Oct. 4, 1938. C. FILLINGER 2,132,260

SPINNING RING AND TRAVELER THEREFOR

Filed April 10, 1937

Fig. 1.

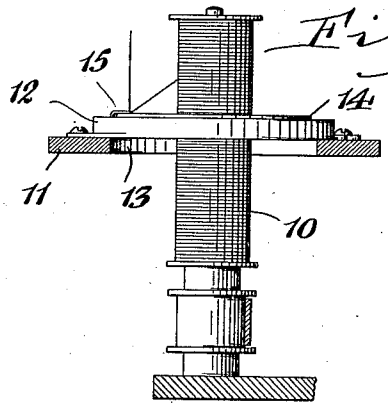


Fig. 2.

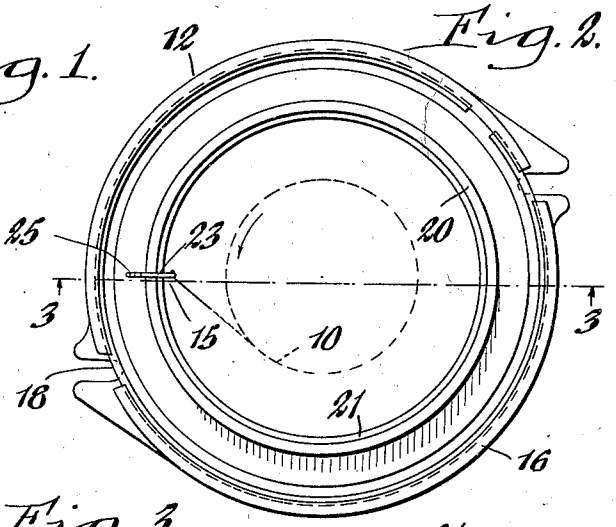


Fig. 3.

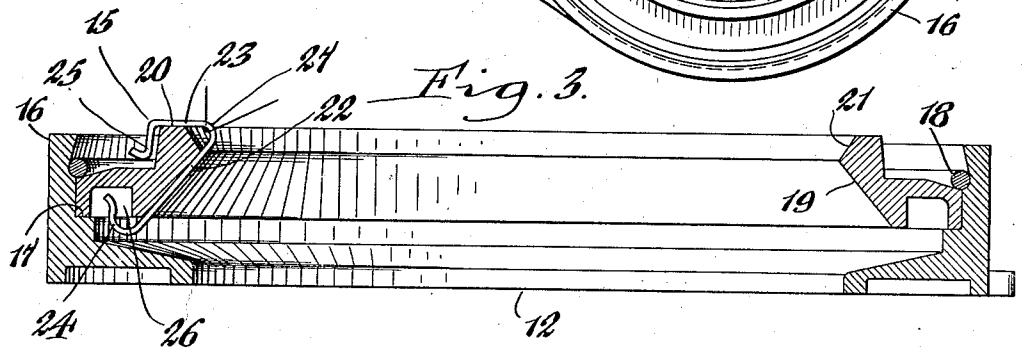


Fig. 5.

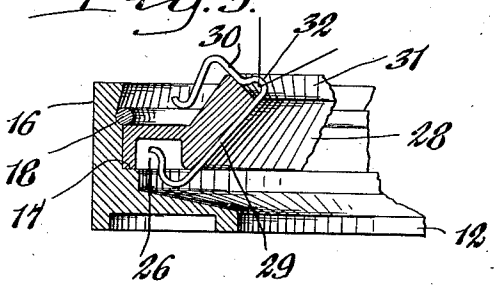


Fig. 6.

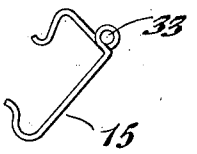


Fig. 7.

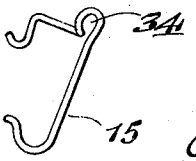
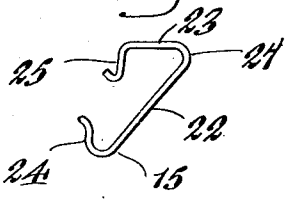


Fig. 4.



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2,132,260

SPINNING RING AND TRAVELER THEREFOR

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Application April 10, 1937, Serial No. 136,162

10 Claims. (Cl. 118—59)

This invention relates generally to certain new and useful improvements in the spinning art but more particularly to the spinning rings and bar travelers employed in connection with spinning machines.

One of its chief objects is to so design and construct the ring and traveler as to effectually control and guide the traveler in a true and uniform path to maintain an even and constant thread-tension, and to provide for a downward and outward thrust or pressure of the traveler against the ring to counteract any tendency of the thread to exert an upward pull or thrust on the traveler during the spinning operation.

Another object of the invention is to provide a ring and traveler construction whereby chattering of the traveler on the ring is eliminated and wear of the parts is reduced to a minimum.

Other features of the invention reside in the construction and arrangement of parts hereinafter described and particularly pointed out in the appended claims.

In the accompanying drawing:—

Figure 1 is a side elevation of the spinning ring and traveler embodying my invention, the same being shown associated with the traverse bar and bobbin. Figure 2 is a top plan view of the ring and traveler. Figure 3 is an enlarged cross section taken on line 3—3, Figure 2. Figure 4 is a side view of the traveler depicted in the previous figures. Figure 5 is a fragmentary cross section showing a modified form of my invention. Figures 6 and 7 are side and perspective views, respectively, showing modifications of the traveler.

Similar characters of reference indicate corresponding parts throughout the several views.

In spinning machines of the character to which my invention is particularly applicable, the threads are delivered by feed rolls (not shown) to a take-up spool 10 and traversing the same is the usual vertically-reciprocating bar 11. Mounted on this bar surrounding the take-up spool is a supporting member or holder 12 of substantially ring-like form and which is alined with an opening 13 formed in the bar. Applied to this holder is the spinning or traverse ring 14 upon which the traveler 15 is adapted to be revolved.

Rising from the holder-body 12 is an annular flange 16 which is provided with an internal seat or shoulder 17, the spinning ring 14 being fitted within this flange and resting at its bottom edge upon such shoulder in the manner shown in Figure 3. This spinning ring is detachably held within the holder by means of a clamping member which may be in the form of a split ring 18 detachably fitted within the holder-flange 16 in bearing contact with the top side of the contiguous portion of the ring.

The ring 14 and traveler 15 are preferably so designed as to have a tendency to impart a downward and outward movement of the traveler relative to the ring, whereby the pressure of the traveler on the ring is from the top down and from the inside out with the result that chattering and undue wear of the parts is reduced to a minimum and, further, any tendency of the thread to pull upwardly on the traveler during the spinning operations is effectually counteracted by the aforesaid relative disposition of the ring and traveler. To this end, the spinning ring 14 is preferably of the cross section shown in Figure 3, wherein the inner bearing surface 19 thereof is flared downwardly and outwardly or frusto-conical in shape, while the top bearing face 20 of the ring is flat and in a plane at right angles to the axis of the ring. The upper inside portion of the ring may be beveled or flared outwardly, as indicated at 21. The traveler 15 is made from a single piece of wire and is of substantially the shape shown in Figures 3 and 4, the same including an outwardly-inclined bearing leg 22 which bears against the companion inclined bearing wall 19 of the ring, and a horizontal bearing bar 23 which bears upon the top face 20 of the ring, the inclined traveler leg being disposed at a more or less acute angle to the top bearing bar. The traveler leg 22 terminates at its lower end in a hook 24 while the top bar 20 terminates in a downwardly and outwardly-bent lug 25 which embraces the adjoining upward portion of the spinning ring. The hooked end 24 of the traveler is free to enter a downwardly-opening recess or annular groove 26 formed in the bottom of the ring 14. As shown in Figure 3, the thread engages that portion or loop 27 of the traveler formed at the junction of the traveler leg 22 and bar 23, and in the normal position of the traveler on the ring this thread-engaging portion of the traveler subtends the upper tapered wall 21 of the ring, thereby providing a clearance or space between these parts for the unobstructed travel of the thread.

By this construction, the traveler bears firmly with its leg 22 and bar 23 against the companion inclined and horizontal bearing faces 19 and 20 of the ring, respectively, which permits the hooked end of the traveler to float or travel out of contact with the ring to prevent chattering of

the traveler. Furthermore, during the spinning of the traveler about the ring, the pressure exerted thereon, due to centrifugal force, tends to urge the traveler downwardly and outwardly against the respective ring-bearing surfaces, and this resulting force on the traveler effectually counteracts any tendency of the thread to pull upwardly on the traveler.

In the modified form of ring and traveler shown in Figure 5, the ring **28** is substantially the same as that previously described, with the exception that the top of the ring is of substantially inverted V-shape in cross section and the traveler is shaped to provide a downwardly and outwardly-inclined bearing leg **29** and an upwardly and outwardly-inclined bearing bar **30** which bears against the inner inclined bearing wall **31** formed at the upper end of the ring. Disposed at the junction between the leg **29** and the bar **30** is a thread-engaging loop **32**. As with the previously described construction, this modified form of my invention performs those same results of creating a downward and outward thrust of the traveler to prevent chattering and provide an even bearing for the traveler at all times.

In the modified form of traveler shown in Figure 6, the disposition of its bearing members is substantially the same as that depicted in Figure 5 with the exception that the thread-engaging loop **33** is shaped by bending the wire upon itself in the form of an eye. The modified form of the traveler disclosed in Figure 7 has its loop **34** disposed in a plane at right angles to the plane of the loops depicted in conjunction with the previously described travelers.

I claim as my invention:—

1. A device of the character described, comprising a supporting member through which a take-up spool is adapted to extend, a spinning ring for a traveler mounted on said member and having a plurality of traveler-engaging bearing faces thereon, the bearing portions and upper and lower edges of said ring being exposed and spaced from said supporting member, one of said faces extending outwardly and downwardly from the upper edge thereof in a straight oblique fashion to the horizontal, and a traveler mounted on said ring and having angularly-disposed portions engageable with said ring-bearing-faces, respectively, one of said traveler portions being straight and oblique for full bearing sliding contact with said oblique ring-face.

2. A device of the character described, comprising a supporting member through which a take-up spool is adapted to extend, a spinning ring for a traveler mounted on said member and having a plurality of traveler-engaging bearing faces thereon, the bearing portions and upper and lower edges of said ring being exposed and spaced from said supporting member, one of said faces extending outwardly and downwardly from the upper edge thereof in a straight oblique fashion to the horizontal, and a traveler mounted on said ring and having angularly-disposed portions engageable with said ring-bearing-faces, respectively, said traveler having a thread-engaging loop at the junction of its angularly disposed portions, and one of such portions being oblique to the horizontal for coextensive bearing engagement with the oblique ring-face.

3. A device of the character described, comprising a supporting member through which a take-up spool is adapted to extend, a spinning ring for a traveler mounted on said member and having a plurality of traveler-engaging bearing faces thereon, one of said faces extending outwardly and downwardly from the upper edge thereof in straight oblique fashion to the horizontal, the bottom of said ring outwardly of said last-named bearing face having a downwardly-opening, annular recess therein, and a traveler mounted on said ring and having angularly-disposed portions engageable with said bearing faces, respectively, that portion of the traveler engaging the outwardly and downwardly extending bearing face being oblique to the horizontal for coextensive bearing engagement therewith and terminating in a substantially hook-shaped end extending freely into said ring-recess.

4. A device of the character described, comprising a holder through which a take-up spool is adapted to extend, a spinning ring for a traveler mounted on said holder and having an upper bearing face and a lower bearing face of substantially frusto-conical shape, said lower bearing face being straight and oblique to the horizontal and sloping downwardly and outwardly from a point adjacent the inner edge of the upper bearing face, and a wire traveler mounted on said ring and having a bearing leg oblique to the horizontal and engageable coextensively with said oblique bearing face and an outwardly-extending bearing bar engageable with said upper bearing face, the free ends of said leg and said bar being bent toward each other to freely embrace the companion contiguous portions of the ring, said traveler having a thread-engaging portion at the junction of its bearing leg and bearing bar.

5. A spinning ring for a traveler, comprising an attaching portion and a ring-body extending inwardly thereof and above and below the same and having upper and lower bearing faces, the lower bearing face being straight and oblique to the horizontal and extending downwardly and outwardly from a point approximating the inner edge of the upper bearing face, the lower edge of said lower bearing face being free and separated from the contiguous portion of the ring-body.

6. A spinning ring for a traveler, comprising an attaching portion and a ring-body extending inwardly thereof and above and below the same and having upper and lower bearing faces, the lower bearing face being straight and oblique to the horizontal and substantially frusto-conical in shape and extending downwardly and outwardly from a point approximating the inner edge of the upper bearing face, the bottom side of the ring-body adjacent the lower edge of said lower bearing face having an annular recess therein.

7. The combination with a spinning ring for a traveler having a lower bearing face disposed obliquely to the horizontal and extending downwardly and outwardly from a point approximating the upper edge of the ring, and a traveler mounted on said ring and having an inclined bearing leg engageable with said oblique ring-bearing face and provided at its upper end with a thread-engaging loop spaced from the contiguous portions of the ring, said traveler during its spinning movement about the ring being urged by centrifugal force downwardly and outwardly along said oblique bearing face to counteract any tendency of the thread to exert an upward and inward pull on the traveler.

8. The combination with a spinning ring for a traveler having a lower bearing face disposed obliquely to the horizontal and extending downwardly and outwardly from a point approximating the upper edge of the ring, the upper and

lower edges and the adjoining exterior walls of the ring being exposed to provide clearance spaces thereabout, and a traveler mounted on said ring and having an inclined bearing leg engageable with and somewhat longer than said oblique ring-bearing face and terminating at its upper end in an outwardly-facing portion arranged to extend about the upper edge of the ring, said traveler during its spinning movement about the ring being centrifugally urged downwardly and outwardly along said oblique bearing face to counteract any tendency of the thread to exert an upward and inward pull on the traveler.

9. The combination with a spinning ring for a traveler having a lower bearing face disposed obliquely to the horizontal and extending downwardly and outwardly from a point approximating the upper edge of the ring, the upper and lower edges and the adjoining exterior walls of the ring being exposed to provide clearance spaces thereabout, and a traveler mounted on said ring and having an inclined bearing leg engageable with and somewhat longer than said oblique ring-bearing face and terminating at its upper and lower ends in portions extending about the companion upper and lower edges of said ring, the junction of the bearing leg with the adjoining upper portion of the traveler being provided with a thread-engaging loop, said traveler during its spinning movement about the ring being centrifugally urged downwardly and outwardly along said oblique bearing face to counteract any tendency of the thread to exert an upward and inward pull on the traveler.

10. A spinning device, comprising a spinning ring including a web portion having exposed ends and an inner oblique bearing face for a traveler extending outwardly and downwardly from approximately the top edge of said web portion to the bottom edge thereof, and a traveler of substantially inverted L-shape having its leg portion engageable with said oblique bearing face and having its cross bar overhanging the upper edge of the web portion of the ring, the junction of the leg and cross bar portions of the traveler forming a thread-engaging loop.

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