

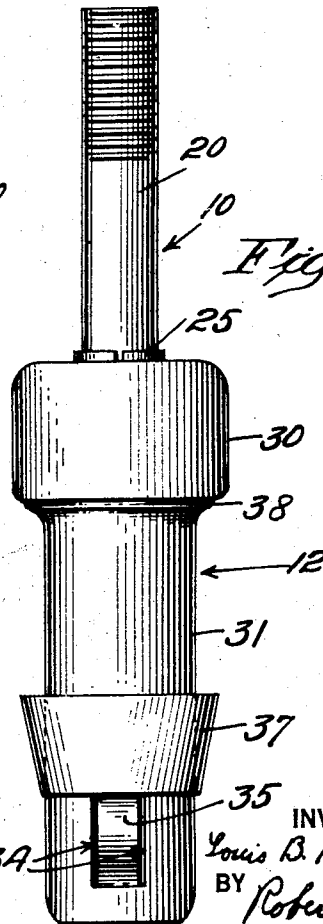
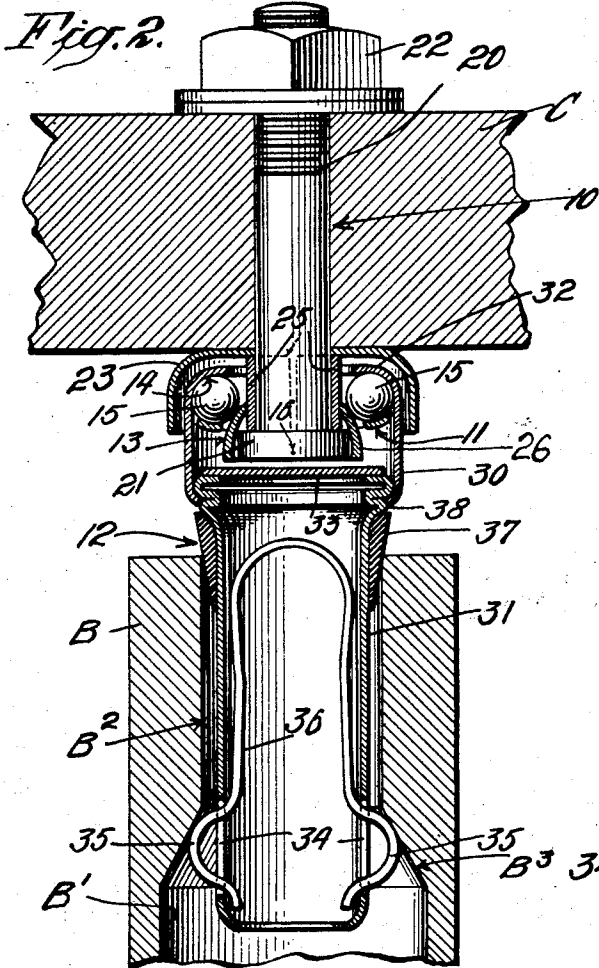
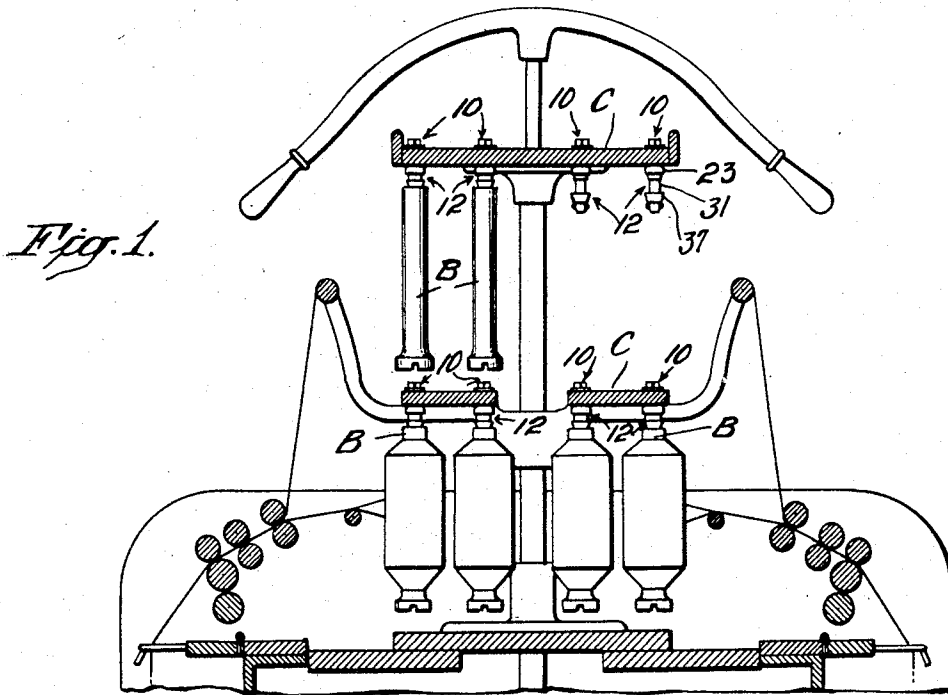
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BOBBIN SUPPORT

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BOBBIN SUPPORT

Application filed January 12, 1928. Serial No. 246,129.

This invention relates to bobbin supports and aims to provide an improved means for mounting roving bobbins on the creels of spinning frames and the like.

5 A specific object of the invention is to improve the bobbin-engaging member of a bobbin support of the type shown in U. S. Patent No. 1,692,441, issued November 20, 1928, to my assignee, Eclipse Textile Devices, Inc., so as to make the use of this bobbin support more convenient and to provide for supporting bobbins of different internal diameters.

10 In order that the invention may clearly be understood, I will describe in detail the embodiment thereof, which is shown in the accompanying drawings, in which:

15 Fig. 1 is a transverse sectional elevation of the upper part of a spinning frame of usual construction, showing the creel provided with bobbin supports embodying the invention;

20 Fig. 2 is an axial section of one of the bobbin supports shown in Fig. 1, showing in vertical section a part of the creel board and a part of a bobbin mounted on a support; and

25 Fig. 3 is a side elevation of the bobbin support with its dust cap and nut removed.

The bobbin support illustrated includes a fixed supporting member 10 and a rotary bobbin-engaging member 12 connected by a single bearing 11. The fixed and rotary parts 10 and 12 are provided with opposed bearing surfaces 13, 14 which serve as races for bearing balls 15 interposed between them. One of the bearing surfaces, most desirably the fixed surface 13, is spherically curved, with its center of curvature at a point 16, located substantially on the axis of a bobbin B carried by the rotary part 12 and materially above the middle of this bobbin. The other bearing surface, 14, has the form of an ordinary ball race.

35 In these particulars, the bobbin support illustrated corresponds to that of Patent No. 1,692,441 heretofore mentioned; but the bobbin-engaging member differs from that shown in said patent and embodies important improvements. The wooden bobbins ordinarily used on spinning frames contain a central bore B1 having an enlarged portion at one end of the bobbin where an external col-

lar is provided, and a portion B2 of reduced diameter at the other end of the bobbin. The skewer mounting heretofore customarily used on spinning frames holds a bobbin with the small end of its bore uppermost while the bobbin-engaging member of the bobbin holder of said Patent No. 1,692,441 holds a bobbin in the opposite position. The present invention includes means for holding the bobbin with the small end of its bore uppermost. This is an important practical advantage, since it avoids the necessity of changing the habits of the spinning frame operative. This and other features of the invention may best be understood from a detailed description of the construction of the specific bobbin support illustrated.

The fixed member 10 of the support includes a bolt 20 having a head 21 at its lower end and a nut 22 at its upper end. The bolt may extend through a creel board C with its nut against the upper surface of the board and its lower end and head projecting below the lower surface thereof. On the bolt are mounted a dust cap 23 and sleeve 25, and a bearing member 26 providing the spherical bearing surface 13. As appears in Fig. 2, the dust cap 23 and sleeve 25 are locked in position between the head 21 of the bolt and the creel board 20 by tightening the nut 22, while the bearing member 26 surrounds and rests on the head 21, and is held firmly in position by the engagement of the resilient sleeve 25 with its upper edge.

The rotary member 12 has an elongated body which, in the form illustrated, consists of an upper sleeve 30 and a lower sleeve 31 of less diameter. The upper sleeve 30 has its upper edge turned in to provide the curved lip 32 which provides the bearing surface or race 14. The upper end of the lower sleeve 31 is secured to the lower end of the upper sleeve 30 by crimping or otherwise, and on the upper edge of the lower sleeve rests a closure disk 33, which operates with the upper sleeve and the dust cap in protecting the bearing from dirt.

The lower sleeve 31 has an external diameter less than the diameter of the reduced portion B2 of the bore of a bobbin B and a length

slightly greater than that of this reduced portion. Diametrically opposite slots 34 are provided in the sleeve 31 near its lower end. Through these project outwardly curved portions 35 of the U-shaped gripping spring 36 located within the sleeve 31.

In order to center bobbins whose bores differ somewhat in diameter, the sleeve 31 is provided with an external collar 37 having a conical or tapered outer surface. This collar may be fixed on the sleeve 31 near its upper end in the position shown in Fig. 2, but is more desirably loose so that it may slide on the sleeve. The parts 35 of the spring 36 prevent it from slipping off the sleeve as shown in Fig. 3. When the sleeve 31 is inserted in the reduced portion B2 of the bore of the bobbin, the upper end of this portion of the bore engages the conical surface of the collar 37 and is thereby centered with respect to the sleeve. The extent to which the sleeve may enter the bobbin is limited by the engagement of the bobbin with the collar 37 and the engagement of this collar with an annular projection 38 at, or near, the upper end of the sleeve 31. The sleeve then extends into the bobbin to such a distance that the outwardly curved portions 35 of the spring 36 engage the tapered portion B3 of the bobbin bore first below the reduced portion B2. The spring therefore urges the upper edge of the bobbin against the collar 37 and the collar against the projection 38 so that the bobbin is held centrally and firmly on the rotary member 12.

It should be noted that the bobbin support which has been described may be manufactured at small cost due to the small number of parts of which it is composed, and the fact that all these parts, except those which are standard machine parts, may easily be made as stampings and assembled by spinning.

The use of bobbin supports as described is illustrated in Fig. 1, which shows the creel of a spinning frame provided with such supports. The supports and bobbins which they carry depend from the creel boards, and sufficient clearance is allowed between the lower ends of the bobbins and the creel board below them to facilitate cleaning the upper surfaces of the creel boards to remove the fly which tends to collect on them.

Removal of the bobbins from the supports and replacement of the bobbins thereon is accomplished easily and quickly. To remove a bobbin, it is necessary only to pull it downward to free its upper end from the spring grips 35 and the sleeve 31 of its support. A bobbin is replaced by pushing its upper end up around the sleeve 31 until the collar 37 engages the shoulder 38. In this operation, the whole rotary member 12 is moved upward to some extent, but its movement is limited by engagement with the dust cap, or with the

creel board if no dust cap is used, so that the bobbin may readily be pushed upon it.

Owing to the free tipping of the rotary members 12, it is possible to change the bobbin on a support in the inner row of the creel without removing any of the bobbins in the outer row. This is accomplished merely by tipping two of the bobbins in the outer row sufficiently to permit the passing of another bobbin between them.

What I claim is:

1. The combination of a bobbin containing a central bore having parts of different diameters connected by a tapering portion, and a member comprising an elongated body adapted to enter the smaller portion of the bore of the bobbin, an expanding spring grip on said body adapted to engage the tapering portion of the bore of the bobbin to urge the bobbin to move longitudinally of said member, and a frusto-conical projection on said body engaging the edge of the smaller portion of the bore in the bobbin and arresting such movement of the bobbin.

2. The combination of a bobbin containing a central bore having parts of different diameters connected by a tapering portion, and a member comprising an elongated body adapted to enter the smaller portion of the bore of the bobbin, an expanding spring grip on said body adapted to engage the tapering portion of the bore of the bobbin to urge the bobbin to move longitudinally of said member, and a projection on the body engaging one end of the bobbin and arresting such movement of the bobbin.

3. In a bobbin support, a bobbin-engaging member comprising an elongated body adapted to extend into the bore of a bobbin, a frusto-conical projection on said body, and means on said body urging the bobbin endwise to hold one end of the bore of the bobbin against said projection to center the bobbin on said body.

4. In a bobbin support, a bobbin-engaging member comprising an elongated body adapted to extend into the bore of a bobbin, a frusto-conical projection on said body, and resilient means on said body separated from said projection by a distance less than the length of the bobbin and adapted to engage an intermediate part of a bobbin and to urge one end of the bore of the bobbin against said projection.

5. In a bobbin support, a bobbin-engaging member comprising an elongated body adapted to enter into the bore of a bobbin, a stop projecting near one end of said body, resilient gripping means extending from said body near its other end, and a collar slidably mounted on said body between said stop and said grips and adapted to engage one end of the bobbin into which said body is extended.

6. In a bobbin support, a bobbin-engaging

member comprising an elongated body adapted to enter into the bore of a bobbin, a stop projecting near one end of said body, resilient gripping means extending from said body near its other end, and a frusto-conical collar slidably mounted on said body between said stop and said grips with its smaller end turned toward said grips.

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7. In a bobbin support, a bobbin-engaging member comprising an elongated body adapted to extend into the bore of a bobbin, resilient gripping means carried by said body, and a collar removably mounted on said body and adapted to engage one end of the bobbin into which said body is inserted.

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8. In a bobbin support, a bobbin-engaging member comprising an elongated body adapted to extend into the bore of a bobbin, resilient gripping means carried by said body, and a frusto-conical collar removably mounted on said body with its smaller end spaced from and directed towards said gripping means.

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9. A bobbin support, comprising a fixed supporting member and a hollow rotary bobbin-engaging member open at its lower end, a ball bearing connecting the fixed and rotary members and located in the upper portion of said hollow rotary member, a horizontal partition in said hollow rotary member below the bearing to prevent dirt from entering the bearing, and a gripping spring located in said hollow rotary member below said partition and removable through the open lower end of said member.

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10. In a bobbin support, a depending bobbin-engaging member comprising an elongated body adapted to extend into the upper end of the bore of a bobbin, a centering projection on said body, and resilient means for urging a bobbin upwardly to hold its upper end against said centering means.

In testimony whereof I have hereunto set my hand.

LOUIS B. HASBROUCK.

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