Aug. 30, 1932. S. G. MALBY 1,875,068

SPOOL

Filed July 19, 1929

Fig. 1.

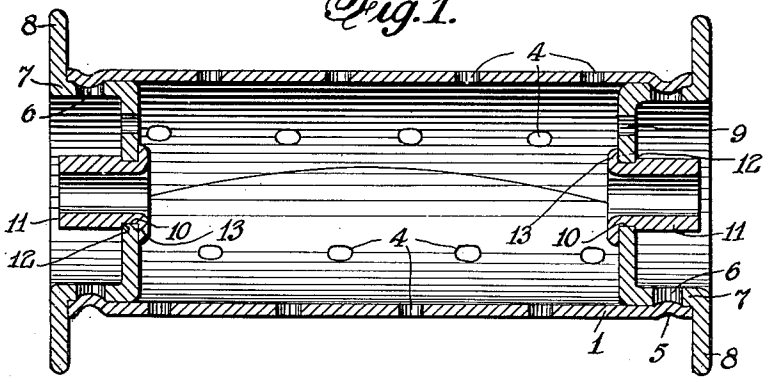


Fig. 2.

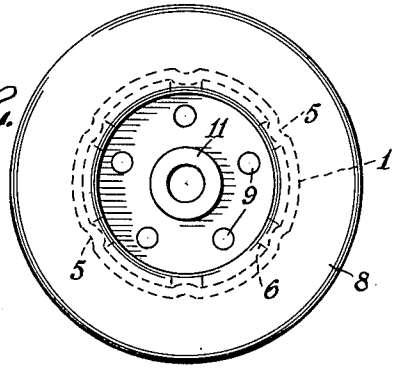
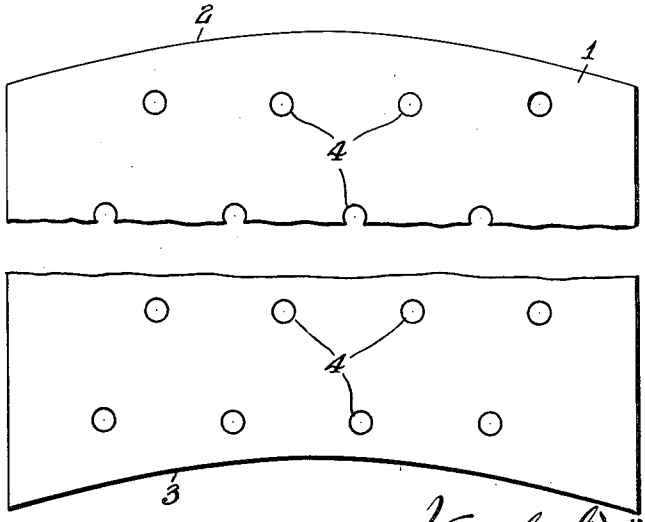


Fig. 3.



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Patented Aug. 30, 1932 1,875,068

UNITED STATES PATENT OFFICE

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SPOOL

Application filed July 19, 1929. Serial No. 379,402.

This invention relates to spools and more particularly to steaming spools used in the textile and rayon industries.

Prior to this invention spools used for steaming rayon and other textiles comprised a perforated barrel associated with end flanges. The end flanges were usually perforated and provided with a central aperture to receive a tube extending through the center and entire length of the barrel. The end portions of this tube functioned as a bushing permitting the spool to be mounted for use. The barrel was usually made of tubing formed by extruding metal such as aluminum or from a flat sheet of metal formed into a cylinder. In the latter, the joint formed by the two opposing edges was straight. In use due to the manner of mounting and the vibrations, the spool was subjected to torsional strains. This caused the end flanges to move in a direction opposite to that of the barrel whereby the spool was deformed and/or the parts thereof loosened.

I have found that I can overcome the above-mentioned defects by providing a spool having a barrel formed from a sheet of material having complemental curved edges whereby said barrel is provided with a curved joint preferably arcuate in shape and extending longitudinally thereof.

It is therefore an object of this invention to provide a spool which will resist the torsional strains to which it is subjected in use.

Another object of this invention is to provide a spool comprising a barrel having a curved joint preferably arcuate in shape and extending longitudinally thereof.

A further object of this invention is to provide a spool comprising a barrel having an arcuately shaped joint extending longitudinally thereof and a plurality of depressions along its circumference adjacent the ends thereof adapted to engage a plurality of holes in the end flanges, whereby the said barrel and flanges are locked together, each of said flanges being provided with a bushing whereby the spool may be mounted for use.

Other objects will appear from the following description, appended claims and accompanying drawing in which:

Figure 1 is a longitudinal section of the spool constituting this invention.

Figure 2 is an end view of the spool.

Figure 3 is a plan view of the sheet of material from which the barrel of the spool is made, said sheet being broken.

Referring now to the drawing wherein like reference numerals designate like parts, the reference numeral 1 designates the barrel of the spool. It is formed from a sheet of material having complemental curved edges 2 and 3 and bent or rolled into the shape of a cylinder, the edges 2 and 3 abutting and forming an arcuately curved joint as illustrated in Figure 1. It is to be noted that the edge 2 is concave and the edge 3 is convex. The barrel 1 is perforated with a plurality of holes 4 and provided on its circumference adjacent the ends thereof with a plurality of depressions 5 adapted to cooperate with a plurality of holes 6 formed in the offset members 7 of the end flanges 8 whereby the barrel and end flanges are locked together. The end flanges 8 may also be provided with perforations 9 if desired.

To provide means for mounting the spool, each end flange is provided with a central hole 10 in which a bushing or hub 11 is disposed. The bushing 11 is formed with a shoulder 12 adjacent one end thereof, whereby it may engage a portion of the flange adjacent the central hole 10. After the insertion of the bushing 11 in the central hole 10, the end 13 of the bushing is spun or upset whereby the bushing is locked to the end member.

The spool may be made from various materials. I prefer to make it from sheet metal, particularly aluminum. By reason of the fact that the bushings 11 do not extend the entire length of the barrel, the spool is much lighter than those used heretofore. The barrel of the spool as above described is made from a sheet of metal. While in its flat condition the sheet may be perforated. It is then assembled with the end flanges and the depressions 5 formed therein whereby the barrel and end flanges are locked together. This permits the spool to be made more economically and quickly than spools having

barrels formed from extruded metallic tubing.

In operation the spool above-described is mounted in the usual manner. Due to the fact that the barrel is formed with a curved joint extending longitudinally thereof, the spool will resist any torsional strains, and loosening of parts will be prevented. For example, if the end flanges were gripped and a twisting moment applied to one flange in one direction and to the opposite end flange in the opposite direction, the twisting would be imparted to the barrel and it would be resisted by the binding action along the curved joint.

It is obvious that changes may be made in the details above set forth without departing from the nature of the invention. Accordingly, this invention is not limited to the specific details described except as defined in the appended claims.

I claim:

1. A spool comprising a barrel having a curved joint extending longitudinally thereof, said barrel having a plurality of depressions around its circumference adjacent the ends thereof, end flanges having a plurality of holes adapted to receive said depressions whereby said barrel and flanges are locked together, and a bushing in each of said end flanges.

2. A spool comprising a barrel having a curved joint extending longitudinally thereof, said barrel having a plurality of depressions around its circumference adjacent the ends thereof, end flanges having a plurality of holes adapted to receive said depressions whereby said barrel and flanges are locked together, each of said flanges provided with a central hole, a bushing disposed in each of said holes, said bushing having a shoulder engaging said flange adjacent the hole and the end thereof adjacent said shoulder spun over whereby said bushing is locked to said flange.

3. A spool resisting deformation by torsional stress comprising a barrel having a curved joint symmetrically curved with respect to the center thereof and extending longitudinally throughout the entire length thereof, one of the elements of the joint being concave and the other convex.

4. A spool resisting deformation by torsional stress comprising a barrel having a curved joint symmetrically curved with respect to the center thereof and extending longitudinally throughout the entire length thereof, one of the elements of the joint being concave and the other convex, end flanges locked to said barrel and a bushing in each of said end flanges.

In testimony whereof, I have affixed my signature to this specification.

SETH G. MALBY.