

Sept. 29, 1942.

F. FALLSCHEER

2,297,208

BOBBIN OR SLEEVE

Filed May 7, 1937

2 Sheets-Sheet 1

Fig. 1.

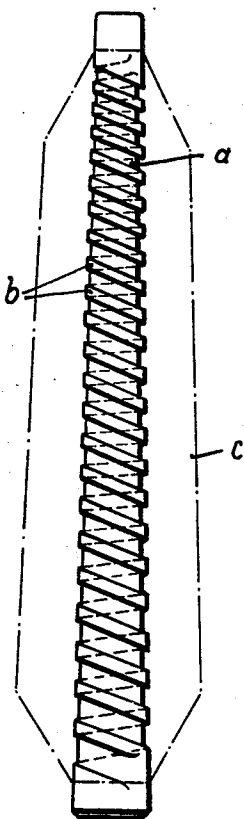
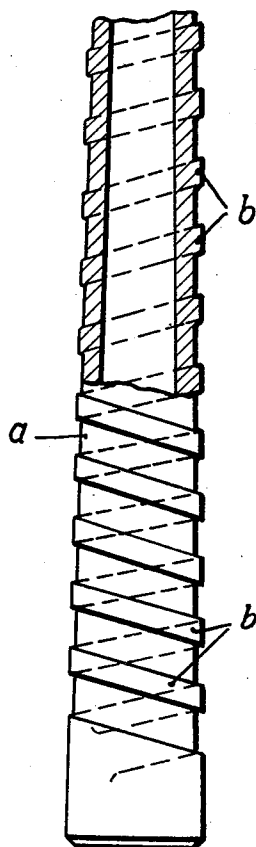


Fig. 2.



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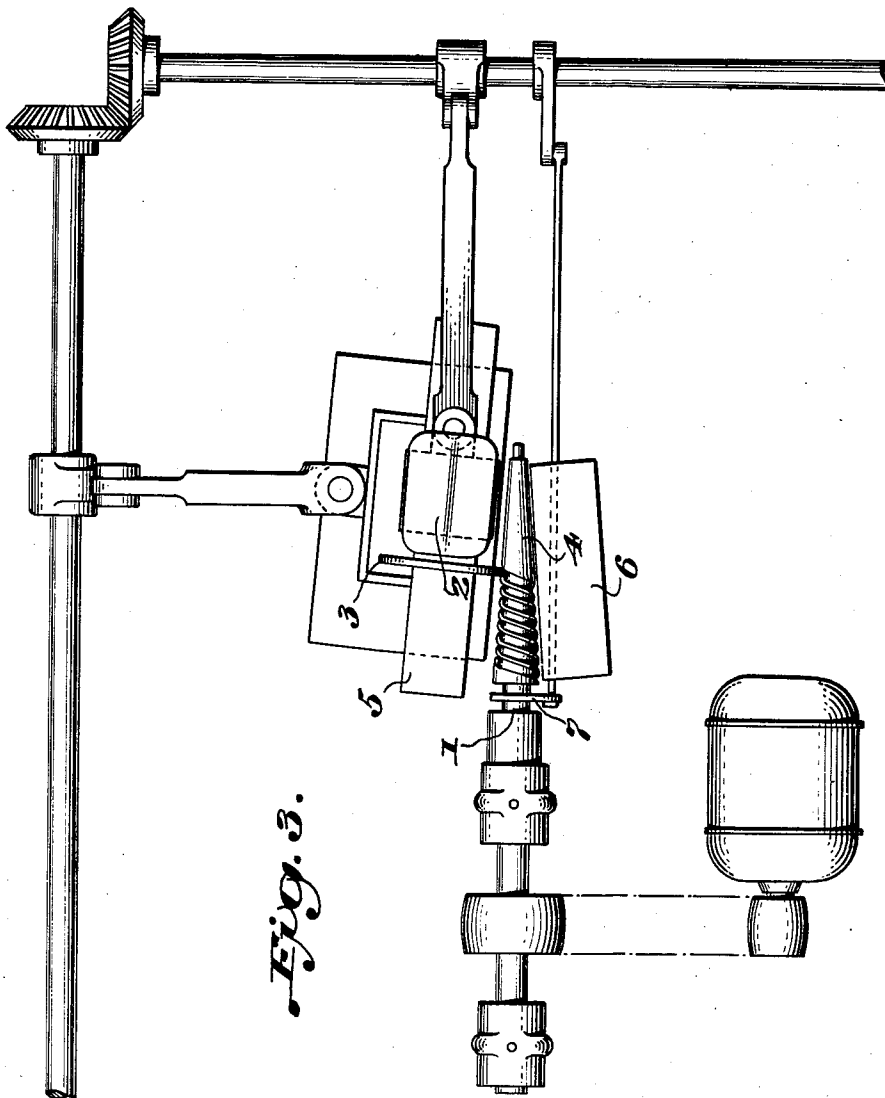


Fig. 3.

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UNITED STATES PATENT OFFICE

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BOBBIN OR SLEEVE

Fritz Fallscheer, Reutlingen, Germany; vested
in the Allen Property Custodian

Application May 7, 1937, Serial No. 141,379
In Germany July 16, 1934

3 Claims. (Cl. 18—56)

The present invention relates to bobbins or sleeves for yarn and to an apparatus and method of producing such bobbins. Yarn is ordinarily removed from a filled bobbin or sleeve by unwinding and in the case of weft yarn, is withdrawn from the bobbin or sleeve by a shuttle, the winding off of the yarn always taking place in the axial direction. In order that when the yarn is being unwound from the sleeve, it may have a certain grip thereon and may not jump off, the sleeves or bobbins have hitherto been constructed with recesses or raised parts on the surface, for example, annular or helical notches, pointed projections arranged in different groups, and raised annularly arranged rings.

These constructions, however, have various drawbacks, and the spinner or weaver is still seeking a better sleeve. An object of the present invention is to provide a bobbin or sleeve from which the yarn can be taken smoothly and uniformly.

The invention consists in providing the sleeve or bobbin with a helical rib arranged on its surface. This rib is produced by pressing and is made of a material which permits of this.

By the construction of the bobbin or sleeve according to the invention, particular resisting capacity is imparted thereto so that it will not break so easily as a sleeve provided with notches or annular ribs. From the point of view of the textile art, the construction according to the invention may be considered as ideal, in so far as with this construction the greater part of the yarn may lie in the helical groove during the spinning on, since the pitch of the helix is so small that each turn of yarn wound on the bobbin crosses a rib only once. The jumping off of the yarn is thereby avoided with greater certainty. It is obvious that in the case of sleeves or bobbins provided with the hitherto known notches, only the smaller part of the yarn comes to lie at the minimum circumference of the bobbin and consequently the tendency of the yarn to shoot off in these known constructions must be greater. Owing to these circumstances, it is not necessary in the case of the construction according to the invention for the raised parts on the surface of the bobbin or sleeve to rise above the surface to an amount which is equal to the depth of the notches heretofore used.

In this way, the yarn is better adapted to be properly drawn off the sleeve or bobbin in the axial direction without the tendency to jump off being promoted. On the contrary, as is mentioned above, this tendency is suppressed. A fur-

ther advantage of the construction according to the invention is that pieces of yarn remaining in the usual way on the sleeve or bobbin of this invention may be better removed by the fingers than in the case of the known constructions, because the surface of engagement is greater owing to the wider space between the rib parts and the bobbin may conveniently be drawn spirally through the fingers. In order to increase the effect realised by the construction of the sleeve or bobbin according to the invention, the raised parts may also be produced by providing ribs in the form of a multiple-thread screw.

An example of the bobbin according to the invention is illustrated in the accompanying drawings, wherein

Figure 1 shows a sleeve or bobbin in elevation, Figure 2 shows the same on a large scale and partly in section, and

Figure 3 is a diagrammatic top view of an apparatus for producing the bobbin.

Figures 1 and 2 illustrate a bobbin in which *a* designates the helical or spiral groove which is pressed into the bobbin, and *b* designates the remaining ribs. In Figure 1 *c* indicates the yarn in dot and dash lines as applied on the bobbin.

Figure 3 illustrates an apparatus for producing the bobbin which is made in accordance with the method in which the groove is spirally pressed into the tube. The mandrel or spindle 1 is driven by a motor having any suitable connection and the bobbin 4 is placed thereon. The mandrel 1 and bobbin 4 are rotated by the motor in one direction. The disk 3 has a circumferential face which is equal in width to the width of the groove to be pressed into the core 4. This disk 3 is rotated by means of a motor 2 in a directional rotation which is opposite that of the motor 1 and the core 4. 5 is a guide which is arranged parallel to the peripheral surface of the core and lengthwise therewith and the motor 2 is guided thereon. 6 is a cylinder which may be rotatably mounted if desired and is placed along the peripheral surface of the core 4 so that when the disk 3 presses the groove into the core the pressure thereof is taken up by the cylinder 6. Any suitable means can be provided for moving the motor 2 and disk 3 on the guide 5 and the pitch of the groove pressed into the core 4 is dependent upon the lengthwise speed of the motor 2 and disk 3 on the guide 5. The disk 3 and core 4 can of course be rotated at any speed, but a high speed is found preferable and the directions of the rotation as pointed out are quite desirable. The speed of rotation can also be

governed if desired and a bobbin will be produced which will have a high polish on all the surfaces thereof.

The apparatus is also provided with a stripping device which when actuated by any suitable means is provided to strip the bobbin from the mandrel after the groove has been pressed therein.

The present application is a continuation in part of applicant's co-pending application Serial No. 759,987, filed December 31, 1934.

I claim as my invention:

1. A method of making a bobbin of pressable material for textile yarn comprising preparing a plain-tapered tube of pressable material, and pressing a flat-bottomed groove spirally into the material of the tube to form a helical groove

along and below the outer peripheral surface of the bobbin without substantially deforming the internal surface of the tube.

2. A method according to claim 1, in which the pressing step is carried out by rotating the tube in one direction and rotating a disk having a flat circumferential face in the other direction in contact with the tube.

3. A method according to claim 1, in which the pressing step is carried out by rotating the tube in one direction at high speed and rotating a disk having a flat circumferential face of a width equal to the width of the groove in the other direction at high speed and in contact with the tube.

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