Nov. 29, 1960 T. M. RHODES 2,961,983

INDUSTRIAL APPARATUS

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FIG. 2.

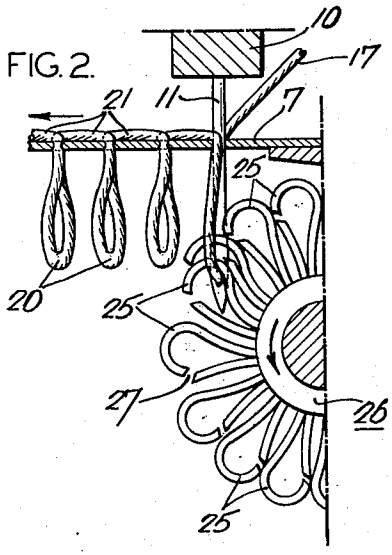


FIG. 1.

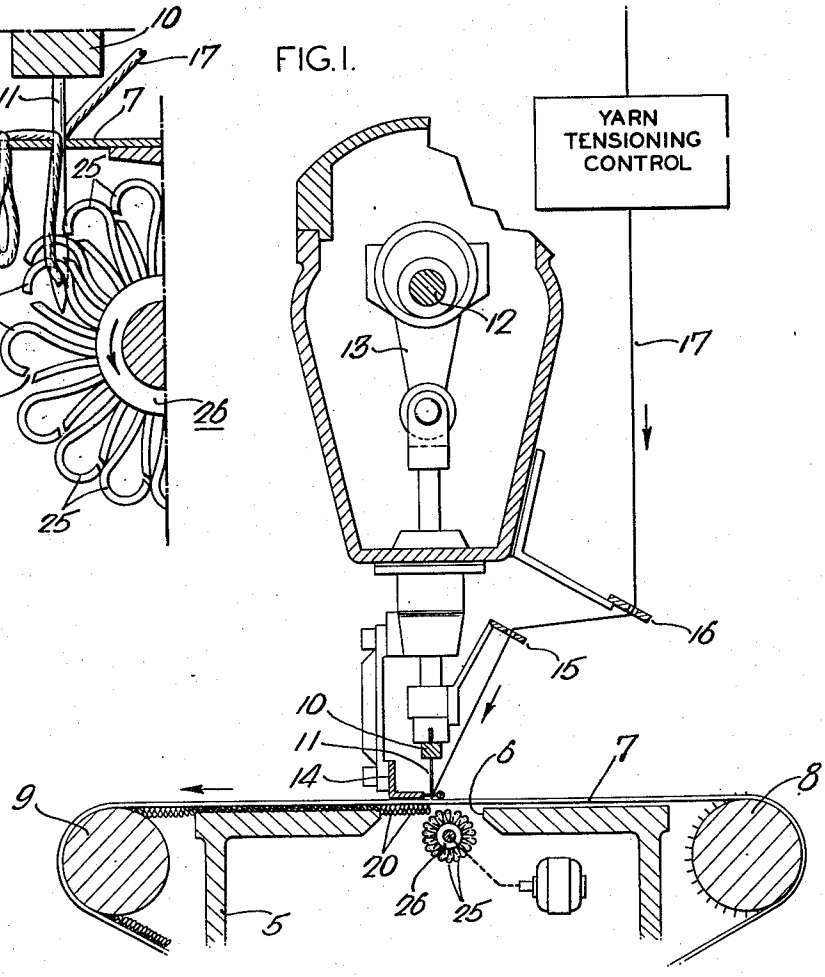
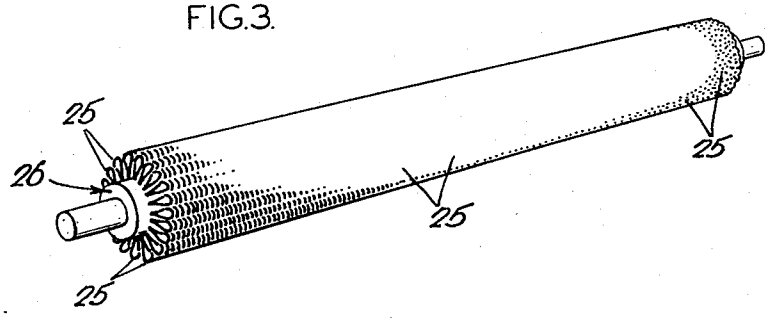


FIG. 3.



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2,961,983

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2 Claims. (Cl. 112—79)

This invention pertains to pile fabric tufting machines and more particularly to an improved looper for gripping and holding the pile projections in such a tufting machine.

The present invention carries forward the inventive concept described in Smith Patent No. 2,879,730 and contemplates the use of a series of formed bristles on the brush looper. These formed bristles will provide more accurate gripping and retention of the pile loops and may also be utilized to pull down the loops to a predetermined height as well as to apply the desired tension to the stitches on the back of the fabric without relying for this purpose on the tension in the yarn.

A primary object of the invention, therefore, is to provide in a brush-type looper for a tufting machine a plurality of continuous filament bristles in the form of loops. Each loop on the looper is severed to provide a hooked long leg, and a straight short leg.

Referring now more particularly to the drawings:

Fig. 1 is a schematic sectional view of a pile tufting machine,

Fig. 2 is an enlarged schematic view showing the construction and operation of my improved looper, and

Fig. 3 is a perspective of the looper dismounted from the tufting machine.

The conventional pile tufting machine is provided with a bed **5** having a throat **6** over which the backing fabric **7** is fed from roller **8** to roller **9**. The needle bar **10** is provided with a series of needles **11** which oscillate in a vertical manner with the needle bar **10** that is driven from a crank **12** through connecting rods **13**. The tufting

machine is provided with the conventional presser foot **14**, thread jerker **15**, and yarn guide **16**, which carries yarn **17** from a yarn supply such as a creel (not shown) and through any standard type of pattern attachment. As the needles **11** descend to carry lengths of pile yarn **17** through the fabric **7**, thereby forming loops **20** in the fabric, it is important that the lengths of yarn be retained at any desired depth in the fabric and that the stitches **21**, **21** on the back of the fabric be formed with sufficient tautness to provide saleable merchandise. In Smith Patent No. 2,879,730, it was proposed to utilize a relatively stiff, straight bristle or series of bristles on a brush mounted under the bed so that as the bristles contacted the pile loops being formed, sufficient downward tension would be applied to the loops to insure that the yarn would not be pulled out when the needles **11** withdrew. Instead of straight bristles on the brush looper, the bristles are formed of synthetic monofilament loops **25** having both ends embedded in the periphery **26** of the brush. Each of these bristle loops is cut or severed on the leading leg thereof at **27** which, in effect, provides a series of forwardly pointing hooks around the periphery of the looper. Where additional pull back of yarn may be required, these hooks will successively engage the pile yarn loops as shown in Figure 2 and more accurately control the length thereof.

Having thus described my invention, I claim:

1. A brush looper for tufting machines and the like comprising series of hooked bristles surrounding the periphery of the brush and a series of relatively straight bristles contiguous to said hooked bristles.

2. In a pile fabric tufting machine having a throat plate over which a supply of backing fabric is adapted to be fed, means for inserting pile projections below said throat plate and through the backing fabric, a shaft journaled below the throat plate and in line with the inserting means, a brush on said shaft, and a plurality of resilient hooked bristles around the periphery of said brush.

References Cited in the file of this patent

UNITED STATES PATENTS

2,717,437	De Mestral	Sept. 13, 1955
2,879,730	Smith	Mar. 31, 1959