

No. 660,626.

Patented Oct. 30, 1900.

G. O. DRAPER.

YARN SPINNING OR TWISTING APPARATUS.

(Application filed May 11, 1900.)

(No Model.)

Fig. 1.

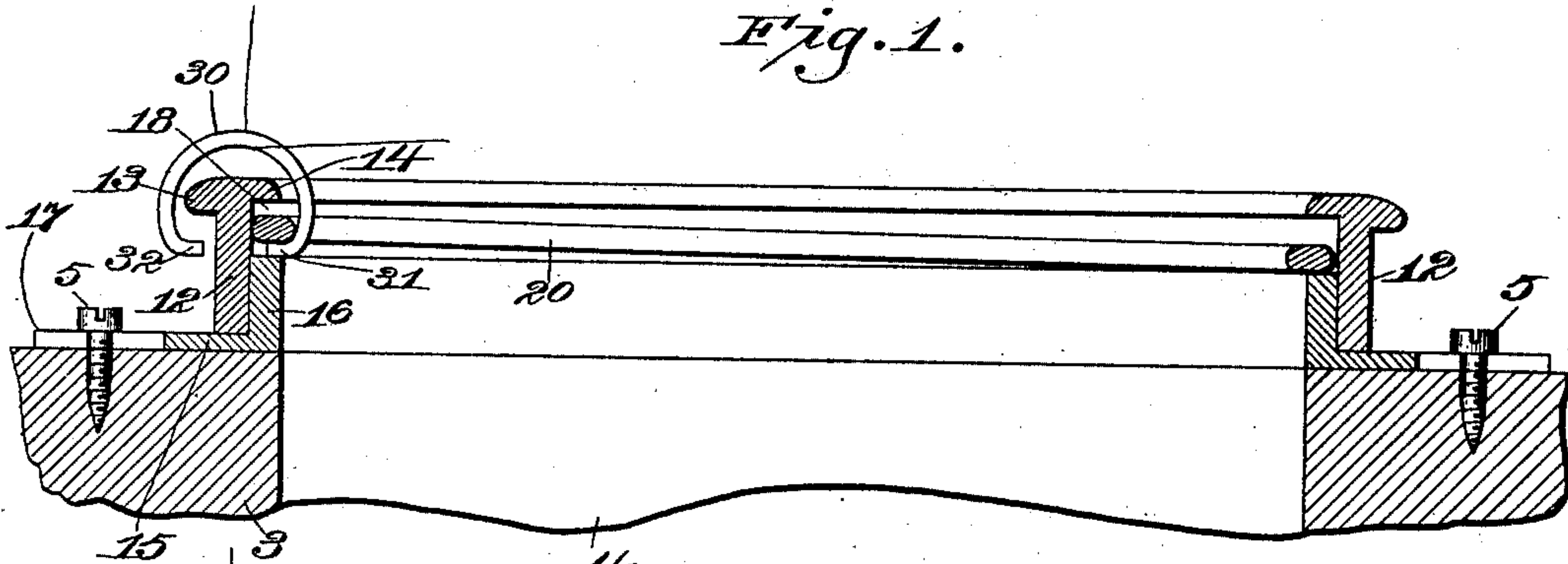


Fig. 2.

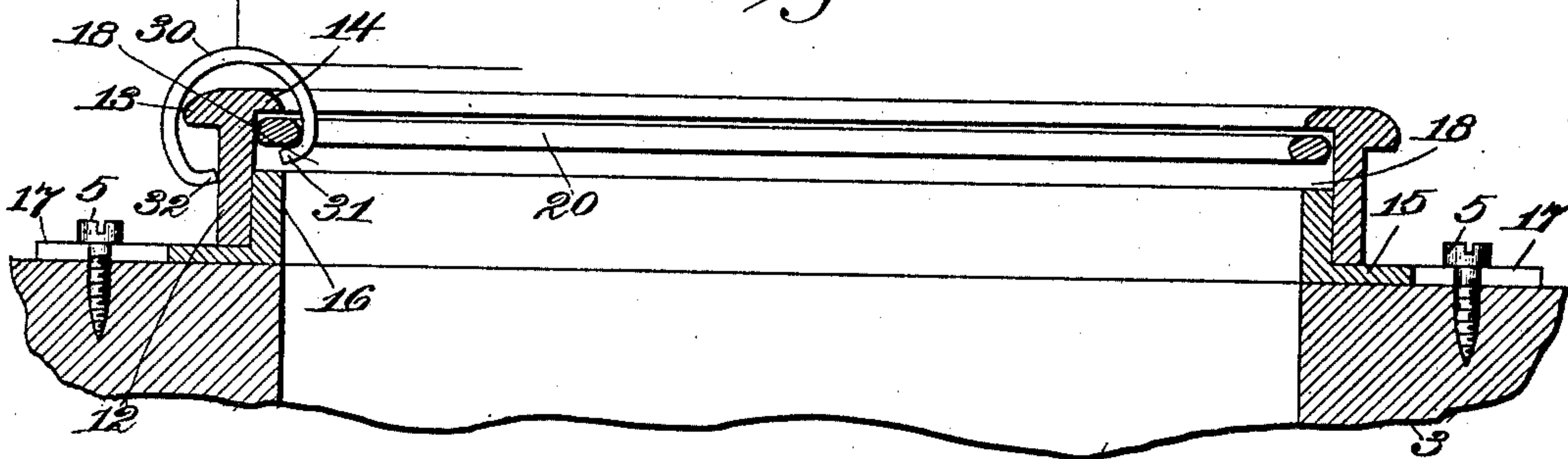


Fig. 3.

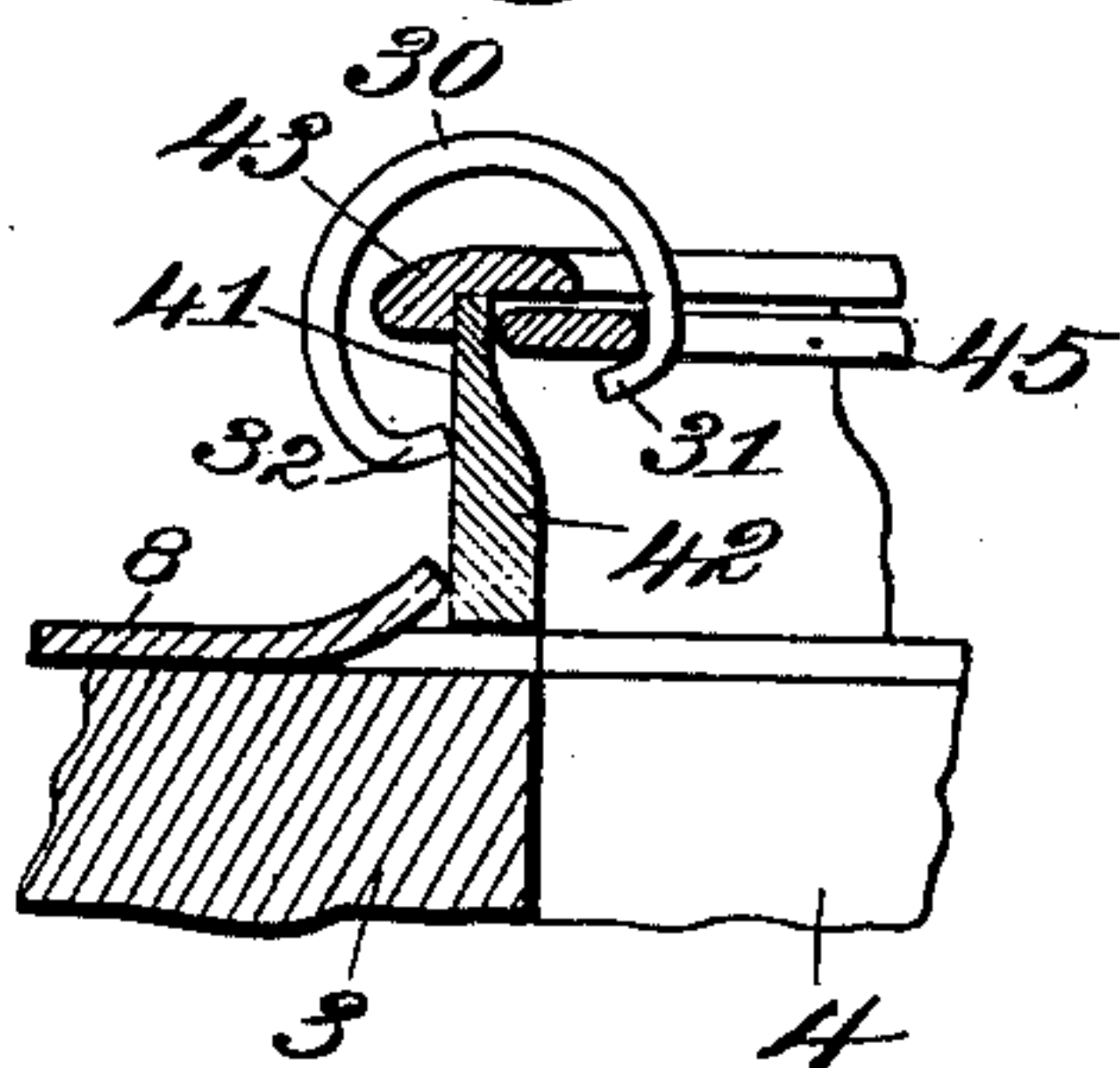
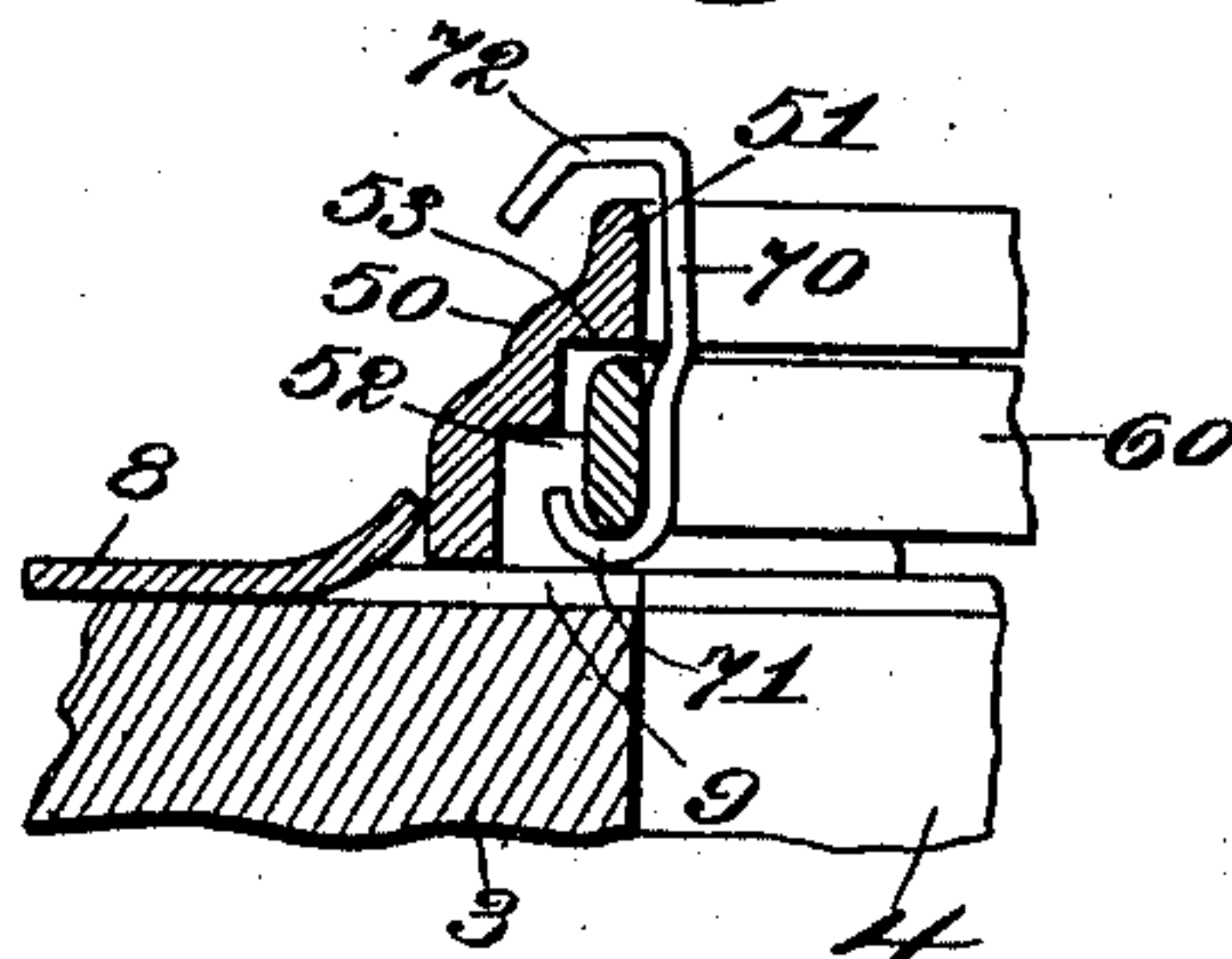


Fig. 4.



Witnesses:
Frank E. Hattie.
Fred L. Grunkof.

Inventor:
George O. Draper.
by Lewis R. Gregory.
Att'y's

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. 660,626, dated October 30, 1900.

Application filed May 11, 1900. Serial No. 16,289. (No model.)

To all whom it may concern:

Be it known that I, GEORGE O. DRAPER, a citizen of the United States, residing at 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.

This invention relates more particularly to yarn spinning or twisting apparatus adapted for high spindle speed—say from ten to fifteen thousand revolutions per minute or higher; and it has for its object the production of a novel, simple, and cheap traveler-support by the use of which such high speed may be utilized without destruction of the traveler by friction.

Figure 1 is an enlarged diametral section of a traveler-support embodying one form of my invention shown as applied to the ring-rail of a spinning or twisting frame, with the parts in normal position. Fig. 2 is a similar view showing the position assumed by the movable members when the frame is running at high speed, and Figs. 3 and 4 are sectional details of modifications to be referred to.

The frame may be of any usual or well-known construction, the ring-rail 3 thereof having the usual aperture 4 for the reception of the spindle and bobbin, (not shown,) the spindle being of some suitable or well-known high-speed type.

In Figs. 1 and 2 I have shown the traveler-support as comprising a fixed and a rotatable member, the fixed member consisting of a circular upright web 12, having a T-shaped head formed by oppositely-extended flanges 13 14, said web resting on the laterally-extended foot 15 of a ring or circular web 16 within the web 12 and around which the latter fits tightly. The foot 15 is radially slotted, as at 17, to receive the shanks of headed screws or other fastening devices 5, which secure the fixed member to the ring-rail. The web 16 forms an annular projection or shoulder below the flange 14, leaving an annular recess 18, in which is loosely placed the movable member of the traveler-support, said

member being shown as a ring 20, flattened and with rounded inner and outer edges, giving it a substantially elliptical shape in cross-section.

When assembling the parts, the ring 20 is inserted within the member 12, and then the latter is pushed down around the ring or web 16, the recess 18 permitting radial and axial movement of the ring 20, which is engaged by one end 31 of the traveler 30, the other end 32 of the traveler embracing the flange 13 of the fixed member.

Referring to Fig. 1, when the ring 20 is quiescent it is supported by the annular projection or web 16 as the traveler revolves; but as the speed increases the ring 20 will by frictional engagement be rotated, slowly at first and finally substantially in unison with the traveler, and at such time said ring appears to maintain the position shown in Fig. 2, out of contact with any part of the fixed member. The traveler is swung out by centrifugal action and its end 32 will travel over the external upright face of the web 12, which thus forms a traveler-race and serves to steady and control the rotation of the traveler and rotating ring 20.

In the modification shown in Fig. 3 the annular fixed member 40 is shown as held in a sheet-metal holder 8 of well-known construction, said member 40 being reduced in thickness internally at its upper end, as at 41, to leave an internal annular projection 42, and the head 43 is made detachable to permit insertion of the rotatable ring 45. The head 43 overhangs the member 40 internally and externally and retains the traveler 30 thereon, the inner end 31 of the traveler passing beneath the inner circumference of the ring 45. The operation is the same as has been described for the construction shown in Figs. 1 and 2, the parts in Fig. 3 being shown in the position assumed when the frame is running at high speed.

Yet another modification is shown in Fig. 4, the fixed annular member 50 being held in the sheet-metal holder 8, said member having an upturned flange 51 at its top and an internal annular recess 52 to receive the rotatable ring 60, which is shown as a thin deep

annular band, the overhanging shoulder 53 preventing undue lifting of said ring 60. This form of my invention is particularly adapted for vertical twisters, the hooked lower end 71 of the traveler 70 embracing the lower edge of the ring 60, while the bent-over head 72 of the traveler engages the upright flange 51 of the fixed member and is guided thereby. In this instance I have shown the body of the holder 8 extended internally, as at 9, to form a support for the ring 60 when the latter is quiescent. The construction is simple, and the operation is substantially the same as hereinbefore described, the ring 60 being capable of radial and axial movement under the stress of the yarn.

It will be obvious that owing to the uniform cross-sectional shape of the rotatable ring it can be used either side up, and if one side or edge should become worn unevenly the ring can be reversed. The flanges 14 and 51 also serve to protect the contact-surfaces of the rings from deposit of dust, lint, or dirt.

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

1. In a spinning or twisting frame, a traveler-support comprising a fixed annular member having an internal, overhanging annular projection, at or near its upper end, and an oppositely-extended flange, a rotatable ring within the fixed member below the projection thereof and capable of radial and axial movement, means to support said ring when quiescent, and a traveler in engagement with said ring and also with the fixed member.

2. In a spinning or twisting frame, a traveler-support comprising a fixed ring having an internal flange or projection at or near its upper end, and an oppositely-extended flange, a loose, rotatable ring of substantially elliptical cross-section, means to support it when

at rest, and a traveler in engagement with the fixed and rotatable rings.

3. In a spinning or twisting frame, a traveler-support comprising fixed annular retaining means provided with an internal annular recess and an external traveler-race, a rotatable, radially-movable ring loosely held in said recess, and a traveler cooperating with said traveler-race and the loose ring.

4. In a spinning or twisting frame, a loose, rotatable ring substantially elliptical in cross-section, supporting and retaining means for said ring, and a traveler adapted to engage said means and the ring, rotating and effecting axial movement of the latter when the frame is running at speed.

5. In a spinning or twisting frame, a fixed ring having an external flange and an internal flange, at its upper end, an annular projection within said ring, below its inner flange, a rotatable ring radially and axially movable in the annular recess between said flange and projection, and a traveler in engagement with said rotatable ring and the outer flange of the fixed ring.

6. The combination with a fixed member having a T-shaped head and an internal annular projection below the head, of a flattened rotatable ring radially and axially movable between said head and projection and adapted to be engaged by a traveler.

7. In a duplex-ring construction the combination, with the stationary flange, of a revolving portion of uniform section so shaped as to be reversible for double use or wear.

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

GEORGE O. DRAPER.

Witnesses:

E. D. BANCROFT,
ERNEST W. WOOD.