

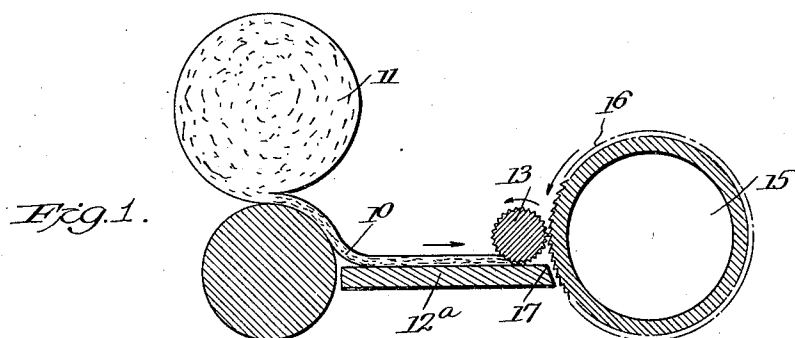
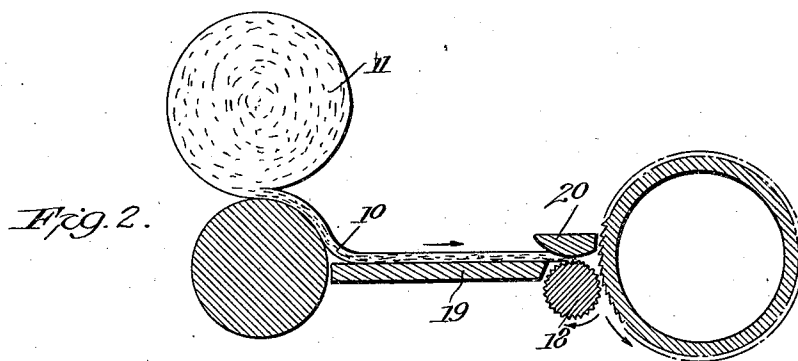
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CARD

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CARD

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The present invention relates to new and useful improvements in cards of the type used in treating cotton, wool or other textile materials.

5 The principal object of the invention is to provide an improved feeding mechanism which shall effectively take the so-called lap from the lap-roll and start the cotton, or other material, on its course through the card, 10 but shall do so with less injury to the material than the feeding apparatus now generally used.

The above and other objects of the invention are accomplished by the method and apparatus described in the following specification and illustrated in the accompanying drawings forming a part of this disclosure.

In these drawings:

Fig. 1 is a semi-diagrammatic illustration 20 showing, in transverse section, the arrangement and construction of the introductory feeding mechanism of one form of my invention; and

Fig. 2 is a similar illustration showing 25 another form of the invention, being a practical modification.

In the usual card employed in the cotton industry, a lap is drawn from the roll, mounted at the front end of the card, and is directed across a horizontal feed-plate. At the 30 inner end of this feed-plate, the lap passes under a fluted gripper and feeding roll. The lap is then directed upwardly over a lip, beyond the upper edge of which it is presented to a lickerin. The lickerin and feed-roll 35 revolve so that their peripheries move in opposite directions relatively and the peripheral speed of the lickerin is greater than that of the feed-roll. Thus, the teeth of the lickerin continuously pull batches of fiber from the lap extending over the feed-plate-lip. The 40 fibers picked up by the lickerin are later transferred to a large carding roll.

In cotton spinning, the primary function 45 of the carding operation is the drawing of the cotton-fiber mass; the secondary function is the preliminary paralleling of the fibers.

In order that the lickerin may act to initiate the paralleling of the fiber and, likewise, 50 that it may draw from the lap relatively

minute quantities of the fiber, it is necessary that the fibers be firmly gripped at their outer ends. Many fibers in the cotton mass are very short; and, in order to afford a grip on these, it is necessary that the gripping 55 point be located as closely as possible to the lickerin. Hence, it is the practice, in constructing cards for use in cotton spinning, to operate the feed-roll in association with the sharp-edged, abrupt-faced lip. 60

The use of this type of lip, while advantageous in treating cotton, is objectionable when short-length rayon-fibers are treated. Cotton-fibers are relatively strong and can withstand considerable abuse; but rayon- 65 filaments are relatively tender. Hence, while cotton endures the severe reverse bending when pulled over the edge of the lip, rayon-filaments tend to break and score when drawn over the lip; the result being a loss of 70 strength and luster in the ultimate yarn.

Hence, the present invention seeks to provide means whereby the usual cotton-card may be adapted to the treatment of rayon.

In both forms or embodiments of my invention, the abrupt, sharp-edged lip, is eliminated. The results are two in number: First, the gripping action of the feed-roll and plate is lessened, and the fibers may, therefore, be 80 more easily withdrawn from the lap by the lickerin; and, secondly, the severe bending of the fibers over the sharp edge of the lip is eliminated and the fibers are drawn off in a gentle arc.

In the form of the invention shown in Fig. 85 1, the feed-plate 12^a is accompanied by the feed and gripping roll 13 (as in the ordinary card) and the inner end of the plate is chamfered to correspond with the curvature of the lickerin, the upper edge or surface being 90 slightly rounded, as indicated at 17.

In the form of the invention shown in Fig. 2, the gripping and feed roll 18 cooperates, not with the feed-plate 19, but with a floating pressure-bar 20, the roll 18 being mounted underneath in fixed bearings (not shown), and the bar uppermost and in a manner permitting it to freely and constantly adjust itself in a vertical direction. The vertical movement of the bar may be afforded through a 100

spring or weight (not shown) arranged to press the bar toward the roll, or through the mere action of gravity.

What I claim is:

5 Apparatus for treating rayon, including
a feed-plate over which the fibrous mass
travels in a single horizontal plane, a feed-
roll juxtaposed to one edge of the plate for
drawing the yarn thereover, and a lickerin,
10 the axis of the lickerin being located in a
plane substantially above that of the feed-
plate, also juxtaposed to the edge of the
plate and coacting with the feed-roll, where-
by the fibrous mass passes between the edge
15 of the plate and the periphery of the lickerin
without substantial elevation above its plane
of travel over the plate, and which by reason
of the position of the feed plate substantially
below the axis of the lickerin is picked up
20 by the lower periphery of the lickerin with-
out subjecting the fibers to any substantial
bending against the edge of the feed-plate.

In testimony whereof I affix my signature.

ROBERT G. CAMPBELL.

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