

Oct. 5, 1943.

A. LODGE

2,331,207

APPARATUS FOR THE LIQUID TREATMENT OF YARN AND THE LIKE

Filed June 14, 1941

2 Sheets-Sheet 1

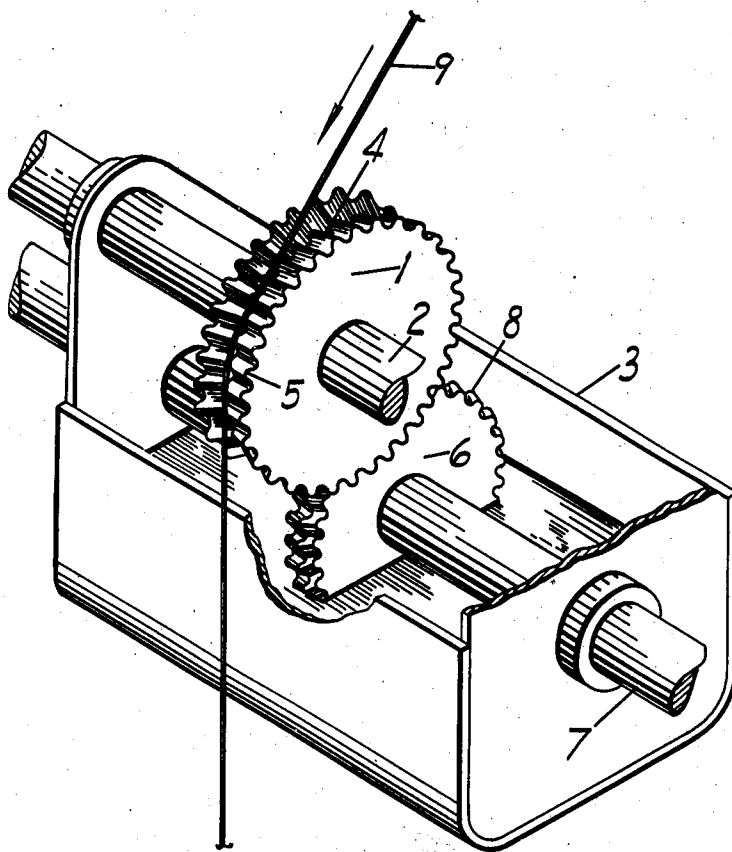


Fig-1.

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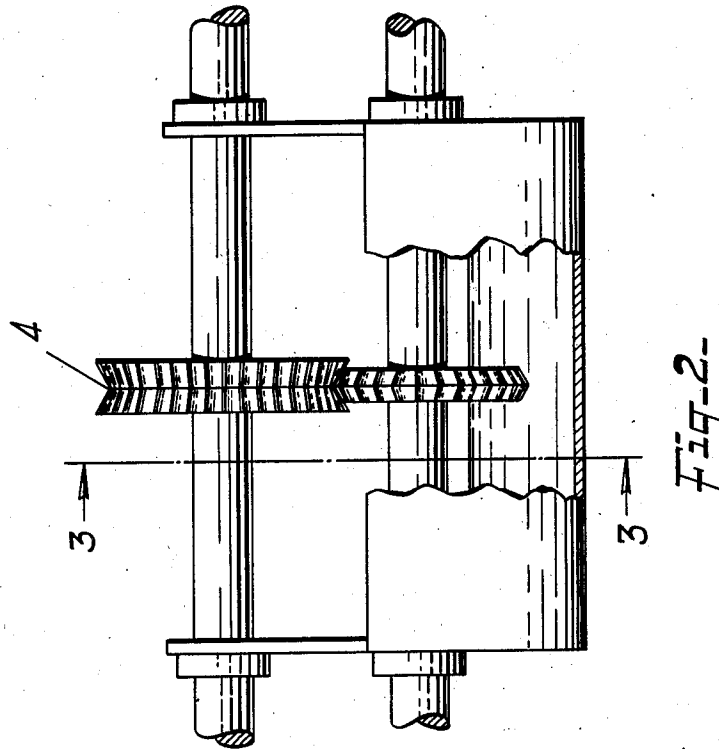
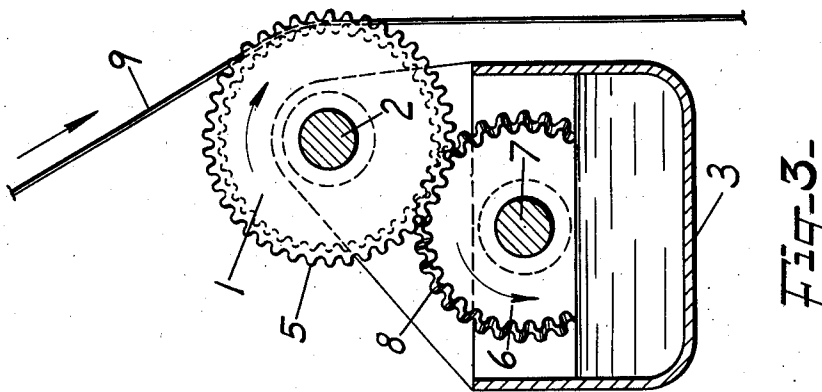
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APPARATUS FOR THE LIQUID TREATMENT OF YARN AND THE LIKE

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2 Sheets-Sheet 2



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2,331,207

APPARATUS FOR THE LIQUID TREATMENT
OF YARN AND THE LIKEAlvin Lodge, Meadville, Pa., assignor to American
Viscose Corporation, Wilmington, Del., a corpo-
ration of Delaware

Application June 14, 1941, Serial No. 398,015

2 Claims. (Cl. 91—50)

This invention relates to improvements in apparatus for the liquid treatment of yarn or the like. More particularly, the invention relates to improvements in apparatus for applying a liquid to a traveling yarn or the like.

In the production of yarn and in any after-treatment thereof it is often desirable to apply a liquid such as a finish or a lubricant. A number of devices have been suggested for this purpose. However, in most cases they were not satisfactory in that they did not apply the liquid to the yarn uniformly and often damaged the yarn.

This invention has for its principal object to provide an improved apparatus for uniformly treating yarn or the like with a controlled amount of liquid without causing damage to the yarn.

Other objects and advantages of the invention will be apparent from the following description and accompanying drawings.

In the drawings

Figure 1 is a perspective view of a preferred embodiment of the invention.

Figure 2 is an elevational view with parts broken away of the form of apparatus shown in Figure 1.

Figure 3 is a sectional view taken on the line 3—3 in Figure 2.

In the drawings reference character 1 indicates a liquid applying roller mounted upon the shaft 2. A liquid receiving chamber or reservoir 3 is positioned beneath the roller. The roller has a groove 4 extending around its periphery. The groove portion of the roller is provided with transversely extending ridges 5 which form channels extending across the bottom of the groove. Means are provided for applying the liquid to the roller comprising the roller member 6 mounted on the shaft 7. The roller 6 is provided with a ridged portion 8 extending around its periphery which is in contact with the grooved portion of the roller 1. The ridged portion is provided with transversely extending grooves. The shaft 2 is positioned laterally of the shaft 7 so that the roller 1 projects beyond the edge of the reservoir. With this arrangement the liquid may be applied to a yarn traveling in a vertical direction. Either or both of the rollers may be driven in the direction shown by the arrows by suitable means which are not shown.

In the operation of the device the traveling yarn 9 passes over the roller 1 in contact with the ridges at the bottom of the groove as the

rollers 1 and 6 revolve. A level of liquid to be applied to the yarn is maintained in the reservoir so that the lower portion of the roller 6 dips into the liquid as it revolves. The roller 6 on revolving carries liquid upwardly from the chamber and applies it to the grooved portion of the roller 1. The liquid applied to the grooved portion of the roller is directed by the channels formed by the ridges to the center of the groove and in contact with the yarn. Thus, most of the liquid applied to the roller finds its way to the yarn and a uniform application of liquid is obtained. With only the ridges in the groove in contact with the yarn there is less tendency for the yarn to adhere to the roller or to be subjected to drag from a continuous oil film which may cause straining or breaking of the filaments. Also, the roller 6 applies liquid to the grooved portion of the roller 1 in a controlled amount. The amount of liquid applied to the yarn may be regulated by varying the speed of the roller, the width of the roller and the extent to which the roller 6 dips into the liquid.

It is not necessary, of course, to extend the ridges across the full width of the groove. The roller will function equally well if the ridges extend only over the bottom of the groove where the actual contact with the yarn is made.

While a preferred embodiment of the invention has been shown it is to be understood that changes and variations may be made without departing from the spirit and scope of the invention as defined by the appended claims.

What I claim is:

1. An apparatus for applying liquid to a traveling yarn or the like comprising a rotatable yarn contacting roller having a grooved periphery, ridged members provided in the grooved portion of the roller extending transversely across the bottom of the groove and a liquid applying roller in contact with the grooved portion of the yarn contacting roller.
2. An apparatus for applying liquid to a traveling yarn or the like comprising a rotatable yarn contacting roller having a grooved periphery, ridge members provided in the grooved portion of the roller extending transversely across the bottom of the groove and a liquid applying roller having a ridged portion in contact with the grooved portion of the yarn contacting roller, said ridged portion of the liquid applying roller having transversely extending grooves.

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