

Nov. 24, 1925.

1,563,307

L. W. FRANK

TUFTING WICKING OR ROVING YARN

Filed Oct. 20, 1924

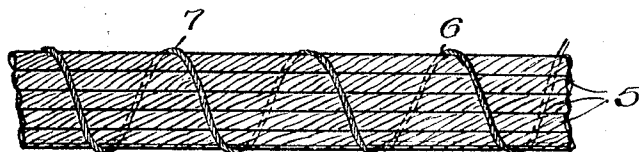


Fig. 1

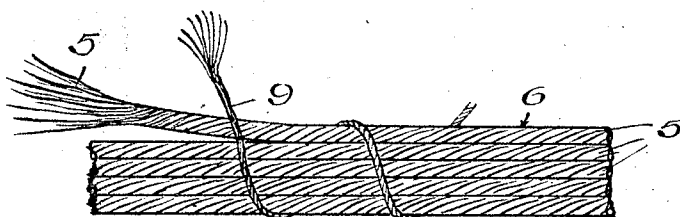


Fig. 2

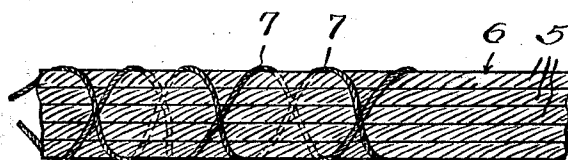


Fig. 3

Witness:

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UNITED STATES PATENT OFFICE.

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TUFTING WICKING OR ROVING YARN.

Application filed October 20, 1924. Serial No. 744,649.

To all whom it may concern:

Be it known that I, LEE WASHINGTON FRANK, a citizen of the United States, and a resident of Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Tufting Wicking or Roving Yarn, of which the following is a full, clear, and exact description, such as will enable others skilled in the art to make and use the same.

My present invention relates to improvements in tufting-wicking or roving yarn. This material consists of a number of roves of textile fibers, usually cotton, which roves are generally slightly twisted together to prevent their too easy disengagement from each other but not so tightly twisted as to materially compact the yarn. The roves of which the tufting-wicking or roving yarn is composed are themselves bundles of textile fibers slightly twisted together which are usually either pulled out and more tightly spun to make ordinary yarn, or employed directly for such purposes as require very slightly compacted bundles of fibers.

Machines have been provided, and are now in very general use, which feed the tufting-wicking or roving yarn to the upholstery and stitch it in place, but for the better operation of these machines a tufting-wicking or roving yarn is required which has a uniform size throughout its length, and which will develop no tendency to twist or buckle during its feeding or passage through the tube of the machine. Textile fibers have elasticity,—that is a tendency to resume their original condition after handling, and both the roves and bundles of roves have a tendency to untwist which is usually known and referred to as "back-twist". This becomes particularly evident when feeding the yarn through the tube of the machine. Also, when a bundle of roves are twisted together the exterior roves necessarily have to be of greater length than the interior roves, and when any untwisting occurs in pursuance with the tendency to "back-twist", which is always present, it impairs the longitudinal uniformity of the wicking or yarn especially as to size.

The objects of my present invention are to provide a tufting-wicking or roving yarn of greater longitudinal uniformity as to size, and a wicking or yarn in which the tendency to back-twist is overcome. I at-

tain the foregoing objects by means of the structure or construction illustrated in the accompanying drawings, in which

Figure 1 is a greatly exaggerated view of a short length of tufting-wicking or roving yarn formed in accordance with and embodying my present invention;

Fig. 2 is a similar view to that shown in Fig. 1 in which a rove and the outer constricting yarn is shown partially disengaged from the bundle or body of the wicking or yarn and partially untwisted to more clearly illustrate the manner of twisting in the preferred form of my invention; and

Fig. 3 is a view of still another length of tufting-wicking or roving yarn showing a different manner in which the constructing yarn may be disposed with respect to the bundle of roves.

In constructing my improved tufting-wicking or roving yarn, I take a suitable number of roves, 5 to provide a tufting-wicking or roving yarn, 6 of the desired size, and, instead of slightly twisting these roves together, I dispose them straight and parallel with respect to the axis of the entire structure. It will thus be seen that the bundle, as a whole, will have no tendency to back-twist, and that by reason of the friction between the adjacent contacting roves, the tendency of each individual rove to back-twist will be overcome.

To complete my new tufting-wicking or roving yarn, I wind about the bundle of roves, each disposed parallel with the axis of the bundle, a yarn 7. This yarn may be disposed quite loosely, that is, the respective convolutions quite far apart, as shown. But owing to the fact that the yarn crosses the roves at quite an angle the respective tendencies of the yarn and the roves to back-twist do not coincide in direction or extent and thus the tendency of the structure as a whole to back-twist is reduced.

However, in the preferred form of my invention, illustrated in detail in Fig. 2, I twist the yarn 7 in the opposite direction to that in which the roves 5 are twisted, so that when the yarn is wrapped about the bundle of roves, their respective back-twist will be in opposite directions and will neutralize each other and cause the yarn to snugly hug the bundle of roves.

It makes no particular difference in which direction the yarn is wrapped about the

bundle of roves, so I have illustrated it in Figs. 1 and 2 as wrapped in one direction, and in Fig. 3 as wrapped in the contrary direction. Also, more than one wrapping yarn may be employed and these wrappings may be in opposite directions without departing from the teaching of my invention, although I have found a single wrapping yarn quite ample.

From the foregoing description, taken in connection with the drawings, it will now be seen that without in any way impairing the soft fluffy nature of the completed product I have produced a tufting-wicking or roving yarn of greater intrinsic strength, greater longitudinal uniformity, both with respect to size and strength as well as a tufting-wicking or roving yarn in which the tendency to back-twist is eliminated.

Having described my invention, what I claim as new and desire to secure by Letters Patent is:—

A tufting-wicking comprising a bundle of roves, the respective roves of which lie parallel with the axis of the bundle, convoluted around which bundle is a yarn twisted in a contrary direction to the direction of twisting of the respective roves of said bundle.

Signed at Chicago, county of Cook and State of Illinois, this 7th day of July 1924.

LEE WASHINGTON FRANK.