

T. A. BOYD.

RING AND TRAVELER FOR SPINNING AND ANALOGOUS MACHINES.

APPLICATION FILED MAY 20, 1905.

Fig^o. 1.

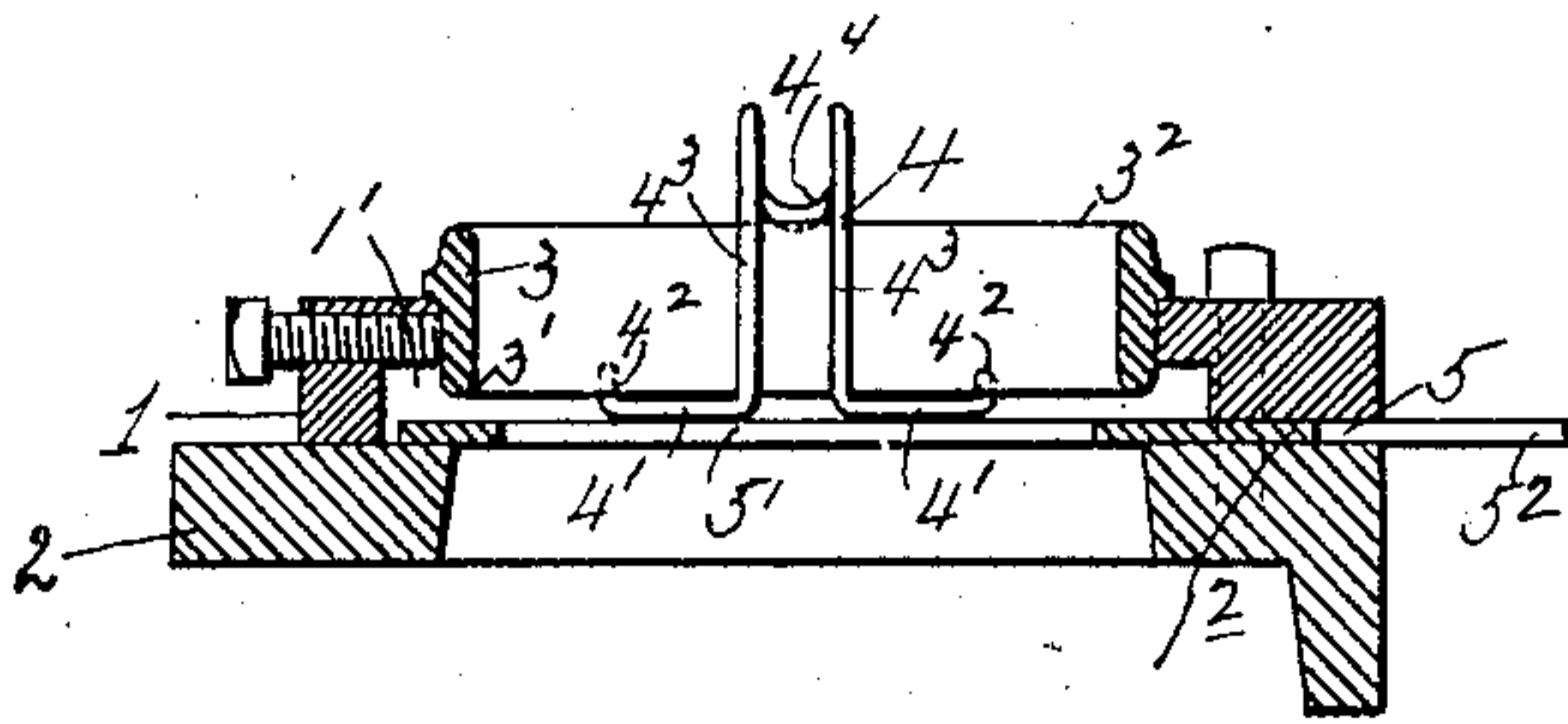


Fig. 3.

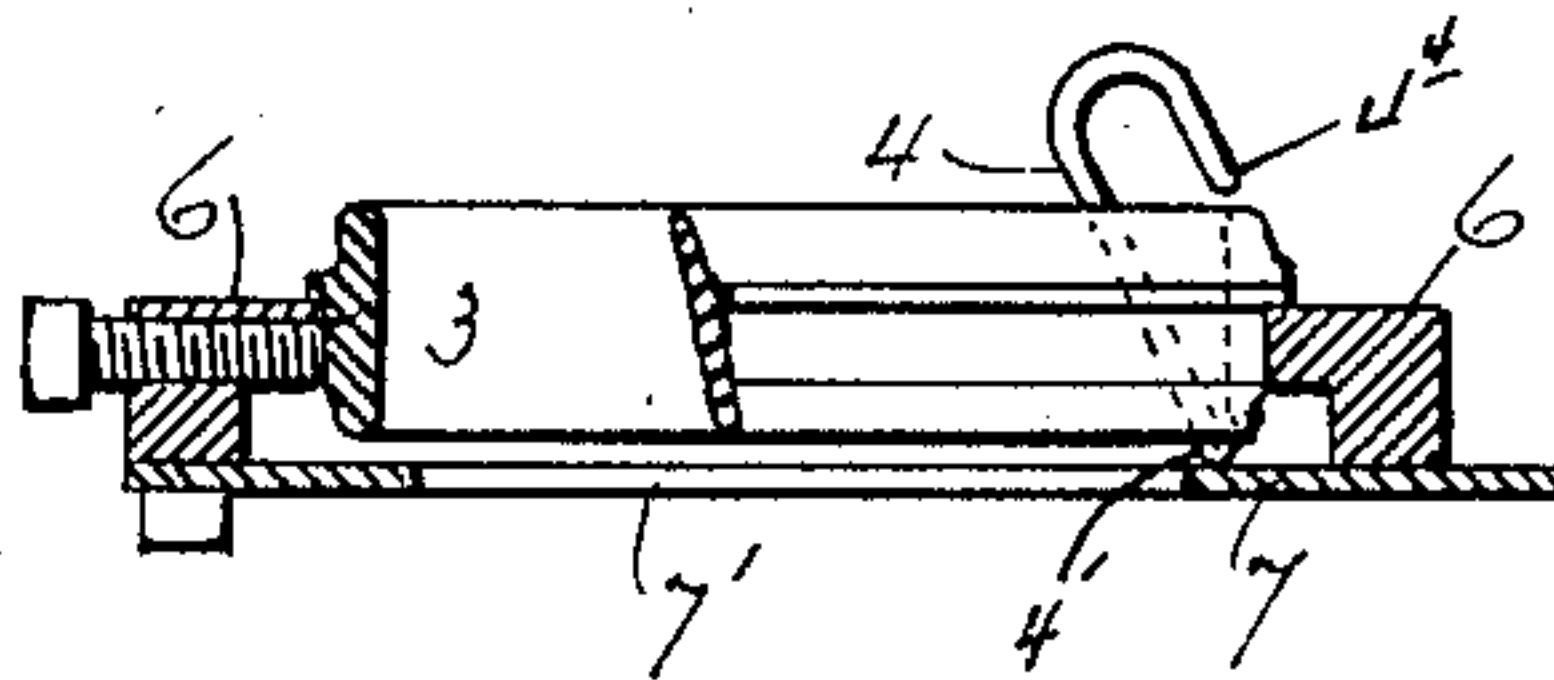


Fig. 2.

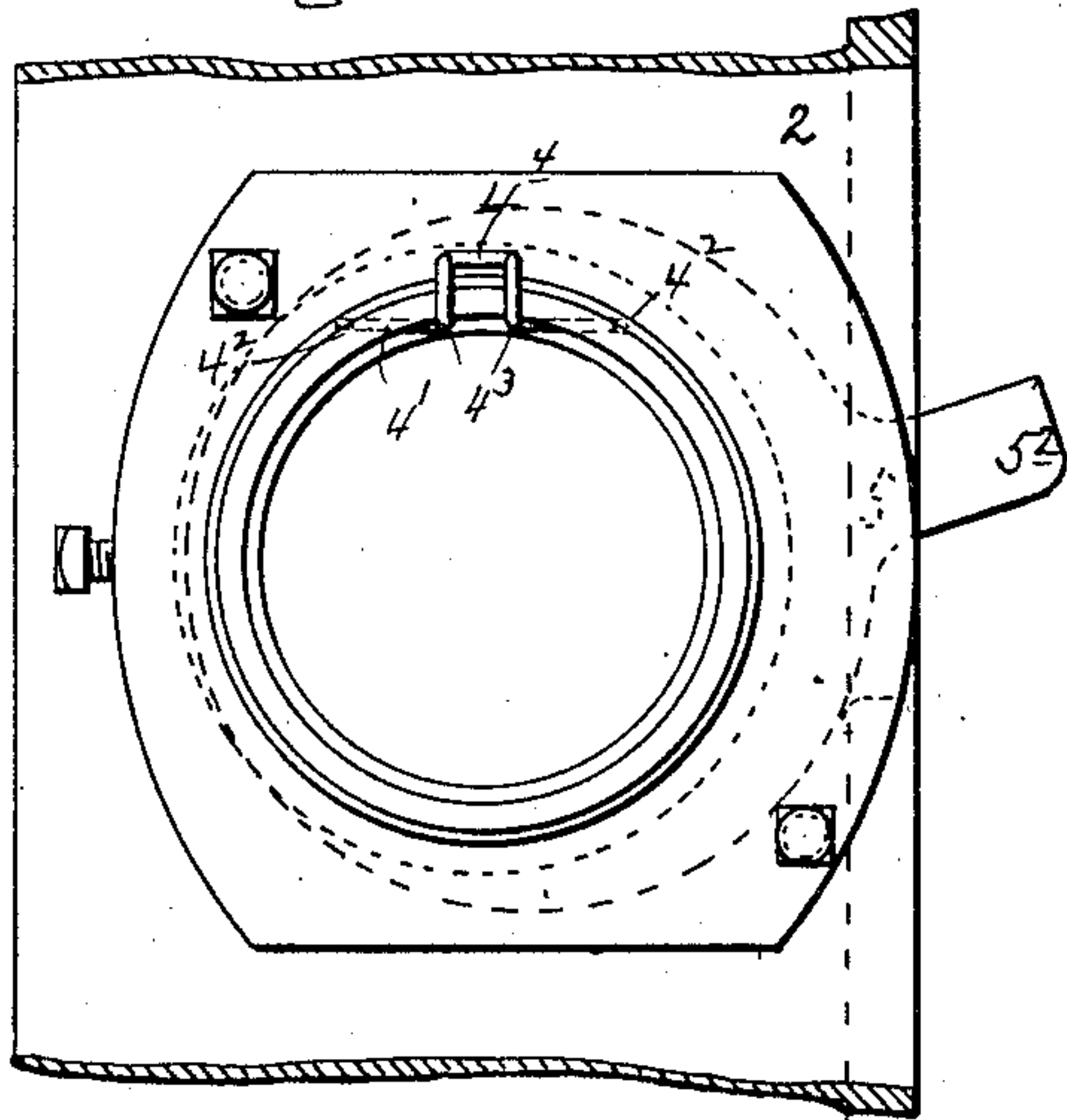


Fig. 4

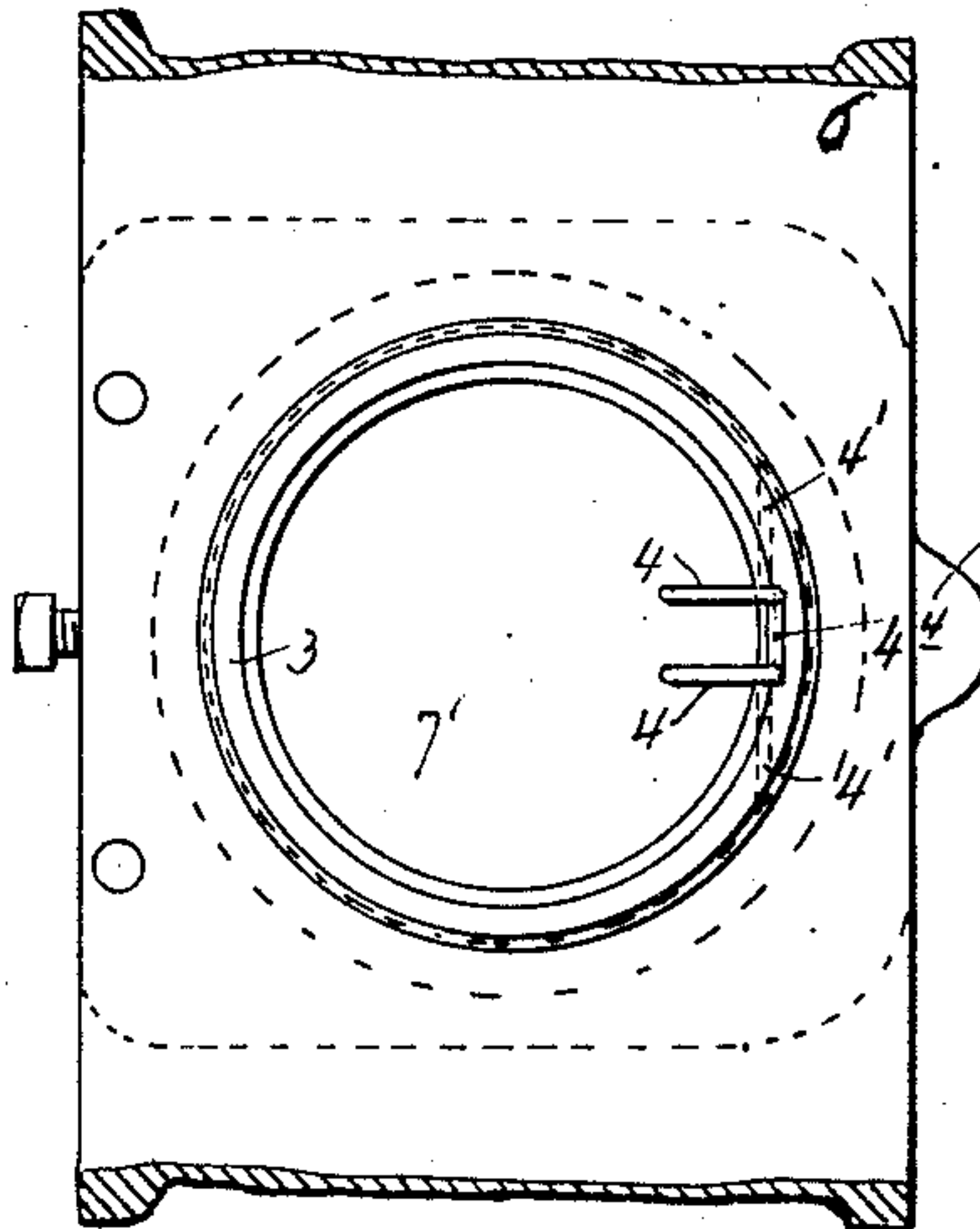


Fig. 5.

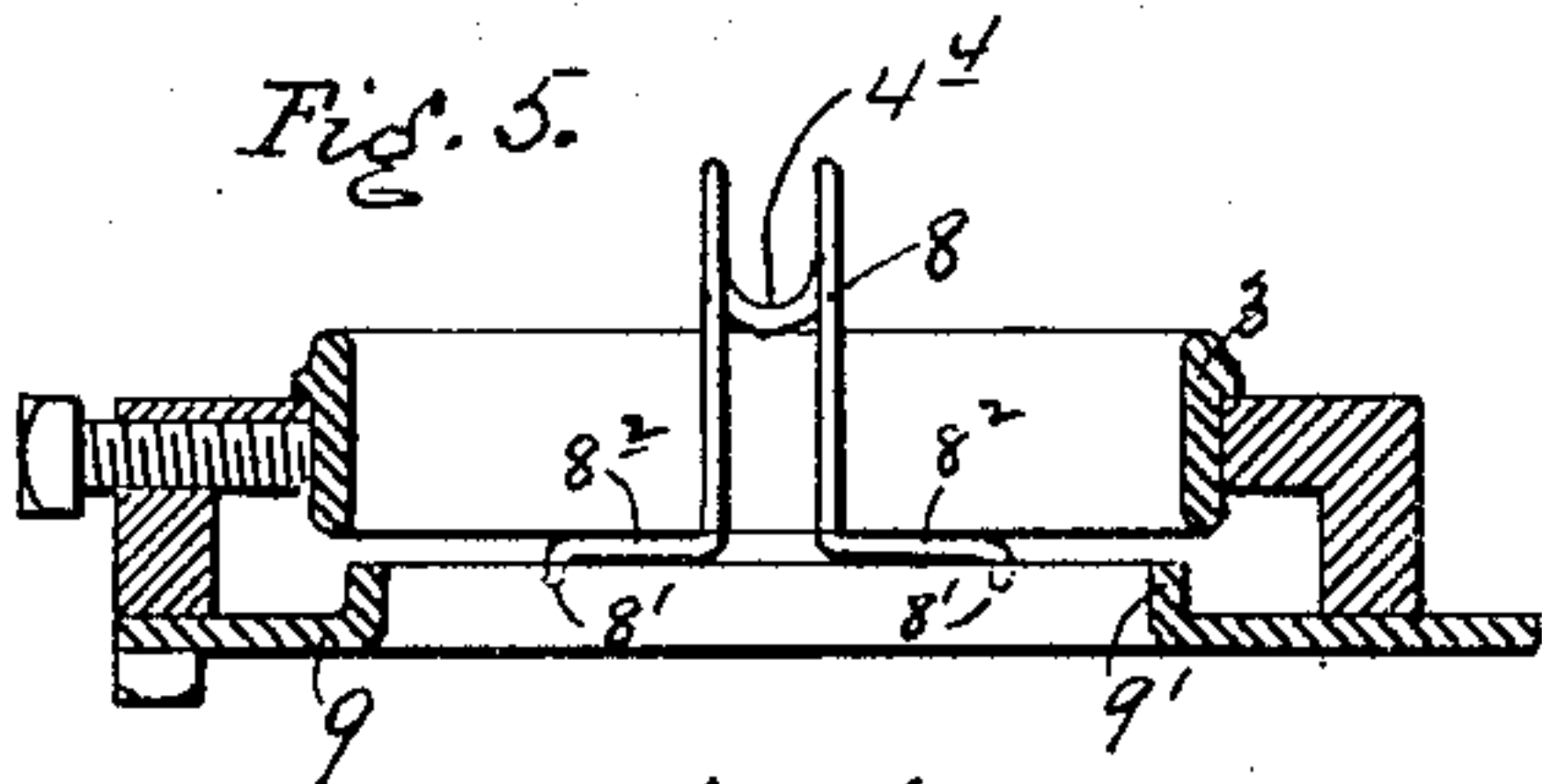


Fig. 7.

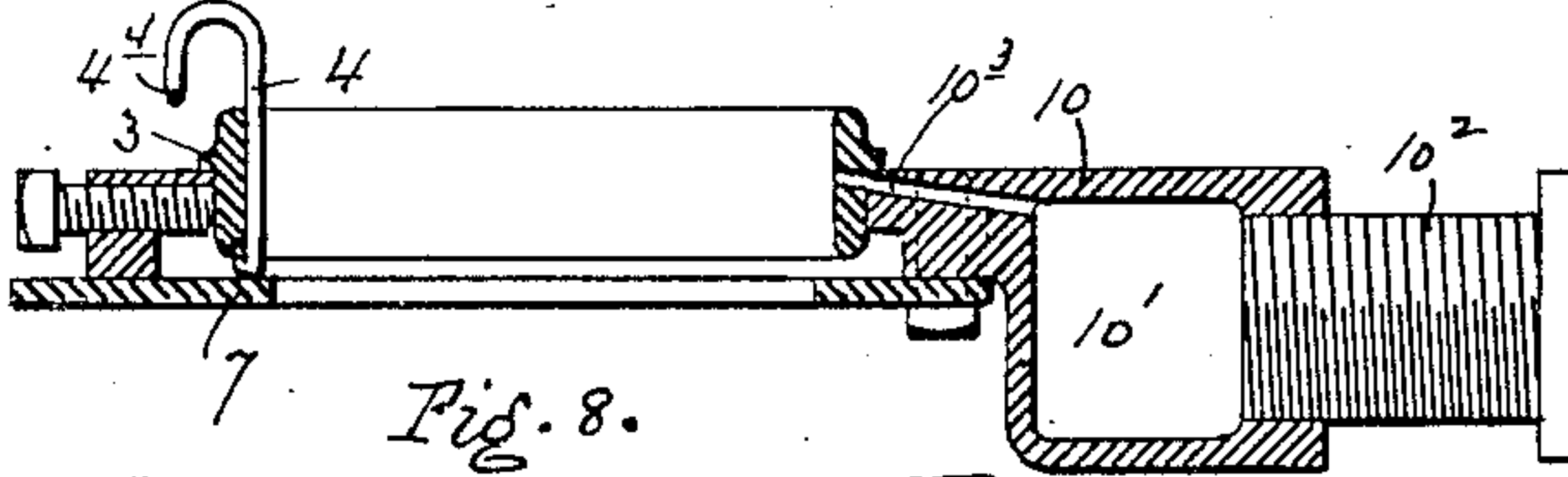


Fig. 6.

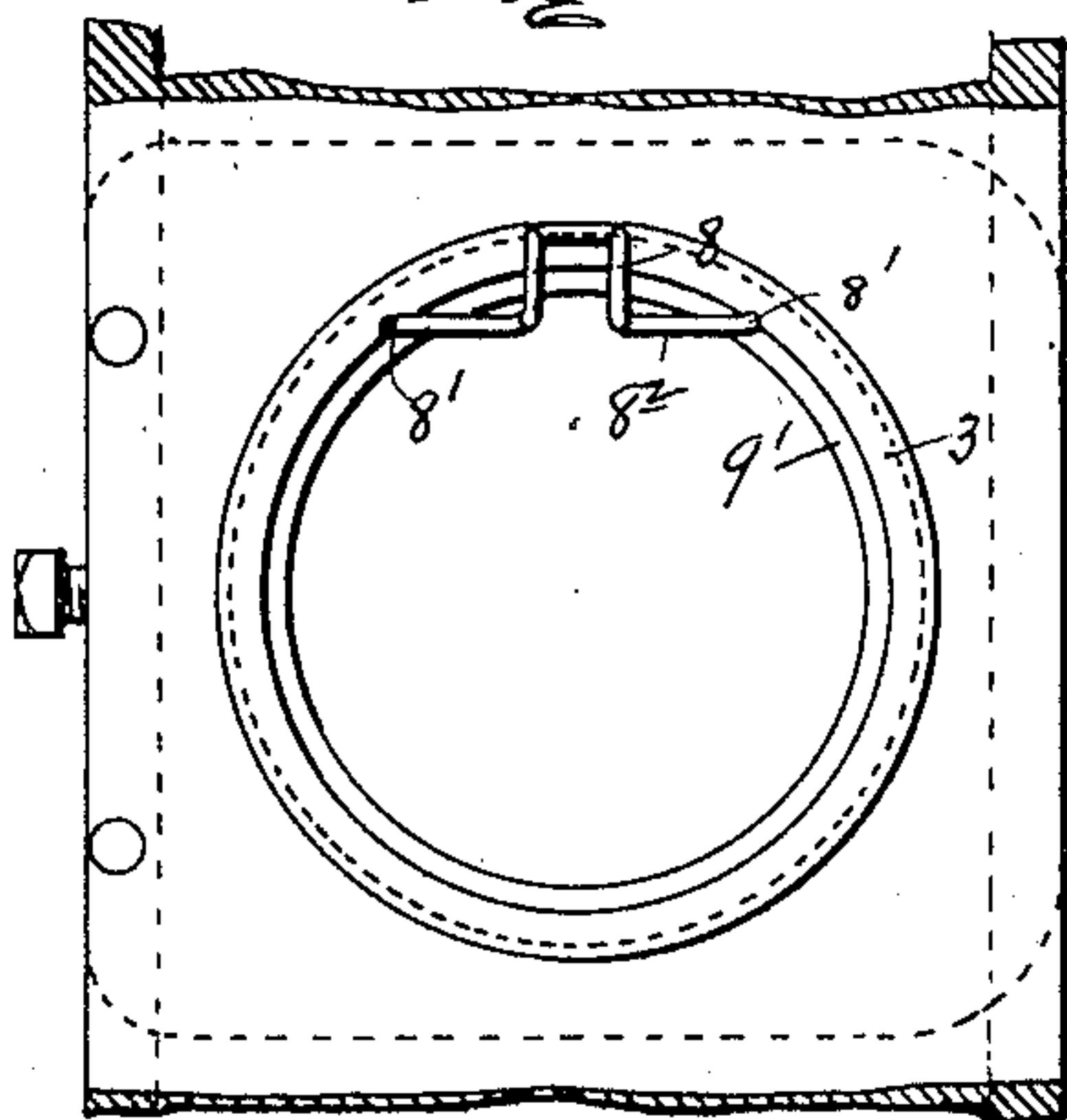
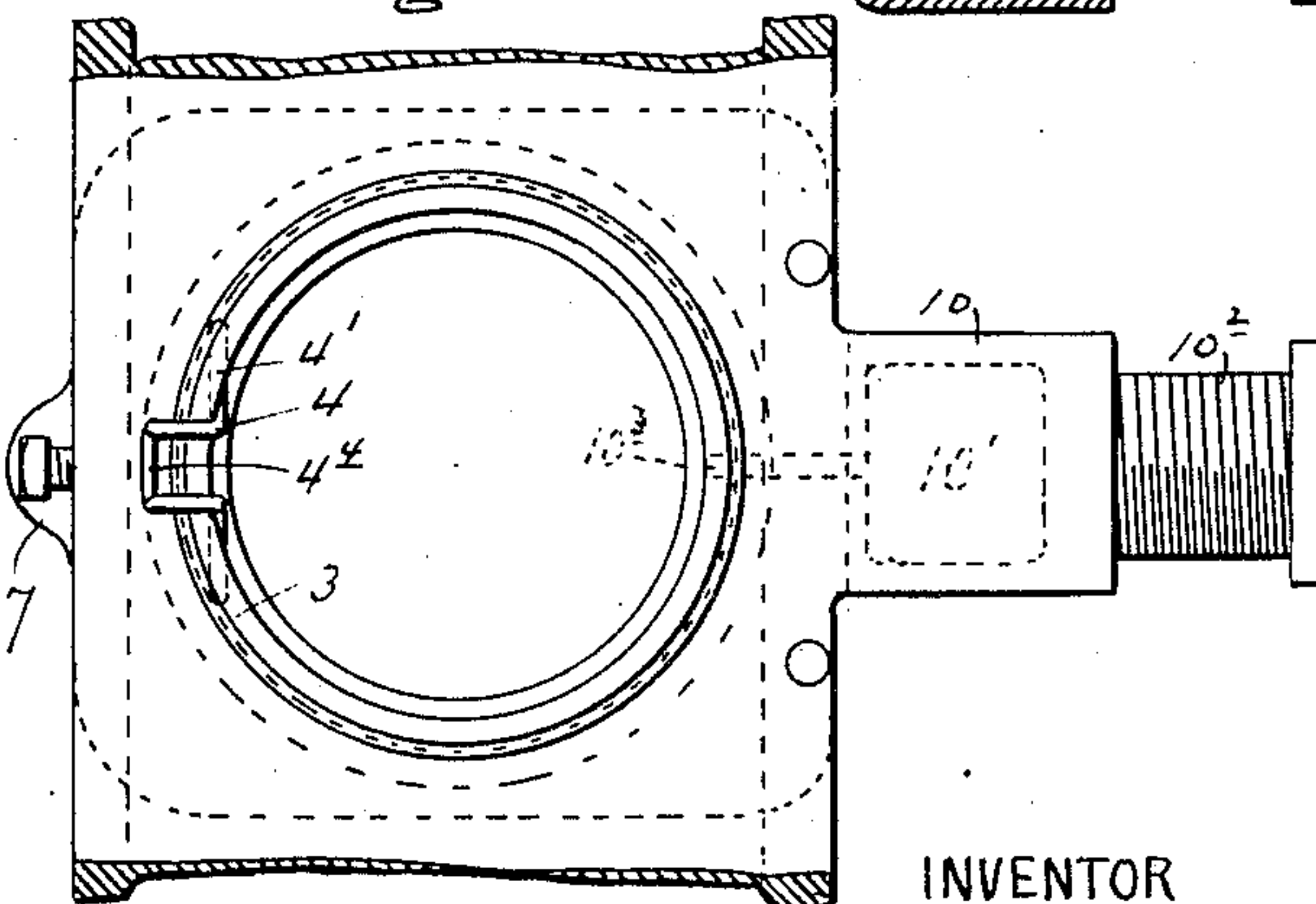


Fig. 8.



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UNITED STATES PATENT OFFICE.

THOMAS ALEXANDER BOYD, OF GLASGOW, SCOTLAND.

RING AND TRAVELER FOR SPINNING AND ANALOGOUS MACHINES.

No. 845,510.

Specification of Letters Patent.

Patented Feb. 26, 1907.

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To all whom it may concern:

Be it known that I, THOMAS ALEXANDER BOYD, a subject of the King of Great Britain and Ireland, and a resident of Glasgow, county of Glasgow, Scotland, have invented Improvements in Rings and Travelers for Spinning and Analogous Machines.

My invention refers to rings and travelers such as are used in spinning, twisting, and such like machines, and has for its object their better working, lubrication, and more convenient manipulation.

In the accompanying drawings, Figure 1 represents an elevation in cross-section of my preferred form. Fig. 2 is a plan view of the same. Fig. 3 is a modification in sectional elevation. Fig. 4 is a plan view of the form shown in Fig. 3. Fig. 5 is another modification in sectional elevation. Fig. 6 is a plan view of the same. Fig. 7 represents a modification in sectional elevation, showing a lubricating means that may be applied to any of the modifications; and Fig. 8 is a plan view of the form shown in Fig. 7.

The first part of my invention consists of a ring-traveler which works upon a short tube or ring. The traveler has a horizontal limb which works upon the lower edge of the ring. From the horizontal limb there rises an upright limb which passes up through the ring and is formed at its upper end to receive the thread. The horizontal limb is enlarged at both ends or has the ends turned upward to catch on the outside of the lower edge of the ring for the purpose of keeping the horizontal limb laterally on the ring. In some cases we turn the ends of the horizontal limb downward, and in such cases we form the plate referred to hereafter, which is below the traveler, with an edge or rim standing upward, so that the ends of the horizontal limb shall bear on it and so keep the horizontal limb laterally in position. The upper end of the traveler is free to press against the inside of the ring by centrifugal force when working or to be drawn toward the spindle by the thread. The two ends or feet of the horizontal limb are preferably made a distance apart equal to one-fourth the circumference of the ring upon which they work, so as to prevent locking. This part of my invention includes a plate placed below the lower edge of the ring sufficiently to allow the traveler to revolve around the ring for the purpose of keeping the traveler from dropping away from the ring. This plate

is made movable downward or sidewise to permit the traveler to pass onto the ring. In carrying out this part of my invention in one arrangement, Fig. 1, I employ a ring-holder 1, mounted on a ring-rail 2, carrying a ring 3 and a traveler 4, and having a plate 5 sufficiently below the ring 3 and traveler 4 to allow the latter to work freely around the ring 3. The ring 3 is a short tube rounded at its lower edge 3', which projects below the ring-holder 1 to permit the traveler 4 to work around it. The ring-holder 1 is chambered on its under side 1' for the same purpose. On the under side of the holder there is also formed a circular recess 1² eccentric to the ring. In this recess I place a plate 5, resting on the ring-rail 2. This plate 5 has a hole 5' central with the ring large enough to clear the bobbin or cop being spun, but less in diameter than the ring 3, so as to prevent the traveler 4, which works on the lower edge 3' of the ring 3, from dropping off. I form on the plate 5 a tail 5², projecting through an opening in the eccentric chamber to the front of the ring-rail 2. The opening permits the plate 5 to receive about one-fourth of a revolution, and being eccentric externally to the ring 3 the hole 5' concentric to the ring 3 is carried sufficiently to one side to allow the traveler 4 to be hooked around the lower edge 3' of the ring 3. The plate 5 is then moved to its original position with its center hole 5' true to the ring 3, and thus it keeps the traveler 4 in its place. I form a traveler 4 of a piece of round steel wire, like the letter T inverted. The horizontal limb 4' of the traveler 4 lies between the plate 5 and the bottom edge 3' of the ring 3. The ends 4² of the horizontal limb 4' are turned upward, so as to embrace the outside of the lower edge 3' of the ring 3. The horizontal limb 4' of the traveler, with the upturned feet 4², is made in length equal to about one-fourth the circumference of the ring 3, so as to revolve freely without locking around the ring 3. From a point preferably nearer to the leading end of the horizontal limb 4' of the traveler 4 I form an upright limb 4³, passing through the ring 3 and having a hook 4⁴ turned outward and downward, but clear of the top 3² of the ring 3 to receive the thread. The traveler 4 presses against the inner side of the ring 3 by centrifugal force when working, but is free to swing inward toward the spindle by the pull of the yarn. It will thus be understood that

the traveler is held on the ring 3 by the up-
turned feet 4² bearing on the outside of the
lower edge 3' of the ring 3 and by the upright
limb bearing on the inside of the ring 3, and
5 as the traveler is drawn around the ring 3 by
the thread it drags the thread. When, how-
ever, the drag becomes excessive, the thread
draws the upper end of the traveler from off
the ring, and thus relieves the drag. In a
10 second arrangement, Figs. 3 and 4, of this
part of my invention I employ a ring 3 and
traveler 4, similar to those described above.
I fix the ring 3, however, in a ring-rail 6, and
on the bottom side I secure at one side by
15 two screws a thin metal plate 7 with a hole 7'
central to the ring to clear the bobbin or cop.
This plate 7 is sufficiently clear of the under
edge of the ring 3 and the traveler 4 so as to
allow latter to work freely, and being held at
20 one side only may be pressed downward from
the ring 3 and traveler 4 sufficiently to allow
the traveler 4 to be hooked onto the ring 3.
In a third arrangement of this the first part
of my invention I employ, Figs. 5 and 6, a
25 ring-traveler 8, similar to the traveler de-
scribed above, but with the ends 8' of the
horizontal limb 8² turned downward to en-
gage on the plate 9 below the traveler 8. For
this purpose the plate 9 is formed with an up-
30 standing edge 9' around the central hole in
plate. The downturned feet 8' of the hori-
zontal limb 8² of the traveler 8 work on the
outside of the upstanding edge 9' on the
lower plate, and these keep the horizontal
35 limb laterally in position.

The second part of my invention refers to
the lubrication of rings and travelers and
consists in forming on the ring-holder or ring-
rail a chamber to contain lubricant with
40 means of forcing the said lubricant into the
rail to lubricate the ring and traveler. In
carrying out this the second part of my inven-
tion in one arrangement, Figs. 7 and 8, I em-
ploy a ring-traveler 4 and plate 7 below the
45 ring 3, as described in the foregoing second
arrangement of the first part of my inven-
tion. I fix the said ring 3 in a ring-rail 10,
upon which I form a chamber 10' with a
screwed plug 10². From the chamber I bore
50 a hole 10³ through the ring-rail and the ring
3 and by means of the screwed plug I force
the lubricant into the ring.

I claim as my invention—

1. In spinning and analogous machines,
55 the combination of a ring with a traveler hav-

ing the shape of the letter T inverted, with
its two horizontal limbs adapted to extend
across and work on the lower edge of the said
ring, and equal in length to about one-fourth
the circumference of the ring, the ends of the 60
said horizontal limbs being formed with ex-
tensions to keep the traveler laterally in posi-
tion, the said traveler having its upright limb
with its upper end made to receive the thread
and free to press on the inside of the ring by 65
centrifugal force or to swing toward the spin-
dle by the pull of the thread.

2. In spinning and analogous machines,
the combination of a ring with a traveler hav-
ing the shape of the letter T inverted, with 70
its horizontal limbs adapted to extend
across and work under the edge of the said
ring, and extensions at the ends of said hori-
zontal limbs to keep the traveler in position
laterally, the said traveler having its upright 75
limb adapted to receive the thread, and to
press against the inside of the ring by cen-
trifugal force.

3. In spinning and analogous machines,
the combination of a ring with a traveler 80
having the shape of the letter T inverted,
with its horizontal limbs adapted to extend
across and work under the edge of said ring,
extensions on said limbs, means engaged
thereby for keeping the traveler in position 85
laterally, the said traveler having its upright
limb to receive the thread, and a readily-ad-
justable plate below said ring adapted to be
moved for placing the traveler on the ring.

4. In spinning and analogous machines the 90
combination of a ring with a traveler having
the shape of the letter T inverted, with its
horizontal limbs adapted to extend across
and work under the edge of the said ring,
and extensions at the ends of said horizontal 95
limbs to keep the traveler in position later-
ally, the said traveler having its upright limb
adapted to receive the thread and to press
against the inside of the ring by centrifugal
force, together with a chamber containing 100
lubricant and means for forcing the said lu-
bricant into the ring.

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

T. A. BOYD.

Witnesses:

GEORGE GEMMELL,
COLIN S. WATT.