June 8, 1937. H. C. MACK 2,083,337

BOBBIN

Filed Feb. 14, 1936

Fig. 1.

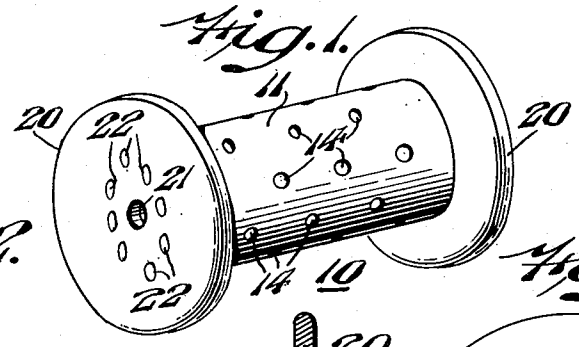


Fig. 2.

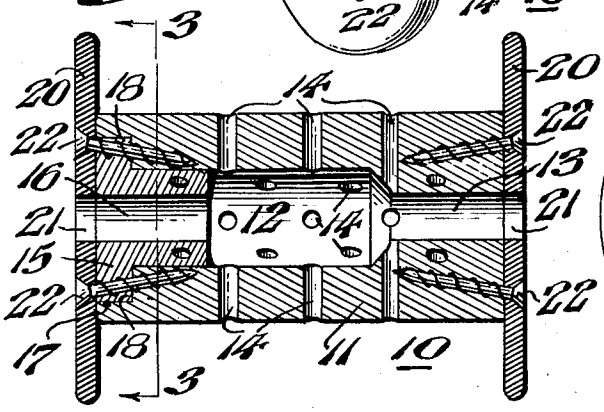


Fig. 3.

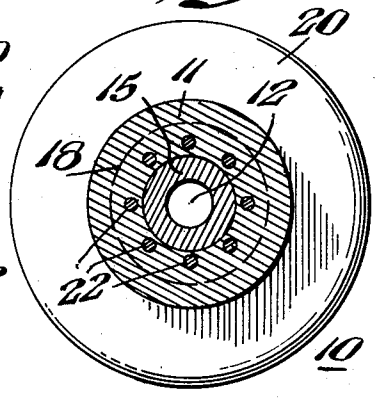


Fig. 4.

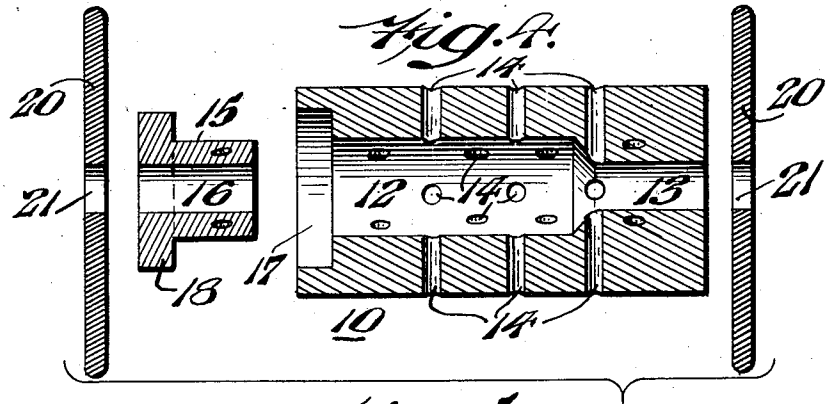
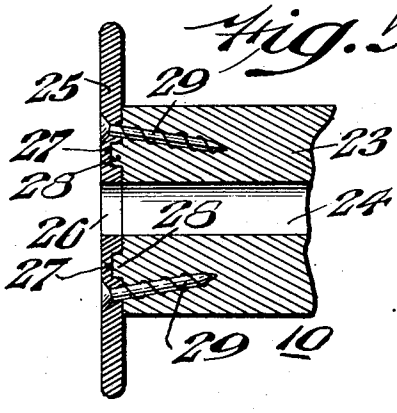


Fig. 5.



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BOBBIN

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Application February 14, 1936, Serial No. 63,845

2 Claims. (Cl. 242—124)

The present invention relates to bobbins and more particularly to a bobbin of the hollow type which in use is subjected to the action of steam.

Heretofore hollow barrel bobbins for general steaming purposes have not proven satisfactory due to the fact that the bearing bushing has been fastened in place by glue and hence expansion and contraction occurs by reason of steam contact. This is a serious disadvantage and has presented a problem not heretofore successfully solved. Also wooden cores of the bobbin barrel have served to mount the bobbin heads and since these cores are of wood and subjected to steam they soon become misshapen with the result the bobbins have an eccentric motion on the spindles.

Some of the objects of the present invention are to provide an improved bobbin; to provide a new and novel bobbin construction for general steam purposes; to provide an improved hollow barrel bobbin; to provide means for permanently holding bearing bushings in place within a bobbin barrel; to provide a head mounting for bobbins wherein provision is made for also preventing the bobbin bushings from becoming loose; to provide an improved head bearing for bobbin spindles, and to provide other improvements as will hereinafter appear.

In the accompanying drawing Fig. 1 represents a perspective of a bobbin embodying one form of the present invention; Fig. 2 represents a sectional elevation of the same; Fig. 3 represents a section on line 3—3 of Fig. 2; Fig. 4 represents a section similar to Fig. 2 showing the parts ready for assembly; and Fig. 5 represents a sectional detail of a modified head construction.

Referring to the drawing one form of the present invention is shown as applied to a hollow bobbin 10 of the type employed for steam treatment of the yarn, thread or other material wound on the bobbin. The bobbin 10 consists of a tubular barrel 11 having in the present instance a cylindrical bore 12 of relatively large diameter which has a reduced portion 13 at one end to form a bearing for the spindle upon which the bobbin is to be mounted. Radially arranged holes 14 form passages for the passage of steam from the bore 12 to the outer periphery of the body 11.

For the purpose of providing a bearing at the end of the barrel 11 opposite to that having the bore 13, a bushing 15 is provided having a diameter to fit snugly in the end of the bore 12. A bearing bore 16 extends longitudinally of the bushing 15 and is of the required diameter to receive, in bearing relation, the other end of the spindle heretofore referred to. In the preferred form of the invention the bushing end of the body 11 is provided with a circular recess 17 concentrically arranged with respect to the bore 12 and of a depth to seat a circular flange 18 formed on the outer end of the bushing 15. In assembled condition the outer face of the flange 18 is flush with the face of the recessed end of the body 11. The body 11 and the bushing 15 are preferably of wood, but any material suitable for the purpose and capable of withstanding hard use may be employed.

To complete the bobbin the ends of the barrel 11 have attached heads 20, preferably of fibre or bakelite, each of which has a centrally located bearing hole 21 for the passage of the bobbin spindle. In assembled condition the holes 21 are exactly alined with the axis of the bore 12. Screws, nails or other fastening devices 22 secure the heads to the barrel 11. In this connection it should be noted that each fastening device 22 passes through the flange 18 of the bushing 15 before entering the barrel 11 and therefore, not only anchors the bushing 15 fast to the barrel 11, but also prevents rotation thereof relative to the barrel. Thus the fastening devices 22 have the double function of mounting the heads 20 and anchoring the bushing 15. Preferably also the bushing 15 is glued along its joint with the barrel 11.

In bobbins as heretofore constructed it has been the practice to mount the bobbin heads on end core extensions and since these are of wood the spindle bearing hole therein soon becomes enlarged and out of shape causing the bobbin to rotate out of balance and wobble on the spindle. By the present invention this is entirely overcome because the fibre or bakelite heads bear directly on the spindle and are not subject to the wear which is present in the use of wood.

A modified form of the invention is shown in Fig. 5 wherein a solid bobbin barrel 23 has a spindle bore 24 therethrough. In this construction each head 25 has a spindle hole 26 of the same diameter as the bore 24 and alined therewith to provide a non-wear bearing for the spindle at each end of the barrel 23. Preferably also each head 25 is provided with a circular groove 27 to receive the complementary shaped extension 28 formed on the end of the barrel 23. Nails or screws 29 hold the heads fast to the barrel 23.

It will now be apparent that a complete unitary bobbin has been devised wherein a bearing bushing is permanently locked to the bobbin body in

such a manner that it is not subject to displacement due to expansion and contraction caused by subjecting the body to the action of steam. Furthermore a non-wearing support has been provided for the ends of the bobbin spindle, thereby overcoming the objections and disadvantages of a wooden support for the spindle.

While only two forms are shown in which this invention may be embodied, it is to be understood that the invention is not limited to any specific construction, but might be applied to various forms without departing from the spirit of the invention or the scope of the appended claims.

Having thus described my invention, I claim:—

1. A bobbin consisting of a barrel having a bore therethrough and a recess at one end, means forming a spindle bearing at one end of said bore, a bushing located in the other end of said bore to form a second spindle bearing, said bushing having its outer end flush with the adjacent end of said barrel, a flange on said bushing seating in said recess, a head, means to attach said head to one end of said barrel, a second head seating against said barrel and said bushing to conceal the bushing and barrel assembly, and means passing through said second head and said flange into said barrel for locking said parts together.

2. A bobbin consisting of a hollow barrel having a bore therethrough and a recess at one end, means forming a spindle bearing at one end of said bore, a bushing located in the other end of said bore to form a second spindle bearing, said bushing having its outer end flush with the adjacent end of said barrel, means to attach said bushing to said barrel, a flange on said bushing seating in said recess, a head, means to attach said head to one end of said barrel, a second head seating against said barrel and said bushing to conceal the bushing and barrel assembly, and means passing through said second head and said flange into said barrel for locking said parts together.

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