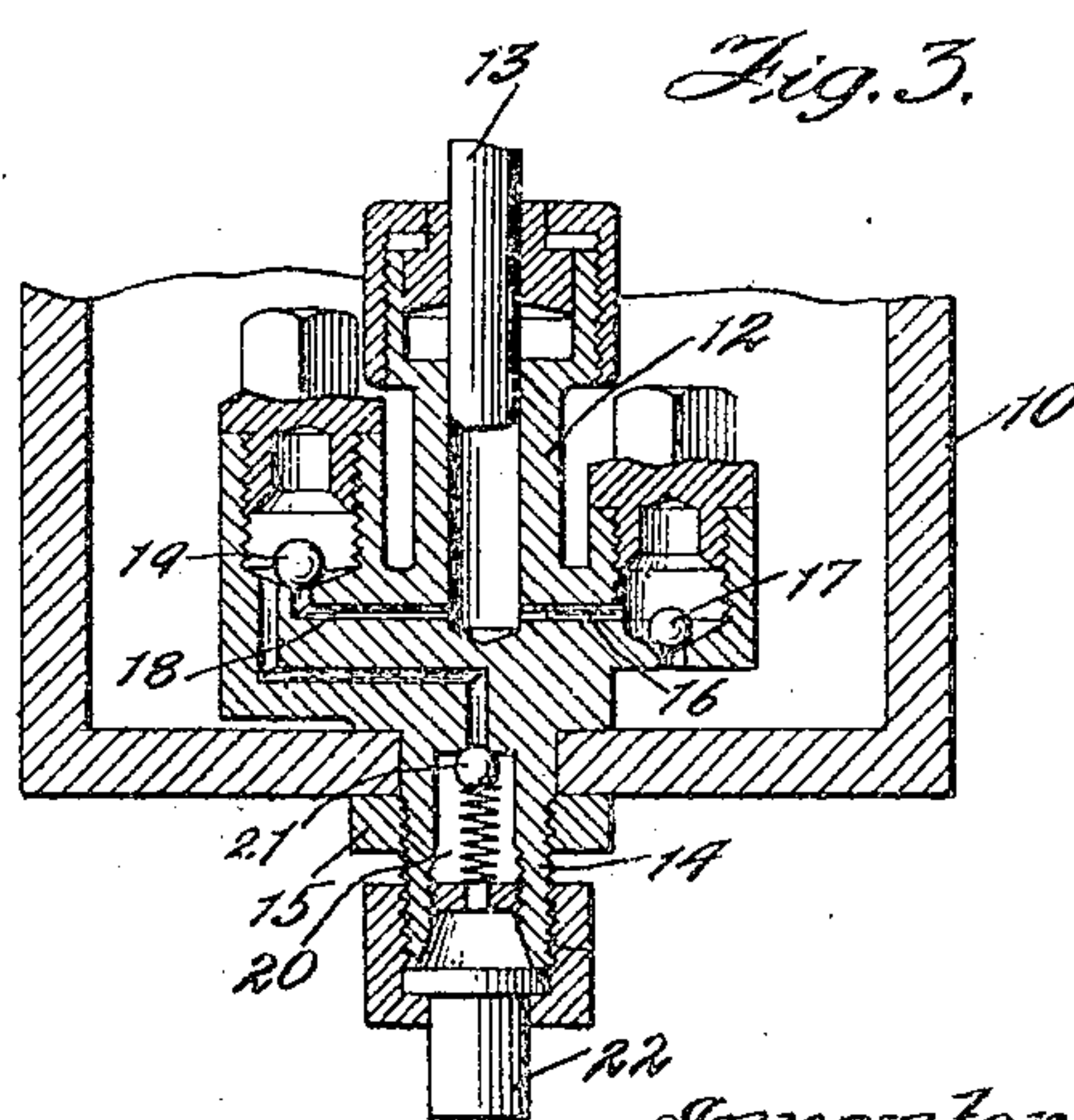
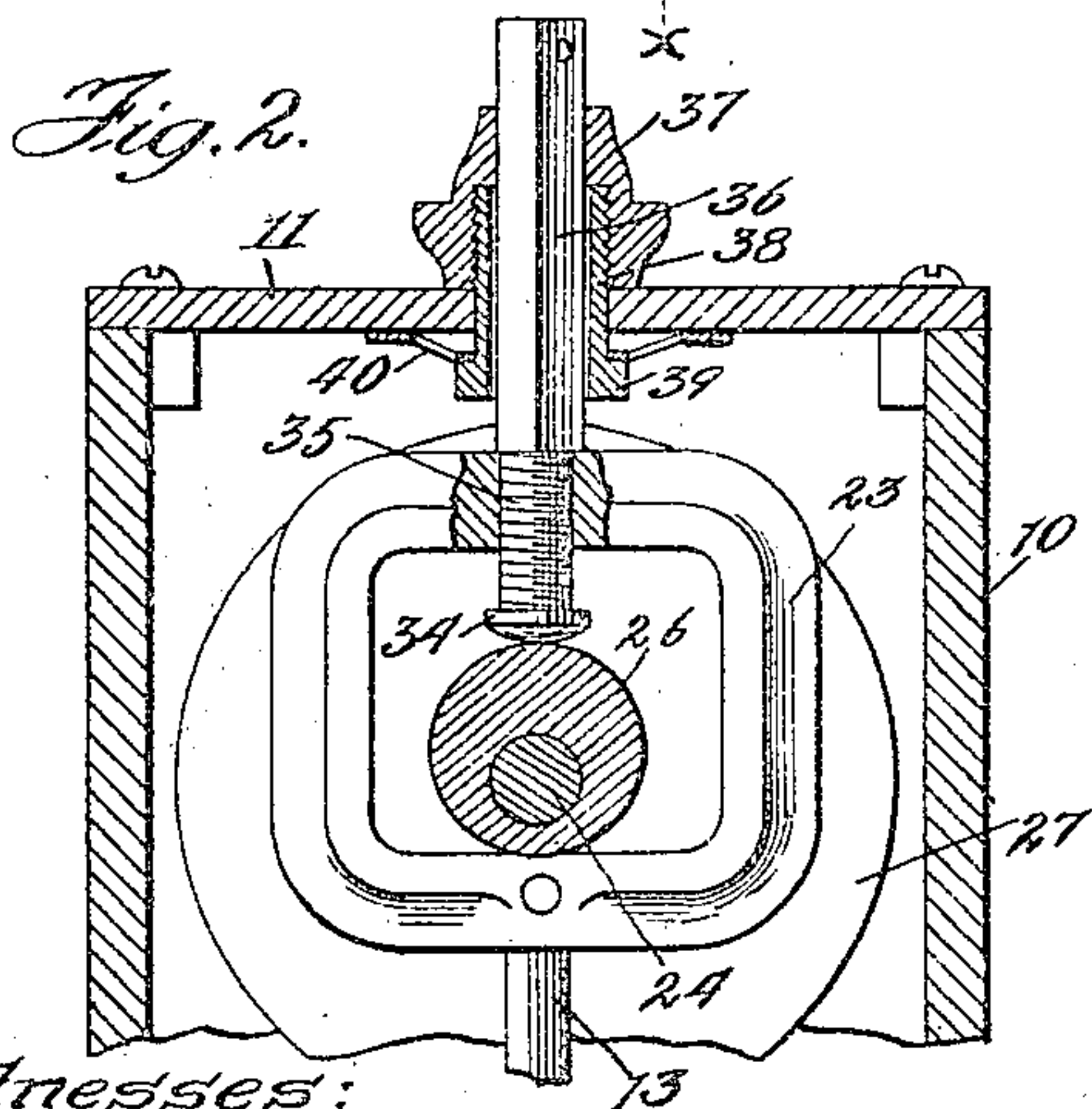
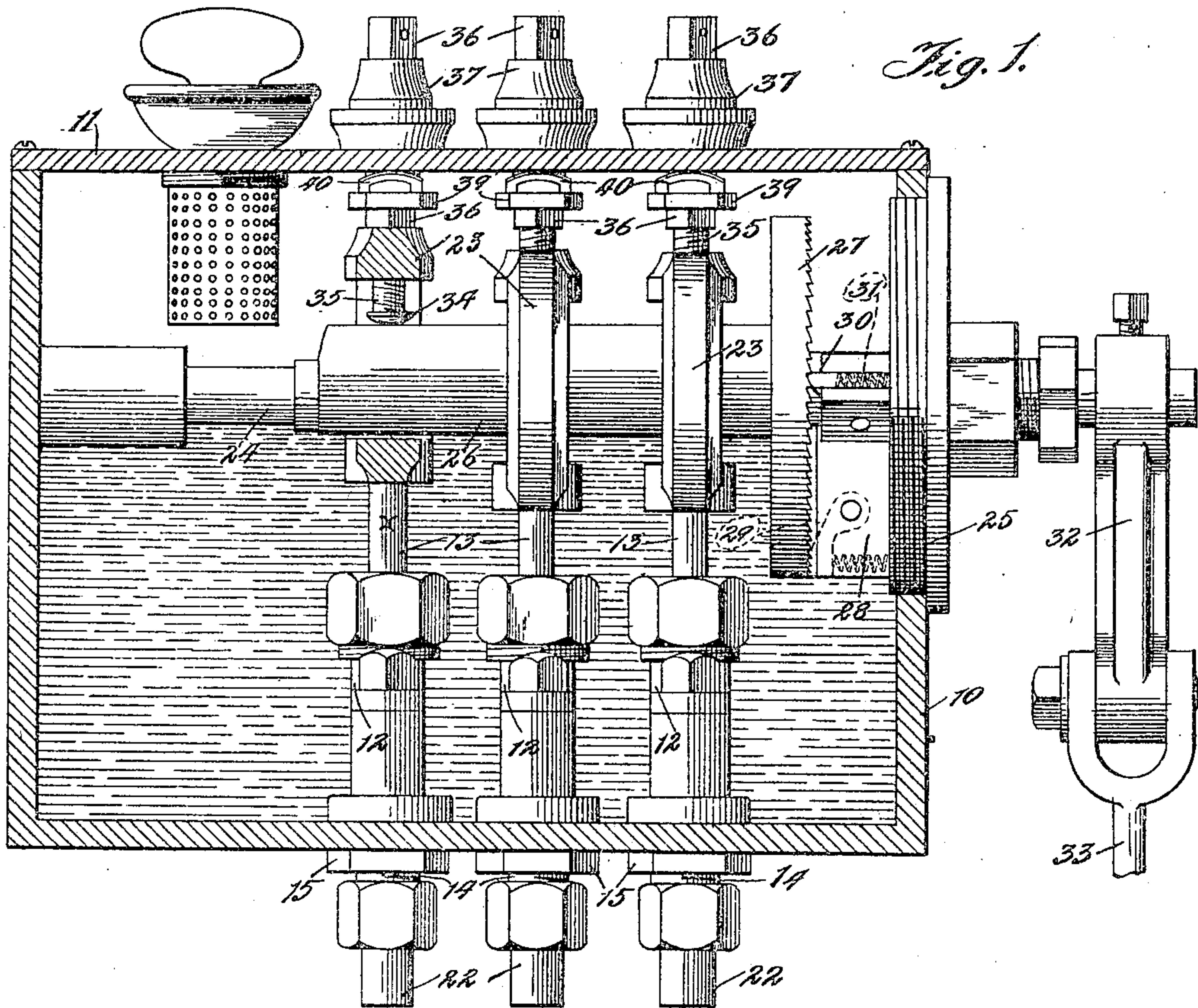


No. 822,900.

PATENTED JUNE 5, 1906.

J. F. McCANNA.  
LUBRICATOR.

APPLICATION FILED DEC. 1, 1905.



Witnesses:  
*Wm. D. Perry*  
*Chas. V. Donnell*

Inventor:  
John F. McCanna  
By *Coburn & McRoberts*  
Attys



# UNITED STATES PATENT OFFICE.

JOHN F. McCANNA, OF CHICAGO, ILLINOIS, ASSIGNOR TO THE JOHN F. McCANNA COMPANY, OF CHICAGO, ILLINOIS, A CORPORATION OF ILLINOIS.

## LUBRICATOR.

No. 822,900.

Specification of Letters Patent.

Patented June 5, 1906.

Original application filed June 15, 1903, Serial No. 161,458. Divided and this application filed December 1, 1905. Serial No. 289,861.

*To all whom it may concern:*

Be it known that I, JOHN F. McCANNA, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Lubricators, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates to force-feed lubricators, and has particular reference to improvements in the means for adjusting or regulating the throw of the pumps thereof.

The invention consists of the combinations and arrangements of parts hereinafter particularly described and then pointed out in the appended claims.

In the accompanying drawings, which illustrate one embodiment of the invention, Figure 1 is a vertical longitudinal sectional view through the reservoir, showing three lubricating-pumps and illustrating the adjusting devices associated therewith. Fig. 2 is a transverse vertical sectional view through the upper portion of the reservoir, showing one of the pump-yokes and the adjustable abutment for varying the throw of the pump; and Fig. 3 is a sectional view on the line  $x x$  of Fig. 1, showing the arrangement of valve mechanism for the particular style of pump illustrated.

In the present instance I have shown a lubricator with three pumps; but as the arrangement and construction of these pumps and the adjusting devices therefor are alike it is to be understood that the following description applies to each of the same. It is also to be understood that while three pumps are shown in the present instance one or more may be employed, depending upon the number of parts to be lubricated, each pump being designed to deliver lubricant to a particular part.

In the drawings, 10 indicates a suitable reservoir, which is designed to contain the lubricant and is provided with a cover or top plate 11, suitably secured thereon. In the construction illustrated each pump comprises a cylinder 12 and a reciprocating piston 13.

The cylinder is provided with a threaded extension 14, which passes through an opening in the bottom of the reservoir and receives a nut 15, which secures the cylinder to the

reservoir. A suitable intake-passage 16, which is controlled by an induction-valve 17, leads to the cylinder, the outlet 18 of which is provided with an eduction-valve 19 and leads to a passage 20 in the extension 14. The passage 20 is governed by a spring-pressed valve 21 and communicates with a tube or pipe 22, which leads to the part to be lubricated.

The piston 13 is provided at its upper end with an operating member, such as the yoke 23, which in the present instance is substantially rectangular. The pumps are located within the reservoir, and the yokes 23 are arranged in parallel—that is, with the openings thereof in line.

A shaft 24, extending through the yokes 23, is suitably journaled in the reservoir, and one end thereof passes through a plug 25, screwing in one of the end walls of the reservoir. An eccentric-sleeve 26 is loosely mounted on the shaft 24, so as to rotate thereon and is provided at its end adjacent to the plug 25 with a ratchet-wheel 27. A pawl-carrier 28 is secured to the shaft 24 within the reservoir and is provided with a forwardly-projecting spring-pressed pawl 29, which engages and is adapted to turn the ratchet-wheel 27. A dog 30 is also mounted on the plug 25 and held in engagement with the ratchet-wheel by an expansion-spring 31 to prevent backward movement of said ratchet-wheel.

In operation an intermittent rotary motion is imparted to the eccentric, which, co-operating with the yokes 23, reciprocates the pump-pistons through the medium of an oscillating arm 32, fixed to the protruding end of the shaft 24 and connected by a suitable link 33 to a suitable moving part of the mechanism being lubricated.

While I have described in detail the construction and arrangement of the pump and operating mechanism illustrated, and which forms a part of the subject-matter of and is claimed in an application filed by me June 15, 1903, Serial No. 161,458, of which the present case is a division, it is to be understood that this is merely by way of example and that the invention herein may be employed with any other suitable or preferred construction of pump and arrangement of operating mechanism.

The present invention has particular refer-



ence to an adjustable abutment or bearing located within the reservoir and adapted to be adjusted from the outside of the reservoir to vary the throw or stroke of the pump without removing the cover or opening the reservoir in any other manner.

In the present instance this abutment, designated 34, is formed at the end of a threaded extension 35 of a rod or stem 36, passing freely through an aperture in one of the walls of the reservoir, such as the cover 11. The top of the yoke 23 is provided with a screw-threaded aperture with which the threaded extension of the stem engages so that the abutment extends into the yoke. By turning the stem 36 the distance between the abutment 34 and the bottom of the yoke may be varied to vary or entirely eliminate lost motion between the eccentric and yoke, and consequently the stroke of the piston is increased or decreased, depending upon the direction of the rotation of the stem.

In the construction illustrated the stem 36 is polygonal in cross-section, it being shown as rectangular in the drawings, and passes through a similarly-shaped aperture in a nut 37 in threaded engagement with a sleeve 38, which extends through the cover 11 and is provided with a shoulder 39, between which and the inner face of the cover a spring-washer 40 is located. When the nut 37 is screwed up to engage the cover 11, the sleeve 38, by reason of its shoulder 39, clamps the spring-washer 40 against the under face of the cover. The washer 40 is designed to hold the nut 37, and consequently the rod or stem 36, against accidental movement after adjustment, but permits the rod to be turned by a suitable key or other convenient device.

From the foregoing it is obvious that by turning the stem, the upper end of which extends outside of the reservoir, the abutment is adjusted vertically in relation to the eccentric, and as the length of the stroke of the piston depends upon the distance between the abutment and the bottom of the yoke it is obvious that the quantity of oil discharged at each stroke of the pump may be regulated by merely turning the stem to set the abutment closer to or farther from the opposite wall of the yoke. The rates of delivery of the pumps may be varied while the automobile or other machine with which the lubricator is employed is in operation, and, if desired, any pump may be put out of action entirely by adjusting the abutment out of the range of movement of the eccentric. When the abutment is in the latter position, a preliminary lubrication may be given the bearing by attaching a handle or key to the stem and reciprocating the latter. Each pump has its adjustment independent of any other pump, though all of the pumps are driven from the same shaft. The adjusting-stem passes through the cover of the reservoir and works

loosely therethrough. As the eccentric operates the piston the adjusting-stem associated therewith being connected to the yoke thereof moves up and down through the cover and thus indicates the amount of movement of the piston. Such stem therefore serves as an indicator whereby the operator can tell approximately how much oil is being forced through each pump. If the rate of delivery indicated by the movement of the stem of any pump is not what is desired, it can readily be changed merely by turning the stem, and this adjustment may be effected for each pump individually.

Having described my invention, what I claim as new, and desire to secure by Letters Patent of the United States, is—

1. In combination in a force-feed lubricator, a reservoir, a pump arranged therein, means within the reservoir for driving the pump, and means extending from the outside into the reservoir for adjusting the throw of the pump, substantially as described.

2. In combination in a force-feed lubricator, a reservoir, a pump within the reservoir, means for operating the pump arranged within the reservoir, and means for adjusting the throw of the pump extending outside of the reservoir, and movable therethrough to indicate the amount of the movement of the pump, substantially as described.

3. In combination in a force-feed lubricator, a reservoir, a pump therein, means for actuating the pump located within the reservoir, and mechanism arranged externally of the reservoir and connected to the said actuating means, said mechanism being adjustable to vary the movement of the actuator, substantially as described.

4. In a lubricator, the combination with a closed reservoir, a pump within the reservoir, a member within the reservoir and connected to the movable part of the pump to reciprocate the same, an adjustable abutment located in the reservoir and cooperating with the said member to regulate the amount of movement of the pump, and a stem extending from the abutment through the wall and outside of the reservoir to regulate the adjustment of the abutment.

5. In a lubricator, the combination with a reservoir, a pump within the reservoir, a member within the reservoir and connected to the movable part of the pump to reciprocate the same, and an adjustable stem extending through the wall of the reservoir to regulate the amount of movement of the said member and indicate the throw of the pump.

6. In combination in a force-feed lubricator, a reservoir, a plurality of pumps therein, a single shaft within the reservoir, means thereon for operating the pumps, each pump having its own adjusting means for altering its stroke independent of the other pumps and each adjusting means comprising



a stem extending from the operating means to a point outside the reservoir, substantially as described.

7. In a lubricator, the combination with a reservoir, and a plurality of pumps therein, and means within the reservoir common to all the pumps for operating the same, each pump having its own adjusting means for altering its stroke independent of the other pumps and each adjusting means comprising a stem cooperating with the operating means and extending to a point outside the reservoir.

8. In a device of the class described, the combination with a closed reservoir, of a pump located therein, a yoke within the reservoir and fixed to the pump-piston, an eccentric turning within the yoke, an adjustable abutment extending into the yoke and provided with a stem which is in threaded engagement with the yoke and projects through the top of the reservoir for adjusting the abutment.

9. In a device of the class described, the combination with a reservoir, of a pump located therein, a yoke connected to the piston of the pump, an eccentric cooperating with the yoke, an adjustable abutment carried by the yoke and comprising a rotatable stem extending in the path of the eccentric, and means for holding the stem against rotation.

10. In a device of the class described, the combination with a reservoir, of a pump lo-

cated therein, a yoke fixed to the piston of the pump, an eccentric cooperating with the yoke, a stem having a threaded extension passing through one of the arms of the yoke and normally extending in the path of the eccentric, a sleeve rotatably mounted in the wall of the reservoir and through which the stem passes, a resilient washer carried by the sleeve and engaging the wall of the reservoir, and a nut on the stem in threaded engagement with the sleeve.

11. In a device of the class described, the combination with a closed reservoir, of a pump therein, a yoke fixed to the pump-piston, an eccentric turning within the yoke, a stem polygonal in cross-section extending through the top of the reservoir and having a threaded extension passing through the top of the yoke and normally extending in the path of the eccentric, a nut on the stem and having an aperture conforming to the shape of the latter and engaging the top of the reservoir, a sleeve in threaded engagement with the nut and having a shoulder within the reservoir, and a spring-washer interposed between the shoulder and the under face of the top of the reservoir.

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

JOHN F. McCANNA.

Witnesses:

ARTHUR B. SEIBOLD,

ELIZABETH MOLITOR.