No. 660,627. Patented Oct. 30, 1900.

G. O. DRAPER.

YARN SPINNING OR TWISTING APPARATUS.

(Application filed May 11, 1900.)

(No Model.)

Fig. 1.

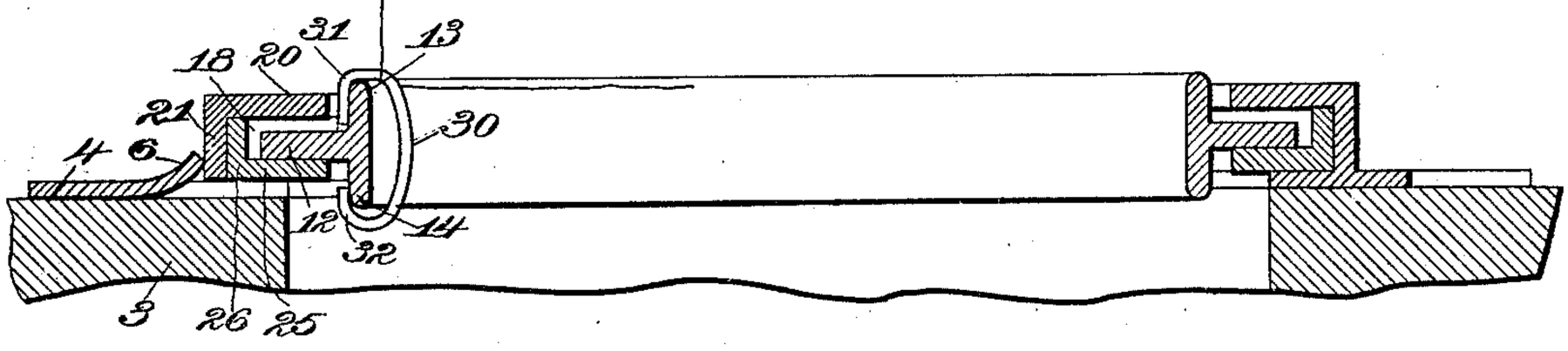


Fig. 2.

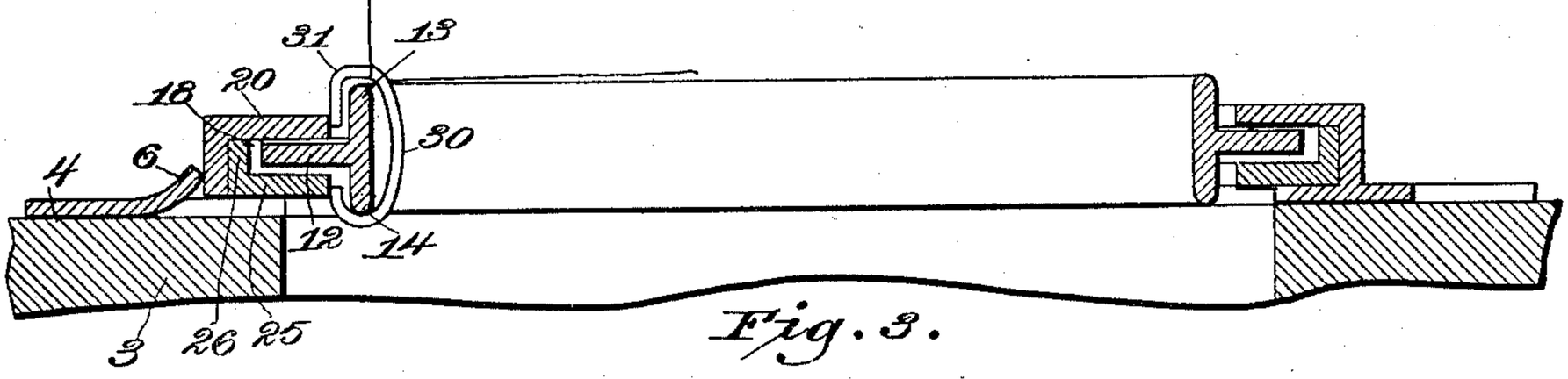
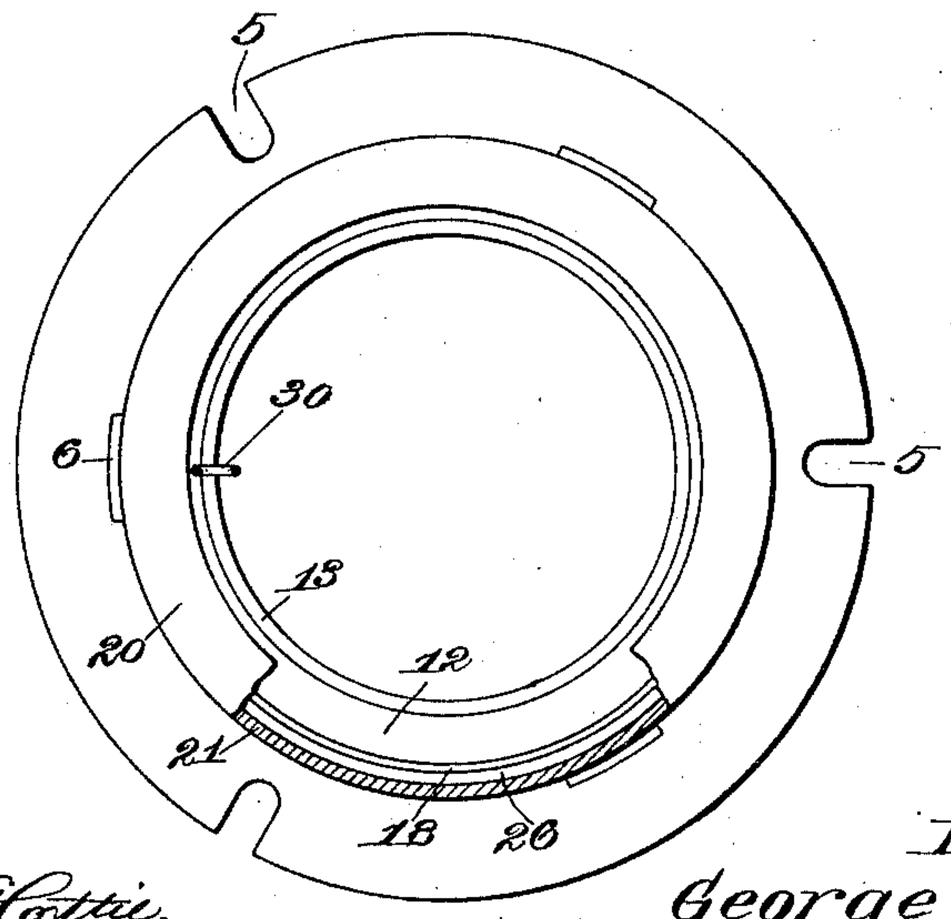


Fig. 3.



Witnesses:
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UNITED STATES PATENT OFFICE.

GEORGE O. DRAPER, OF HOPEDALE, MASSACHUSETTS, ASSIGNOR TO THE DRAPER COMPANY, OF SAME PLACE AND PORTLAND, MAINE.

YARN SPINNING OR TWISTING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 660,627, dated October 30, 1900.

Application filed May 11, 1900. Serial No. 16,290. (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 Yarn Spinning or Twisting Apparatus, of which the following description, in connection with the accompanying drawings, is a specification, like numerals on the drawings representing like parts.

My present invention relates to what has been designated "rotary-ring" spinning or twisting apparatus, wherein the traveler is in coöperative engagement with a rotatable ring or support, whereby, owing to the reduction in friction between the traveler and the rotatable ring, very high spindle speed can be employed with consequent increase of production. I have herein shown a novel, simple, and practical form of traveler-support or ring adapted for use with high spindle speed.

Figure 1 is a diametral sectional view of a traveler-support or ring embodying my invention with the parts at rest or when spinning or twisting is started. Fig. 2 is a similar view, but with the parts in the position assumed when the frame is running at high speed; and Fig. 3 is a top or plan view, partly broken out, of the traveler-support and its holder for securing it to the ring-rail.

My invention is applicable to any usual or well-known form of spinning or twisting frame, and I have herein shown only a portion of the ring-rail 3 of such apparatus, provided with a sheet-metal holder 4 of well-known construction, notched at 5, Fig. 3, to receive headed screws, by which it is attached to the ring-rail, upturned clips or lugs 6 serving to hold the traveler-support or ring in place.

I have herein shown the rotatable member or ring of my novel traveler-support as a flat annular web 12, having at its inner periphery an upturned flange 13 and a depending flange 14 to be embraced by the inturned ends 31 32 of the traveler 30 of substantially well-known form, the flanges retaining the traveler in place and forming races for the inner sides of the traveler ends. The fixed member is shown as two substantially Γ-shaped rings 20 25, the downturned flange 21 of the former tightly fitting over the upturned flange 26 of the latter, and being held together by frictional engagement, said rings when assembled presenting an annular internal groove or recess 18, into which the web 12 of the rotatable ring loosely enters, the rotatable ring being capable of limited radial and axial movement under the stress of the yarn. The inner peripheries of the horizontal portions of the rings 20 25 form fixed upper and lower races for the outer sides of the traveler ends, as will be described. When the frame is started up, the pull of the yarn draws the traveler inward, and it travels upon the races of the rotatable ring, and as the speed increases the friction of the traveler will gradually effect the rotation of the rotatable ring, which will run practically out of engagement with the fixed member when high spindle speed is attained. Thus the strain upon the yarn when the frame is starting up will be lessened, owing to the greater freedom permitted the traveler, but the latter will, by or through centrifugal action, be thrown outward after high speed has been attained, so that one or both of its ends will bear on their outer sides on the fixed races, steadying the operation of the traveler by exerting a slight drag thereupon. Should both ends bear against the upper and lower stationary races, the lower bend of the traveler would then be in engagement with the lower edge of the flange 14, as in Fig. 2.

The construction may be modified without departing from the spirit and scope of my invention, as herein shown and described by one practical embodiment thereof.

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

1. In a spinning or twisting frame, a rotatable ring, a traveler adapted to be engaged on its inner side by said ring, and a stationary bearing to coöperate with the outer side of the traveler.

2. In a spinning or twisting frame, a rotatable ring having a race to be engaged by the inner side of the traveler ends, and a stationary, annular race to engage the outer side of the traveler ends.

3. In a spinning or twisting frame, a rota-

table ring, a traveler adapted when drawn inward to engage and rotate said ring, and a fixed, surrounding annular race adapted to be engaged by the traveler when moved outward by or through centrifugal action.

4. In a spinning or twisting frame, a rotatable ring having upper and lower external races, corresponding upper and lower fixed races surrounding the said ring, and a traveler having its ends inturned between said pairs of races, the inner sides of the said ends coöperating with the races on the rotatable ring.

5. The combination with a rotatable ring comprising a horizontal web and upper and lower flanges at its inner circumference, of fixed annular retaining means having an internal recess to loosely receive the web of the rotatable ring, and a traveler adapted to embrace the flanges of the rotatable ring.

6. The combination with a rotatable ring comprising a horizontal web and upper and lower flanges at its inner circumference, of concentric flanged rings in frictional engagement with each other and presenting an internal annular recess to loosely receive the web of the rotatable ring, a traveler in engagement with the flanges of the latter, and a holder for said frictionally-engaged rings.

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

GEORGE O. DRAPER.

Witnesses:

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