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1,956,191

TEXTILE BOBBIN

Filed March 19, 1932

FIG. 1.

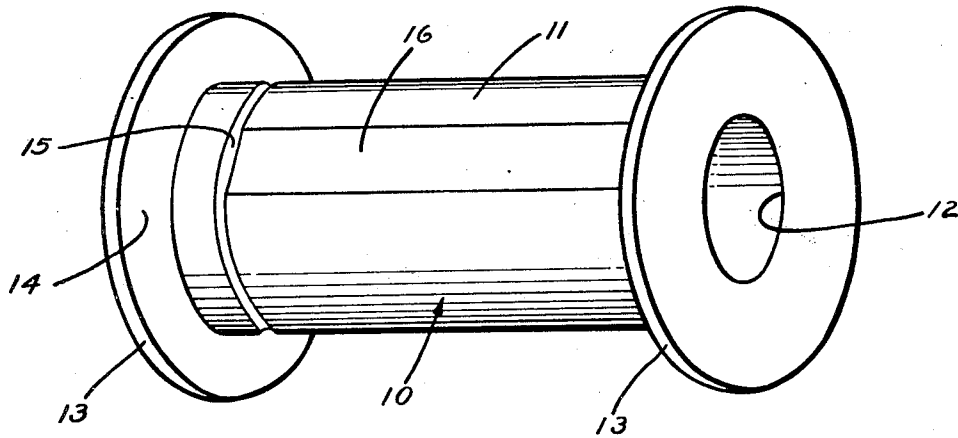


FIG. 2.

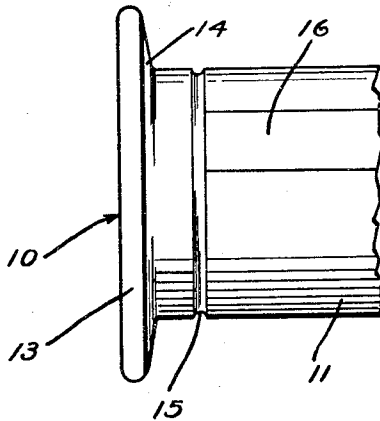
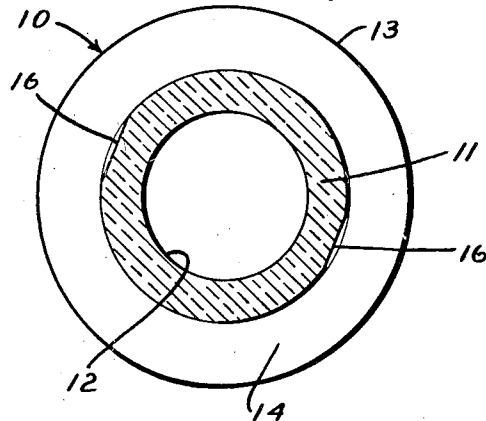


FIG. 3.



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1,956,191

TEXTILE BOBBIN

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Application March 19, 1932, Serial No. 599,886

3 Claims. (Cl. 242-118)

This invention relates to improvements in textile bobbins and more particularly to bobbins employed in the silk and rayon industry. Textile bobbins such as I am about to describe find many uses in the above mentioned industry among which is the setting of the twist in silk and rayon threads under which conditions they are subjected to heat and moisture. In fact, after the thread is wound on the bobbin, it is introduced into a steam bath having a temperature at or about the temperature of boiling water or from 200° to 220° Fahrenheit. Heretofore, wooden bobbins have been employed in this service but due to the time required for their cooling and their tendency to swell under the heat and moisture, the industry has endeavored to satisfactorily make them from other materials. Another objection to wood for such service is its tendency to gather and absorb dirt with the result that unless each bobbin is cleaned each time it is used, much spoilage of thread is experienced. Attempts have been made to use metals for the manufacture of these bobbins but these efforts have proven unsuccessful for the reason that no metal has been found which will withstand the repeated immersions in a steam bath without corroding and spoiling a portion of the thread which is wound thereon.

An object of my invention is to avoid the spoilage of thread which accompanies the use of textile bobbins of the ordinary type.

Another object is to increase the speed with which the twist may be set in silk and rayon threads.

A further object is to avoid injury to the bobbin due to the expansion of the thread relative thereto.

Still another object is to prevent the thread from shifting with relation to the bobbin and yet provide a truly circular cylindrical surface upon which the bobbin may run during the early stages of the winding operation.

The above and other objects may be accomplished by employing my invention which embodies among its features a tubular glass body having at opposite ends tapered flanges between which the thread is confined, said body being formed with longitudinally extending flat areas to prevent the thread from rotating thereon.

Other features include the forming of the body adjacent opposite ends with means for preventing longitudinal shifting of the thread thereon and the provision of a circular cylindrical area upon which the bobbin may run when little or no thread is on it.

In the drawing:

Fig. 1 is a perspective view of a bobbin made in accordance with my invention;

Fig. 2 is a fragmentary side view of my improved bobbin; and

Fig. 3 is a transverse sectional view through my improved bobbin;

Referring to the drawing in detail, my improved bobbin designated generally 10 comprises a cylindrical body 11 having a relatively large centrally located longitudinal bore 12 for the reception of a bobbin support such as that disclosed in a copending application filed by me on the 2nd day of October, 1931, Serial No. 566,391. While this bore receives the bobbin support when the bobbin is on the machine, it serves the double purpose of ventilating the bobbin so that a large part of the surface of the bobbin contacts with the atmosphere and hence the heat stored in the thread and the bobbin from its immersions in the steam bath is rapidly dissipated. Actual tests have shown that whereas a wooden bobbin wound with thread takes twenty-four hours to cool, my improved glass bobbin of the same dimensions and wound with an equal quantity of thread will cool in six hours. Hence it can be readily seen that aside from their cleanliness, glass bobbins with large bores such as I have described and illustrated materially decrease the length of time required for the satisfactory production of thread.

Formed on opposite ends of the body 11 are annular flanges 13, the inner faces of which are inclined as at 14 on an angle of from three to five degrees from the perpendicular. This enables me to wind the bobbins full of thread and then subject it to a steam bath as previously described without endangering the bobbin. The steam causes the thread to swell and I have experienced instances where the end flanges of a wooden bobbin having flat inner faces have been actually forced off the end of the cylindrical body with the consequence that large quantities of the thread have been utterly ruined. By providing the smooth surface characteristic of glass and then tapering it as above described, I experience no injury to the bobbin from the swelling of the thread.

In order to prevent the thread from shifting longitudinally on the body 11, I have formed the latter near opposite ends with annular grooves 15. While in the present embodiment I have shown and described grooves, it is obvious that an annular ridge or ridges will serve the same purpose and I consequently do not wish to have

an interpretation placed hereon which will limit my invention to grooves except as defined in the appended claims. Extending longitudinally of the body at diametrically opposite points between the grooves 15 are flat areas 16 which serve to prevent rotation between the bobbins and the thread. It will be noted that these flat areas terminate at the groove 15. This is done so as to provide circular cylindrical faces 16 adjacent opposite ends of the body. These faces contact with the driving wheel at the start of the winding and serve to make the bobbin run true and hence facilitate the winding of the thread thereon. Obviously, where ridges are substituted for the grooves 15, it is important that their outer faces be formed truly circular and possess no flats nor other irregularities which might interfere with the running of the bobbin.

While in the foregoing, I have shown and described the preferred embodiment of my invention, it is to be understood that minor changes in the details of construction, combination and arrangement of parts may be resorted to without departing from the spirit of the invention as defined in the appended claims.

I claim:

1. A bobbin including a cylindrical body having a groove in spaced relation to each end, flat areas on the body extending throughout the distance between the grooves and circular cylindrical areas on the body between the grooves and the adjacent ends.

2. A one-piece bobbin including a cylindrical body having a longitudinal bore of relatively large diameter, flanges at opposite ends of the body, said body having annular grooves in spaced relation to the flanges, and flat areas on the exterior of the body extending between the grooves.

3. A one-piece bobbin including a cylindrical body having a longitudinal bore of relatively large diameter, flanges at opposite ends of the body, said body having annular grooves in spaced relation to the flanges, flat areas on the exterior of the body extending between the grooves and circular cylindrical areas on the body extending from the grooves to the adjacent flanges.

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