

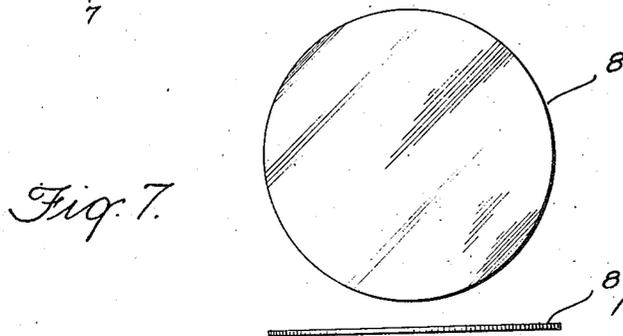
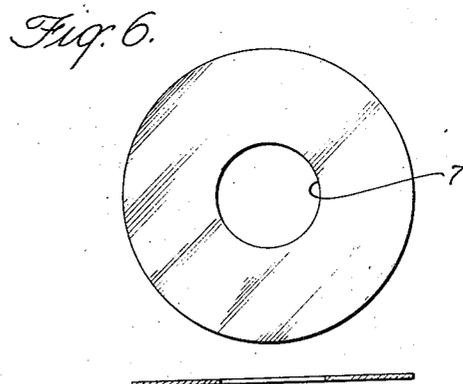
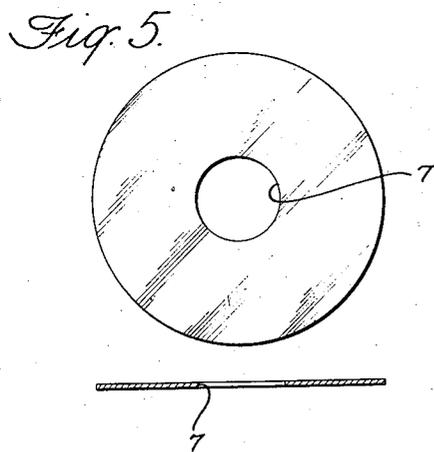
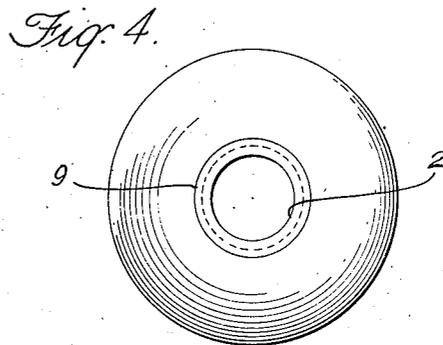
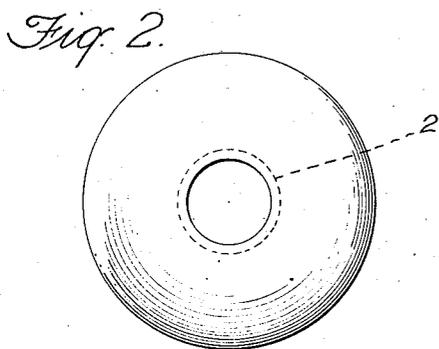
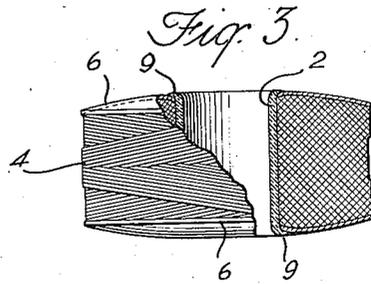
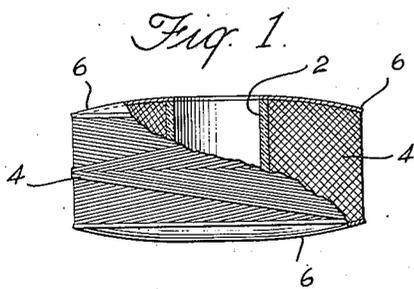
Nov. 18, 1924.

1,516,002

M. CURRY

FILLED BOBBIN AND METHOD OF PRODUCING THE SAME

Filed Nov. 22, 1923



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# UNITED STATES PATENT OFFICE.

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## FILLED BOBBIN AND METHOD OF PRODUCING THE SAME.

Application filed November 22, 1923. Serial No. 676,221.

*To all whom it may concern:*

Be it known that I, MALCOLM CURRY, a citizen of the United States, residing at Scarsdale, county of Westchester, State of New York, have invented certain new and useful Improvements in Filled Bobbins and Method of Producing the Same, of which the following is a full, clear, and exact description.

My invention relates to sewing machine bobbins and method of producing the same and has for its object to produce a filled bobbin having end disks of very light weight secured directly to the wound mass so as to not interfere with the unwinding of the bobbin and yet so as to prevent the thread from slipping down so as to surround the post of the shuttle.

A further object is to produce a bobbin with end supports which will contain a greater length of thread than existing bobbins of the same dimensions.

A further object is to produce a self contained bobbin the ends of which will be less liable to damage the sewing machine needle should it strike the ends than the ends of existing bobbins with metal shells.

A further object is to produce a bobbin with ends which will prevent endwise absorption of atmospheric moisture by the bobbin to a greater extent than existing bobbins.

A further object is to produce a bobbin having transparent ends and attaining the aforesaid objects.

The following is a description of an embodiment of my invention, reference being had to the accompanying drawings, in which,

Figure 1 represents a side view of a bobbin embodying my invention;

Fig. 2 represents a plan view of the same;

Figs. 3 and 4 show a modification; and

Figs. 5, 6 and 7 represent three forms of disk which may be used in the manufacture of my improved bobbin.

Referring more particularly to the drawings, 2 is a tubular core preferably of fibrous material, such as paper or pasteboard. 4 is a mass of thread cross-wound thereon in the usual manner and so that the length of the mass is approximately equal to the length of the core. 6-6 are two disks composed of strongly cohering flexible material which is adhesive when superficially

moistened. I prefer to use a homogeneous material such as sheet gelatine, a substance capable of being formed into thin pliable sheets or strips and the drawing is intended to show such gelatine disks. I prefer to use for the end pieces thin uncolored sheet gelatine of about .002 inch thickness. This material is transparent so that when applied to the ends of the bobbin the mass of the thread appears therethrough, and when the gelatine is practically colorless, the color of the thread and any surface imperfections are apparent through the same. The gelatine ends, moreover, keep the atmospheric moisture from entering the mass through the end faces thereof. Such sheet gelatine is sold under the trade name of "Glassine".

In manufacturing my bobbin I first wind the thread upon the core, the ends of the core being approximately flush with the ends of the mass. I then secure to the ends of the mass disks of the material referred to, which disks, when applied, may be centrally perforated as shown at 7 in Fig. 5, or may be without perforations as shown at 8 in Fig. 7. If applied without being perforated, they can subsequently be perforated either by removing a piece the size of the inside of the core, or by forcing a mandrel into the center of the core and pressing the center of the disk into the core and outwardly against the inner wall of the core. As shown in Figs. 1 and 2 the perforations in the disks are of the same diameter as the internal diameter of the core, and adhere to the core as well as to the mass so as to stay in position until the bobbin is completely unwound, that being desirable.

In applying the disks to the mass, I, in practice, slightly moisten the disks superficially on one side and then apply them to the ends with that side in contact with sufficient pressure to make them adhere, altho it may be possible to slightly moisten the ends of the mass superficially and press the dry disks thereon. I have found that in the bobbins the adherence is sufficient to hold the disks in place and, if the moistening is slight, not sufficient to interfere practically with the unwinding of the thread. The adherence seems to be due to surface contact between the thread strand and the end pieces, and independent of the body of the strand, that is, to the connection between the end pieces and the somewhat delicate

fibres constituting the nap or pile surrounding the body of the strand. The disks when applied, if they do not have perforations of greater diameter than the internal diameter of the core, may be made to adhere to the ends of the core as well as to the ends of the mass.

The cores may be slightly longer than the mass, and the perforations larger than the core, in which case, pressure may be applied in the usual bobbin press to compress the mass and upset the ends of the core so as to form flanges 9 outside the disks as shown in Figs. 3 and 4, which hold the disks in place after the bobbin has been unwound.

The bobbins may be compressed in the bobbin press and their ends rounded before the end pieces are applied, in which case, the gelatine end pieces are molded by the applying pressure to conform to the shape of the ends and retain their formed shape.

In Fig. 5 the disk has a hole of the same diameter as the bore of the tube. In Fig. 6 the hole is the same as the external diameter of the core as in Figs. 3 and 4. In Fig. 7 the disk has no hole.

I am aware that heretofore it has been proposed to secure paper disks to such masses by means of mucilage. Mucilage, however, adheres too strongly to the thread and is not of itself strongly cohering so as to be capable of being formed into thin pliable sheets as is the case of the gelatine which I use in forming the ends of my bobbins. Furthermore, paper thus secured is not transparent and neither the mass of thread, the color of the mass, nor any imperfections in the mass are visible through it. The material I use is not only strongly cohering and flexible but it is only slightly adhesive when superficially moistened.

As will be evident to those skilled in the art, my invention permits of various modifications without departing from the spirit thereof or the scope of the appended claims.

What I claim is:

1. In a filled bobbin, the combination of a tubular core having thereon a cross-wound mass of thread of a thickness approximately equal to the length of the core, and end pieces comprising strongly cohering flexible material slightly adhesive when superficially moistened, said material being capable of being formed into thin pliable sheets, said end pieces adhering slightly to the ends of the mass.

2. In a filled bobbin, the combination of a tubular core having thereon a cross-wound mass of thread having a thickness approximately equal to the length of the core, and homogeneous transparent end pieces com-

posed of end pieces of flexible material strongly cohering and slightly adhesive when superficially moistened, said material being capable of being formed into thin pliable sheets, said end pieces adhering slightly to the ends of the mass.

3. In a filled bobbin, the combination of a tubular core having thereon a cross-wound mass of thread of a thickness approximately equal to the length of the core, and thin end homogeneous pieces of gelatine adhering slightly to the ends of the mass.

4. In a filled bobbin, the combination of a tubular core having thereon a cross-wound mass of thread of a thickness approximately equal to the length of the core; and end pieces comprising strongly cohering flexible material slightly adhesive when superficially moistened, said material being capable of being formed into thin pliable sheets, said end pieces adhering slightly to the ends of the mass, the ends of said core extending through said disks and being upset.

5. The method of forming a filled bobbin, which consists in cross-winding a mass of thread upon a tubular core, applying to the ends of the mass under pressure end pieces of strongly cohering flexible adhesive material and causing them to adhere slightly to said ends.

6. The method of forming a filled bobbin, which consists in cross-winding a mass of thread upon a tubular core, applying to the faces of the ends of the mass under pressure thin end pieces of strongly cohering flexible adhesive material one of the opposing faces of said ends and end pieces being previously slightly moistened.

7. The method of forming a filled bobbin, which consists in cross-winding a mass of thread upon a tubular core, superficially moistening thin end pieces of strongly cohering flexible material slightly adhesive when superficially moistened and applying the same under pressure to the ends of the mass.

8. The method of forming a filled bobbin, which consists in cross-winding a mass of thread upon a tubular core, superficially moistening end pieces of thin gelatine and applying the same under pressure to the ends of the mass.

9. The method of forming a filled bobbin, which consists in cross-winding a mass of thread upon a tubular core, applying to the ends of the mass under pressure end pieces of strongly cohering flexible adhesive material and securing them to said ends by adhering action and to the ends of said core.

MALCOLM CURRY.