

No. 714,966.

Patented Dec. 2, 1902.

M. E. SULLIVAN.
SPINNING RING.

(Application filed Feb. 20, 1901.)

(No Model.)

FIG. 1.

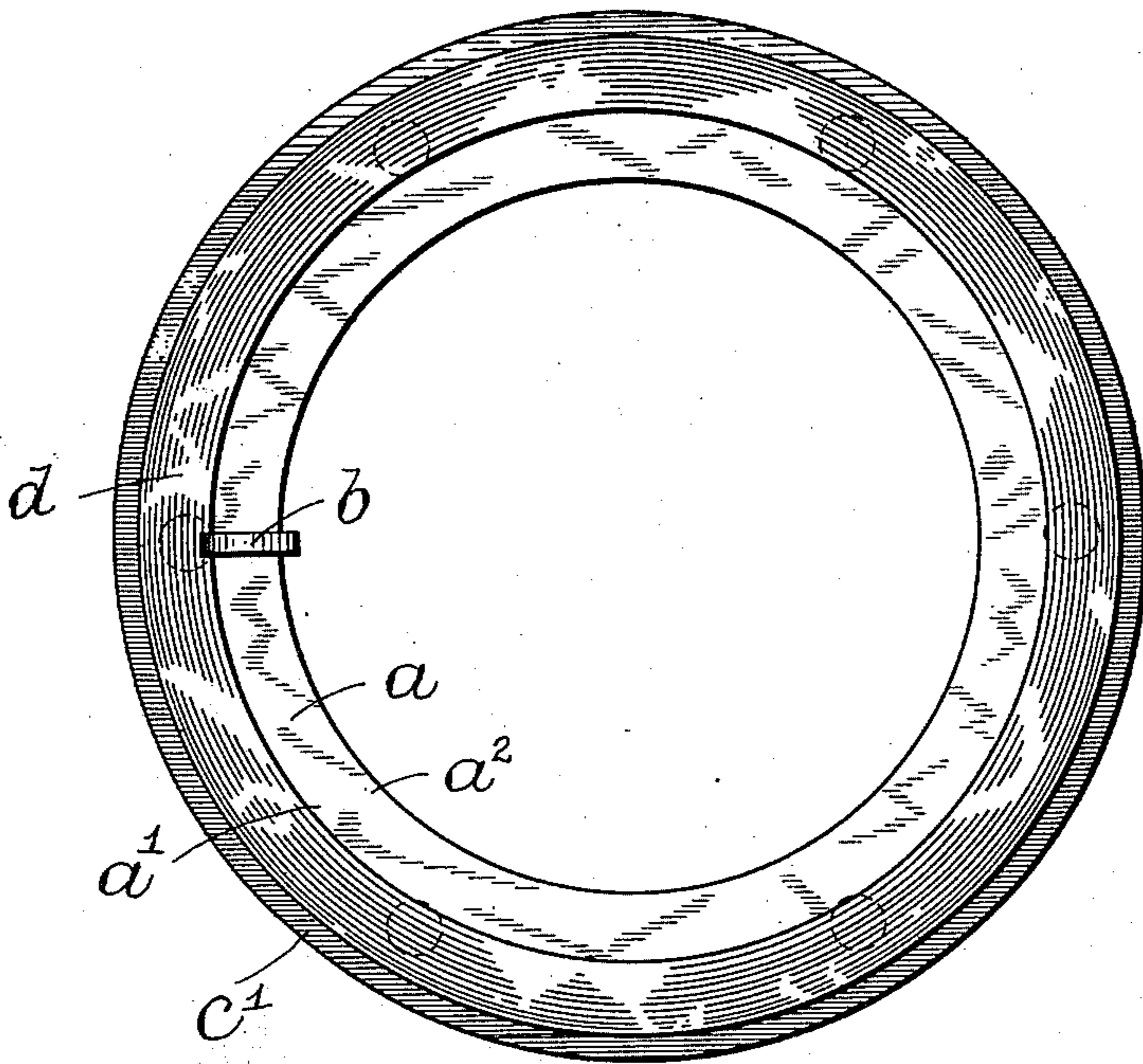


FIG. 2.

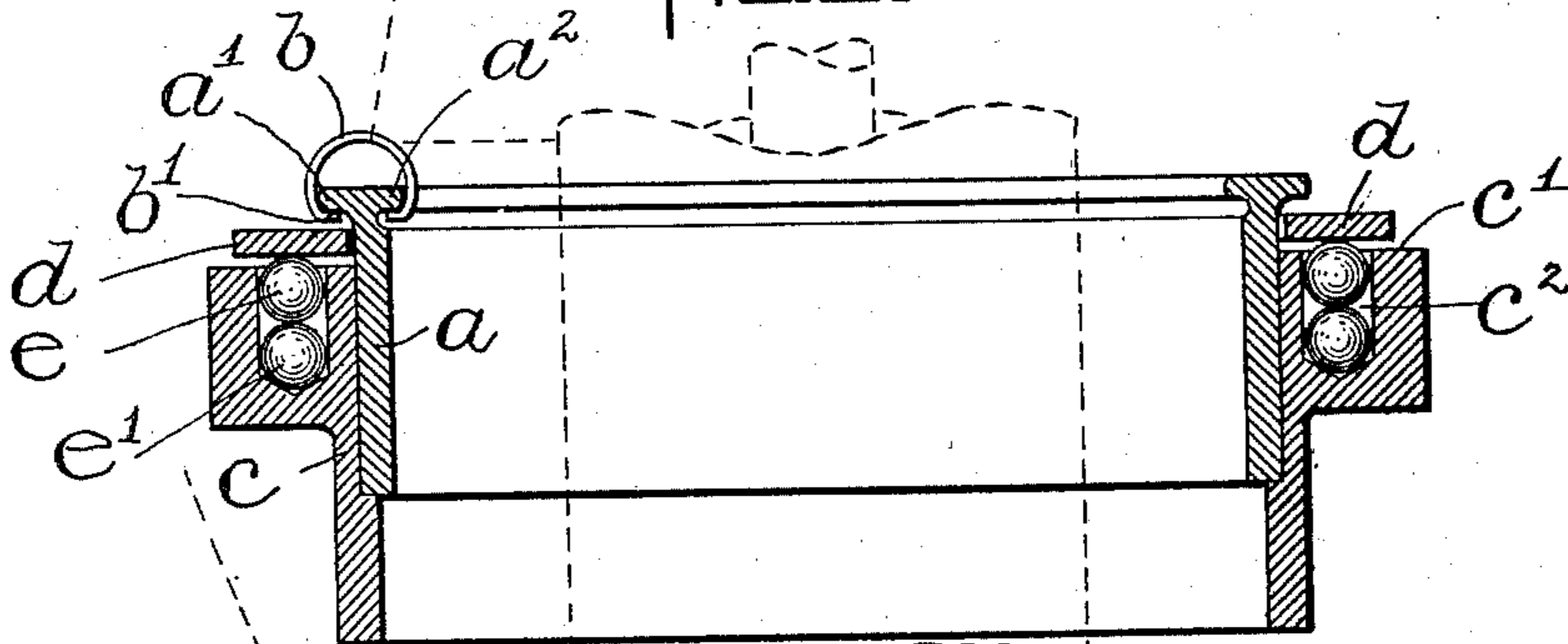
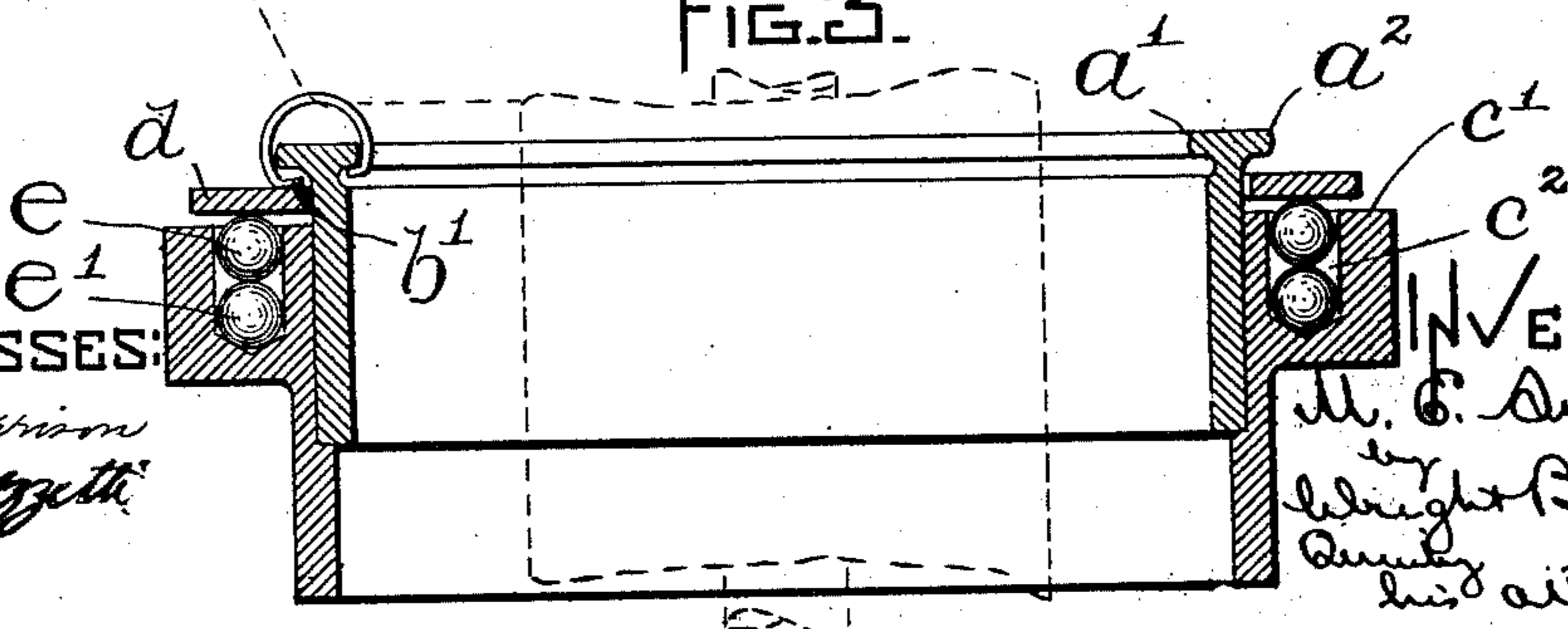


FIG. 3.



WITNESSES:

A. D. Harrison
Geo. P. Pugh

INVENTOR

M. E. Sullivan
by
Edw. H. Brown &
Associates
his attys

UNITED STATES PATENT OFFICE.

MICHAEL E. SULLIVAN, OF NEW BEDFORD, MASSACHUSETTS, ASSIGNOR TO
THE DRAPER COMPANY, OF PORTLAND, MAINE, AND HOPEDALE, MAS-
SACHUSETTS, A CORPORATION OF MAINE.

SPINNING-RING.

SPECIFICATION forming part of Letters Patent No. 714,966, dated December 2, 1902.

Application filed February 20, 1901. Serial No. 48,122. (No model.)

To all whom it may concern:

Be it known that I, MICHAEL E. SULLIVAN, of New Bedford, in the county of Bristol and State of Massachusetts, have invented certain
5 new and useful Improvements in Spinning-Rings, of which the following is a specification.

This invention has relation to spinning-frames, and more particularly to rings there-
10 for, having for its object to provide certain improvements therein whereby the friction on the end of the traveler will be reduced to permit the more rapid rotation of the bobbin and a consequent increase in the production
15 of the frame.

In carrying out my invention I employ a fixed—i. e., non-rotary—ring, but interpose between it and the outer end of the traveler a movable race or traveler-support. This
20 support is illustrated as in the form of a flat ring which encircles the spinning-ring and which rests loosely upon antifriction members, so that when the traveler is thrown outward and downward by centrifugal action
25 during the rotation of the bobbin its end rests upon the rotary support, which is free to rotate with it, and thereby relieve it from friction.

On the accompanying drawings, which illustrate one embodiment of my invention, Figure 1 represents a plan view of a ring embodying my invention. Fig. 2 represents a vertical section through the same when the bobbin and traveler are at rest. Fig. 3 represents a similar section, but shows the position of the traveler when moving at high speed.

Referring to the drawings, *a* indicates a spinning-ring having the external flange *a'* and the internal flange *a''*, which constitute
40 races for the traveler *b*. A holder *c*, which is adapted for attachment to the rail, is counterbored to receive the ring, the latter having a snug friction fit therein and projecting a short distance thereabove to leave a groove-like space between the flange *a'* and the upper face *c'* of the holder.

When the traveler is moving swiftly around the race during the rapid rotation of the bob-
50 bin, the outer end *b'* thereof is forced out-

ward and downward from the race *a'* by centrifugal action, as is well known, and engages the periphery of the ring-body. Consequently both ends of the traveler are in engagement with the ring, and the friction engendered
55 thereby increases with the speed of rotation of the bobbin. This has hitherto limited the speed at which the traveler could travel without becoming annealed and burned, and a relatively low production of yarn upon a frame
60 has been the result. I find, however, as previously stated, that by interposing between the periphery of the ring and the end of the traveler a movable race or traveler-support that the friction may be reduced to such an
65 extent as to permit a relatively great increase in the speed of the traveler without a material increase in friction.

The traveler-support in the illustrated embodiment of the invention consists of a flat
70 ring *d*, which loosely encircles the ring *a* and lies between the flange *a'* and the face of the ring-holder. A space is left between the upper face of the support and the under face of the said flange *a'*, into which the intumed
75 end *b'* of the traveler projects and which is greater than the thickness of the traveler to permit one side of said end of the latter to leave said flange *a'*, as shown in Fig. 3, and the other side to engage the movable race.
80 The support or movable race is free to move laterally in any direction to a limited extent, and it rests upon antifriction-balls *e*, placed loosely in sockets *c''*, formed at regular intervals in the face of the holder *c*. Each ball *e*
85 rests upon another ball *e'* and projects above the face *c'*, as shown, to maintain the support above and out of contact with said face.

In operation the initial rotation of the bobbin causes the traveler to move slowly around
90 the race; but as its speed increases the end *b'* of the traveler is thrown downward until it rests upon the rotatable race. The engagement of the traveler with the support or rotatable race causes the latter to rotate slowly
95 at first and then with increasing speed until it appears to be moving in unison with the traveler.

Having thus explained the nature of the invention and described a way of construct- 100

ing and using the same, although without attempting to set forth all of the forms in which it may be made or all of the modes of its use, I declare that what I claim is—

- 5 1. In combination, a non-rotary spinning-ring having two flanges forming a traveler-race, and a rotatable traveler-support.
2. In combination, a spinning-ring having two flanges forming a traveler-race, a ring-
10 holder, and a movable traveler-support.
3. In combination, a spinning-ring having oppositely-extending flanges forming a traveler-race, and a rotatable traveler-support encircling said ring.
- 15 4. In combination, a non-rotary spinning-ring, having two oppositely-extending flanges forming a race, and a rotatable traveler-support encircling the ring below said race.
- 20 5. In combination, a spinning-ring having two oppositely-extending flanges forming a traveler-race and means supported independently of the traveler for reducing the friction between the traveler and the ring.
- 25 6. In combination, a non-rotary ring having oppositely-extending flanges forming a traveler-race, and means supported independently of the traveler, and rotatable therewith for reducing the friction of the traveler.
- 30 7. In combination, a non-rotary ring, having oppositely-extending flanges forming a traveler-race, a traveler, and a flat traveler-support rotatable with the traveler but located below the end of said traveler.
- 35 8. In combination, an inner non-rotary ring, a traveler, and an outer rotatable ring disposed in such relation that the under side of one end of the traveler engages one ring and the other end of the traveler engages the other ring.
- 40 9. In combination, a non-rotary ring having a race, a traveler, a rotatable race located below the end of the traveler, the traveler being moved by centrifugal force into engagement with the movable race when moving at
45 high speed.
10. In combination, a fixed ring having inner and outer races for the ring, and a sur-

rounding rotatable ring having a traveler-race adjacent one of the races of the fixed ring.

11. In combination, a fixed ring having 50 outer and inner races for the traveler, and a rotatable ring having a race for the traveler, and a traveler, the latter being caused to engage the movable race by centrifugal force.

12. In combination, a ring having flanges forming a race for the traveler, a traveler revoluble on said ring, and a rotatable traveler-race located below and adjacent one of said flanges to be engaged at times by said 60 traveler.

13. In combination, a fixed ring having a double flange forming a race for the traveler, a traveler cooperating therewith, and a rotatable race intermittingly cooperating with the 65 traveler.

14. In combination, a fixed ring having a double flange forming a race for the traveler, a traveler, and means cooperating intermittingly with the traveler to reduce the frictional engagement thereof with said double 70 flange.

15. In combination, a fixed ring, a traveler adapted to be engaged on its inner side by said ring, and a movable bearing to cooperate 75 with the outer and under side of the traveler.

16. In combination, a ring having an external flange against which the traveler may bear, a ring-holder, and a rotatable member 80 adapted to cooperate with the traveler, interposed between said flange and said holder.

17. In combination, a fixed ring having an external flange, a rotatable member below said flange, and a traveler having an intumed 85 end adapted to alternately engage the flange with one side of its said end and the member with the other side of its said end.

In testimony whereof I have affixed my signature in presence of two witnesses.

MICHAEL E. SULLIVAN.

Witnesses:

MARCUS B. MAY,
GEO. PEZZETTI.