with the cloth, a rod connected with said tension member, spaced members fixed on said rod, and a lever having one end disposed in operative relation between said spaced members, the provision and arrangement being such to allow the roll to move out of feeding contact with the cloth, when the cloth, under abnormal tension, exerts pressure on said tension member causing movement of the latter.

6. In a cloth feeder and guider, a pair of cooperative cloth feed and guide rolls, one of said rolls being mounted to move into and out of cooperative feeding relation to the other roll, a movable tension member spaced from said rolls, a fixed cloth guide which guides the cloth in contact with said tension member, to cause movement of the tension member, when the cloth is under abnormal tension, and yieldable means to hold said yieldably mounted roll, in contact with the cloth, said tension member causing the actuation of said means, when the cloth, under abnormal tension, exerts pressure on said tension member causing movement of the latter.

7. A cloth feeder and guider including a movable mounting and cloth feed and guide roll carried thereby a movable tension member having a curved edge acted on by the cloth, means constantly acting on said mounting to urge said roll in contact with the cloth, means actuated by said tension member to actuate said first means, to allow the roll to move out of feeding contact with the cloth, when the cloth, under abnormal tension, exerts pressure on said tension member causing movement of the latter, and means cooperating with said tension member to guide the cloth in contact with the latter when the cloth is under abnormal tension.

ROBERT MacFARLANE.