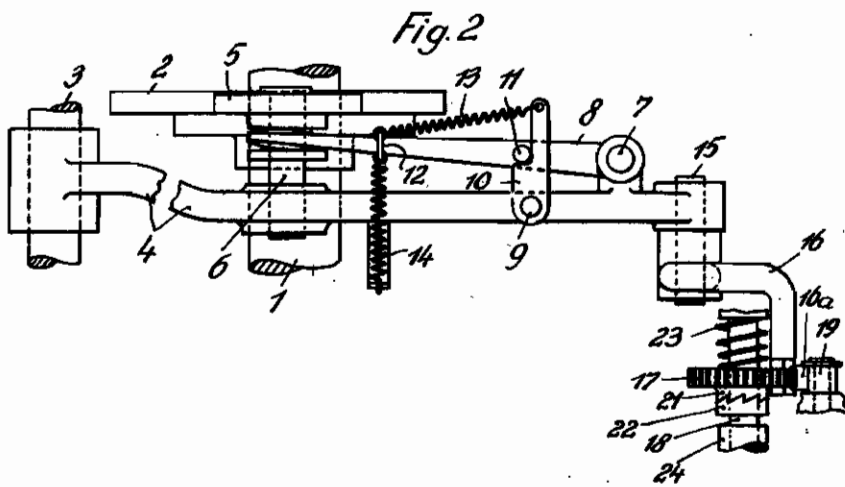
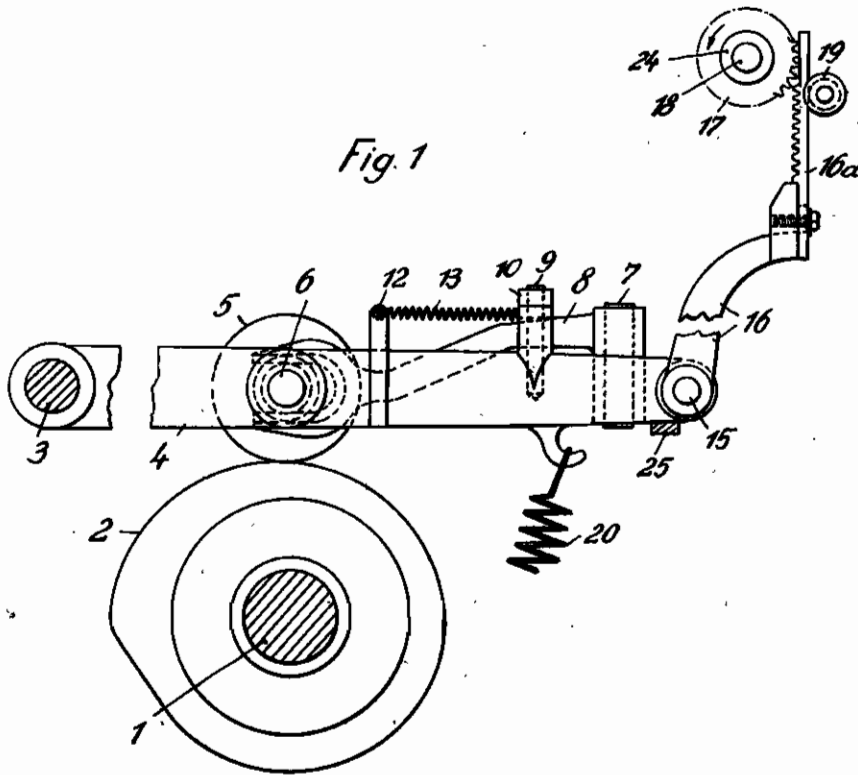


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SLACKENING THE FABRIC ROLLERS OF
FLAT KNITTING MACHINES
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SLACKENING THE FABRIC ROLLERS OF FLAT KNITTING MACHINES

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The present invention relates to a method of and a device for slackening or loosening the fabric rollers of flat knitting machines of the Cotton type.

It is well known to slacken or loosen the fabric rollers of flat knitting machines at the production of fabric having covered loops. Hereby during carrying out of covering operations a loosening or slackening of the fabric rollers is effected by means of a cam of the displaced or shifted main cam shaft by way of a rack, a pawl system or the like in such a manner that after termination of the slackening or loosening the fabric rollers positively reach their starting-or exit-position again. Now, it has been found that in this return movement of the fabric rollers which occurs very rapidly a sudden stretching of the fabric is effected, as the weight of the fabric rollers returns the latter beyond their exit-or starting-position.

When carrying out covering operations in larger distances from each other, for instance when narrowings or the like are effected, this stretching of the fabric is not particularly apparent. During the manufacture of continued rows of covered loops, for instance when making network in which covering is effected in one and the same row several times or in each second row respectively, this stretching of the fabric has proved to be very unfavorable, as it causes, after a short period of time already, breakage of the needles and covering defects.

According to the present invention when producing continued rows of covered loops this disadvantage is obviated by effecting during the formation of new rows of loops a permanent slackening or loosening of the fabric rollers.

The object aimed at is obtained by deriving the slackening or loosening of the fabric rollers from a cam of the main cam shaft by way of a roller lever provided with a linked rack which engages a gear wheel arranged upon the shaft of the fabric rollers.

The cam roller carried by the roller lever is adjusted between a position of rest and an operating position relatively to the cam by a roller shifting fork swingably mounted upon the roller lever.

The operating position of the roller shifting fork is controlled by a spring actuated rotatable angle member of the roller lever and by a fixed stop of the roller shifting fork, whereas the position of rest is controlled by another spring connected to the roller lever.

When manufacturing continued rows of cov-

ered loops the permanent slackening or loosening of the fabric rollers during the formation of new rows of loops is obtained by a toothed locking ring mounted upon the shaft of the fabric rollers and another toothed locking ring fixed to a gear wheel rotatably arranged upon the shaft of the fabric rollers which latter toothed locking ring is pressed into the first mentioned locking ring by the action of a spring.

In the accompanying drawing one device for carrying out the method according to the invention is shown by way of example.

In this drawing:

Fig. 1 is a side view of a device for slackening or loosening the fabric rollers, and

Fig. 2 shows the plan view of the device according to Fig. 1.

Fixed upon the main cam shaft 1 is a cam 2 serving the purpose of slackening or loosening the fabric rollers. A lever 4, carrying a cam roller 5, is swingably mounted upon a shaft 3. The roller 5 is shiftably and rotatably arranged upon a bolt 6 fixed to the lever 4. Rotatably and swingably mounted upon a bolt 7 provided in the lever 4 is a roller shifting fork 8. The lever 4, moreover, carries an angle member 10 which is pivoted on the bolt 9 fixed to the lever 4. Upon the roller shifting fork 8 a stop pin 11 is fixed against which bears an angle member 10. Two springs 13 and 14 are connected to the eye 12 provided on the roller shifting fork 8. The other end of the spring 13 engages an eye of the angle member 10, whereas the other end of the spring 14 is fixed to the lever 4. The free end of the lever 4, swingably arranged upon the shaft 3, carries a bolt 15 which serves as pivot for a lever 18 to which a rack 16a is fixed. During the upward movement of the free end of the lever 4 the rack 16a engages a gear wheel 17 and rotates the latter about an angle depending on the lifting height of the lever 4. The rack 16a is supported and guided by a loosely mounted roller 19. By means of a tension spring 20 the cam roller 5 is pressed against the cam 2. The gear wheel 17 is pivotally mounted upon the shaft 18 of the fabric rollers and is provided with a toothed locking ring 21. A second toothed locking ring 22 is fixed upon the shaft 18 of the fabric rollers. The toothed locking ring 21 is pressed against the toothed locking ring 22 by a spring 23 so that both toothed locking rings 21 and 22 are in engagement. The fabric roller 24 is fixed upon the shaft 18 of the fabric rollers. 25 is a stop limiting the downward movement of the lever 4 carrying the cam roller 5.

The operation of the device according to the invention is as follows:

Before starting the production of continued rows of covered loops, the roller shifting fork 3 is so swung that the pin 11 engages the angle member 10. In this position the cam roller 5 rests upon the cam 2. On rotation of the main cam shaft 1 the rack 16a is moved up and down by way of the cam 2 and the lever 4 carrying the cam roller 5. During upward movement the rack 16a engages the gear wheel 17 of the shaft 18 of the fabric rollers and causes slackening or loosening of this shaft 18 together with the fabric rollers due to the engagement of the toothed locking rings 21 and 22. During downward movement of the rack 16a the slackened

or loosened position of the fabric rollers 24 is maintained as the toothed locking ring 21 of the gear wheel 17 is pressed out of engagement with the teeth of the toothed locking ring 22. In this manner a permanent slackening or loosening of the fabric rollers is obtained, so that a stretching of the fabric and therewith breakage of the needles is prevented.

During carrying out covering operations at which the main cam shaft 1 is displaced in a well known manner, the cam roller 5 runs idle with the position of the roller shifting lever 3 unaltered due to the roller lever 4 being supported by the stop 25.

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