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BOBBIN BASE
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Fig. 1.

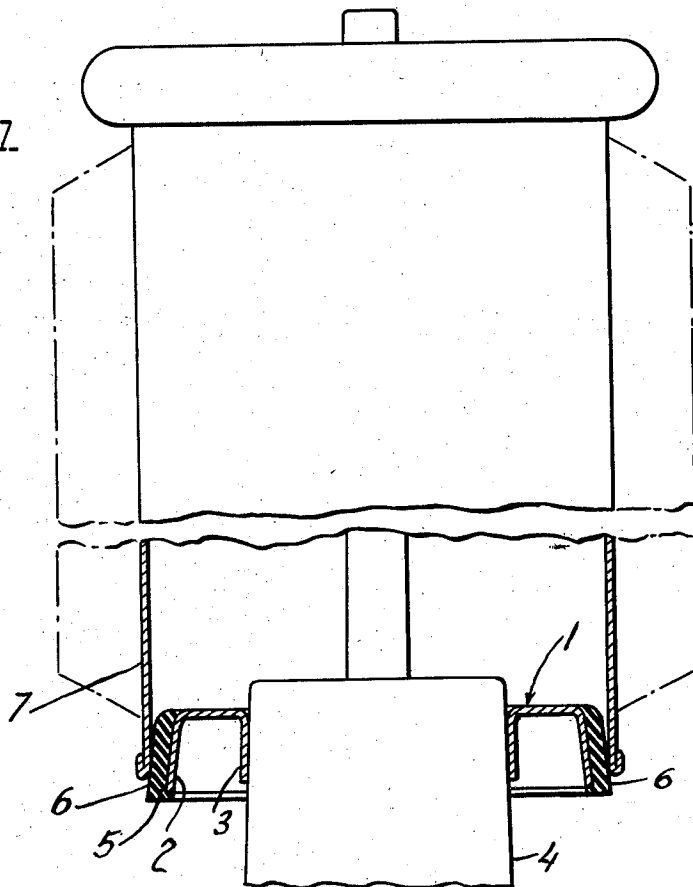
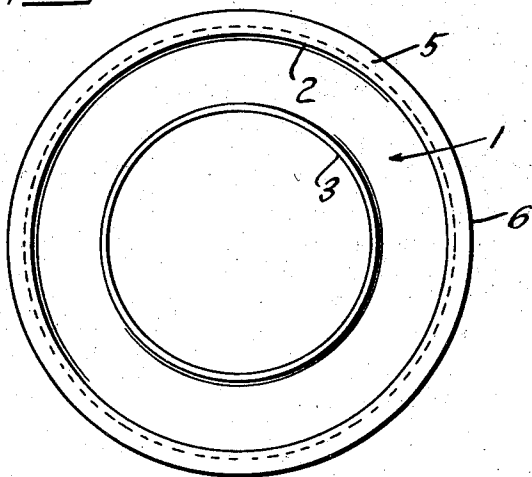


Fig. 2.



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BOBBIN BASE

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3 Claims. (Cl. 242—46.5)

This invention relates to the twisting of rayon thread and has for its object the provision of an improved bobbin base for twisting machines. The bobbin base of the invention is especially intended for mounting upon the spindle of an "upstroke twister" such as is commonly used in the rayon industry, and comprises an annular metal member adapted to engage a spindle and a yieldable member fixed to the metal member which is adapted to engage a bobbin.

The metal member may be made of any suitable metal such as steel and may be cast, machined, spun or pressed to the desired shape. It is provided with any suitable spindle-engaging means and has an exterior surface, preferably tapered or conical in form, to which the yieldable member is fixed. The yieldable member is preferably formed of elastic and wear-resisting rubber and is fixed to the metal in any suitable manner, such as by cementing or bonding.

In the accompanying drawing:

Fig. 1 shows in sectional view, a bobbin base according to the invention as mounted in one manner of use; and

Fig. 2 shows a plan of the bobbin base of Fig. 1. The bobbin base illustrated in the drawing comprises an annular metal member 1 preferably formed of pressed steel having a depending outer portion 2 and a depending inner portion 3 which is tapered to make a snug engagement with the spindle whorl 4. The exterior surface of the outer portion 2 is preferably tapered, that is, frusto-conical in form, and the yieldable member 5 is fixed to the outer surface thereof as by bonding, cementing or the like.

The yieldable member is preferably made of elastic rubber which has abrasion resisting properties and is preferably fixed to the metal member during the vulcanizing process in any suitable manner. Very satisfactory processes of vulcanizing and bonding the rubber to the metal which are now employed and widely known in the art are the Permabond process and the Vulca-lock process. The exterior or bobbin-engaging surface of the rubber, that is, the peripheral edge 6, is preferably tapered or conical in form to enable the inner cylindrical surface of a bobbin 7 to form a snug or non-slipping engagement therewith, as illustrated in Fig. 1. The peripheral surface or edge 6 makes a circumferential engagement with the edge portion of the inner surface of the bobbin.

The rubber member is of sufficient thickness to be resilient without being deformed when the bobbin is pressed thereover and has enough mass

that, under the action of centrifugal force (at speeds in the neighborhood of 6000 R. P. M.) the rubber is thrown outwardly into tight engagement with the bobbin. The yieldable property of the rubber, coupled with the displacement due to centrifugal force tend to center the bobbin automatically and accordingly reduce objectionable vibrations. Undue thickness of rubber is objectionable because the centrifugal force set up is apt to pull the rubber from the metal. A bobbin base having a maximum exterior diameter of about 3.70 inches having the yieldable member formed of elastic rubber about 0.20 of an inch thick, gives entirely satisfactory results when operated at speeds in the neighborhood of 6000 R. P. M.

The bobbin base of the invention does not wear or grind off the bobbin such as results when a metal base contacts an aluminum bobbin. The grinding action of metal to metal, especially when aluminum is one of the metals, forms a black powder that is deposited on the thread with resulting damage. Due to the rubber engagement with the bobbin the present noise of the twisting room is greatly diminished and the tendency for slippage to occur between the bobbin and the base, during twisting, is practically eliminated. This, of course, gives a more uniformly twisted thread. The bobbin base of the invention is especially advantageous from a standpoint of smoothness of operation. At the high rotative speeds now used in twisting rayon thread, an unbalanced or poorly centered bobbin is very likely to set up an objectionable vibration. The bobbin base of the invention has a pronounced tendency automatically to center within the bobbin and engage it uniformly all the way around. It may, therefore, be subjected to the high speeds of present twisting without objectionable or noticeable vibration shocks being transmitted to the twisting apparatus.

I claim:

1. A bobbin base for upstroke twister apparatus which comprises a metal member having a central opening for engaging a spindle, said metal member having an exterior surface concentric with the spindle, and a yieldable member formed of elastic rubber bonded to the said exterior surface of the metal member, said yieldable member being annular in form and of a sufficient thickness to yield under the action of centrifugal force and make a snug circumferential engagement with the inner surface of the bobbin when rotated at high speeds.

2. A bobbin base for upstroke twister appara-

tus which comprises a metal member having a depending inner portion adapted to effect a snug engagement with a spindle and a depending outer portion having a smooth outer surface, and
5 a yieldable member formed of elastic rubber bonded to the smooth surface of the depending outer portion of the metal member, said yieldable member being relatively thick and adapted to effect a gripping engagement with
10 the inner surface of the bobbin.

3. A bobbin base for upstroke twister appara-

tus which comprises a metal member formed of sheet metal having a depending inner portion for engaging a spindle in snug gripping engagement and a depending outer portion, and a yield- 5 able member formed of elastic rubber bonded to the depending outer portion of the metal member, said yieldable member being relatively thick and readily expansible at the speeds employed and adapted to make a snug circumferential engagement with the bobbin. 10

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