

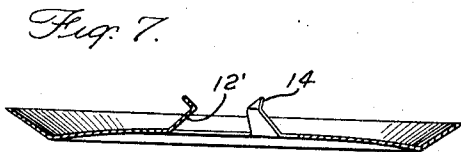
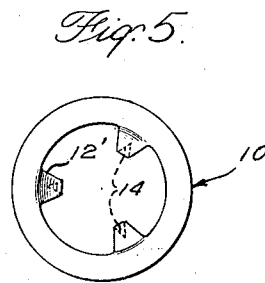
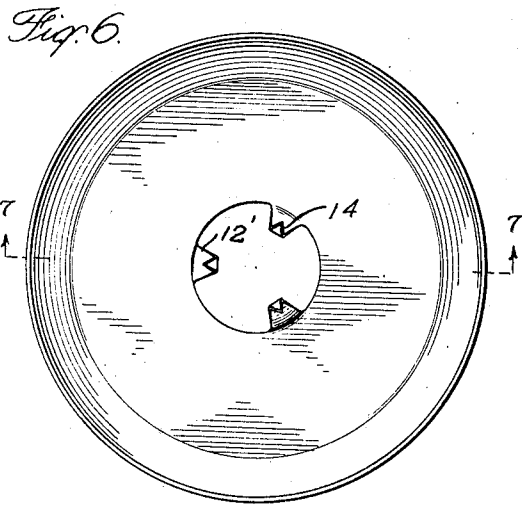
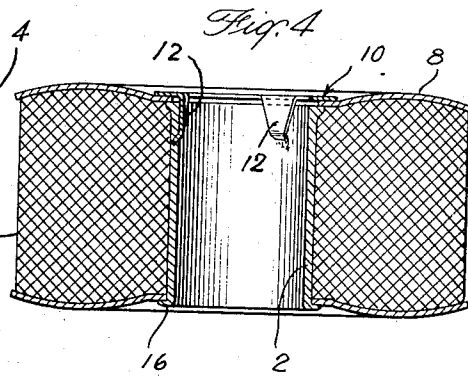
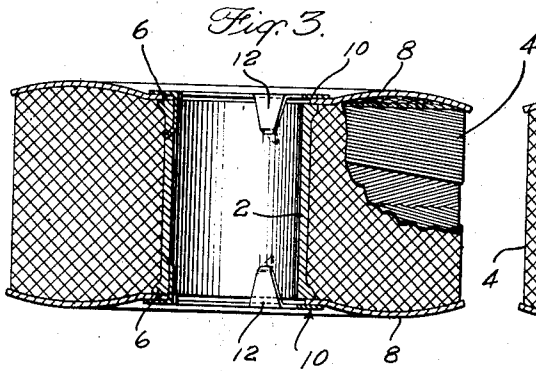
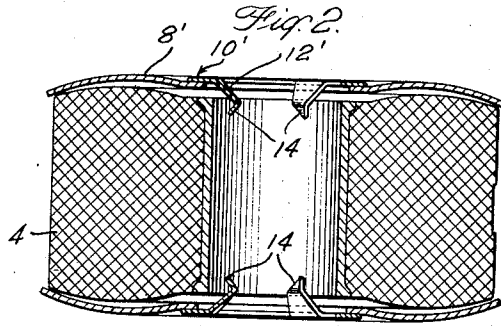
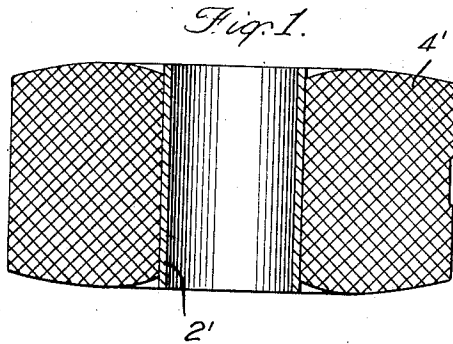
May 25, 1926.

R. K. CLARK

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WOUND BOBBIN AND METHOD OF PRODUCING THE SAME

Filed Feb. 19, 1926



R. K. Clark INVENTOR
BY *Bartlett Moore* ATTORNEYS

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UNITED STATES PATENT OFFICE.

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WOUND BOBBIN AND METHOD OF PRODUCING THE SAME.

Application filed February 19, 1926. Serial No. 89,299.

My invention relates to a new and improved wound bobbin and method of producing the same, and has for its object to provide a wound bobbin in which one or both heads are secured to the core by mechanical means after the core and mass have been axially compressed and the method for producing such a product. The following is a description of a bobbin embodying my invention and the method of producing the same, reference being had to the accompanying drawings, in which:—

Figure 1 shows in section an uncompressed mass of thread universally wound upon a compressible tubular core;

Fig. 2 shows the same compressed, with end pieces about to be applied thereto;

Fig. 3 shows the parts in section of a complete bobbin embodying my invention and produced by my method;

Fig. 4 shows the modified form of the complete bobbin in which the end piece, at one end only, is secured in accordance with my invention;

Fig. 5 is a plan view of a clip employed in producing the bobbins of Figs. 3 and 4;

Fig. 6 is a plan view of a modified form of head; and

Fig. 7 is a sectional view of the same on the line 7—7 of Fig. 6.

Referring more particularly to the drawings, 2 is a tubular core of pasteboard or similar compressible material, usually used in sewing machine bobbins. 4 is a mass of thread cross-wound thereon, the wind being usually known as the universal wind. The core and thread after winding are compressed axially so that the ends of the core are thickened as at 6. 8 are perforated concavo-convex end pieces which form a portion of the bobbin head and fit the ends of the mass, the same being cupped so as to exert a spring tension upon the outer periphery of the mass. 10 is a clip member constituting a portion of the head having an annular portion and detent prongs 12 provided with barbs 14 which prongs enter the ends of the tubular core and are expanded so that the barbs engage the inner surface thereof, the barbs 14 entering the material of the core and holding the clip and end piece 8 to the end of the mass, the annular portion of the clip overlapping the inner edge of the perforated end piece.

compressible tubular core 2' a universally wound mass 4' (Fig. 1) and then compress the same so that the mass is somewhat compressed and the core is compressed so that its ends are thickened and substantially flush with the adjacent portions of the end of the mass, as shown in Fig. 2. I then apply to one or both ends of the mass a cupped head comprising a cupped disk 8' and prongs 12'. This cupped disk 8' may be made of cardboard or similar material, and the prongs 12' can be separately carried by a clip member 10' having an annular portion engaging the inner periphery of the disk, or the end piece and prongs may be made of one integral piece of metal, as shown in Figs. 6 and 7. After the end piece has been applied, it is subjected to pressure which brings its inner surface into close contact with the outer surface of the corresponding end of the wound mass, the pressure slightly expanding the cup-shaped end piece so that it exerts a spring pressure upon the outer periphery of the ends of the mass. I then force the prongs outward so that the barbs 14 enter the inner surface of the core and hold the end piece to the core and to the mass, as shown in Fig. 3.

The end pieces at both ends of the mass may be similarly applied and secured, as shown in Fig. 3, or if desired the prongs of one of the end pieces may be omitted and that end piece secured to the core by swaging over the ends of the core, as shown at 16 in Fig. 4, the end piece at the other end being secured by prongs in the manner first described.

Where the end pieces are metallic I form them in one piece with the detent prongs, as shown in Figs. 6 and 7, and apply them under pressure, forcing the prongs outward in the same manner as in the two-piece construction. The metallic end pieces are cupped and slightly expanded by the pressure so as to exert peripheral tension on the mass. By using the securing prongs above described, and applying the heads under pressure, in the manner described, a wound bobbin is produced in which cupped shaped heads are securely held in place by mechanical means and exert the desired pressure upon the ends of the mass.

By my method, a clip secured to the cup-shaped end pieces can be applied after the mass is wound upon the core, it being im-

In producing this bobbin I wind upon a

practicable to wind the mass upon a core having cup shaped end pieces previously applied there.

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

1. In the method of producing wound bobbins, the improvement which consists in cross-winding a mass of thread upon a compressible core, compressing said mass and core axially so as to bring one end of said core flush with the adjacent portion of the corresponding end of said mass, applying under pressure a cupped disk-like head having metal prongs extending from one side thereof to said end of said mass with the prongs within said core, and forcing said prongs outward so as to embed them in the inner surface of said core.

2. In the method of producing wound bobbins, the improvement which consists in cross-winding a mass of thread upon a compressible core, compressing said mass and core axially so as to bring one end of said core flush with the adjacent portion of the corresponding end of said mass, applying under pressure a cupped disk-like head having metal prongs extending from one side thereof to said end of said mass with the prongs within said core so as to expand said

cup-shaped disk and cause it to exert a spring tension on the periphery of the end of said mass, and forcing said prongs outward so as to embed them in the inner surface of said core.

3. A wound bobbin comprising a compressible core, a mass of thread cross-wound thereon, the core and mass being axially compressed and each end of the core being flush with the adjacent portion of the end of said mass, a cupped head having barbed prongs extending within said tubular core, said barbed prongs being embedded in the inner surface of said core and holding said head to said mass in expanded position.

4. A wound bobbin comprising a compressible core, a mass of thread cross-wound thereon, the core and mass being axially compressed and each end of the core being flush with the adjacent portion of the end of said mass, a cupped head having barbed prongs extending within said tubular core, said barbed prongs being embedded in the inner surface of said core and holding said head in expanded position to said mass, said head comprising a cupped pasteboard disk and a clip member engaging the outer surface of said disk and carrying said prongs.

In testimony whereof, I have signed my name to this specification this 16th day of February, 1926.

ROBERT KERR CLARK.