

No. 859,715.

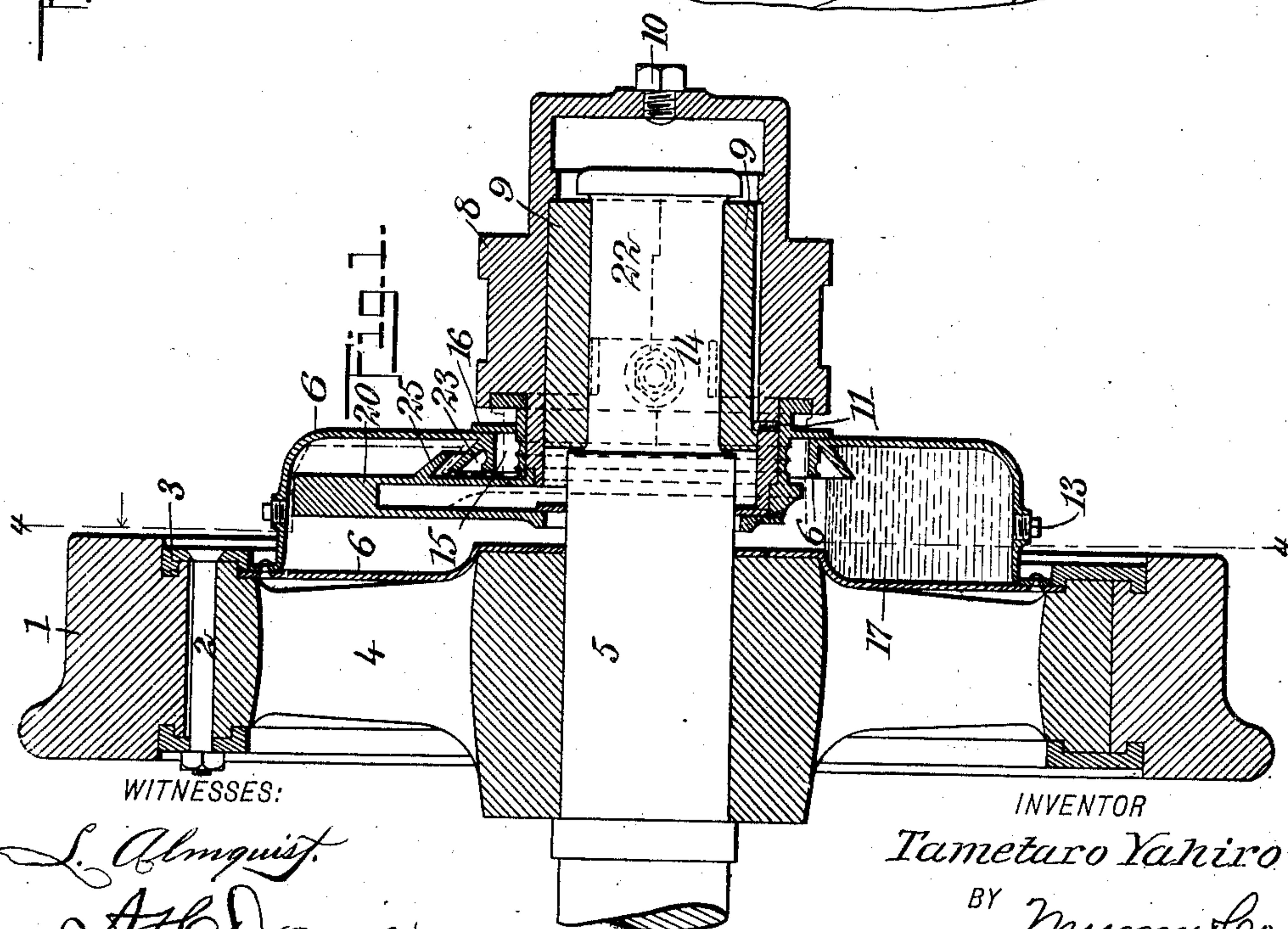
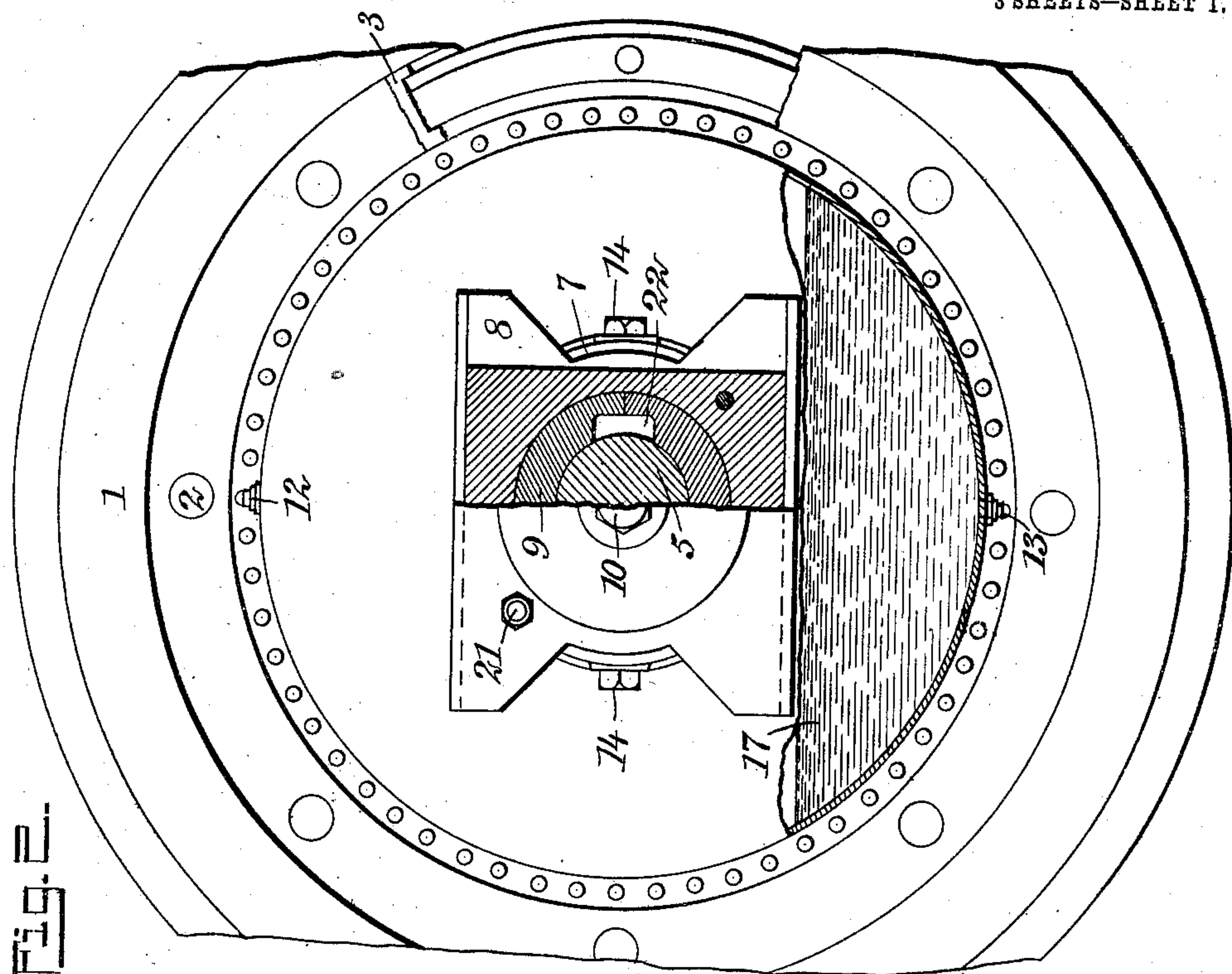
PATENTED JULY 9, 1907.

T. YAHIRO.

AUTOMATIC LUBRICATING APPARATUS.

APPLICATION FILED FEB. 14, 1906.

3 SHEETS—SHEET 1.



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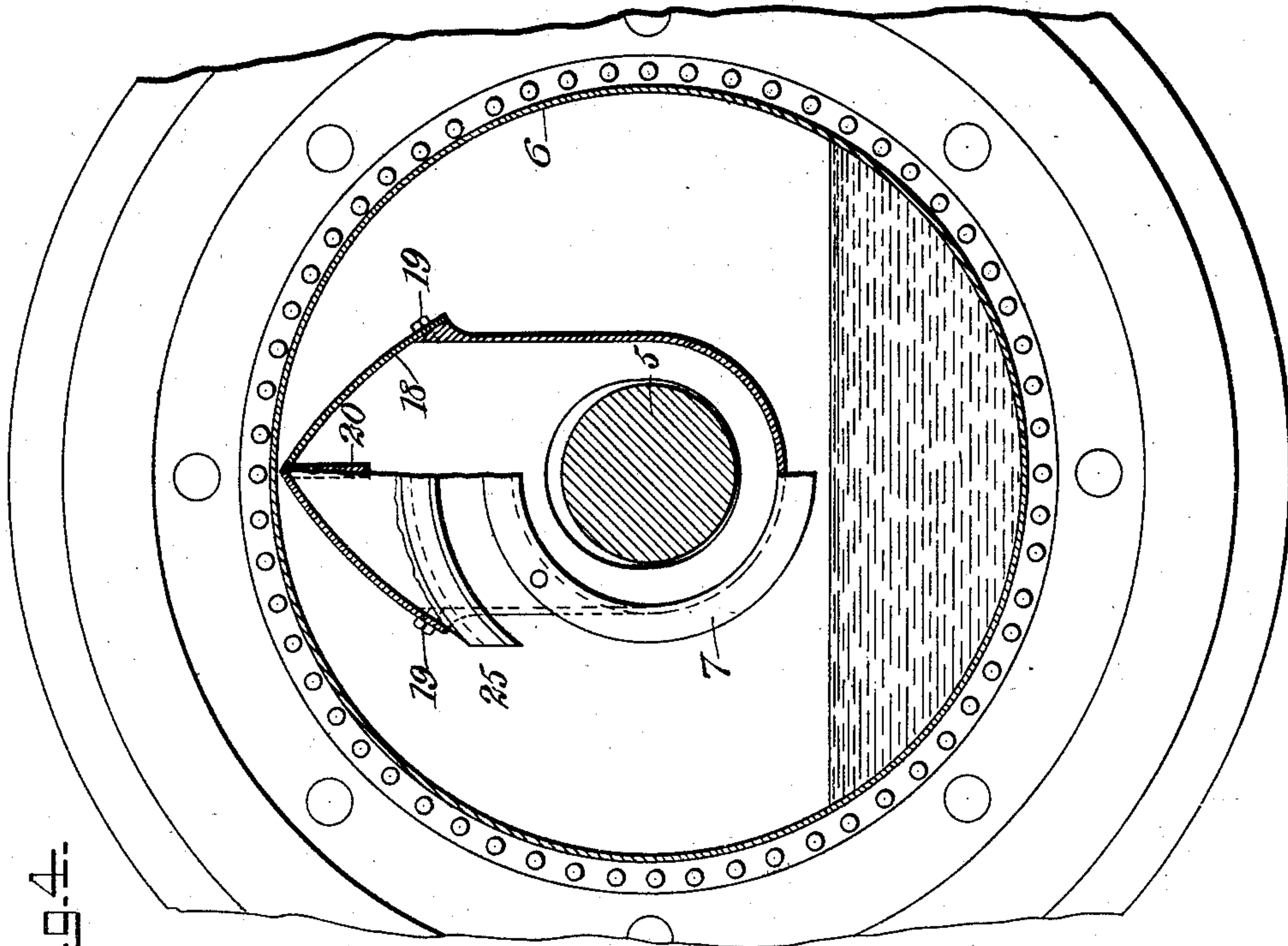


Fig. 4.

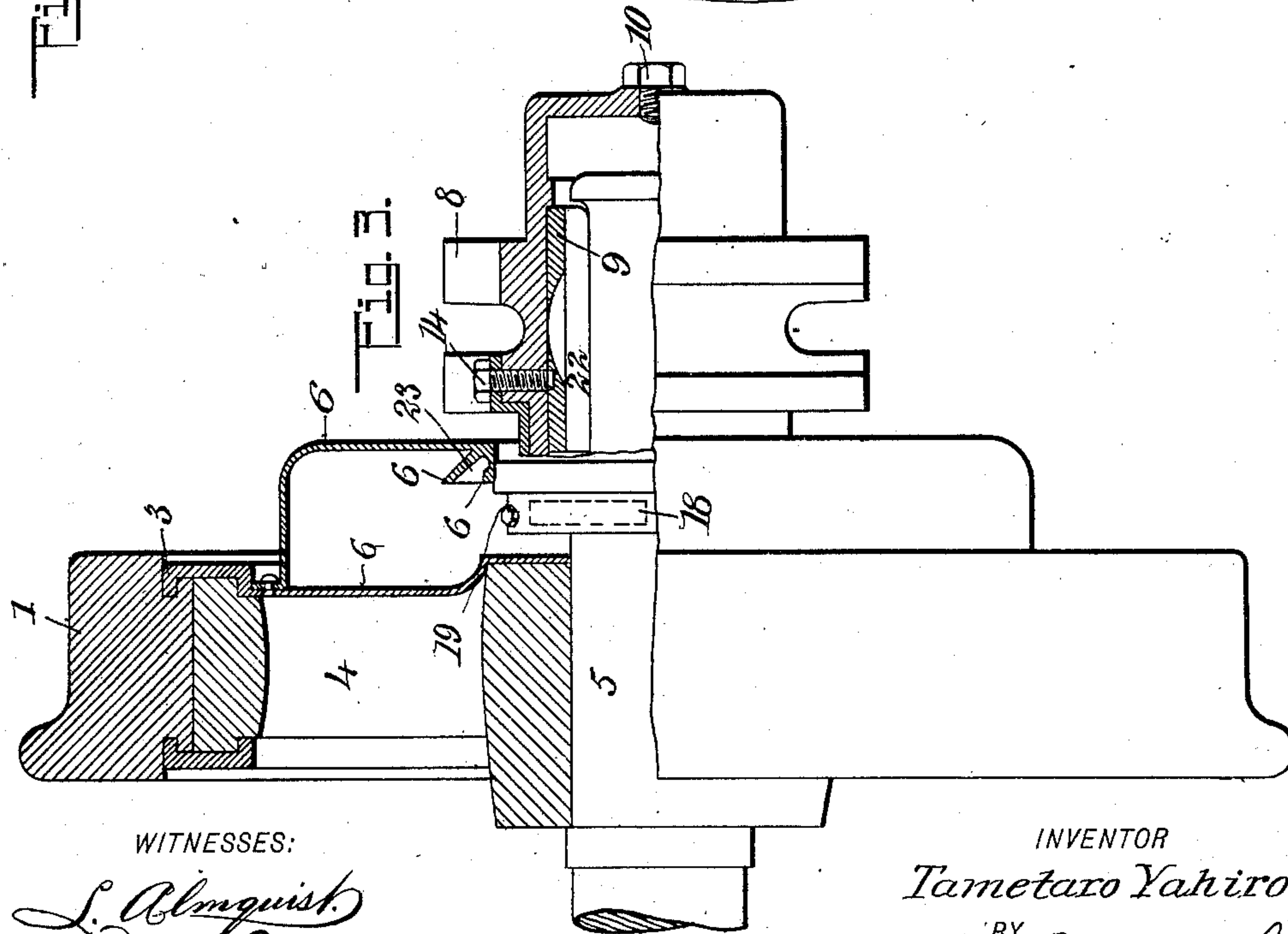


Fig. 3.

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3 SHEETS—SHEET 3.

Fig. 5.

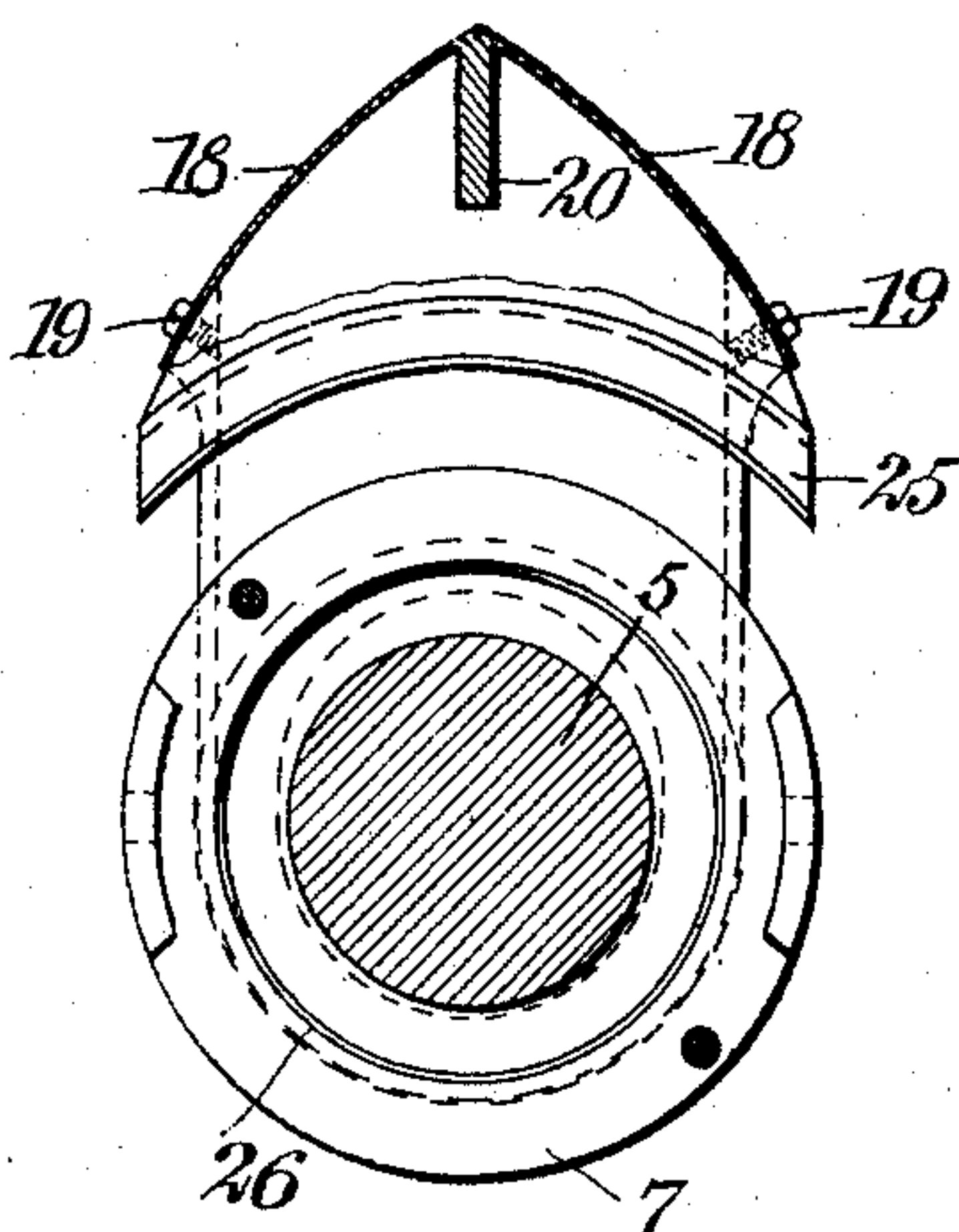


Fig. 6.

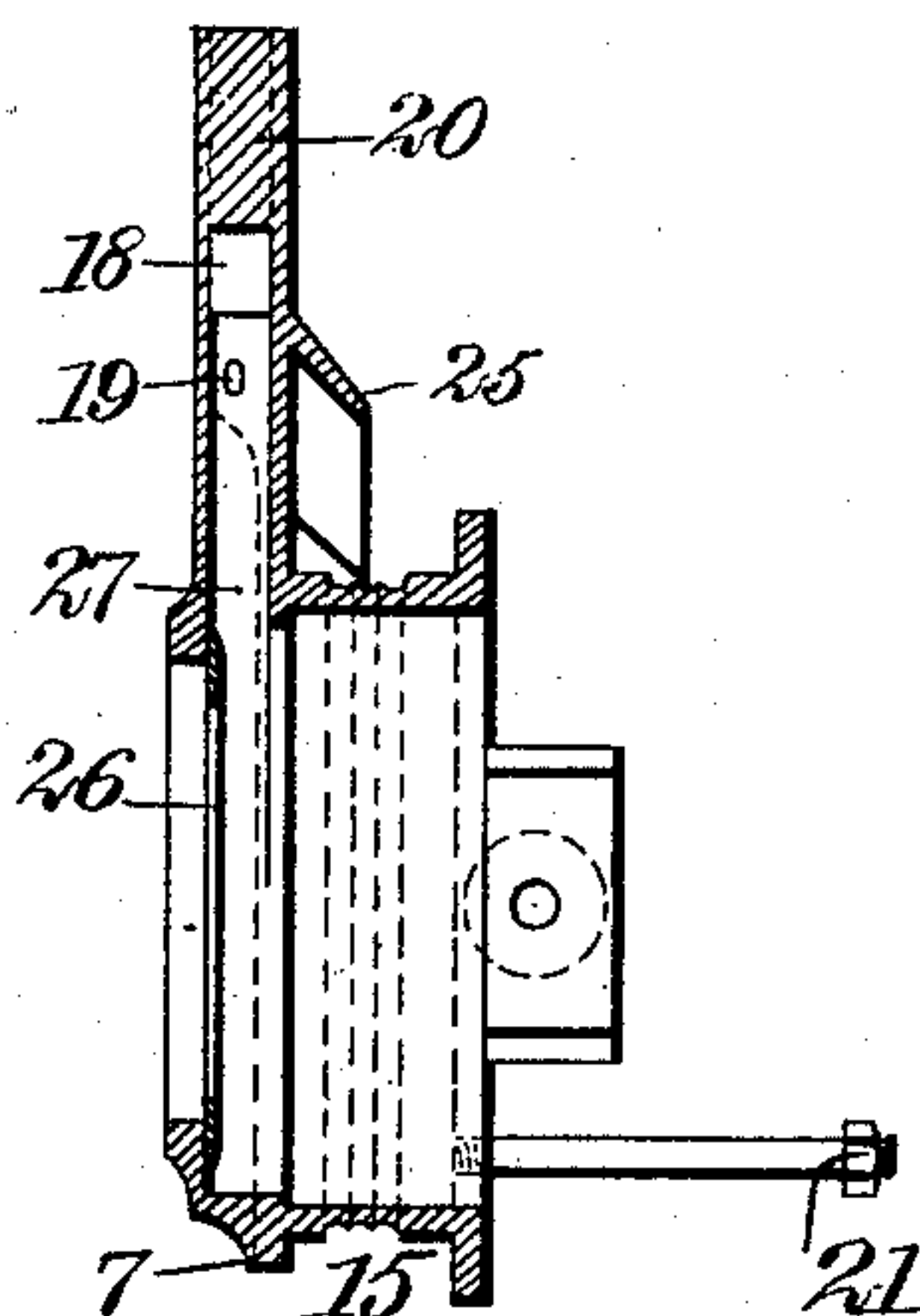
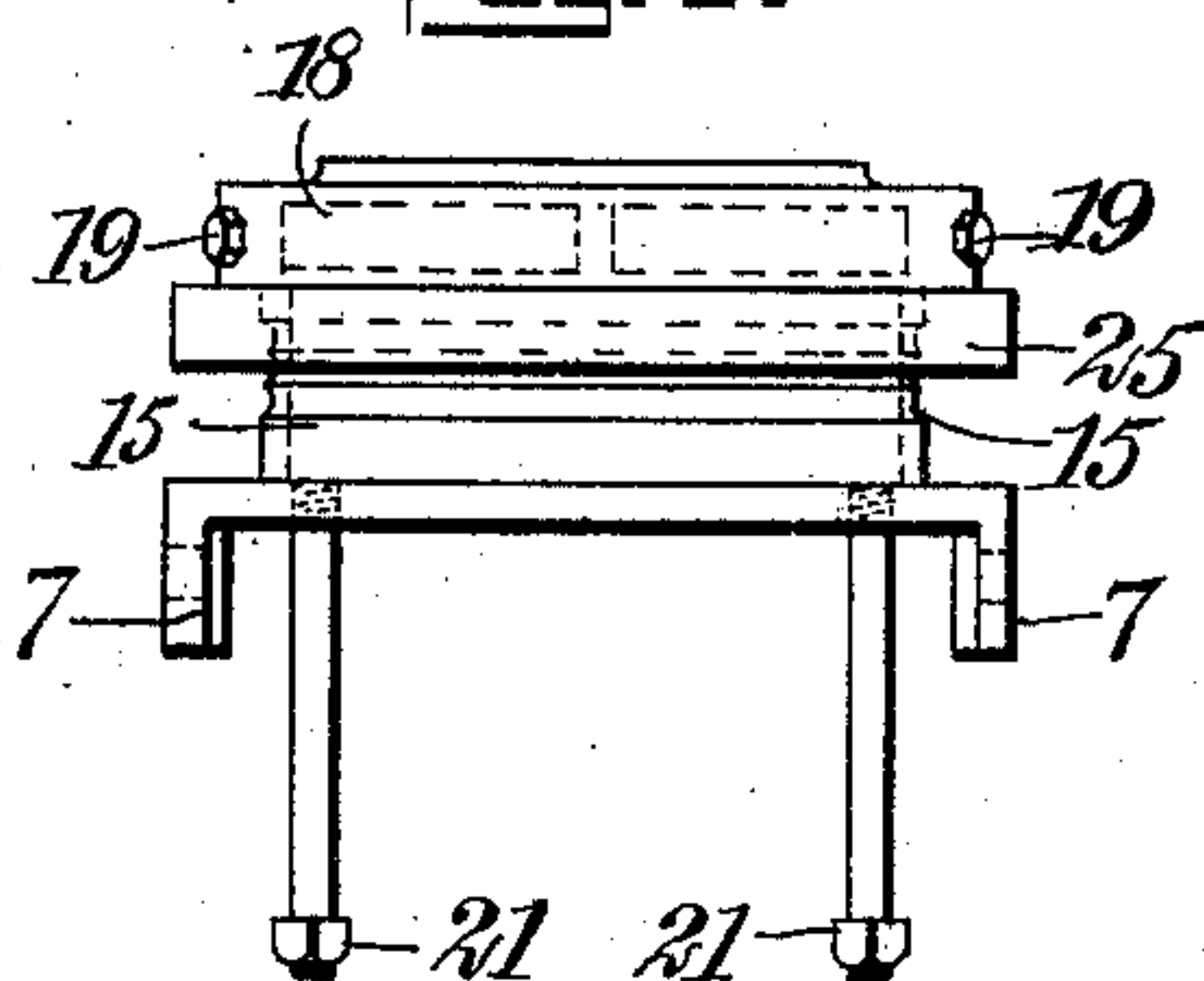


Fig. 7.



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UNITED STATES PATENT OFFICE.

TAMETARO YAHIRO, OF TOKYO, JAPAN.

AUTOMATIC LUBRICATING APPARATUS.

No. 859,715.

Specification of Letters Patent.

Patented July 9, 1907.

Application filed February 14, 1906. Serial No. 300,991.

To all whom it may concern:

Be it known that I, TAMETARO YAHIRO, a subject of the Emperor of Japan, residing at 80 Shiba-Kurumacho, Shiba-Ku, Tokyo, Japan, have invented a new and useful Improvement in Automatic Lubricating Apparatus, of which the following is a specification.

My invention is an improvement in automatic lubricating apparatus, and consists in certain novel constructions and combinations of parts hereinafter described and claimed.

Referring to the drawings forming a part hereof, Figure 1 is a sectional side elevation of the apparatus. Fig. 2 is a right hand elevation of the same, partly broken away and in section. Fig. 3 is a plan view of the apparatus partly broken away and in section. Fig. 4 is a sectional view on the line 4—4 of Fig. 1, showing the oil reservoir and the oil leading means. Fig. 5 is a right side view of the oil leading means. Fig. 6 is a sectional side elevation of the same; and Fig. 7 is a plan view.

In the present embodiment of my invention, the wheel 1 is secured to the axle 5 in the ordinary manner, and the end of the axle is journaled in the journal box 8, bearing plates 9 being interposed between the journal box and the journal in the ordinary manner.

The interior of the journal box is cylindrical, and the bearing plates fit the inner surface of the said box, the lower bearing plate being provided with a longitudinal groove on its outer face which is engaged by a screw 11 traversing the journal box whereby to guide said bearing plate. The journal box is also provided with a screw plug 10 to permit inspection of the interior thereof.

An oil reservoir 6 comprising a substantially cylindrical casing is secured to the wheel in any suitable manner, in the present instance by means of bolts 2 traversing an annular flange 3 on the oil reservoir and the wheel, as shown in Figs. 1 and 2. The said oil reservoir is provided with a central opening there-through, for permitting the passage of the axle 5, and within the reservoir is an oil leading means 7, the said leading means comprising a casing having its upper end open, and provided with an opening there-through for permitting the passage of the axle 5. The front opening of the casing is somewhat larger in diameter than the axle as shown in Fig. 4, and an annular ring 26 closes the rear opening in the casing.

The open upper end of the oil leading means is covered by gauze 18 secured to the casing by means of the screws 19, whereby to strain the oil as it passes into the oil leading means. A partition 20 is arranged between the walls at the upper end of the casing whereby to strengthen the same and to support the gauze at the extreme upper end.

The bearing plates 9 are provided with grooves 22, in their inner faces at their abutting edges, the grooves

coacting to form recesses extending the full length of the bearing plates and opening at the rear end adjacent to the opening in the front wall of the casing, whereby to receive the oil passing out at said front opening and conduct it to the outer end of the journal. Screw plugs 12 and 13 are arranged at the upper and lower sides of the oil reservoir to permit insertion and withdrawal of oil from the same.

When the wheel is in rotation, the oil will be thrown against the outer wall of the cylindrical oil reservoir, by centrifugal force, and will participate in the rotary movement of the wheel. A part of the oil will pass through the gauze into the oil leading means, and outwardly through the opening in the front wall thereof to the grooves in the bearing plate, thus keeping the journal supplied with oil at all times when the wheel is in motion. The oil leading means is secured to the journal box in any suitable manner, in the present instance by bolts 14 and 21, as shown in Figs. 2, 3 and 5, the bolts 21 being arranged parallel with the axle, and the bolts 14 at right angles thereto.

As shown in Fig. 1, the front face of the casing of the oil leading means is provided with an arc shaped flange or rib 25 which projects toward the front of the oil reservoir and is inclined downwardly, and the front side of the reservoir is provided on its inner face with an annular flange or rib 23 inclined upwardly, the annular flange and the arc shaped flange being concentric and coöperating with each other to deflect the oil on each side to the bottom of the reservoir. The opening in the front wall of the reservoir through which passes the axle and journal box, is provided with an inwardly projecting flange as shown in Fig. 1, and the opening in the front wall of the oil leading means is provided with an outwardly projecting flange, and the flanges are spaced apart from each other to form a recess 15, as shown in Fig. 1, a ring 16 closing said recess at the outside.

In assembling the device, the oil leading means 7 is first placed in position, after which the front and rear walls of the reservoir are riveted together, and the reservoir is placed in proper position on the wheel and secured thereto. The ring 16 which also acts as a dust protector is then placed in position after which the journal of the axle is inserted in the journal box and the parts secured together.

Having thus described my invention I claim as new and desire to secure by Letters Patent,

1. The combination with the wheel and the axle and the journal box, of bearing plates between the axle and the journal box, the said plates having longitudinal grooves on the inner faces thereof, an oil reservoir secured to the wheel and encircling the axle between the journal box and the wheel, oil leading means comprising a casing within the reservoir and having an opening therethrough to permit the passage of the axle, the opening in the rear wall of the casing fitting closely the axle whereby to prevent

leakage of oil, said casing having a pointed open top covered with gauze to permit the entrance of oil, such reservoir having an arc shaped upwardly inclined flange, and said oil leading means an arc-shaped downwardly inclined flange spaced apart from the flange on the reservoir, whereby to guide the oil to the bottom of the reservoir, substantially as set forth.

2. The combination with the wheel, the axle and the journal box, of bearing plates between the axle and the journal box, the said plates having longitudinal grooves on the inner face thereof, an oil reservoir secured to the wheel and encircling the axle between the journal box and the wheel, oil leading means within the reservoir, said means comprising a casing having an open gauze covered top, and an opening therethrough to permit the passage of the axle, the rear opening in the casing fitting closely the axle and the front opening being of greater diameter whereby to permit the passage of the oil from the oil leading means to the longitudinal grooves.

3. The combination with the wheel and the axle, of the oil reservoir encircling the axle, and secured to the wheel a fixed oil leading means within the reservoir comprising a casing having an opening therethrough to permit the passage of the axle, the outer end of said casing having an opening to permit the passage of the oil thereinto, and a reticulated cover for the opening.

4. The combination with the wheel, and the axle, of the oil reservoir secured to the wheel and encircling the axle, and oil leading means within the reservoir, such means comprising a casing having an opening therethrough to permit the passage of the axle, and an opening at the outer end thereof to permit the entrance of oil.

In testimony whereof, I have hereunto signed my name in the presence of two subscribing witnesses.

TAMETARO YAHIRO.

Witnesses:

CHESUKI TOJGUI,
TOKUJO SAKAI.