

No. 624,132.

Patented May 2, 1899.

R. TODD & J. A. STOTT.
APPARATUS FOR SPINNING TEXTILE FIBERS.

(Application filed Nov. 10, 1896.)

(No Model.)

Fig. 1.

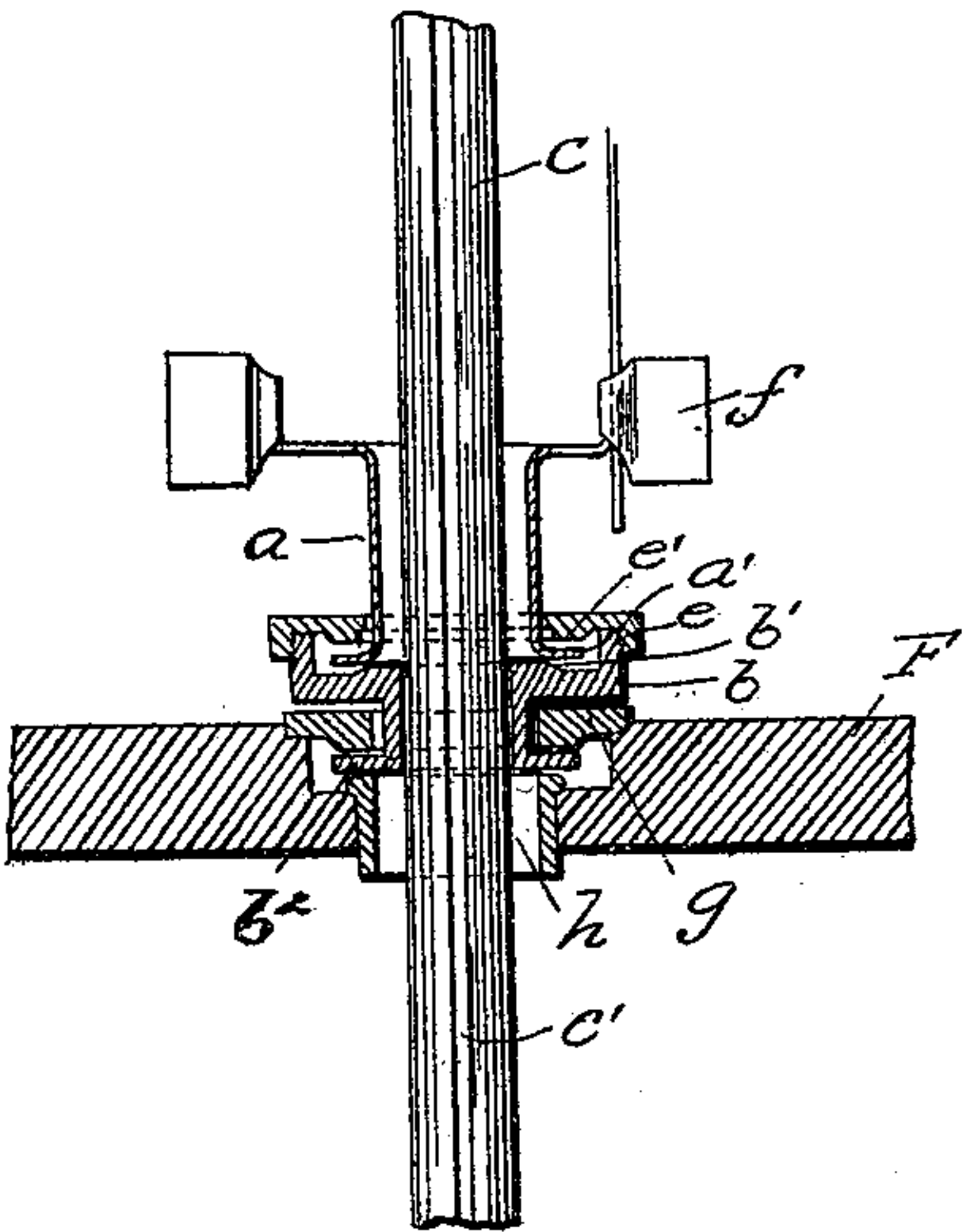


Fig. 2.

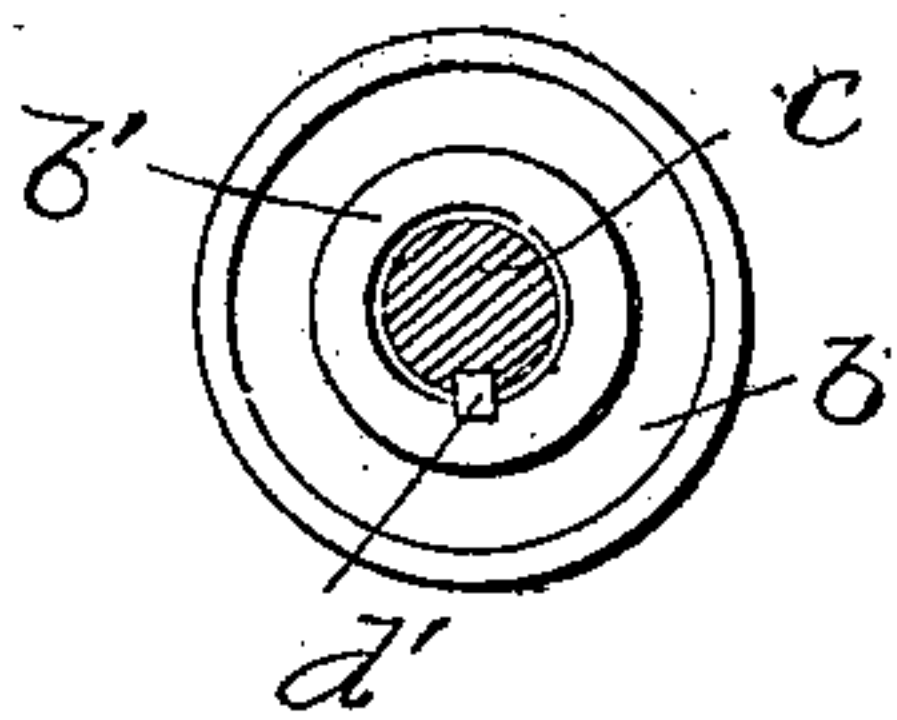


Fig. 3.

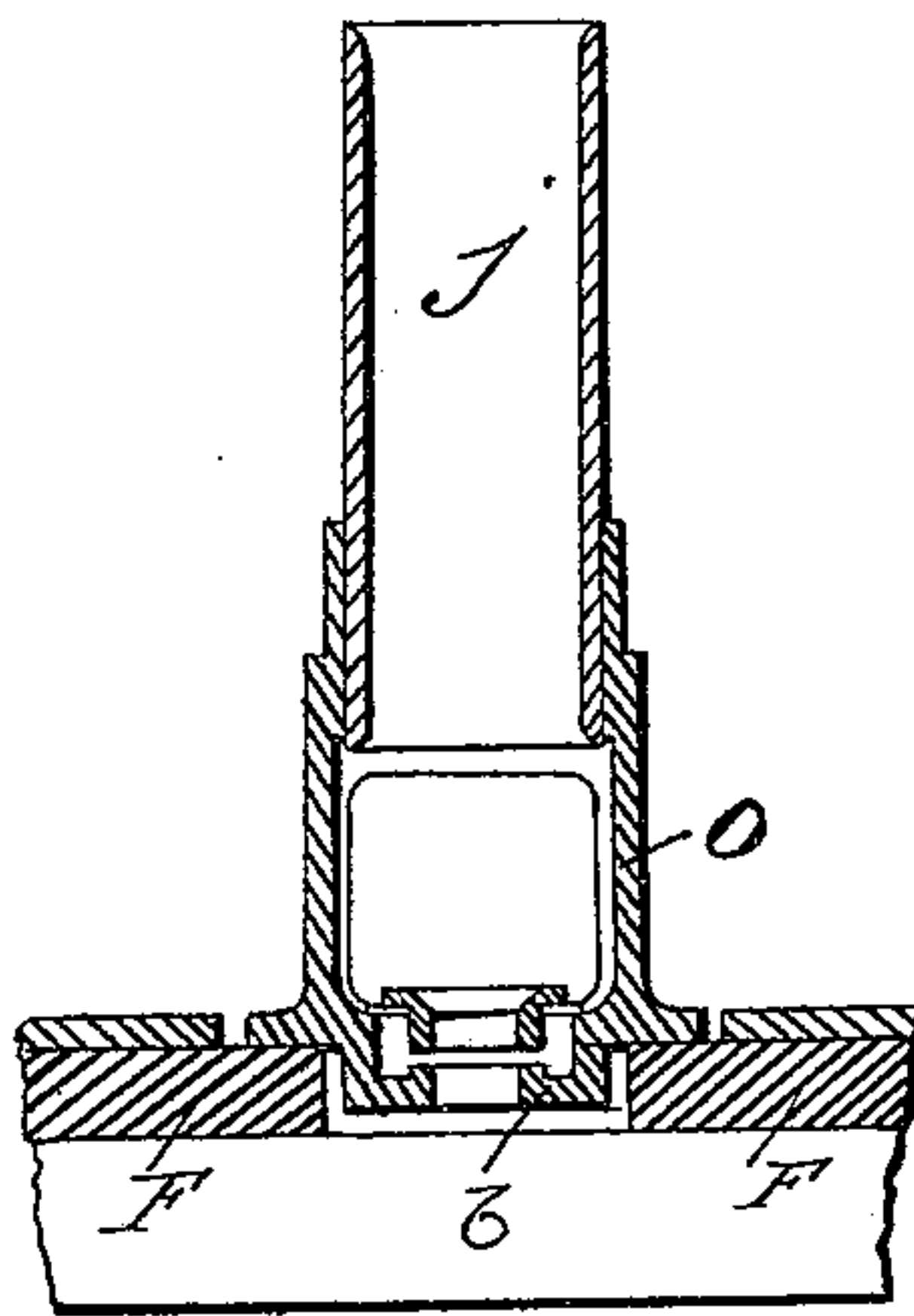
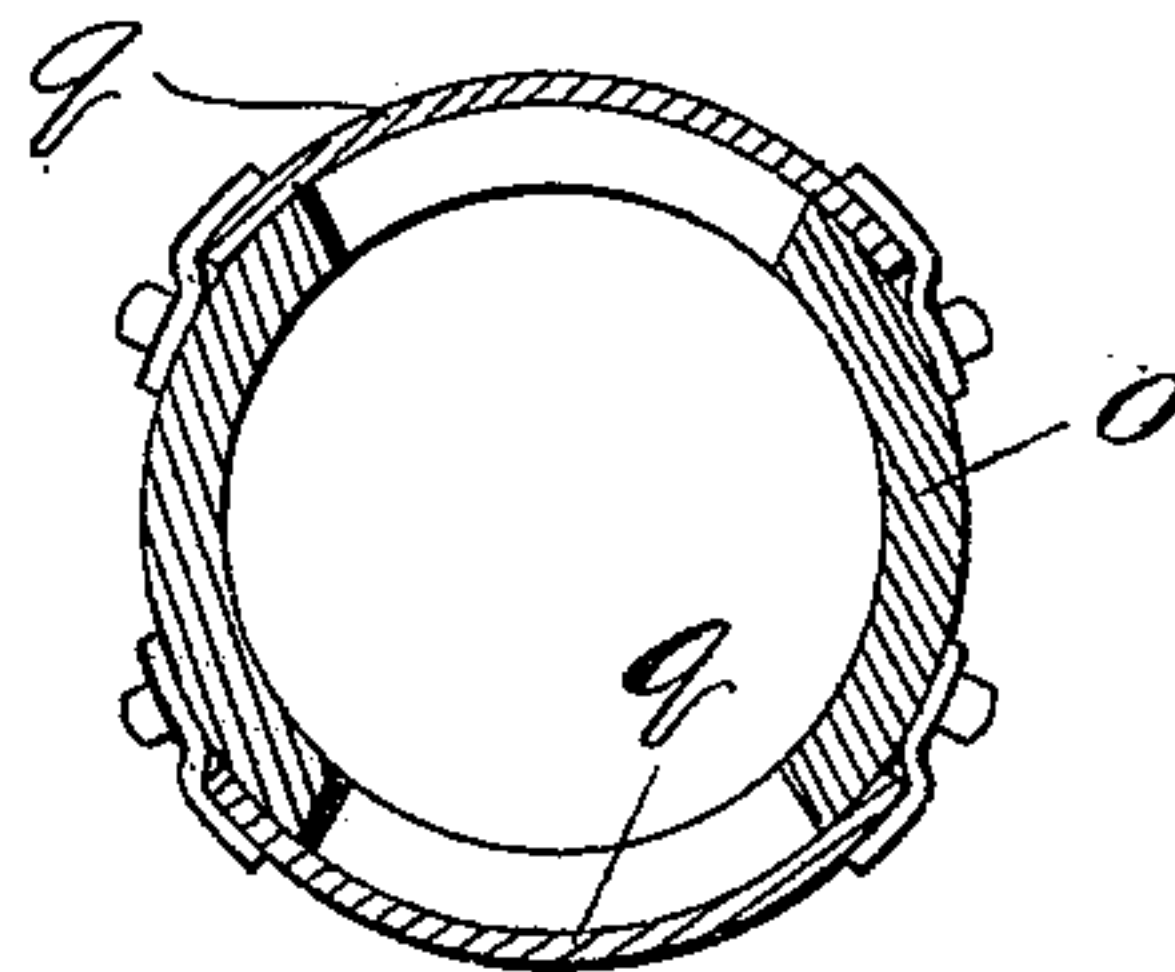


Fig. 4.



Witnesses:-
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UNITED STATES PATENT OFFICE.

RICHARD TODD, OF HEATON CHAPEL, AND JESSE AINSWORTH STOTT, OF
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APPARATUS FOR SPINNING TEXTILE FIBERS.

SPECIFICATION forming part of Letters Patent No. 624,132, dated May 2, 1899.

Application filed November 10, 1896. Serial No. 611,651. (No model.)

To all whom it may concern:

Be it known that we, RICHARD TODD, manufacturer, of Heather Bank, Heaton Chapel, and JESSE AINSWORTH STOTT, architect and engineer, of 5 Cross street, Manchester, in the county of Lancaster, England, subjects of the Queen of Great Britain and Ireland, have invented certain new and useful Improvements in Apparatus for Spinning Textile Fibers, (for which we have obtained a patent in Great Britain, No. 23,473, dated the 7th of December, 1895,) of which the following is a specification.

Our said invention relates to improved means for spinning yarns upon the bare spindle of the ordinary diameter in frames principally of the throstle type.

In carrying our invention into effect we use a whip-traveler consisting of a flexible or rigid arm carried by a ferrule or ring which surrounds the spindle beneath the cop, all as set forth in the specifications of our accompanying applications of even date herewith, Serial Nos. 611,649 and 611,650. The said whip-traveler is of sufficient length to extend from the foot to the tip of the cop and is furnished with an eye at the top, through which the yarn passes to the spindle or cop. At the foot or butt the whip-traveler is made readily attachable and detachable by any suitable means to the ferrule or ring surrounding the spindle or to a projection therefrom, as described in one of the aforesaid specifications of even date herewith.

Figure 1 is a sectional view through the rail, the socket-ring and ferrule in position about the spindle. Fig. 2 is a detail plan view of the socket-ring with the cover removed. Fig. 3 is a sectional view of a curbing-sleeve for inclosing the ferrule and other working parts, and Fig. 4 is a sectional plan view of Fig. 3.

According to our present invention and as clearly shown in Figs. 1 and 2 of the annexed sheet of drawings the said loose surrounding ferrule or ring *a* is formed at the foot with bent fingers or a flange or portions of a flange *a'*, which are confined in a socket-ring *b*, fixed to the spindle *c* by a slip-feather *d'* and groove *c'* or other suitable means which will insure the revolution of the socket-ring *b*, while permitting it to rise and fall on the spindle *c*

with the lifting-rail *F*. The said socket-ring has a cap *e* with an inner ledge *e'*, and the socket-ring *b* is made with an upstanding ledge *b'*, the fingers *a'* or other part or parts projecting from the loose ferrule or ring running between the said ledges *e'* and *b'*, provision being made for lubrication. The cap *e* of the socket-ring may be extended so as to surround the loose boss or ferrule *a* for some distance.

Attached to the loose ferrule or ring *a* or to projections therefrom are suitable vanes or wings *f* to obtain the necessary drag for winding on the yarn by the resistance of the atmosphere.

By the arrangements indicated it will be seen that the socket-ring *b* revolves at the same speed as the spindle *c*. The loose ferrule or ring *a*, carried in the socket-ring, is therefore urged by its frictional contact with the socket-ring or with the socket-ring and the spindle and is retarded by the resistance of the atmosphere to the vanes or wings attached to it.

While applicable to all counts of yarn, our present invention is specially useful in the production of very fine counts. The drag caused by the friction of the fingers formed on the loose ferrule or ring *a* when revolving in a socket-ring and cap formed or fixed on the lifting-rail is too severe for very fine yarns; but by our present invention it is not only entirely dispensed with, but the revolving socket-ring and cap *b* and *e* assist the ferrule or ring *a* around, and any desired drag may be obtained by suitably proportioning the vanes or wings *f* on the ferrule. The aforesaid loose ferrule or ring may be made in halves, or the socket-ring may be so constructed or arranged as to permit of the ready introduction of the bent fingers or other parts which retain the ferrule in the socket. The socket-ring *b* on the spindle may be connected to the rising-and-falling rail in any suitable or convenient manner. For instance, as shown in the drawings, we might form it with a flange *b²* at the foot and confine the said flange in a recess in the rail *F* by means of a cover *g* applied in halves, the cover-halves *g* being held down by clamps or

screws; but we do not wish to limit ourselves in this respect. The lower edge, upon which the flange b^2 rests and revolves, may be formed by the upper edge of a bush h inserted into
 5 the rail f . The sunk recess in the rail serves to contain lubricant.

We may inclose the ferrule within a curbing-sleeve to protect it, such curbing-sleeve being shown in Fig. 3. A method of sup-
 10 porting the curbing-sleeve j is shown in said Fig. 3. It consists in mounting the sleeve in a hollow or recessed pillar o from the socket-ring or copping-rail F , in which case the upper lifting-rail might be dispensed with. The
 15 pillar o is cut out or recessed at or near the foot, so as to allow access to the ferrule carrying the bent fingers and the detachable whip-traveler, and these cut-out gaps are preferably closed by sliding plates q , as shown
 20 in section in Fig. 4. The part of the pillar carrying the curbing-sleeve may be split and fitted with a binding-screw or binding-screws to grasp the curbing-sleeve, and as shown in Fig. 3 the socket-ring b^3 might be formed in

the base of the pillar. In this latter case the
 25 socket or the hole to receive the same and the part to receive the curbing-ring may be bored out at one operation so as to be relatively concentric. This diminishes the trouble of
 30 setting the spindles concentric to both.

What we claim as our invention is—

In combination, the spindle the lifting-rail, the main socket-ring carried thereby, the sup-
 35 plemental socket-ring splined to the spindle and retained in position by the main socket-ring, the ferrule engaging the supplemental
 40 socket-ring to be rotated thereby, the traveler carried by the ferrule, and retarding means for the ferrule and traveler, substantially as described.

In witness whereof we have hereunto set our hands in presence of two witnesses.

RICHARD TODD.

JESSE AINSWORTH STOTT.

Witnesses:

JOSHUA ENTWISLE,

RICHARD IBBERSON.