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COVER ON TAKE-UP ROLL FOR LOOMS

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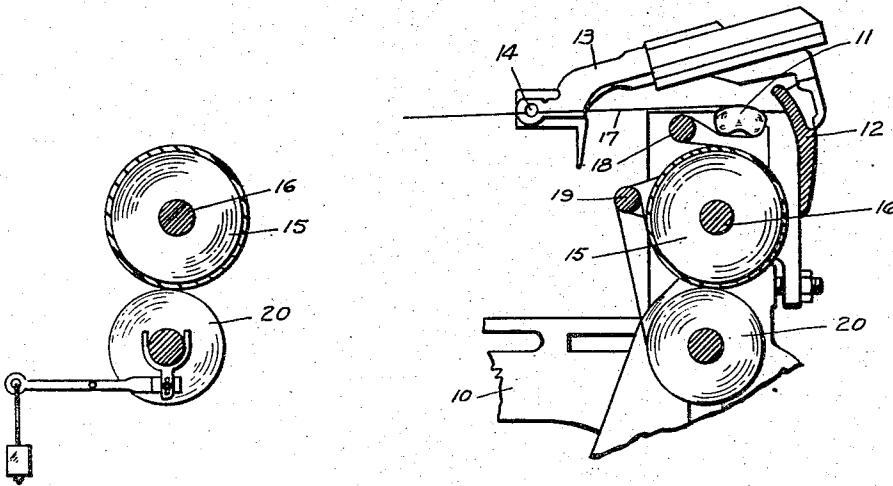


Fig. 1a.

Fig. 1.

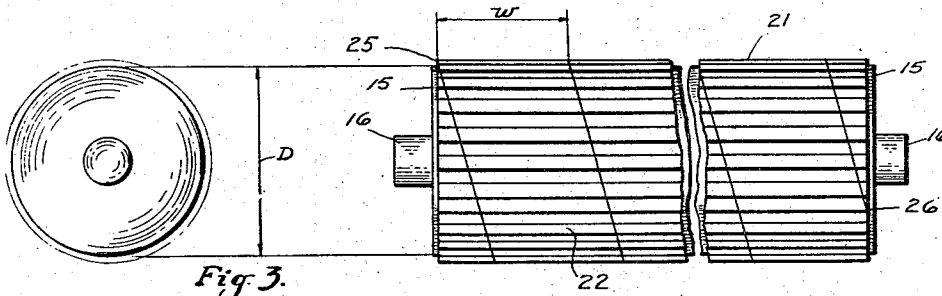


Fig. 3.

Fig. 2.

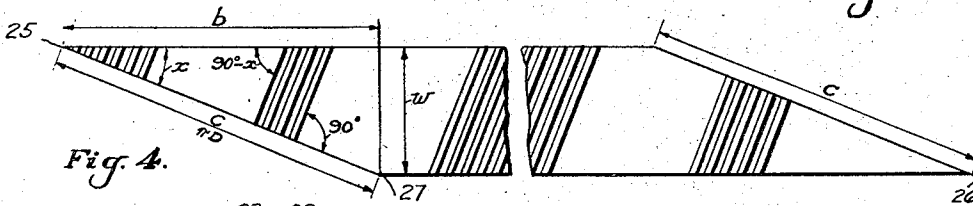


Fig. 4.

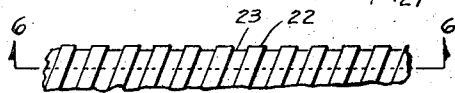


Fig. 5.

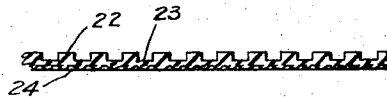


Fig. 6.

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COVER ON TAKE-UP ROLL FOR LOOMS

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1 Claim. (Cl. 139—307)

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This invention relates to improvements in takeup rolls for looms and has reference more particularly to a covering for such rolls.

Looms are provided with a takeup mechanism which controls the rate at which the completed cloth is taken away by the friction roll, sometimes designated "sand roll."

The takeup motion controls the number of picks per inch placed in the cloth and therefore determines the speed of movement of the cloth through the loom. It governs the picks per inch that goes into the cloth and hence its density or compactness. The takeup mechanism comprises a friction roll that is subjected to intermittent rotation by a suitable mechanism actuated from the lay sword and it is quite necessary that this takeup roll be of such material or so constructed that the cloth will not slip and for this purpose various kinds of materials have been employed among which may be mentioned perforated tin, crepe rubber and rubber mixed with cork.

It is the object of this invention to produce a covering formed from a sheet of rubber having a fabric backing and provided on its front side with spaced ridges separated by grooves of considerable depth, the outer surface of the ridges being flat before the material is applied and curved about the axis of the takeup roll when in position thereon.

It is a further object to produce a takeup roll covering that shall have a longer life than similar coverings now in use and which shall have superior gripping qualities. The increased life is obtained by making the ridges high so that it will require a greater amount of wear before the outer surface becomes smooth.

A still further object is to produce a covering material in the form of an elongated strip having one side provided with spaced ridges or ribs, extending at such an angle that when this strip is secured to the roll by being spiralled around the same, the ridges and grooves will register and extend in the direction of the length of the roll.

Having thus briefly described the objects of the invention and in a general way the invention itself, the invention will now be described in greater detail and for this purpose reference will be had to the accompanying drawing in which the invention has been illustrated, and in which:

Figure 1 is a view partly in side elevation and partly in vertical cross section of the front upper portion of a loom showing an ordinary type of temple in position and including an ordinary type of takeup mechanism;

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Figure 2 is a side elevation of the takeup roll showing the improved covering in place thereon; Figure 3 is an end view of the roll shown in Figure 2;

5 Figure 4 is a plan view looking down on one of the covering strips showing its shape and the angular relation of the ribs to the longitudinal axis of the strip;

10 Figure 5 is a fragmentary plan view showing the ribbed surface of the covering material to substantially full size; and

Figure 6 is a section taken on line 6—6, Figure 5.

In the drawing reference numeral 10 shows one of the side frames with a breast beam 11 and the false breast beam 12. A temple 13 is shown mounted on the base beam 12 and as usual has journaled in its head a temple roll 14. A takeup roll 15 is also shown carried by the usual positively driven shaft 16. The cloth 17 is shown as passing through the temple beneath and about the temple roll 14, thence over the breast beam 11, thence around a spindle guide 18, thence about a large segment of the takeup roll 15, then over another roll 19 and thence to the cloth roll 20 upon which it is wound.

My invention relates to the covering of the takeup roll 15 and to the takeup roll provided with my improved covering.

30 Referring now to Figure 2, it will be seen that the takeup roll 15 is provided with a covering 21 that is wound spirally thereon in the form of a helix. The width of the strip is designated by w and the diameter of the roll D . The circumference of the roll will therefore be πD inches where this is the unit employed. The lines designated by reference numeral 22 indicate the ridges on the outer surface of the roll material. The ridges are separated by grooves 23 in the manner shown in Figure 6. The covering has a fabric backing 24. When the covering is applied the fabric surface 24 and the outer surface of the roll are both covered with shellac and the covering is then wound about the roll beginning at point 25 in Figure 2 and ending at point 26. In Figure 4 a strip has been shown developed. It will be seen that the material adjacent each end is cut on a diagonal. This diagonal being indicated by c , the length of side c , beginning at point 25, is πD inches where D is the diameter of the roll in inches. If a line is drawn from point 27 perpendicular to the straight side, a portion of which has been designated by letter b , a right angle triangle is formed whose hypotenuse has a 55 length equal to the circumference of the roller

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and whose short side is equal to the width of the strip. The angle between sides b and c is dependent upon the relationship between the diameter of the roll and the width of the strip and in the present illustration angle X is one whose sine is equal to w/c and whose cosine is b/c . Since the edge represented by side c is in a plane perpendicular to the axis of the roller, it is evident that the ribs must be perpendicular to this line and they are therefore inclined at an angle of $90^\circ - X$ to the longitudinal axis of the strip. It will be seen that the angular relation of the ribs is dependent on two variables, namely, the diameter of the roll and the width of the strip and to get the best results, the relationship must be such that the ribs are always perpendicular to the hypotenuse c .

As above described, when the roller is to be covered with this material, the former covering is removed and the surface of the roller thoroughly cleaned and shellacked, the fabric side of the covering is then given one or more coats of shellac after which the end is secured to the roller at point 25 and the strip wound about the roller as indicated in Figure 2.

It has been found that a covering of this construction is very effective for gripping material and due to the fact that the grooves 23 can be made quite deep, it will wear a very long time before it loses its effectiveness as a gripping surface.

Having described the invention what is claimed as new is:

A rubber covering for takeup rolls having a diameter D comprising, a strip of a uniform width

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w , the ends of the strip being oppositely tapered commencing at diagonally opposite corners, the length of the tapered edges being πD , one surface having spaced ridges perpendicular to the inclined edges of the tapered sections, whereby when the strip is wound about a roll with the inclined edges lying in planes perpendicular to the axis of the core, the ridges will be parallel with the axis of the core.

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