F. H. WHEAT.
Spinning-Ring.

No. 203,683. Patented May 14, 1878.

Fig. 1.

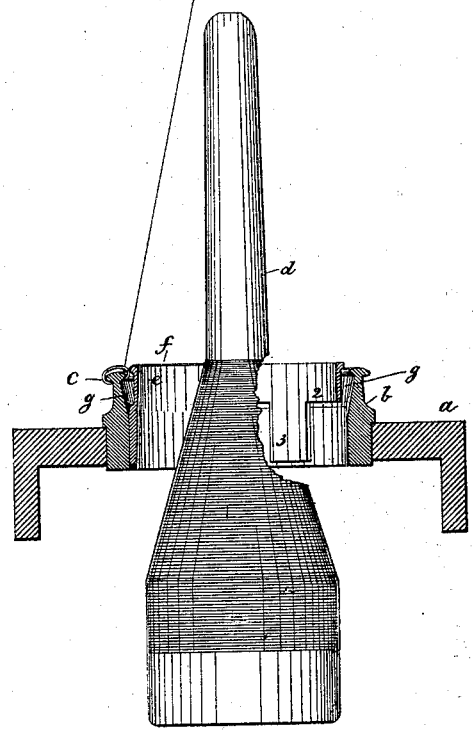
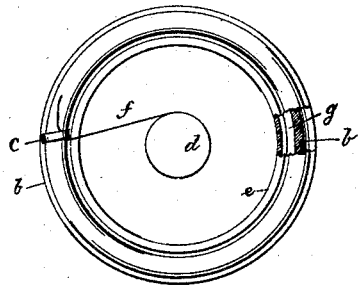


Fig. 2.



Witnesses.
W. J. Pratt.
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Inventor.
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UNITED STATES PATENT OFFICE.

FRANKLIN H. WHEAT, OF LOWELL, MASSACHUSETTS.

IMPROVEMENT IN SPINNING-RINGS.

Specification forming part of Letters Patent No. **203,683**, dated May 14, 1878; application filed April 10, 1878.

To all whom it may concern:

Be it known that I, FRANKLIN H. WHEAT, of Lowell, county of Middlesex, State of Massachusetts, have invented an Improvement in Spinning-Rings, of which the following is a specification:

This invention relates to improvements in rings for ring-spinning frames; and consists in a ring and traveler, combined with a tension-annulus arranged between the traveler and bobbin to equalize the drag or friction on the thread after leaving the traveler, it then having its full amount of twist, and being of full strength.

It is well known to those conversant with the operation of ring-spinning frames that the twist is put into the thread or yarn between the traveler and the rolls; that the thread extending from the traveler to the bobbin is fully twisted; that between such points the thread is of full strength, and the tension on the thread, produced by the drag of the traveler, is greatest when the bobbin is first started, and decreases as the bobbin is wound.

To wind the thread upon the bobbin as closely and with as uniform a tension as possible, I have arranged a tension-annulus within, and so as to rise and fall in unison with, the ring and ring-rail, such annulus equalizing the tension and compensating for the inequality of drag of the traveler, for the friction and consequent tension produced upon the thread by the annulus is least when the bobbin is being commenced, and is gradually increased as the bobbin is wound. As the traveler-drag decreases in amount, the tension produced on the thread is increased by the annulus, to thereby equalize the strain on the thread from the commencement to the completion of the winding operation. By subjecting the fully-twisted thread between the traveler and bobbin to the friction of the annulus it is possible to employ a lighter traveler, and reduce the strain on the thread being twisted between the traveler and rolls, which results in stretching the thread less, and leaves it more even.

Figure 1 illustrates, in section, a ring-rail containing a ring embodying this my invention and a bobbin; and Fig. 2, a top view thereof.

The ring-rail *a*, ring *b*, traveler *c*, and bobbin *d* are and may be of any ordinary construction.

Within the ring is placed the tension-annulus *e*. Its smooth upper end, preferably somewhat rounded, and extending one-sixteenth of an inch, more or less, above the ring-race, receives the thread *f*, extending from the traveler *c* to the bobbin. The nearer the thread to the center of rotation of the bobbin the greater the friction of the thread on the annulus, and vice versa.

The inner end of the traveler moves in the space *g* between the interior of the ring-race and the annulus. At the left of Fig. 1 the annulus is shown as a ring extended to nearly the bottom of the spinning-ring; but at the right of Fig. 1 I have shown how the construction of the annulus may be modified without departing from my invention.

The annulus may be made as a ring, placed within and extending but a little way below the ring-race, as at 2, and two or more legs, 3, at opposite places about the annulus, may be extended downward to fit the interior of the ring *b* closely. The annulus being made open in this way would reduce the weight of metal, and leave an open passage below the space *g*, for the escape of flyings and dust, and also for the end of a traveler, if one should be from any cause broken. This tension-annulus in no way impedes the movement of the thread between the traveler and the usual rolls.

It will be noticed in this my invention that the friction or drag is solely upon the fully-twisted yarn, and, applied as described, does not increase the strain upon the weaker thread being twisted between the traveler and rolls.

I claim—

A spinning-ring and traveler, in combination with a tension-annulus placed within and adapted to move with the ring, to operate upon the fully-twisted thread between the traveler and bobbin, substantially as described.

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

FRANKLIN H. WHEAT.

Witnesses:

WILLIAM D. BROWN,

WILLIAM C. TROMBLY.