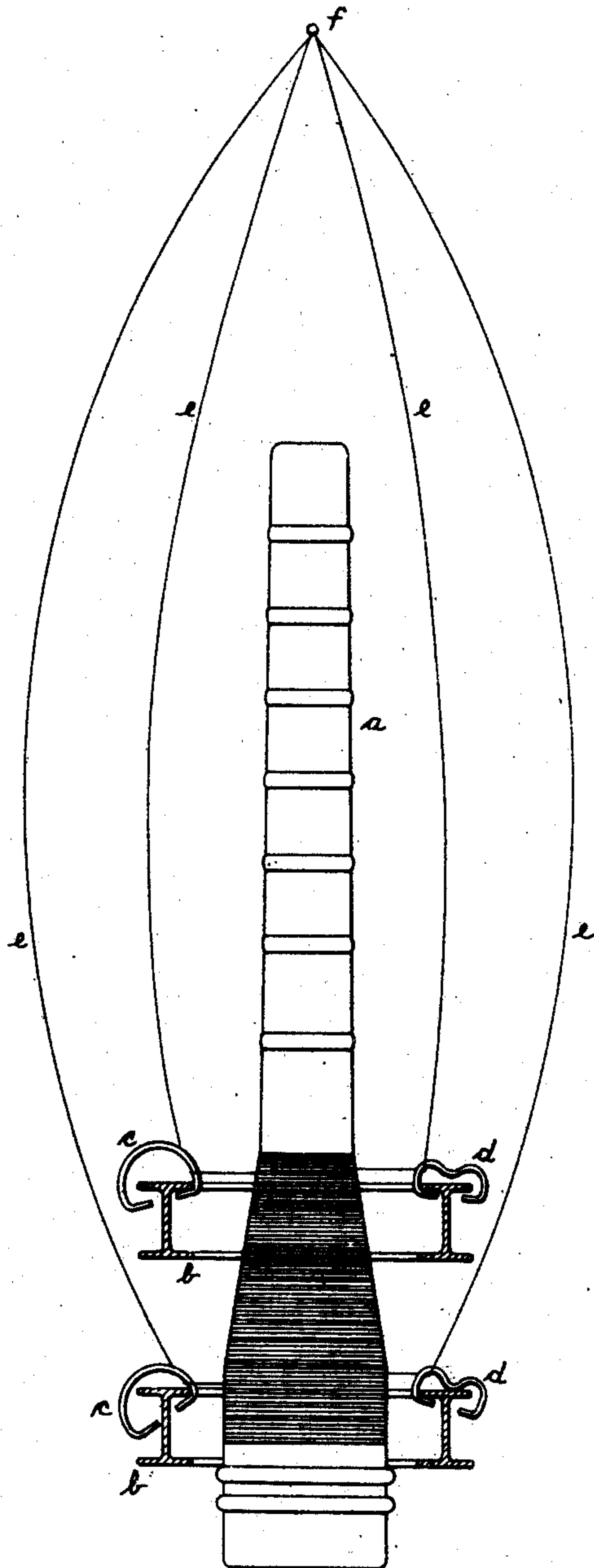


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E. L. MERROW.
RING TRAVELER.

APPLICATION FILED MAR. 27, 1905.



WITNESSES

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RING TRAVELER.

No. 879,293.

Specification of Letters Patent.

Patented Feb. 18, 1908.

Application filed March 27, 1905. Serial No. 252,218.

To all whom it may concern:

Be it known that I, EDGAR L. MERROW, of the city and county of Providence and State of Rhode Island, have invented certain new and useful Improvements in Ring Travelers; and I do hereby declare the following specification, taken in connection with the accompanying drawings, forming a part of the same, to be a full, clear and exact description thereof.

The present invention relates to ring travelers used on ring spinning frames, and is designed as an improvement upon the flat top traveler shown and described in the application of Albertus B. Potter, Serial No. 252,285 filed Mar. 27, 1895.

In spinning with a traveler on a ring spinning frame there is a constant tendency of the traveler to become tipped from its normal horizontal position by reason of the effect of centrifugal force on that portion of the thread extending from the thread eye above the bobbin to the traveler, and the consequent ballooning of the thread. This tipping of the traveler increases as the ring-rail moves from its upper to its lower position, and is greatest when the ring-rail is at its lowest position. This tipping of the traveler is also affected by the condition of the bobbin, whether full or empty, by reason of the different angle of the inward pull of the thread from the bobbin to the traveler. When the bobbin is empty this inward pull is nearly radial to the ring, but when the bobbin is filled such pull is nearly tangential to the ring. When the pull is thus nearly tangential to the ring the greater portion of the pull is in a direction to pull the traveler around the ring, and the pull in a direction to prevent the ballooning of the thread is correspondingly lessened, with the result that the ballooning of the thread is increased as the bobbin fills.

It has been found that the tipping of a flat top traveler, such as shown and described in the application referred to, is much less than that of the ordinary C-shaped traveler. It has also been found that under the conditions conducive to extreme tipping of the traveler, viz., with the bobbin filled and the ring-rail in its lowest position, the top of such flat top traveler comes in contact with the upper surface of the outer flange of the ring, thereby preventing any further tipping of the traveler and also producing a desired increase of friction between the traveler and the ring.

The object of the present invention is to produce a traveler which will come in contact with the upper surface of the ring with a less degree of tipping of the traveler and consequently at an earlier point in the downward traverse of the ring-rail and so that such contact will be maintained during a larger portion of the downward and upward traverse of the ring-rail.

To that end the invention consists in forming the top or back of the traveler with an inward bend, preferably located about midway of its length and forming what may be conveniently termed a B-shaped traveler. If desired, however, the back of the traveler may be provided with two inward bends instead of one.

In the accompanying drawing I have illustrated the invention in connection with a filling bobbin which is made of larger diameter at the base and which tapers upward for a certain distance forming a conical portion, the remainder of the bobbin being of a substantially uniform but reduced diameter. Such filling bobbins are wound in sections as indicated in the drawing. The drawing shows in section a spinning-ring in the position it occupies when the ring-rail is at its lowest position, and also shows a spinning ring in the position it occupies when the ring-rail is in its highest position for that section of the "wind." In connection with each of these rings, the old form of C-shaped traveler is shown at the left, and my improved form of traveler is shown at the right.

In the drawing *a* represents the bobbin; *b* the ring, *c* the C-shaped traveler; *d* my improved form of traveler; *e* the thread; and *f* the thread-eye above the bobbin.

As shown in the drawing, when the ring-rail is in the upper position indicated and at a point where the bobbin is empty, or practically so, the B-shaped traveler occupies a position somewhat more nearly horizontal than the old C-shaped traveler and the ballooning of the thread is likewise somewhat less. As the ring-rail descends the C-shaped traveler continues to tip more and more until, when the ring-rail has reached its lowest position, the traveler has become tipped to the extreme position shown. In the case of my improved B-shaped traveler, however, the tendency of the traveler to tip as the ring-rail descends is not so great, because of the angular bend which furnishes a

defined position for the thread, and so that the inward pull of the thread serves more effectually to hold the traveler up toward the horizontal. Moreover with such B-shaped traveler a comparatively small amount of tipping will serve to bring the inward bend d' in contact with the upper surface of the ring, as shown, thereby positively preventing any further tipping of the traveler. As only a comparatively slight tipping of the traveler is required to thus bring the bend d' into contact with upper surface of the ring, such contact will take place soon after the ring-rail begins to descend and will be maintained during the greater portion of the downward and upward traverse of said rail. This contact of the traveler with the ring not only serves to prevent any further tipping of the traveler, but also produces additional friction between the traveler and ring-rail which serves to compensate for the changed angle of the inward pull of the thread as the diameter of the bobbin increases. As this increased friction is produced and maintained during the lower portion of the traverse of the rail, the increased lag of the traveler resulting therefrom will serve to lessen the ballooning of the thread, or to prevent the increased ballooning which would otherwise occur with the ring-rail in its lower position.

The contact of the bend d' with the ring also furnishes an additional bearing surface for the traveler, thereby dividing the wear on the traveler and the ring and proportionately reducing the same. Preferably the contacting portion of the bend d' is rounded so as to reduce the wear on the ring

and also the wear on the traveler itself. A further advantage resulting from the contact of the bend d' with the upper surface of the ring and the consequent increased lag of the traveler is that the bobbin is thereby more tightly wound and thus made smaller in diameter than would otherwise be the case.

What I claim as my invention and desire to secure by Letters Patent is:

1. A ring traveler having a top provided with an inward bend, and relatively short sides terminating in inwardly bent horns, substantially as described.

2. A ring traveler having a top provided with an inward bend, with the inner portion of said bend at a relatively short distance from the plane of the horns, substantially as described.

3. A reversible ring traveler, having a top provided with an inward bend substantially midway of its length and relatively short sides terminating in inwardly bent horns, with the inner portion of said bend at a relatively short distance from the plane of its horns, substantially as described.

4. The combination with a spinning ring, of a traveler having an inward bend in its top and relatively short sides whereby when the traveler tips the inner portion of its bend will come in contact with the upper surface of the ring.

EDGAR L. MERROW.

Witnesses:

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