June 5, 1934. T. E. ANDREW 1,961,952

FEEDING ROLLER IN TEXTILE OR LIKE APPARATUS, MORE ESPECIALLY TWISTING MACHINES

Filed Aug. 16, 1932

Fig. 1.

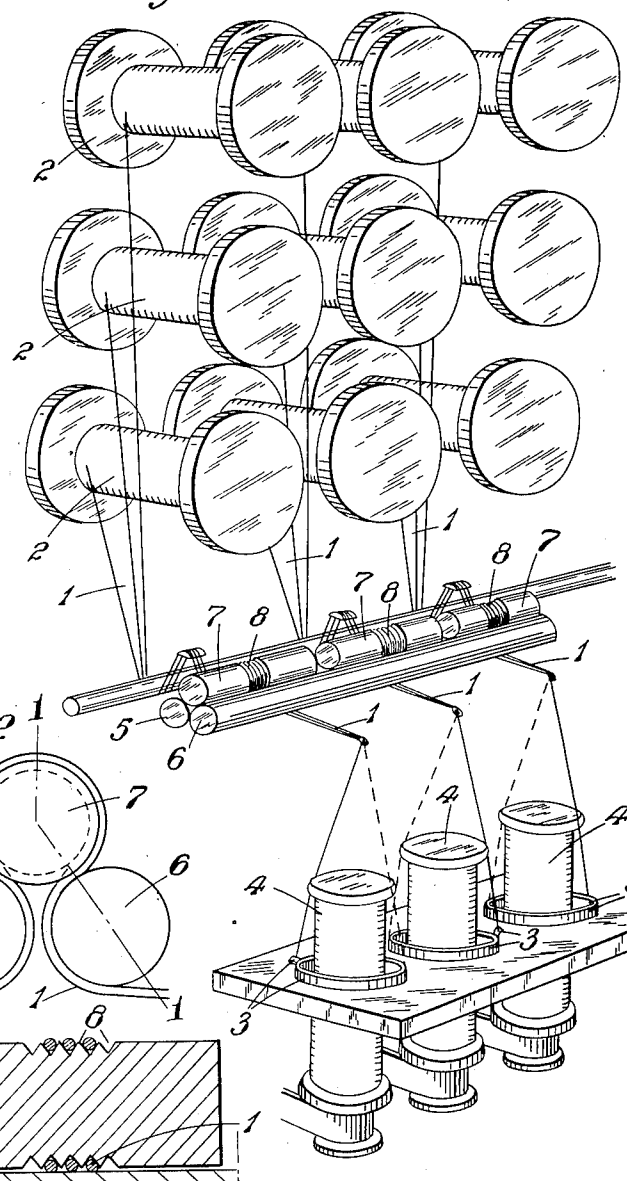


Fig. 2

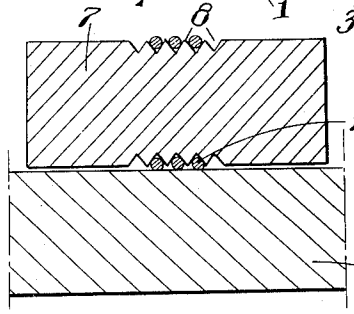


Fig. 3.

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FEEDING ROLLER IN TEXTILE OR LIKE APPARATUS, MORE ESPECIALLY TWISTING MACHINES

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Application August 16, 1932, Serial No. 628,978
In Great Britain September 23, 1931

1 Claim. (Cl. 117—21)

This invention relates to textile or like apparatus, more especially twisting machines, for example, doubling frames, and its object is to make provision for improving the roller feed drive thereof by means which are at once simple, inexpensive and highly efficient.

The invention is confined to the type of feed drive comprising a series of rollers provided specifically for the purpose of applying to the yarn the necessary traction to feed or progress it, and not for the purpose of operating upon said yard as in drawing or drafting in the spinning operation.

According to this invention then, a feed drive of the kind referred to is characterized in this, that at least one of the feed rollers about which the yarn or the like passes is grooved circumferentially, or analogously formed; said yarn or the like will hereinafter be called yarn.

In this way a sort of "rope drive" effect is produced, the tractive grip of the yarn being considerably greater than on a plain roller; and said yarn is definitely prevented from meandering from side to side of the rollers.

Thus it will be apparent that I provide a very considerable practical advance in feed drives of the kind referred to inasmuch as slipping and wandering of the yarn is recognized as being most undesirable, more especially where one is dealing with high class yarns.

In order that the invention may be readily understood and carried into effect, the same will now be described with reference to the accompanying drawing, in which—

Fig. 1 is a diagrammatic perspective view of the invention applied to doubling,

Fig. 2 is an end view of the feed rollers according to this invention, and

Fig. 3 is a cross section on the line 1—1 of Fig. 2.

Fig. 1 illustrates by way of example, a standard doubling arrangement wherein the feed drive, which progresses the yarn 1 from the supply spools 2 to the ring and traveller motion 3 associated with the receiving spools 4, comprises two driven rollers 5 and 6 with an idler roller 7 resting thereupon; one set of rollers supporting a plurality of idler rollers, as shown.

According to the preferred embodiment of the invention as applied in this connection, said rollers 7 are grooved circumferentially, as shown at 8, while the rollers 5 and 6 remain plain as at present.

Indeed, apart from the grooving of the rollers 7 the arrangement, including the drive to the rollers 5 and 6 and to the receiving spools 4 and associated mechanism, may be absolutely standard, it being a particular feature of the invention that an ordinary standard arrangement can be very readily converted so as to acquire the advantages of the present invention, the only requirements being to remove the loose top rollers, groove them, and drop them back into position, the change-over being very readily carried out, gradually if desired, with the minimum of trouble and expense.

This, it will be apparent, is a further advantage which is very important from a practical standpoint, namely, that the said invention is susceptible of application to existing standard plant without any addition or expensive alteration thereto or taking-down and re-assembly thereof.

The groove or grooves may be of any convenient shape cross sectionally, for example, so that the yarns may get a good grip (*a*) by the mere co-action of yarn and groove and/or (*b*) by being pressed between the respective rollers.

In the preferred arrangement, as shown in Figs. 2 and 3, the yarn 1 normally projects a little from the grooves 8 and, in operation, is gripped between the respective rollers by the top roller 7 bearing on the lower rollers 5 and 6 by its own weight and by the pull of the yarn. The size of the grooves and thread is, of course, exaggerated in these two Figs. 2 and 3—actually they are much smaller in proportion to the size of the rollers.

It should be clearly understood that I am not limited to any one particular embodiment of the invention as, for example, it will be apparent that instead of grooving only one of the rollers, any number of them, up to all of them, may be grooved or analogously formed, and it will be apparent that any number of grooves from one upward may be used.

In the preferred embodiment shown, each yarn coming from the supply spools 2 occupies a separate groove but, alternatively, all three, or as many foldings as are being doubled, may occupy only one groove.

And again it should be understood that I do not confine myself to simple grooves, as other conformations, for example, ridges, may be used to achieve the same result.

Finally it should be understood that although the invention is very advantageously applied in connection with doubling frames, it is not limited thereto, as it may also be applied in any instance in which a roller drive is provided, in apparatus of the kind described, for the purpose of feeding or progressing the yarn, as distinct from operating upon it.

What I claim is:

A set of tractive rollers for driving yarn which comprises a pair of driven rollers, a roller supported on said driven rollers to rotate freely therewith, a yarn passed about one of said driven rollers, between said driven rollers, about said supported roller, returning between said rollers and about the second of said driven rollers, said supporting roller having yarn guiding and tractive grooves therein of less depth than the diameter of the yarn to grip the opposite sides of said yarn.

THOMAS EDWIN ANDREW.