Aug. 29, 1933. F. MOSSBERG 1,924,745

BOBBIN

Filed Jan. 9, 1930

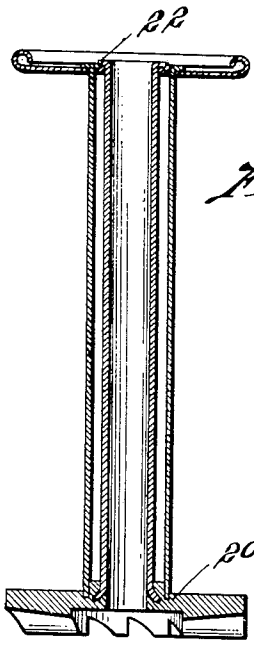


Fig. 1.

Fig. 2.

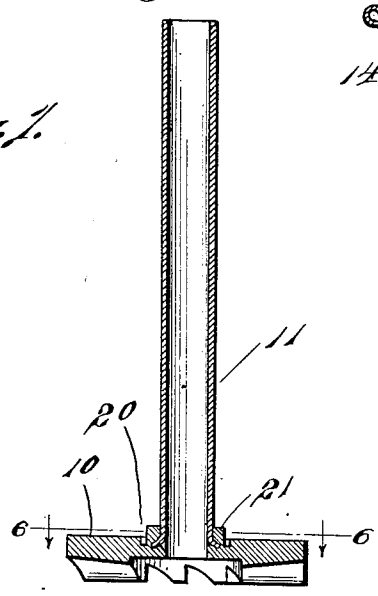
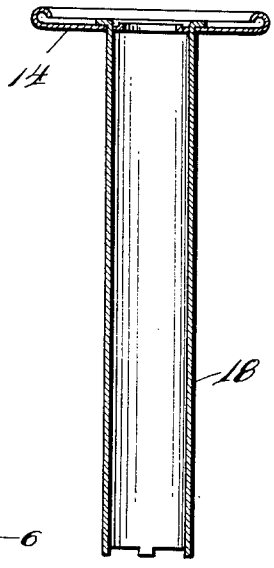


Fig. 3.



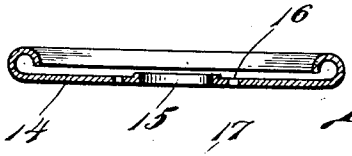


Fig. 4.

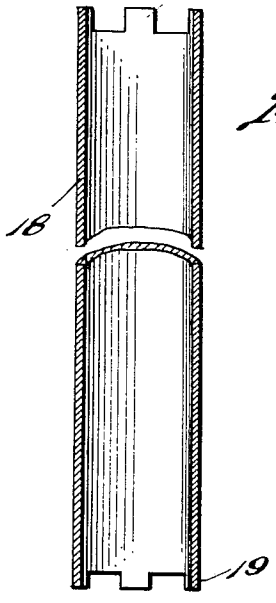


Fig. 5.

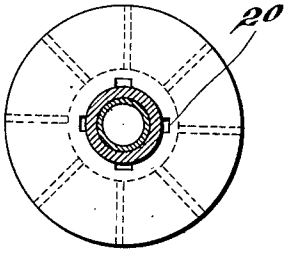


Fig. 6.

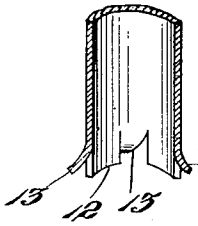


Fig. 7.

INVENTOR.
Frank Mossberg
BY Barlow & Barlow
ATTORNEYS.

Patented Aug. 29, 1933

1,924,745

UNITED STATES PATENT OFFICE

1,924,745

BOBBIN

Frank Mossberg, Attleboro, Mass.

Application January 9, 1930. Serial No. 419,552

4 Claims. (Cl. 242—118)

My present invention relates to the construction of metal bobbins suitable for use in braiding machines and the like.

One object of the invention is to provide a metal bobbin having a ratchet head which is rigidly locked to the central tube.

Another object of the invention is to provide a metal bobbin with an outer sleeve and a circular head which are rigidly locked in position by mechanical means.

A further object is to provide locking structure which will prevent relative turning of any of the bobbin parts.

With these and other objects and advantageous features in view, the invention consists of the novel arrangement of parts more fully disclosed in the detailed description following, in conjunction with the accompanying drawing, and more particularly set forth in the appended claims.

In the drawing:

Fig. 1 is a central section through the novel bobbin;

Fig. 2 is a central section through the ratchet head and tube;

Fig. 3 is a central section through the circular head and the outer sleeve;

Figs. 4 and 5 are central sections through the circular head and the outer sleeve, prior to assembly;

Fig. 6 is a section on the line 6—6 of Figure 2; and

Fig. 7 is a perspective view of the lower end of the central tube.

It has been found desirable to form a metal bobbin with a cast metal ratchet head, the other parts being of sheet metal, and to securely lock the parts together by mechanical means without welding, so as to be rigidly held together under the excessive vibration of braiding machinery and the like without turning of one part on another. I have devised a simple method and construction which locks the parts together mechanically, the ratchet head being cast around one end of the bobbin tube, and the circular head plate at the other end of the tube and the outer yarn holding sleeve being locked in position on the bobbin tube and the ratchet head by passing the free end of the bobbin tube through a central opening in the head plate and rolling the free end over the edges of the central opening; and the following is a detailed description of the preferred embodiment of my invention.

Referring to the drawing, the ratchet head 10 is cast around the lower end of the bobbin tube 11, this lower end being slit to form a series of separate fingers 12, the alternate fingers being turned laterally outward to form anchoring fingers or lugs 13 which are securely imbedded in the metal of the ratchet head during the casting operation, thus forming a sheet metal bobbin tube with an integral cast ratchet head.

The circular head plate 14 has a central opening 15 to receive the bobbin tube 11, and a plurality of spaced openings 16 which receive correspondingly spaced fingers 17 on the outer sleeve 18, the fingers 17 being then bent over, as shown in Figure 3, to lock the circular head and the sleeve together in assembled relation. The other end of the sleeve is provided with spaced fingers 19 which are adapted to enter and to be received in correspondingly spaced recesses 20 formed in the ratchet head 10.

As will be noted in Figures 1 and 2, the ratchet head 10 has an upstanding central flange or hub 21 which receives the lower end of the outer sleeve 18. In certain constructions, the frictional engagement of the sleeve with the hub 21 will be sufficient to prevent relative rotation, particularly when forced together as described below.

After the fingers 19 are seated in the recesses 20, the upstanding end 22 of the tube 11, which projects through the opening 15, is turned outwardly over the edges of the opening. The opening 15 preferably has an annular flange 23, note Figure 4, and the turned end 22 may, if desired, be rolled over the flange 23.

This turning of the tube end 22 is preferably under heavy pressure, thus rigidly binding the parts together. While it is preferred to assemble the sleeve and head plate together, and the tube and ratchet head together, and then to bind the two assemblies by turning the end 22 as described, in certain constructions the sleeve need not be locked to the head plate, as the binding action will rigidly hold the sleeve between the head plate and the ratchet head.

While I have described one specific embodiment of my invention, it is obvious that various changes in form and in construction may be made, within the spirit and the scope of the invention as defined in the appended claims.

I claim:

1. In a metal bobbin, a ratchet head, a central tube having one end permanently secured to the ratchet head, a head plate having a central opening, an outer sleeve concentric with said central tube, an integral annular hub on said ratchet head extending inwardly of said sleeve, said sleeve having a close fit on said hub, the ends of said sleeve contacting with said head plate and said ratchet

head, said central tube extending through said central opening and having its free end turned over the edge of said opening to bind and lock the parts in assembled relationship.

2. In a metal bobbin, a ratchet head, a central tube having one end secured to the ratchet head, a head plate having a central opening, an outer sleeve concentric with said central tube, an integral annular hub on said ratchet head extending inwardly of said sleeve, said sleeve having a close fit on said hub, the ends of said sleeve engaging recesses in said head plate and said ratchet head, said central tube extending through said central opening and having its free end turned over the edge of said opening to bind and lock the parts in assembled relationship.

3. In a metal bobbin, a ratchet head of substantial thickness having spaced recesses, a central tube having one end embedded in said head, a head plate having a central opening, an outer sleeve having one end secured to the head plate and spaced fingers on the other end adapted to seat in the recesses of the ratchet head, said central tube extending through said head plate opening and having its free end turned over the edge of said opening to lock the parts in assembled position.

4. In a metal bobbin, a ratchet head having spaced recesses therein of a depth less than the thickness of said head, a central tube having one end embedded therein, a cylindrical head having a central opening and spaced slots therearound, an outer sleeve having spaced fingers at each end, the fingers at one end entering the spaced slots and being bent to lock the cylindrical head and sleeve together, the fingers at the other end seating in the recesses of the ratchet head, said central tube extending through said cylindrical head opening and having its free end rolled over the edge of said opening to lock the parts in assembled position.

FRANK MOSSBERG.