

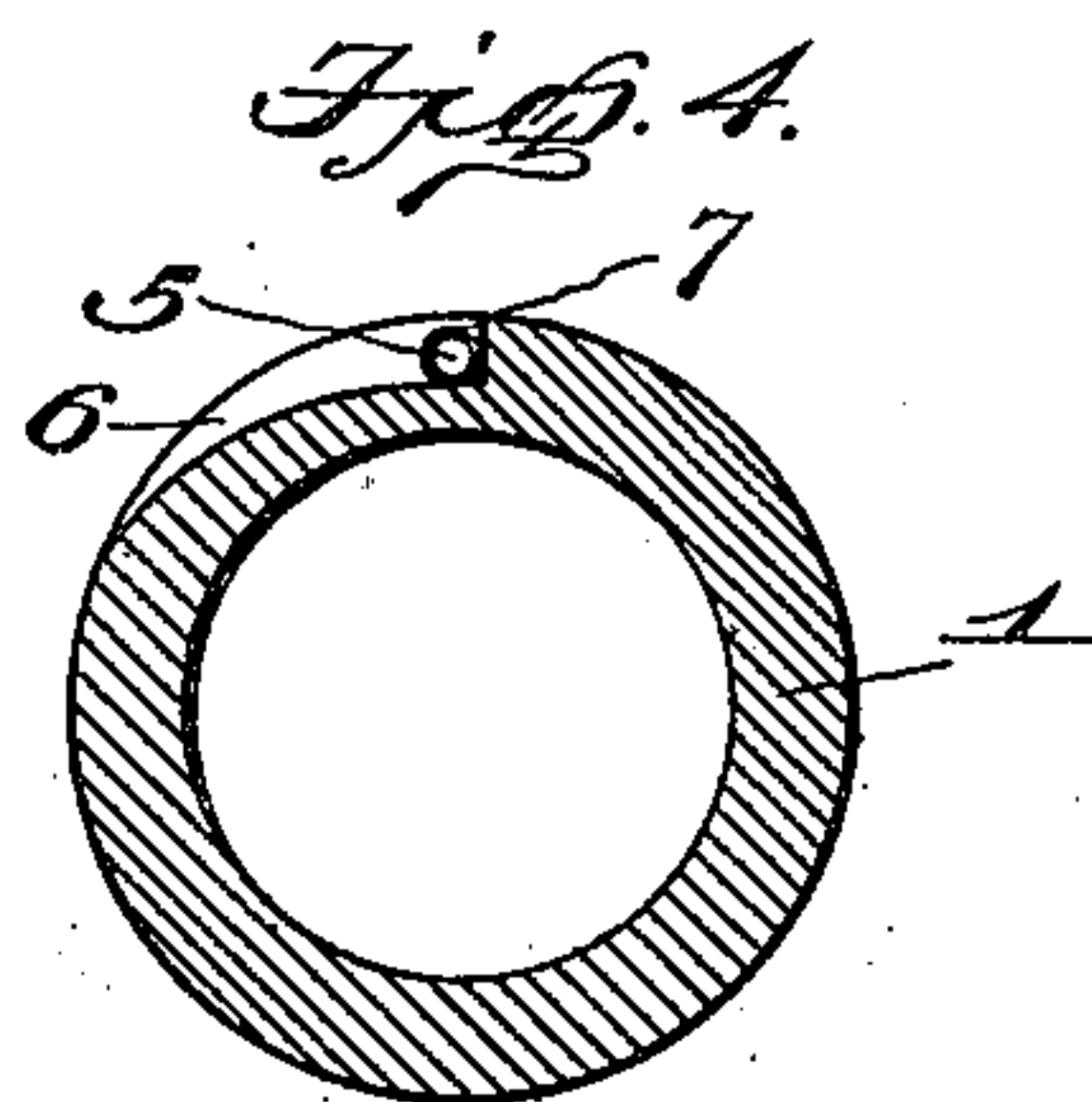
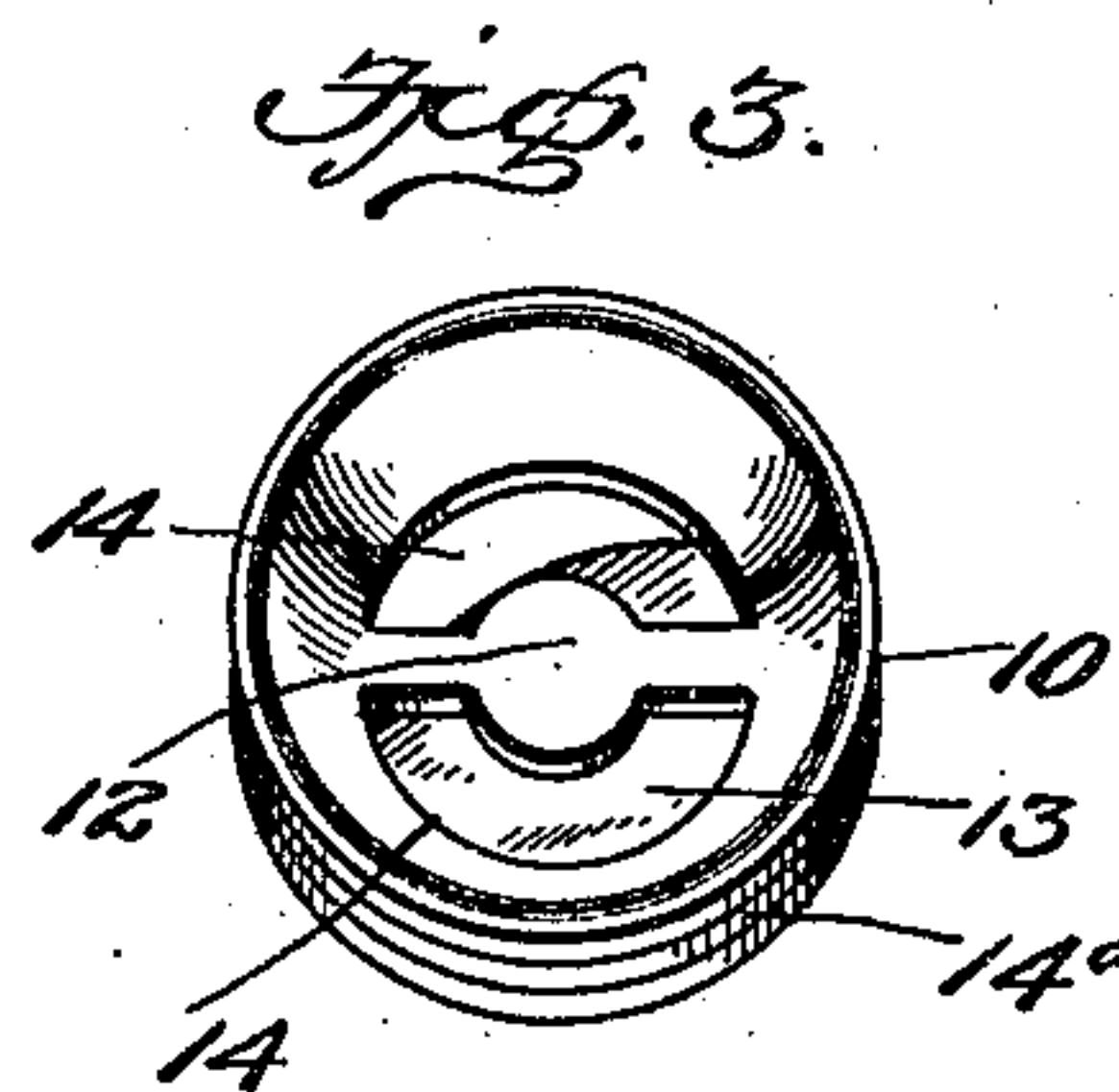
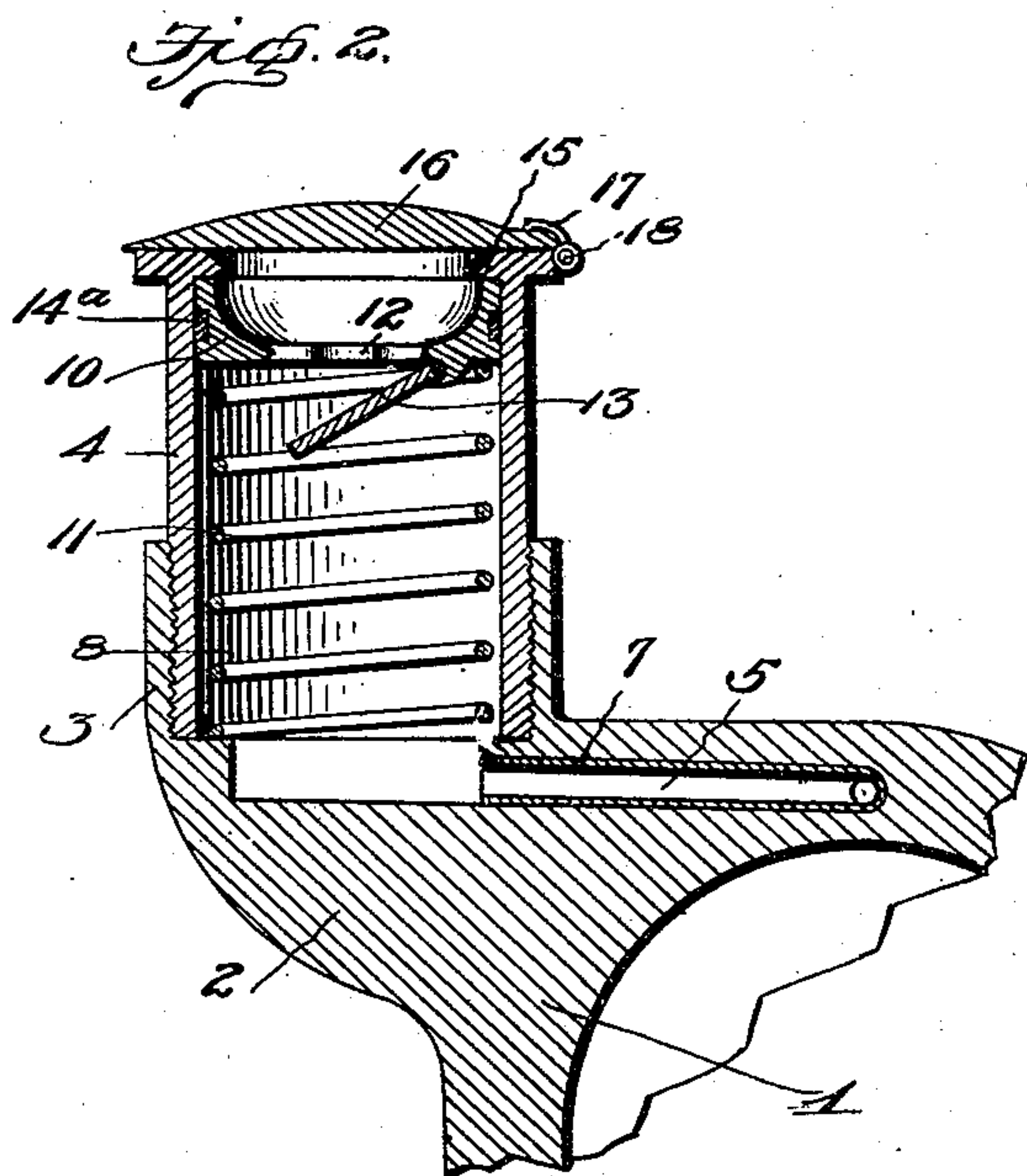
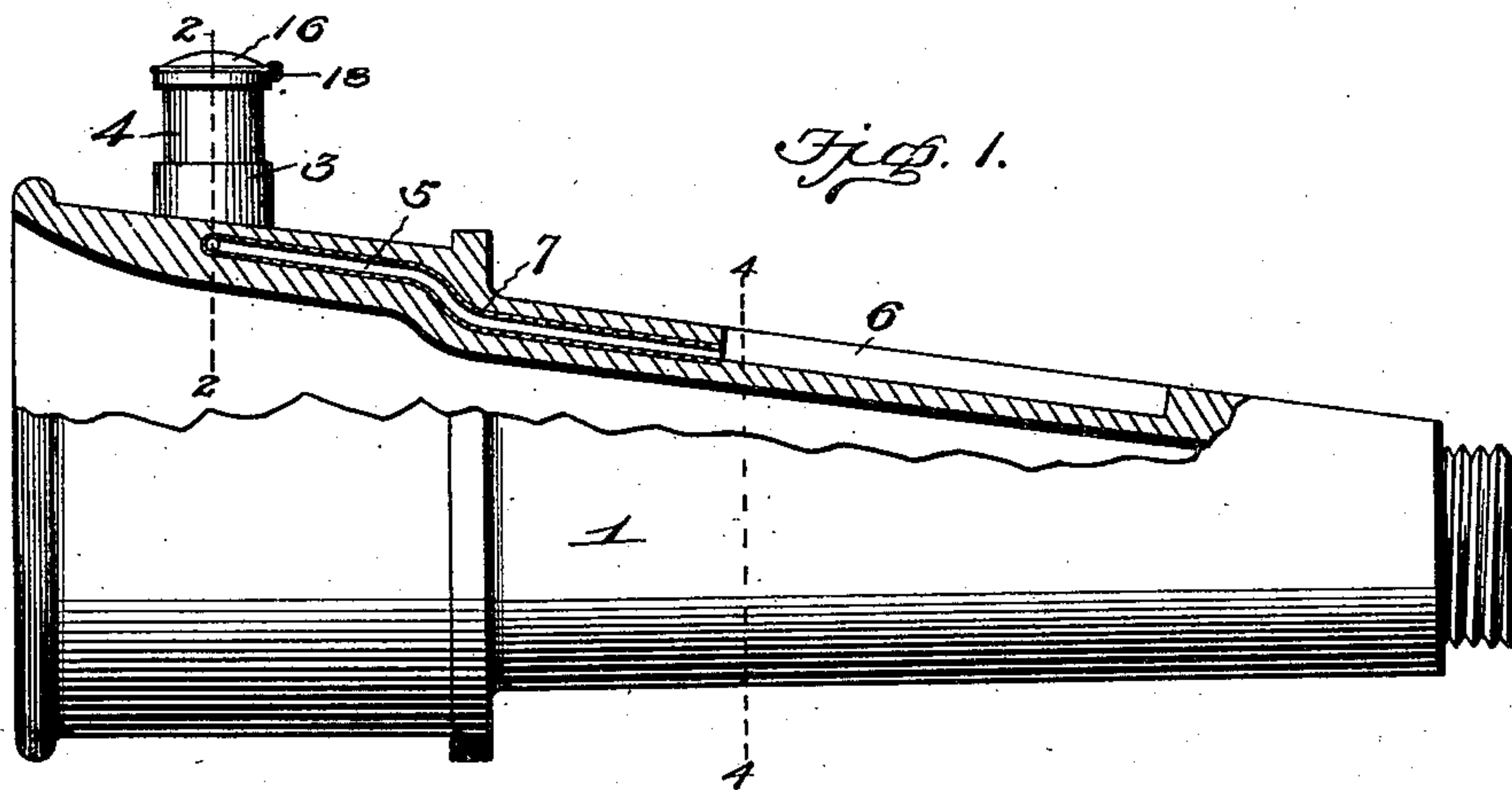
No. 704,028.

Patented July 8, 1902.

R. H. GOWAN.
AXLE LUBRICATOR.

(Application filed Aug. 13, 1901.)

(No Model.)



Witnesses
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UNITED STATES PATENT OFFICE.

RICHARD H. GOWAN, OF CORSICANA, TEXAS.

AXLE-LUBRICATOR.

SPECIFICATION forming part of Letters Patent No. 704,028, dated July 8, 1902.

Application filed August 13, 1901. Serial No. 71,934. (No model.)

To all whom it may concern:

Be it known that I, RICHARD H. GOWAN, a citizen of the United States, residing at Corsicana, in the county of Navarro and State of Texas, have invented a new and useful Axle-Lubricator, of which the following is a specification.

The invention relates to improvements in axle-lubricators.

10 The object of the present invention is to improve the construction of axle-lubricators and to provide a simple, inexpensive, and efficient one adapted to be readily applied to axles and capable of enabling oil to be
15 employed for lubricating all kinds of axles for vehicles, especially those employing axle-skeins for forming the spindles.

A further object of the invention is to provide a device of this character adapted to
20 permit an axle to be lubricated without removing the wheels and capable of being readily supplied with oil without detaching any of the parts.

The invention consists in the construction
25 and novel combination and arrangement of parts hereinafter fully described, illustrated in the accompanying drawings, and pointed out in the claims hereto appended.

In the drawings, Figure 1 is a side elevation, partly in section, of an axle-skein provided with an axle-lubricator constructed in accordance with this invention. Fig. 2 is a transverse sectional view on the line 2 2 of Fig. 1. Fig. 3 is a perspective view of the
30 plunger. Fig. 4 is a sectional view on the line 4 4 of Fig. 1.

Like numerals of reference designate corresponding parts in all the figures of the drawings.

40 1 designates an axle-skein provided at its inner enlarged end with a lateral extension 2, having a socket 3 for the reception of an oil-cup 4, and extending from the socket to the bearing portion of the skein is an oil-
45 passage 5, arranged at a slight inclination, as clearly illustrated in Fig. 1 of the accompanying drawings, and terminating at its lower or outer end at a recess 6. The recess, which is tapering, as clearly shown in Fig.
50 4, extends downward and forward in order that the forward rotation of the wheel will carry the oil downward and insure a thorough

and complete lubrication of the bearing of the axle. The oil-passage consists of a short transverse branch and a longitudinal branch, 55 the longitudinal branch extending from the inner end of the transverse branch to the recess 6 and the short branch extending from the socket to the inner or upper end of the longitudinal branch. The oil-passage is preferably formed by tubes 7, which are placed 60 in the molds while the axle-skeins are being manufactured; but any other means may be employed for forming the oil-passages. Within the socket, which may be arranged at any 65 other desired point and which has an annular or cylindrical wall or flange, is mounted the oil-cup 4, which has a lower threaded end 8. The lower end 8 of the oil-cup is exteriorly threaded to engage interior screw- 70 threads of the socket. The oil is forced out of the oil-cup by means of a plunger 10, which is normally supported in an elevated position by a coiled spring 11, located within the oil-cup and having its lower end seated at the 75 bottom of the socket; but the spring may be mounted in any other suitable manner, and it is adapted to be compressed to permit the plunger to be forced downward. The plunger, which is dish-shaped, consists of a circular 80 rim or body portion, a connecting cross-bar 12, and a valve 13, arranged beneath the body portion of the plunger and adapted when the same is moved downward to close automatically and cover the openings 14 at opposite sides of 85 the cross-piece 12, whereby the oil is expelled from the oil-cup and is forced through the oil-passage to the bearing of the axle. The cross-piece is centrally arranged and has an enlarged central portion adapted to be engaged 90 by the finger of the operator when the plunger is forced downward. The enlarged central portion of the cross-piece is circular, and the openings 14 at opposite sides of the cross-bar are curved, as shown. The plunger is 95 provided with a suitable packing-ring 14^a, which forms an oil-tight fit for the plunger, and the upward movement of the latter is limited by an inwardly-projecting annular flange 15, arranged at the top of the oil-cup 100 and having a beveled upper face, as shown. The oil-cup is also provided at its top with an outwardly-extending annular flange, to which is hinged a lid 16, and the latter is held nor-

mally closed by a suitable spring 17, arranged at the hinge 18.

When it is desired to supply the device with oil, the lid 16 is raised, and the valve 13, which is in the position illustrated in Fig. 2 of the drawings, will not interfere with the introduction of the tube or spout of an oil-can into the oil-cup 4 through one of the openings 14. After the oil-cup is supplied with a sufficient quantity of oil the tube or spout of the oil-can is withdrawn. The lubricant is forced through the oil-passage by placing the finger or a stick or other device on the cross-bar 12 and pressing downward on the same. This will cause the valve to remain firmly closed, and the downward movement of the plunger will expel the oil from the oil-cup and force the same to the exterior of the spindle. After operating the plunger the lid is closed.

It will be seen that the lid is adapted to exclude dust from the oil-cup and that the latter is not in the way and does not necessitate any alteration in the construction of a vehicle. It will also be apparent that the automatically-closing valve permits the lubricant to be supplied to the oil-cup without removing the plunger.

What I claim is—

1. In a device of the class described, the combination of an axle having an oil-passage extending to the bearing, an oil-cup arranged at the outer end of the passage, a depressible spring-supported plunger arranged within the oil-cup at the top thereof and adapted to be moved downward to force the oil through the oil-passage, said plunger being provided with an opening to permit the cup to be supplied with oil and having a valve arranged to cover the opening when the plunger is forced downward, substantially as described.

2. In a device of the class described, the combination of an axle provided with an oil-passage, an oil-cup, a spring-supported plunger arranged within the oil-cup at the top thereof and provided with an opening adapted to permit oil to be introduced into the oil-cup, and having an automatically-closing valve arranged to cover the opening when the plunger is depressed, substantially as described.

3. In a device of the class described, the combination of an axle having an oil-passage, an oil-cup, a plunger arranged within the oil-cup and having a cross-piece and provided at opposite sides thereof with openings, a valve arranged to close the openings when the plunger is depressed, and a coiled spring arranged beneath and supporting the plunger, substantially as described.

4. In a device of the class described, the combination of an axle having an oil-passage and provided with a socket, an oil-cup secured within the socket and provided at its top with a stop and having a lid closing the top of the cup and located above the stop, a plunger arranged within the oil-cup and provided with a valve, and a spring supporting the plunger in an elevated position and holding the same normally against the said stop, said stop limiting the upward movement of the plunger and preventing the same from raising the lid, substantially as described.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

RICHARD H. GOWAN.

Witnesses:

FRED L. BIBBY,
JOE SANDS.