My invention relates to a novelty yarn comprising a twist of two threads of decorative material such as wool which are twisted in a new and unusual manner to obtain desirable decorative effects. My invention further relates to the process and apparatus for producing such novelty yarn.

It is the object of my invention to provide a novelty yarn of relatively light weight by twisting two threads of decorative material such as wool over a core in such a manner that the curvature of the decorative threads in the twist are spaced from one another.

It is a further object of my invention to provide a decorative novelty yarn in which a relatively thin thread of decorative material such as wool is superimposed and twisted over a relatively thick thread of decorative material such as wool.

It is a further object of my invention to provide a novel method of forming a decorative yarn in which a thread of decorative material is twisted over a multiple thread core and a second decorative thread is twisted and superimposed over said first decorative thread upon said core.

It is a further object of my invention to provide a decorative novelty yarn comprising a relatively thick thread of decorative material twisted about a core and a relatively thin thread of decorative material superimposed over and twisted over said relatively thick thread of decorative material.

It is a further object of my invention to provide a decorative novelty yarn comprising a relatively thick thread of wool and a relatively thin thread of rayon.

It is a further object of my invention to provide a novel apparatus comprising multiple sets of rolls adapted to feed and twist decorative threads over a core.

It is a further object of my invention to provide a novel apparatus comprising three sets of feed rolls and a faller bar, two of the sets of feed rolls operating at a predetermined speed and the third set of said feed rolls operating at one-half said predetermined speed.

These and further objects of my invention will be apparent from a consideration of the drawing and the specific description thereof which here follows.

Figure 1 is a perspective view of the novelty yarn of my invention.

Figure 2 is a side elevational view of the apparatus of my invention which I employ to form the decorative thread shown in Figure 1.

Figure 3 is a front view of the apparatus of my invention which is shown in Figure 2.

Referring now more specifically to Figure 1, I show a novelty yarn comprising two threads of core material 10 and 11. These threads may be of cotton, rayon, worsted or some other suitable core material. Loosely twisted over the core threads 10 and 11 is a thread of decorative material such as wool 12. Superimposed and twisted over the decorative thread 12 is a second thread of decorative material such as wool 13. It will be noted that the decorative thread 13 is substantially thicker than the decorative thread 12.

A further feature of my decorative yarn is the relation of the twists of the decorative threads of wool 12 and 13. The twists are generally similar to sine curves, but it will be noted that the sine curves of the respective threads of wool 12 and 13 are not superimposed upon one another but are spaced periodically from one another. Bound back over the novelty yarn is a binder 14 which may be of cotton, rayon, worsted or any suitable binder material.

Referring now to Figure 2 I show the reels 16 and 17 which carry the core threads 10 and 11. A set of rolls comprising a power driven ridged surface roll 20 and an idler 21 which is driven by the roll 20 draw the core threads 10 and 11 from the reels 16 and 17, respectively. As the core threads 10 and 11 are drawn from their reels they are fed down through a set of rolls comprising a ridged surface power driven roll 22 and an idler roll 23 driven by its friction contact with roll 22. Roll 23 as can be more clearly seen in Figure 3 has grooves 24 and 25 which are so formed with sloping outer walls 26 and 27 and substantially straight inner walls 28 and 29 that the core threads 10 and 11 which are led through these grooves 24 and 25 are directed towards the center portion of the grooves and are not in such friction contact with rolls 22 and 23 so as to affect their speed of travel.

A thread of decorative material such as wool 12 is drawn from the reel 30 down past a guide 31 and by means of its friction contact between the rolls 22 and 23, the thread of wool 12 rides in the center portion 33 of the roll 23.

The roll 22 is driven by gear 34 from the source of power 35 so that the speed of the roll 22 is substantially twice the speed of the roll 20, the roll 20 being driven by a relatively larger gear 36 which contacts the power driven gear 35. Since the speed of the rolls 22 and 23 is substantially greater, namely about twice that of the rolls 20 and 21, the thread of wool 12 is fed down
over the cores 10 and 11 loosely as shown in Figure 3 so that it is thereby waved or piled loosely over the core threads 10 and 11. This produces the sine curve effect shown in Figure 1. Simultaneously a second thread of decorative material such as wool 13 is drawn from the reel 42 by means of the ridged surface driven roll 43 and the idler roll 44 which is driven by its friction contact with the roll 43. The thread of decorative material 13 is drawn by means of the rolls 43 and 44 and passes over the roll 23 and past a stationary faller bar 45. Below the faller bar 45 the thread of decorative material 13 is twisted over the already loosely twisted thread of decorative material 12. Because the thread of decorative material 13 is thinner than the more bulky thread of decorative material 12, and because of the manner in which it is fed there over it is twisted over the thread of wool 12 so that its twists fall in between the twists of the thread of wool 12 as shown in Figure 1. The twists of the two threads of wool 12 and 13 over the core threads 10 and 11 then passes down through the guide member 46 and thence through the traveller 47 and on to the bobbin 48 which is rotated by the pulley 49. After the thread is formed as described on the bobbin 48, it is bound back with a binder 14 in a manner not shown but which is well known in this art.

By the process above described and the apparatus shown and described, I obtain a novelty yarn having desirable decorative effects. The twists of the threads of wool of varying size are so effects as to get the variegated effects of the spaced sine curve path of the respective threads of wool 12 and 13.

By means of the combination of rolls including specifically the grooved roller 23, the loosely twisted effect of the thread of wool 12 is obtained. The apparatus of my invention efficiently and effectively forms the novelty yarn with the complex novelty effect with a minimum of material and time.

Various modifications of the method and apparatus will be apparent to those skilled in the art from a consideration of the drawing and the above specific description. Accordingly I intend to be limited not by the specific description above set forth but only by the claim appended hereto.

Although the apparatus shown and the method disclosed have been discussed with regard to the formation of the novelty yarn particularly illustrated in Figure 1, it is to be understood that this apparatus and method may be employed to make many other types of novelty yarns having many different appearance characteristics.

It is the particular function of the present invention to obtain a novelty yarn in which a first decorative thread is loosely twisted, that is, twisted with a fullness so that the thread extends out from the core of the yarn, and superimposing a second twist over that first twist in a particular manner as shown.

By the method and apparatus shown I can, for example, twist a relatively thick thread of wool over a core and then superimpose and over-twist a relatively thin thread of rayon over said wool to provide for a novel yarn effect. It is also within the purview of my invention to twist the superimposed thinner threads such as the rayon in closer twists over the relatively thicker thread of decorative material such as wool. I prefer that the threads of decorative material that make up my novelty yarn be contrasting in appearance.

I claim:

A method of making a novelty yarn comprising twisting a first thread of decorative material loosely about a core by feeding said first thread of decorative material at a substantially greater rate of travel than said core and twisting a second thread of decorative material about said first thread of decorative material, said second thread of decorative material being twisted relatively tightly about said first thread of decorative material, said second thread of decorative material being fed at a rate of travel substantially less than said first thread of decorative material, and binding back said yarn, said second thread of decorative material being so twisted about said first thread of decorative material that it is spaced from said first thread of decorative material.

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