No. 890,618. PATENTED JUNE 16, 1908.

D. DESPRADELLE.

DEVICE FOR SPINNING AND TWISTING YARN.

APPLICATION FILED MAY 19, 1906.

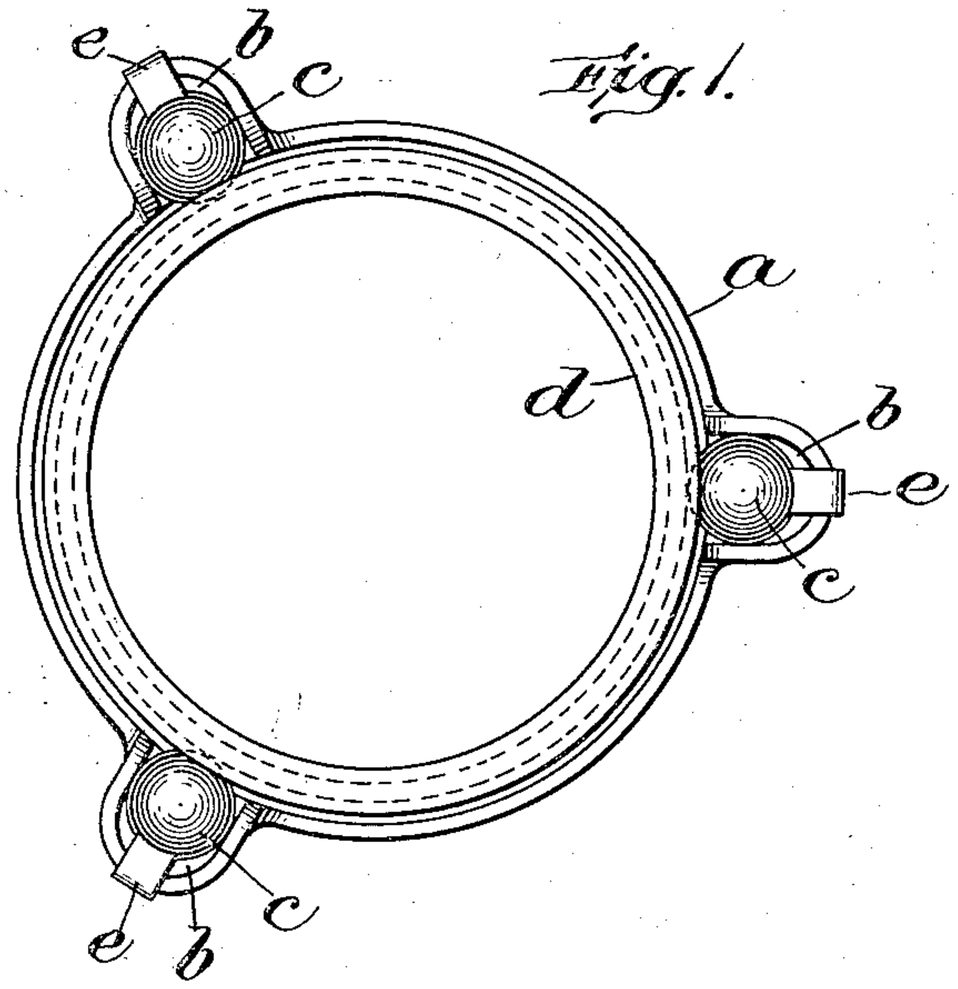

Fig. 1.

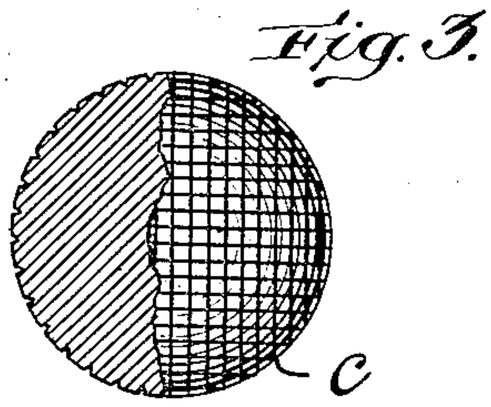

Fig. 3.

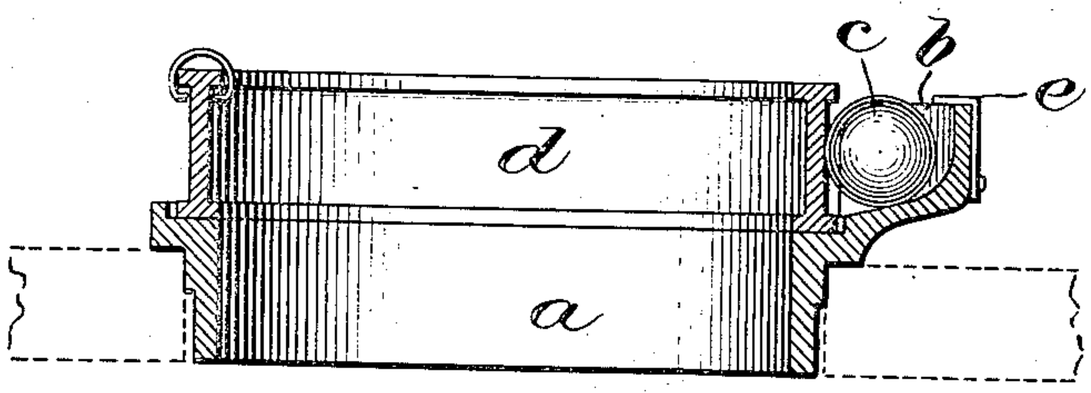

Fig. 2.

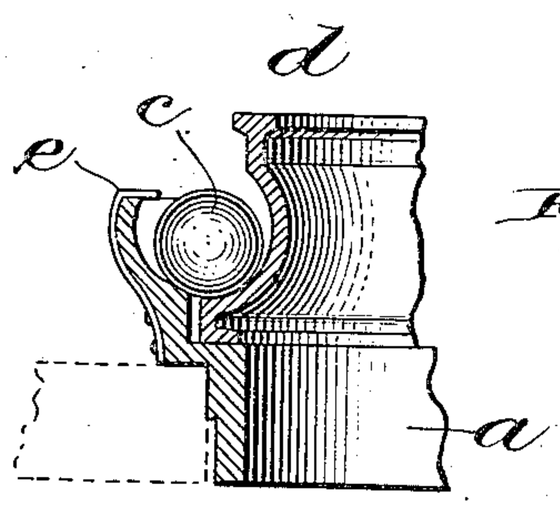

Fig. 4.

Witnesses:
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UNITED STATES PATENT OFFICE.

DÉSIRÉ DESPRADELLE, OF BOSTON, MASSACHUSETTS.

DEVICE FOR SPINNING AND TWISTING YARN.

No. 890,618. Specification of Letters Patent. Patented June 16, 1908.

Application filed May 19, 1906. Serial No. 317,691.

To all whom it may concern:

Be it known that I, DÉSIRÉ DESPRADELLE, a citizen of France, and resident of Boston, Massachusetts, county of Suffolk, have invented certain new and useful Improvements in Devices for Spinning and Twisting Yarn, of which the following is a specification.

This invention relates to devices for spinning and twisting yarn and more particularly has reference to means for controlling the rotary traveler ring such as are used in ring spinning frames or other devices for twisting or spinning yarn.

The invention comprises a controller containing a series of gravity-operated rolling weights arranged to lie normally in contact with the ring when the ring is at rest but which are supported to roll away from the ring under the influence of the centrifugal repulsion of the ring during its rotation at operative speed.

In the accompanying drawings are illustrated two of the various forms under which the invention may be embodied.

Figure 1 is a plan view of the device. Fig. 2 is a vertical cross section thereof showing its position in the ring rail. Fig. 3 is a detail showing one of the ball weights. Fig. 4 is a detail in vertical cross section showing the application of the invention to a modified form of ring.

In the practice of my invention according to the specific form illustrated in Figs. 1 and 2 of the drawings, I provide a holder or supporting device *a* which as illustrated comprises an annulus formed to fit into the holes in the ring rail of a ring spinning frame. This annulus is provided at suitable intervals with scoop-like pockets or recesses *b* each constructed and arranged to receive a rolling weight which in this case is shown as a ball *c* which has approximately the same diameter as the internal width of the pocket so as to practically fill the same from side to side. The floor or bottom of the pocket is inclined so as to give the ball a tendency to roll toward the center of the holder or of the ring supported by it. The traveler ring *d* rests loosely on top of the holder *a*, its outer face being close to but out of contact with the edges or walls of the surrounding pockets.

As illustrated in the drawings, when the ring is at rest the rolling weights or balls *c* rest with a light pressure against the outer periphery of the ring. Upon starting up the frame the revolution of the traveler is imparted to the ring which quickly acquires a gyratory movement lifting from its seat on the holder. By the time the normal speed of rotation has been reached the centrifugal force exerted by the rapidly rotating zone or film of air immediately in contact with the raceway or outer surface of the ring, is sufficient to push the ball *c* slightly out of contact with the ring itself, while excessive repulsion of the balls is prevented by the centripetal tendency of the balls due to their gravity and inclined support. To give increased resistance the inclination of the supporting surfaces upon which the balls rest may be more abrupt as it extends outwardly. In both forms I have shown this inclination as being in the form of a curve approaching more nearly to the vertical plane as it recedes from the inner edge of the pocket next to the ring.

The lower flange of the ring acts as a means for preventing the ring from lifting out of its position within the plane of the balls, while the accidental displacement of the balls out of the pockets may be prevented either by suitably shaping the pocket or by providing it with a detent overhanging its top. I have shown for this purpose a spring metal tongue *e* which may be readily pushed back to permit the removal or insertion of the ball when desired.

As shown in Fig. 3 the rolling weights which act as the controller of the ring may be corrugated or roughened in any suitable manner to increase the repellant action of the air particles thrown off from the ring during its rapid rotation.

A modified form illustrated in Fig. 4 embodies the same principles as the form already described but in this case the raceway of the ring is curved or dished so that in a state of rest the ball lies partly upon the ring so that the ring affords support for the ball from beneath as well as in a lateral plane.

By the construction and arrangement described the minimum area of contact between the ring and its controlling weight is obtained, while the action of the weight is purely automatic, the extent of its repulsion depending upon the speed of the ring and the resistance to such repulsion increasing in any desired proportion as the ball recedes from contact with the ring, since the supporting surface in the pocket may be curved or inclined at any desired angle to give this effect.

Without attempting to set forth the various changes in form, construction and ar-

rangement that may be made in the practice of my invention, what I claim is: —

1. A device for spinning yarn the combination with a rotatable traveler ring, of a holder or base provided with a series of pockets, a series of rolling weights adapted to lie in said pockets and having a normal tendency to roll toward and into contact with the ring to afford a yielding lateral resistance to the ring, substantially as described.

2. A device for spinning yarn the combination with a rotatable ring of a base provided with a series of scoop-like pockets, a series of balls formed to practically fill said pockets from side to side, a traveler ring positioned inside the circle of said balls whereby the repulsion of the air particles from the ring when in rotation acts to roll the balls outwardly from the ring, substantially as described.

3. A controlling device for a rotary traveler ring, embracing in its construction a base provided with a series of pockets or recesses whose bottoms are inclined inwardly and downwardly, a series of roughened surfaced rolling weights mounted therein so as to roll against the ring when at rest and to be repelled therefrom when the ring is in rotation, substantially as described.

4. A controlling device for a rotary traveler ring, embracing a base member adapted to be secured to the ring rail and provided with a series of pockets having concavely curved bottom walls, balls disposed in said pockets and free to roll inwardly against the ring under the action of gravity and outwardly away from the ring under the centrifugal repulsion caused by the ring when rotating, substantially as described.

5. A device of the class described embracing an annular base member provided with radial pockets about its periphery, balls disposed in said recesses and free to roll toward and away from the center, means for preventing the accidental displacement of the balls from said recesses, substantially as described.

6. A device of the class described embracing in its construction, a stationary base member adapted to be secured to the ring rail and provided with a series of pockets about its periphery, a rotatable ring resting upon said base concentrically with said pockets, and a series of rolling weights disposed in said pockets and normally resting in contact with the raceway between the flanges of the ring, substantially as described.

In witness whereof, I have hereunto set my hand, this 11th day of May, 1906.

DÉSIRÉ DESPRADELLE.

In the presence of—
GEO. N. GODDARD,
KATHARINE A. DUGAN.