

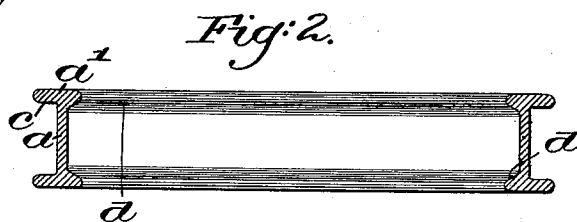
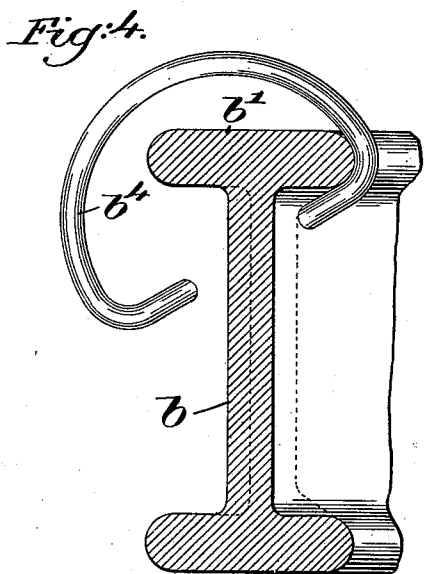
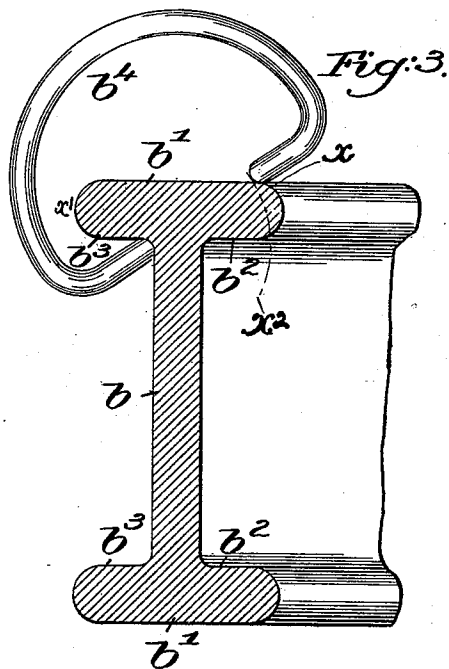
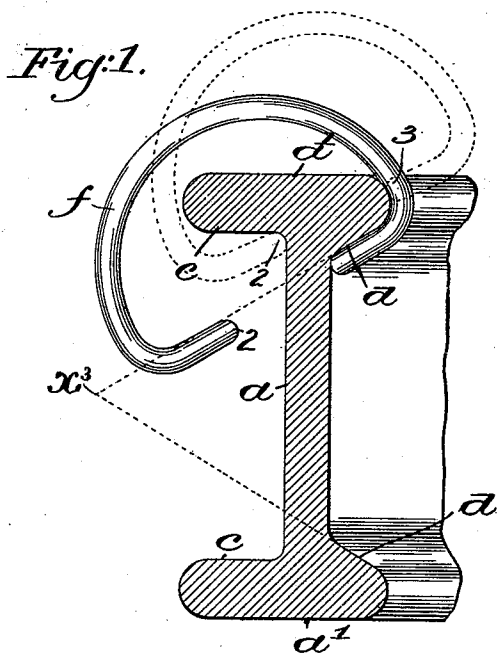
(No Model.)

G. O. DRAPER.

RING FOR SPINNING AND TWISTING FRAMES.

No. 523,200.

Patented July 17, 1894.



Witnesses.

Edward F. Allen.

Thomas J. Drummond.

Inventor.

George O. Draper.

by Crosby & Gregory
attys.

UNITED STATES PATENT OFFICE.

GEORGE O. DRAPER, OF HOPEDALE, MASSACHUSETTS, ASSIGNOR TO GEORGE DRAPER & SONS, OF SAME PLACE.

RING FOR SPINNING AND TWISTING FRAMES.

SPECIFICATION forming part of Letters Patent No. 523,200, dated July 17, 1894.

Application filed February 2, 1894. Serial No. 498,851. (No model.)

To all whom it may concern:

Be it known that I, GEORGE O. DRAPER, of Hopedale, county of Worcester, State of Massachusetts, have invented an Improvement in Rings for Spinning and Twisting Frames, of which the following description, in connection with the accompanying drawings, is a specification, like letters on the drawings representing like parts.

In spinning and twisting frames wherein the winding of the yarn upon the spindle or bobbin is due chiefly to the slower revolution of the traveler as compared with the revolution of the spindle, it will be understood that in connection with modern high speed spindles the traveler attains very high speed on the ring, and much study has been devoted to improve both the shape of the ring and the traveler to obviate wear and to gain greater uniformity of drag upon the yarn due to the traveler.

In my experiments I have aimed to produce a ring of such shape that the traveler may run easily and uniformly upon it with the minimum of wear to both the ring and the traveler, and I have so shaped the ring that the traveler may be readily applied thereto without bending the traveler.

Figure 1 in section shows part of one of my improved rings with a traveler thereon, the dotted line position of the traveler showing it as being applied to the ring. Fig. 2 shows on a smaller scale one-half of one of my improved rings, and Figs. 3 and 4 represent sectional views of a double raced ring and traveler of usual shape.

My improved ring consists essentially of a web a and a raceway a' , and in the form in which I have herein illustrated my invention there is a raceway at the bottom and top of the web, thus making a double raced ring, but my invention is applicable to a single raced ring if desired.

Referring briefly to Figs. 3 and 4, showing an ordinary ring and traveler such as largely in use, b represents the web and b' the raceway, and it will be noticed that said raceways are substantially level at their upper edges and that the inner sides b^2, b^3 , of the flanges extend substantially at right angles from the web b .

The space between the ends of the traveler b^4 , shown in Fig. 3 is less than the width of the race of the ring between the points $x'-x$, and consequently the traveler cannot be put into working position without springing the same apart, the traveler having to be sprung sufficiently to pass over the space to the right of the dotted line x^2 .

When running a traveler b^4 on a ring, such as shown in Figs. 3 and 4, the traveler will normally occupy the position shown in Fig. 4, wherein it will be seen that the bend in the traveler hooks over and about the inner edge of the inner flange of the raceway but does not contact with the underside of said flange, and hence there is great wear on the inner edge of the raceway and also upon the traveler.

In accordance with my invention I prefer that the top of the raceway of the ring shall be substantially horizontal, and I also prefer that the under side of the shoulder of the raceway, outside of the body of the ring, shall be substantially horizontal, as designated at c .

In accordance with my invention the inner faces or under sides of the flanges of the raceway, as at d, d' , are inclined so as to present a beveled or inclined face against which the inner end of the traveler may slide, such inclined faces presenting large surfaces to resist the wear of the traveler, so that the ring not only lasts longer, but the traveler takes a better bearing and its life is increased by this loss of wear.

As double raced spinning rings are ordinarily constructed, see Fig. 3, the body or web b is substantially central between the inner and outer edges of the raceways, but in accordance with my invention I so place the body of the ring with relation to the raceways that the body occupies a position nearer the inner edges of the race than the outer edges thereof, for with the old form of ring it frequently happens that the outer end of the traveler drops so far as to contact with the body of the ring at its outer side, but to avoid any possibility of contact of the outer end of the traveler, when running upon the raceway, with the body of the ring at its outer side, I have in my improved ring located the body of the ring nearer the inner edges of the race-

ways, as, for instance, viewing Fig. 4, the full lines represent the usual position of the body and the dotted lines represent the position of the body as changed in accordance with my invention. This new placing of the body with relation to the inner flange of the raceways also makes it possible to apply the traveler to the raceway without springing the traveler open, for it will be noticed, see Fig. 1, that the distance between the outer end 2 of the traveler *f* and the inner end 3 thereof is substantially the same as the distance from the junction of the outer face of the body of the ring and the under side of the outer flange *c*, to the most distant point of the inner edge of the raceway, and consequently when the traveler is in the position Fig. 1 the inner end 3 will readily slip around the inner edge of the raceway without unduly straining or spreading open the traveler.

It will be noticed in Fig. 1 that the outer face of the body or web *a* connecting the two flanges is substantially midway between the outer and inner edges of the flange of the raceway, whereas in the common form of ring, represented in Fig. 4 by full lines, the outer face of said body or web is much nearer the outer edge of the flange of the raceway.

This invention is also an improvement on the form of ring represented in patent No. 500,999, granted to me on the 4th day of July, 1893, wherein the raceway is inclined and the under side of the outer flange of the raceway is beveled, while the under side of the inner edge of the raceway is substantially horizontal.

A ring having the shape represented in this my present application is not only more durable, but is cheaper to make than the ring represented in the patent referred to.

Prior to my invention I am aware that the body of a spinning ring has been provided at one end with a removable raceway, made as a circular concavo-convex ring so applied to the body that the race projects most from the outer side of the body and presents outside the body a concavity, while at the inner side of the body the thicker edge of the concavo-convex ring is made to present a substantially horizontal surface, as in United States Patent No. 216,345, dated June 10, 1879, but a race of such shape would not be practicable for use in connection with a double raced ring.

I am also aware that in a single raced ring the inner flange of the race having its under side in a horizontal plane has been made wider than its outer flange, as in United States Patent No. 358,995, dated March 8, 1887.

I am also aware of British Patent No. 3,934, dated August 17, 1882, it showing an inclined raceway inside and outside the body thereof, but in said patent it is proposed that the outer end of the traveler run in a narrow groove,

which I disclaim, as in my invention it is absolutely essential that the outer end of the traveler have free play up and down, as thereby the traveler may be run practically at high speed and not bind or catch in the groove as the traveler is tipped when running.

Prior to my invention I am not aware that the under side of the inner flange of a ring has ever been beveled substantially as herein represented, that is, beveled downwardly and outwardly from its inner side, as indicated in Fig. 1.

In my improved ring the race is integral with the body, the top of the race is substantially horizontal, and the inner sides of the narrower inner flanges of the ring are beveled outwardly toward the center of the height of the body thereof said center being indicated by the letter *x*³ at the junction of the dotted lines extended from said inner flanges, see Fig. 1.

Having described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. A spinning ring having a horizontal faced race, the under side of the inner edge thereof being inclined outwardly and toward the center of the height of the ring body, the body of the ring being situated nearer the inner than the outer edge of said raceway, substantially as described.

2. The herein described double-raced spinning ring composed of two horizontal faced raceways united by a vertical body integral therewith and located nearer the inner than the outer edges of the flanges constituting said raceways, the inner sides of the narrower inner flanges being beveled outwardly and toward the center of the height of said ring, the inner sides of the outer flanges being substantially horizontal, substantially as described.

3. A double raced spinning ring composed of two raceways having their faces horizontal and parallel and united by a vertical body integral therewith, said body being located nearer the inner than the outer edges of the raceways, the inner sides of the narrower inner flanges being beveled outwardly and toward the center of the height of said ring, while the inner sides of the outer flanges are substantially horizontal and located nearer the faces of the raceways and meeting the body of the ring at a point between the horizontal face of each raceway and the lower end of the beveled inner flange of the raceway, substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

GEORGE O. DRAPER.

Witnesses:

FREDERICK L. EMERY,
JOHN C. EDWARDS.