

No. 747,369.

PATENTED DEC. 22, 1903.

R. BRADLEY.
METAL WHEEL.

APPLICATION FILED APR. 22, 1903.

NO MODEL.

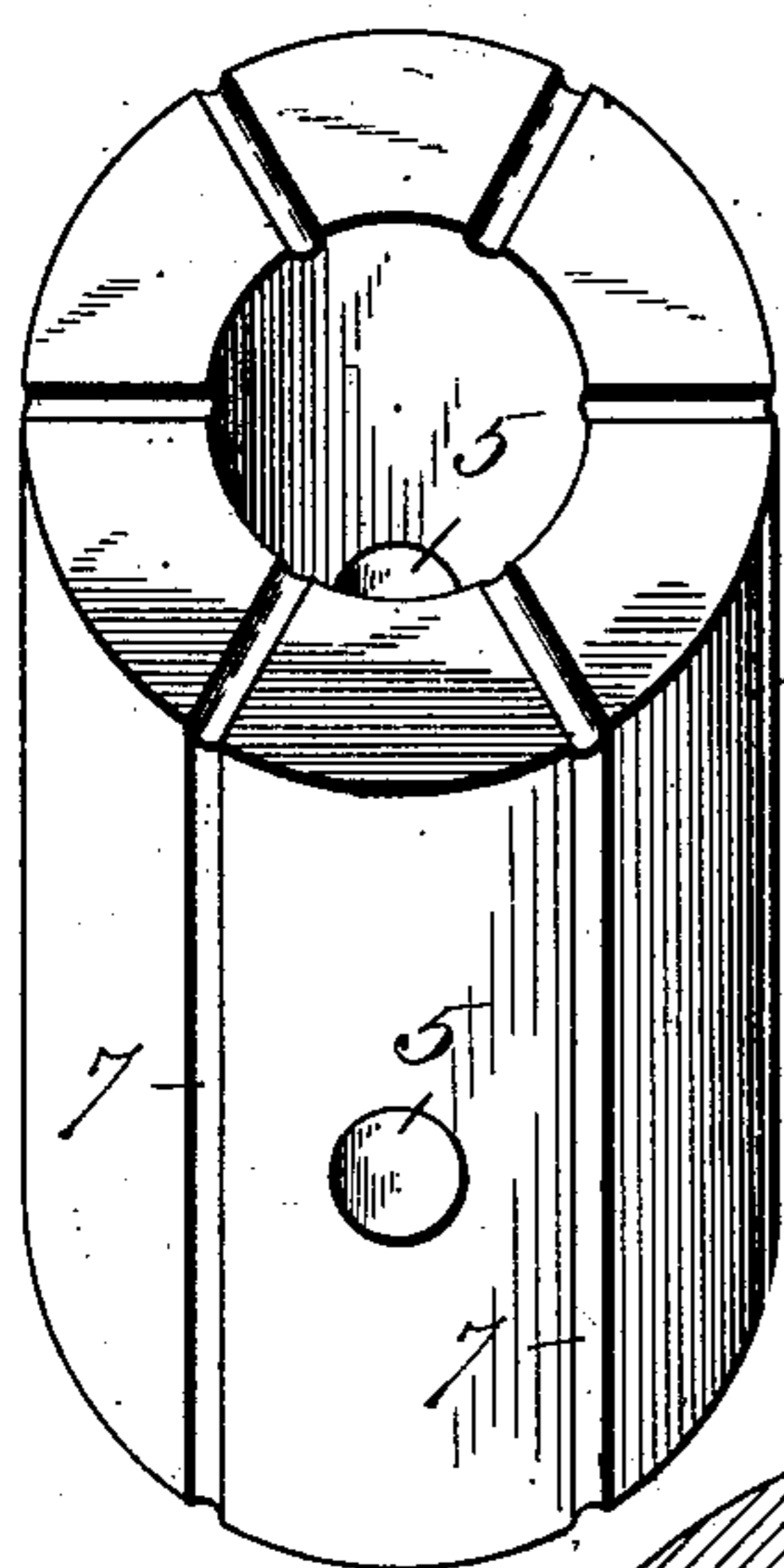
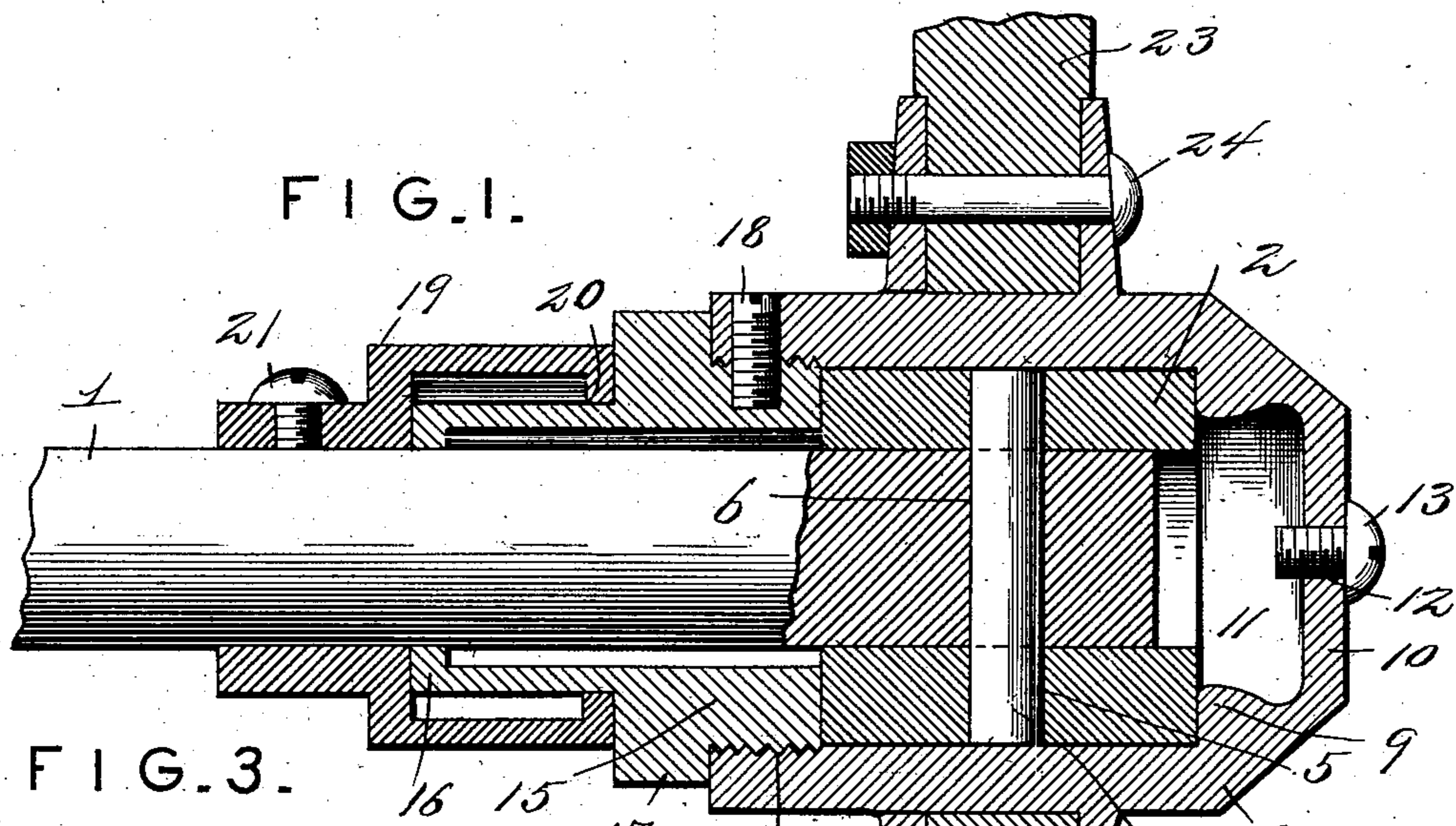


FIG. 4.

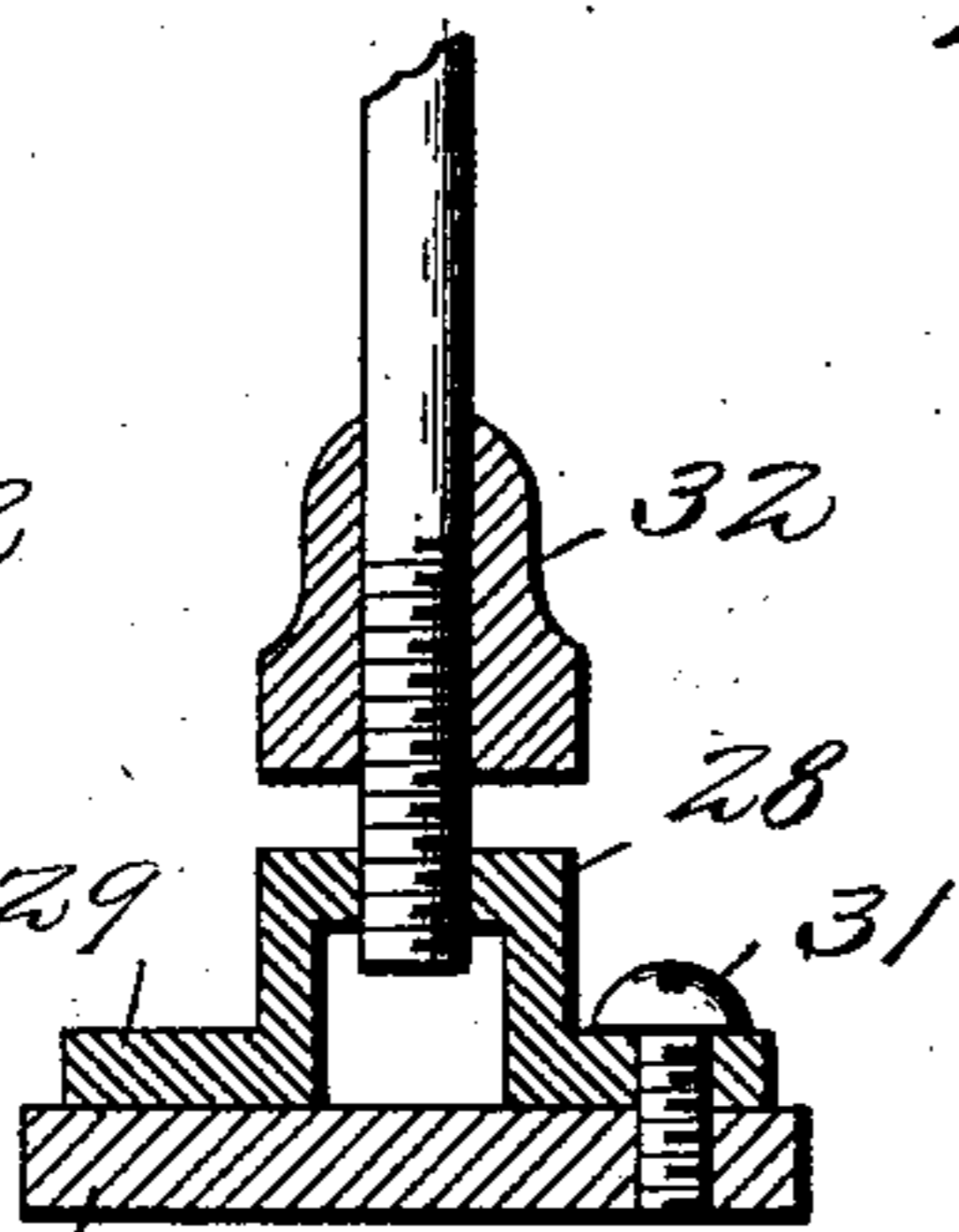
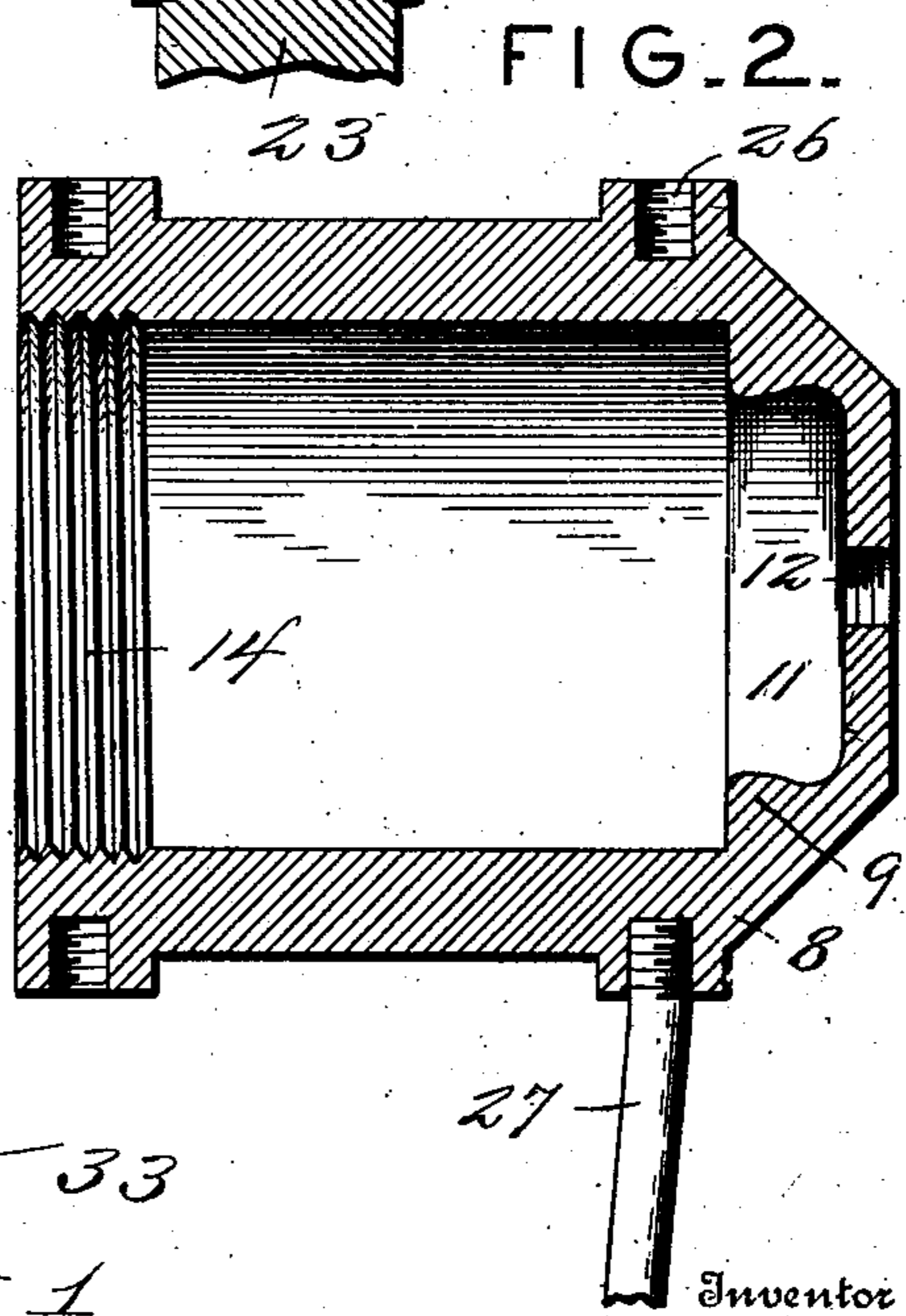
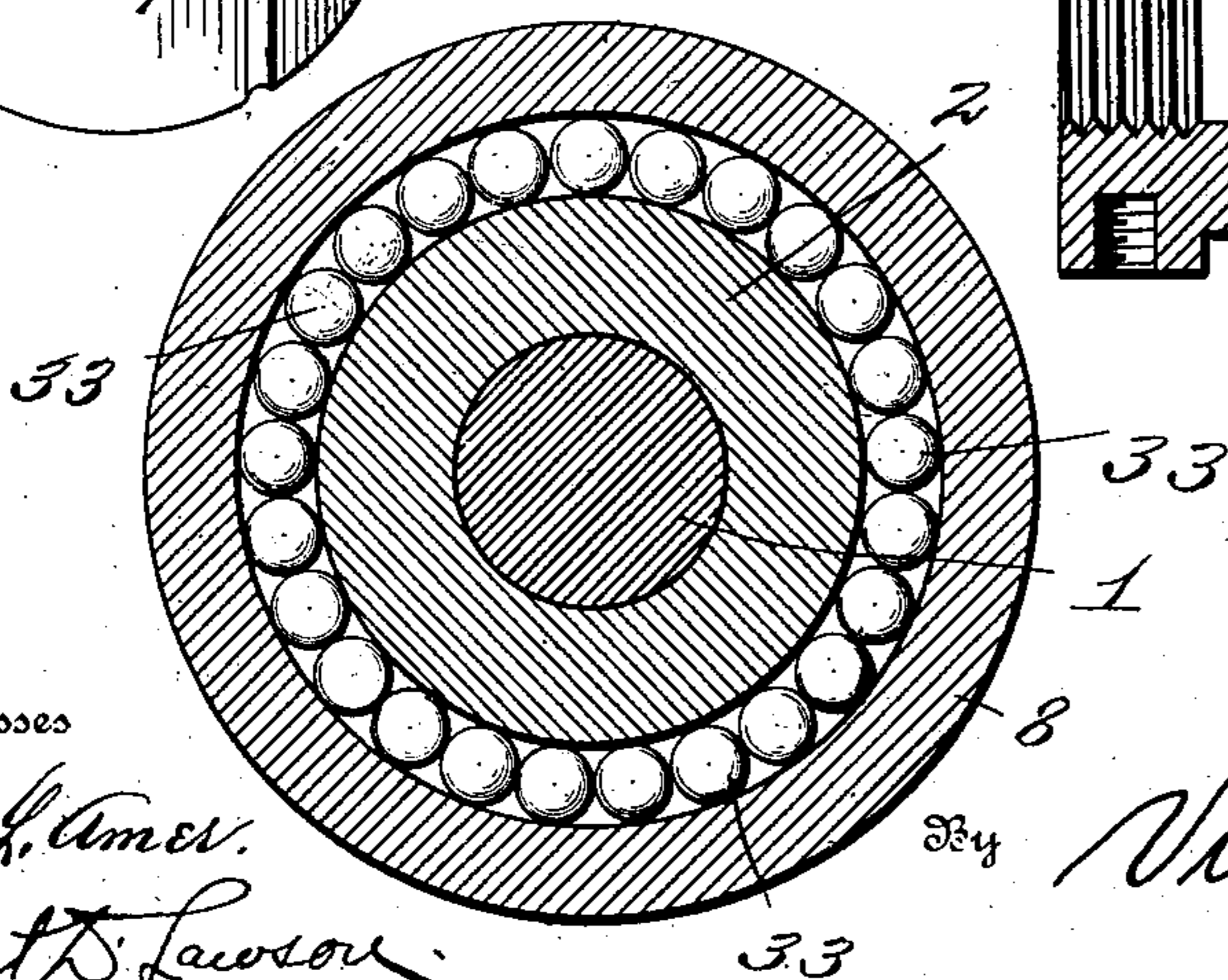


FIG. 5.



Witnesses
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UNITED STATES PATENT OFFICE.

ROBERT BRADLEY, OF MINNEAPOLIS, MINNESOTA.

METAL WHEEL.

SPECIFICATION forming part of Letters Patent No. 747,369, dated December 22, 1903.

Application filed April 22, 1903. Serial No. 153,836. (No model.)

To all whom it may concern:

Be it known that I, ROBERT BRADLEY, a citizen of the United States, residing at Minneapolis, in the county of Hennepin and State of Minnesota, have invented new and useful Improvements in Metal Wheels; of which the following is a specification.

My invention relates to new and useful improvements in metal wheels, and more particularly to the hubs thereof; and its object is to provide a device of this character which may be readily formed of metal and has means whereby the working parts thereof may be thoroughly lubricated.

Another object is to employ means for securely fastening the hub into position upon an axle.

With the above and other objects in view the invention consists in the novel construction and combination of parts hereinafter more fully described and claimed, and illustrated in the accompanying drawings, showing the preferred form of my invention, and in which—

Figure 1 is a longitudinal section through my improved hub, the same being shown in position upon an axle. Fig. 2 is a longitudinal section through the body of the hub detached, showing a modified means for connecting spokes thereto. Fig. 3 is a detail view of the sleeve of the axle. Fig. 4 is a section through a tire and felly adapted to be used in my improved construction of wheel; and Fig. 5 is a transverse section through a modification of the hub, the same being shown provided with ball-bearings.

Referring to the figures by numerals of reference, 1 is an axle of any suitable form, having a sleeve 2 secured to the end thereof by means of a pin 4, which extends through apertures 5 within said sleeve and a passage 6 within the axle. This sleeve has a series of grooves 7 within the sides and ends thereof and is adapted to fit within a hub of novel construction. This hub comprises a hollow body portion 8, substantially cylindrical in form and having an inwardly-extending flange 9 therein adjacent to the closed end 10 thereof. The sleeve 2 is adapted to project into the body of the hub and abut against flange 9, and a compartment 11 is thus formed between said sleeve and its axle and the

closed end of the body portion. An aperture 12 is formed within the center of end 10 and is normally closed in any suitable manner, as by means of a screw-plug 13. The open end of the body portion is internally screw-threaded, as shown at 14, and is adapted to receive and engage one end of a sleeve 15, which is held spaced from axle 1 by means of an inwardly-extending flange 16, formed at its outer end. An angular flange 17 incloses the sleeve 15 and is integral therewith, and this flange abuts against the end of the body portion 8 and also serves the purpose of a nut to permit the sleeve to be readily screwed into the body portion of the hub. A set-screw 18 may be employed for locking said sleeve in position. A dust-cap 19 is mounted upon the axle and extends over the adjacent end of sleeve 15 and is held spaced therefrom by means of an inwardly-extending flange 20. This cap is held in position upon the axle by means of a set-screw 21 or in any other suitable manner.

A flange 22 is formed integral with and incloses the body portion of the hub, and spokes 23 are adapted to be clamped thereagainst by means of bolts 24, which engage a clamping-ring 25. If desired, however, the body portion of the hub may be so constructed as to permit wire spokes to be attached thereto. I have shown such a construction in Fig. 2, in which the hub is provided with internally-screw-threaded recesses 26, each of which is adapted to receive the threaded end of a spoke 27. Where a spoke of this character is used, the other end thereof is secured in any suitable manner to a felly 28, which is circular in form and substantially U-shaped in cross-section, as shown in Fig. 4, laterally-extending flanges 29 being arranged at the sides thereof. The tire 30 of the wheel is shrunk upon the felly and may be then locked thereon in any suitable manner, as by means of screws 31. A nut 32 may be arranged on each spoke to lock it in position within the felly. Oil is placed within the compartment 11 through the aperture 12, and it is obvious that it will be evenly distributed over the outer face of the sleeve 2 by flowing through grooves 7. Said grooves will also conduct the oil to that portion of the axle which is located within the sleeve 15, and it will be seen that a smoothly-

running bearing may thus be readily obtained. The plug 13 prevents the admission of dust to the bearing, and the cap 19 also serves to protect the interior of the hub from dust, &c. If desired, balls 33 may be interposed between the sleeve 2 and the body 8 of the hub, and in such case it is unnecessary to provide grooves 7 within the sleeve, as oil will be free to flow between the balls. In Fig. 5 I have shown the hub provided with roller-bearings, as above described.

In the foregoing description I have shown the preferred form of my invention; but I do not limit myself thereto, as I am aware that modifications may be made therein without departing from the spirit or sacrificing any of the advantages thereof, and I therefore reserve the right to make such changes as fairly fall within the scope of my invention.

Having thus described the invention, what is claimed as new is—

1. In a device of the character described, the combination with an axle having a sleeve thereon; of a hub revolvably mounted upon the sleeve and closed at one end, there being an oil-compartment formed between said end

and the sleeve, a sleeve detachably secured within the open end of the body portion and adapted to prevent longitudinal movement of said portion upon the axle, and means for conducting oil from the compartment to the bearing-surfaces of the body portion of the hub and the sleeve upon which it is mounted.

2. In a device of the character described, the combination with an axle having a sleeve secured thereon and provided with grooves in the outer surfaces thereof; of a hub mounted upon said sleeve and comprising a body portion normally closed at one end, there being a flange within the body portion and adjacent to said closed end, an oil-compartment being formed between the flange and end of the body portion, a sleeve detachably secured within the opposite end of the body portion, said sleeve and flange serving to prevent longitudinal movement of the hub upon the axle.

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

ROBERT BRADLEY.

Witnesses:

RICHARD TATTERSFIELD,
A. G. WILLITS.