

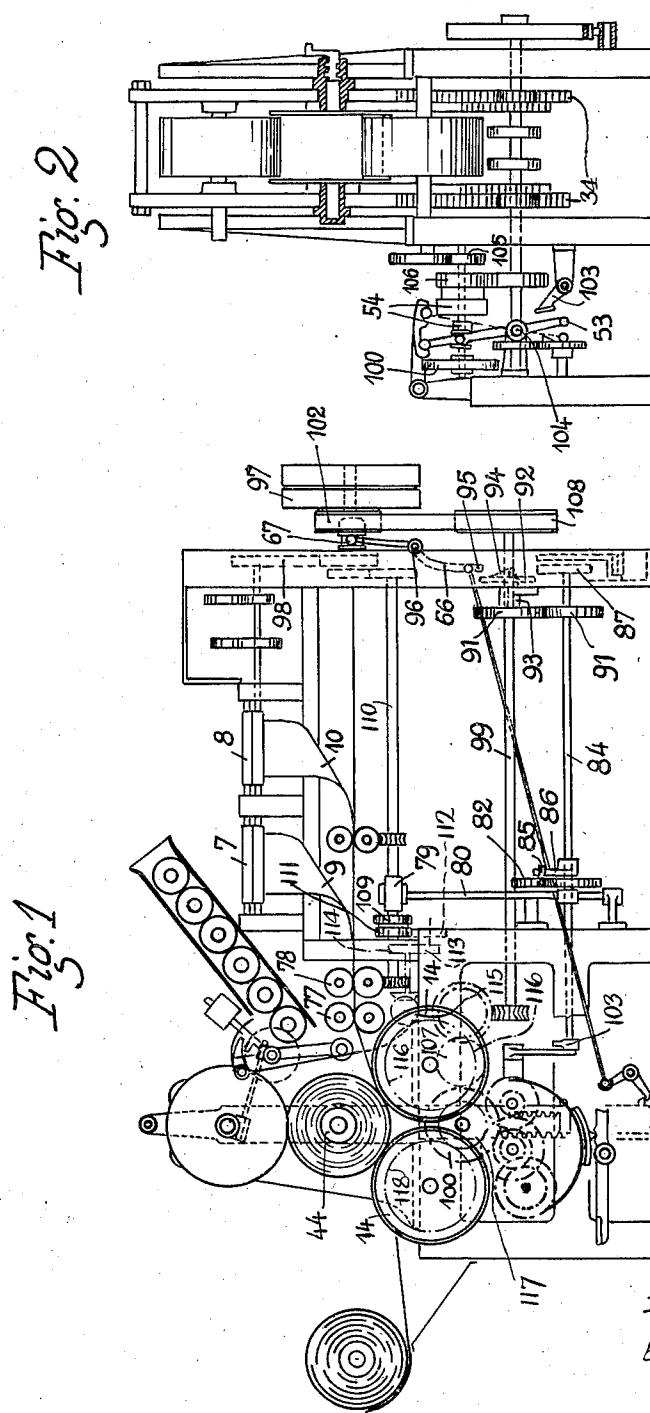
Oct. 27, 1936.

J. WEINBRENNER
LAP FORMING APPARATUS

2,058,848

Filed June 23, 1934

2 Sheets-Sheet 1



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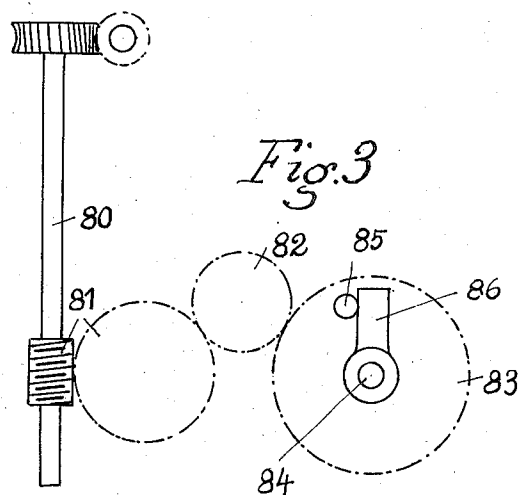
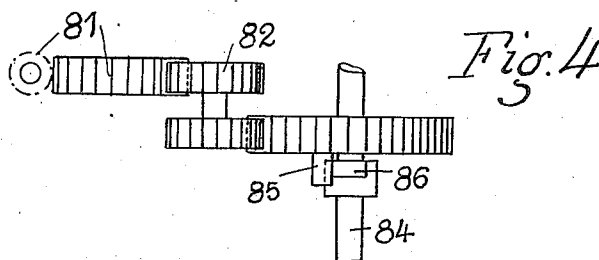
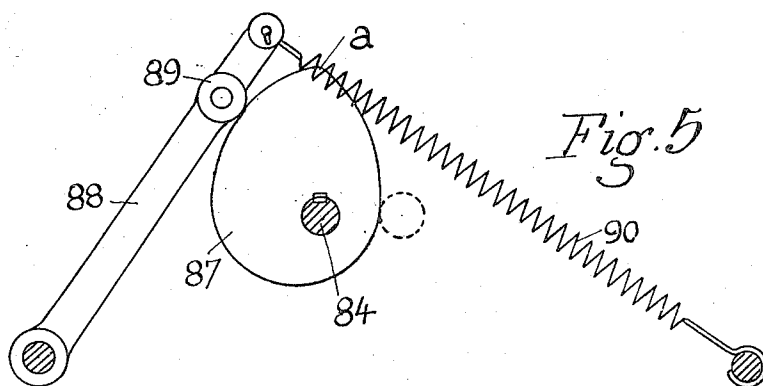
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UNITED STATES PATENT OFFICE

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LAP-FORMING APPARATUS

Jules Weinbrenner, Thann, France

Application June 23, 1934, Serial No. 732,137
In Germany June 28, 1933

1 Claim. (Cl. 19—162)

In the U. S. patent application Serial No. 640,232 filed Oct. 29, 1932 has been described an automatically working device for preparing lap rollers in winding machines or the like.

It has been observed that the lap rollers prepared by such machines have not always the absolutely exact size required, and the object of the present invention is a device applicable to the machine described in said specification and by means of which lap rollers may be automatically prepared which present exactly the required size, as well with respect to length as to weight.

The essential characteristic of the new device consists therein that the production of the machine is controlled by means of a counter and that said counter mechanism suddenly unclutches the feeding machine at the moment when the lap roller has reached its predetermined size, whereas simultaneously the device for expelling said lap roller is thrown in.

The invention has been illustrated in the accompanying drawings, in five figures.

Figs. 1 and 2 illustrate, in front and side elevations, a fleece deflecting and assembling machine.

Fig. 3 shows the transmission mechanism between the counter and the stopping shaft.

Fig. 4 is a plan view of the mechanism illustrated in Fig. 3.

Fig. 5 illustrates the cam-disc device effecting the clutching and disconnecting.

The slivers assembled to a fleece within the stretching frames 7 and 8 are guided over the deflecting sheets 9 and 10. The slivers are assembled between the pairs of calender rollers 77 and 78 and wound upon the lap roller tube 44. The length and width of the lap or wound fleece are determined by a counter 79, the movement of which is transmitted by a constantly rotating shaft 80, Figs. 1 and 3, and by means of the worm-gear 81 and the toothed wheels 82 and 83, to the shaft 84. The toothed wheel 82 is a change speed pinion. The toothed wheel 83 is loose upon the shaft 84. The latter is driven by means of the abutment 85 projecting from the toothed wheel 83, said abutment being acted upon by the lever 86 fixed upon the shaft 84.

At the end of the shaft 84 is provided a cam-disc 87, against which is pressed a roller 89, mounted upon the lever 88, under the action of a spring 90 (Fig. 5). When the roller 89 has reached the ridge α of the cam-disc 87, the latter is suddenly rotated with a pull under the pressure of the roller 89 and over an angle of about 90°. By this sudden rotation is performed

an immediate stopping of the machine by transmission of the movement of the shaft 84, by means of the transmission gear 91, upon the disc 92, which is mounted upon a bracket 93 fixed to the machine frame. The catch 94 of this disc acts against the roller 95 of the lever 66, which is thus caused to swing about its center of rotation 96 and actuates the coupling 67, so as to interrupt the delivery of the fleece, i. e. the driving of the stretching frames.

Simultaneously with the stopping of the feeding of the fleece, the device for expelling the lap roller is thrown in by means of the same shaft 84. At the other end of the shaft 84 is provided the lever 103, which, during the movement of the shaft 84, acts against the lever 53, and the rotation of the latter about its center 104, throws in the coupling 54.

To the coupling 54 is connected the toothed wheel 106, for the purpose of driving the rack bar 34 as well as the pinion 105 for driving the winding rollers 14. Normally, the driving of the winding rollers 14 is performed by the pulley 97, the shaft 110 and the transmission gears 111, 112, 113, 114, 115, 116, 117, and 118. The pairs of rollers 77, 78 are also driven by the shaft 110. When for the purpose of stopping the machine the coupling 67 is shifted to the left, the pulley 102 runs loose and the shaft 110 is stopped.

For the purpose of severing the fleece between the non-rotating calender or delivery rollers and one of the winding rollers 14, it is necessary to rotate the winding rollers. They are driven by means of the shaft 99, which at this moment is rotated by the belt transmission 102, 103 and by means of the helical gear 101 and the gear transmission 107 and 100. The before-mentioned gear wheels 105 and 106 are coupled to the shaft of the gear 100 by means of the coupling 54. In order to prevent that the shaft 110 and with it the delivery or stretching frame be rotated by the winding rollers 14 themselves, a ratchet or free-wheel coupling 109 has been inserted.

As stated herebefore, the pinion 106 is rotated by throwing in the coupling 54, whereby the rack bars 34 are lifted, so that the lap roller is freed according to the arrangement described in the aforementioned specification.

I claim:

In an automatic lap-forming apparatus of the type described in which a counter controls the size of the lap roller, the arrangement of a shaft rotated by said counter when the lap roller is of the predetermined size, a cam-disc at the end of

the shaft, a pressure roller acting on said cam-
disc for suddenly imparting a partial rotation to
said shaft when started by the counter, a catch
rotated by the shaft and a transmission device,
5 a lever actuated by said catch, said lever being
connected to a clutching device, the disconnec-
tion of which from the main drive of the machine
stops the feeding motion thereof, a radial arm at

the other end of the shaft, a swinging lever ac-
tuated by said arm, a clutch device moved by said
swinging lever, and a transmission gear con-
trolled by said clutch device for transmitting the
movement required for expelling the finished lap 5
roller, substantially as described.

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