

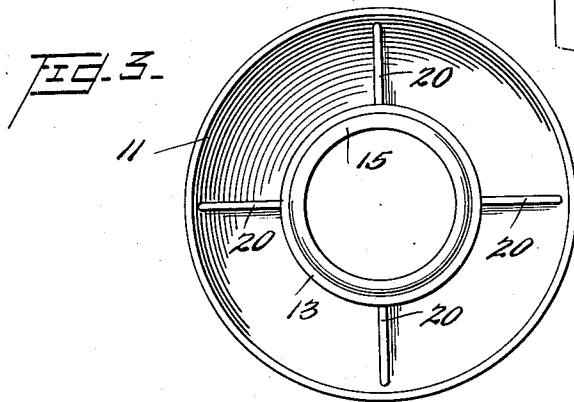
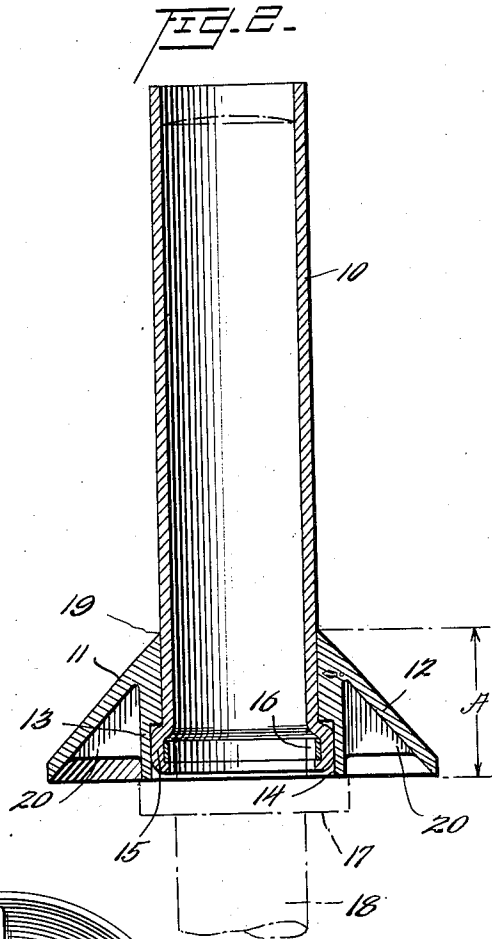
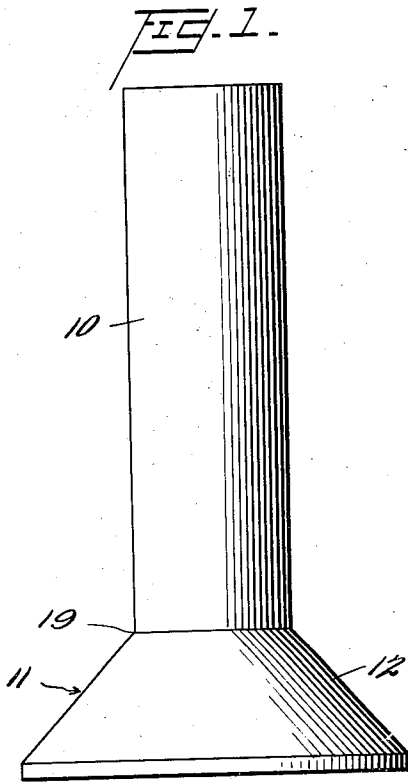
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BOBBIN

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BOBBIN

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1 Claim. (Cl. 242—122)

The present invention relates to bobbins and particularly to the simple, light type of bobbin adapted for use as a core for a package of thread or yarn in the textile industry.

Many types of bobbins have heretofore been suggested and are now used in large quantities in the textile industry. One type which has met with widespread favor comprises a cylindrical barrel and a frusto conical base, the barrel and base being coaxially disposed and one end of the barrel being housed and retained within the base, the other end of the barrel having no head or base thereon.

In forming a thread package upon such a bobbin it is first placed upon the winding mandrel of a winding machine and, while the mandrel and the superimposed bobbin revolve about the axis of the mandrel, a thread package is built up thereon by the action of a thread feeding and traversing mechanism, this mechanism having a thread guide which moves in a closed path parallel to the axis of the winding mandrel and from which guide the thread passes directly upon the bobbin. The winding mandrel and the traversing mechanism just described comprise portions of the same winding machine and are definitely positioned or located with respect to each other. It is intended that the mandrel and traversing mechanism occupy such relative position that the initial thread winding upon the bobbin is begun exactly at the junction of the conical and cylindrical thread receiving surfaces of the bobbin.

If, for any reason, the bobbin is not properly placed upon the winding mandrel, or is not so constructed that the junction of the cylindrical and frusto conical thread receiving surfaces occupy the desired relationship to the thread feeding and traversing mechanism, the initial layers of the thread winding will be imperfectly placed.

Manufacturers of bobbins have naturally made every attempt heretofore to secure uniformity and accuracy of dimension in their products but, in the manufacture of inexpensive bobbins in large numbers, a certain proportion of bobbins are made which do not seat upon the winding mandrel with the desired degree of accuracy. This is particularly true where paper is employed in the manufacture of the bobbin and where the annular end of the barrel itself is employed as an abutment surface adapted to contact with the seating surface formed on the winding mandrel when the bobbin is placed in position on such a mandrel. Thus, in a series of such bobbins, the distances between the ends of the respective

barrels and the lines of junction between the conical and cylindrical surfaces may vary considerably, in some of the bobbins this distance being exactly that desired and in others being greater or less than that desired.

The present invention contemplates the provision of a bobbin which, while yet inexpensive to produce, light in weight and durable, is formed in such a manner that the distance between the surface thereof which is adapted to contact with an abutment surface of the mandrel and therefore definitely locate or position the bobbin upon the mandrel, is in every case the same distance from the line of junction between the cylindrical and frusto conical thread receiving surfaces of the bobbin. When placed on the winding machine, therefore, each and every bobbin of the series will be definitely and accurately located with respect to the thread feeding or traversing mechanism and hence inaccurate and faulty winding is eliminated. Generally speaking the invention consists in the combination of a cylindrical barrel and a one piece base formed for instance of bakelite, hard rubber, or any other similar material which, after having been formed into a bobbin base, will maintain its shape and its original dimensions while at the same time is comparatively inexpensive and durable.

In the accompanying drawing one embodiment of the invention is disclosed by way of example and will be hereinafter described in detail.

In the drawing:

Figure 1 is a side elevation of the improved bobbin;

Figure 2 is a longitudinal section through the same, portions of a winding mandrel being indicated in chain lines;

Figure 3 is a bottom plan view of the bobbin showing details of the base thereof.

The barrel of the bobbin is indicated at 10 and the base at 11, the barrel comprising a cylindrical paper tube, preferably formed by winding a sheet of paper convolutely upon a cylindrical mandrel and gluing or pasting the several convolutions together, and the base being preferably formed of bakelite, hard rubber, or other such plastic substance by a molding operation, after which the substance is allowed to harden, or is subjected to some hardening treatment.

It will be perceived that the base has a frusto conical portion which is indicated at 12 and an axial cylindrical portion 13 integral therewith. The cylindrical portion 13 is axially and cylindrically apertured to receive the end of the

paper barrel 10 and at its outer end this inner barrel receiving cylindrical aperture has a short section of enlarged diameter, indicated at 14, which receives the expanded end 15 of the barrel 10. Within the end of the barrel is a metallic retaining ring 16 which prevents contraction of the expanded barrel and thereby locking the barrel end within the base against relative axial movement in one direction. It may be further retained by a suitable adhesive or other locking means if found necessary or desirable. The annular lower end surface of the cylindrical portion or skirt 13 of the base is disposed in a plane transverse to the axis of the bobbin and is adapted to seat upon the shoulder or collar 17 which forms a part of the winding mandrel 18. The circular line of junction of the thread receiving surfaces of base and barrel is indicated at 19 in Figure 1 and by reason of the fact that the base 11 is formed in one piece and of durable material, it is obvious that the distance indicated at A in Figure 2, between the annular lower edge surface of part 13 and the line of junction 19, will always be the same for all bobbins of a series employing bases such as illustrated. The end of the paper barrel 10 does not touch the collar 17 of the winding mandrel but the position of the bobbin upon the mandrel is wholly determined by contact between the base 11 and the collar 17.

The base itself may be formed in various

ways and of various materials but that illustrated in the drawing is eminently satisfactory. Strengthening webs 20 are shown in Figures 2 and 3, these strengthening webs being disposed laterally of the bobbin and connecting the outer cylindrical surface of part 13 to the inner conical wall of part 12. In all instances these strengthening webs are not necessary, but in certain instances they may be increased in number as, where it is desired to make the parts 12 and 13 as light as possible and yet have a base which is rigid and durable.

Having thus described the invention, what is claimed as new and desired to be secured by Letters Patent is:

15 A bobbin adapted to serve as a core for a thread package comprising a cylindrical paper barrel and a one-piece base, said base having a central hollow cylindrical portion, and a conical skirt portion, said portions having their inner ends joined together and their outer ends spaced apart, radially disposed bracing webs integral with the said two base portions, the end of the barrel being housed entirely within the hollow cylindrical central portion and the end of this portion projecting outwardly beyond the barrel end and terminating in an annular end surface disposed in a plane normal to the axis of the bobbin and comprising a seating surface adapted to rest upon the collar of a winding mandrel.

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