

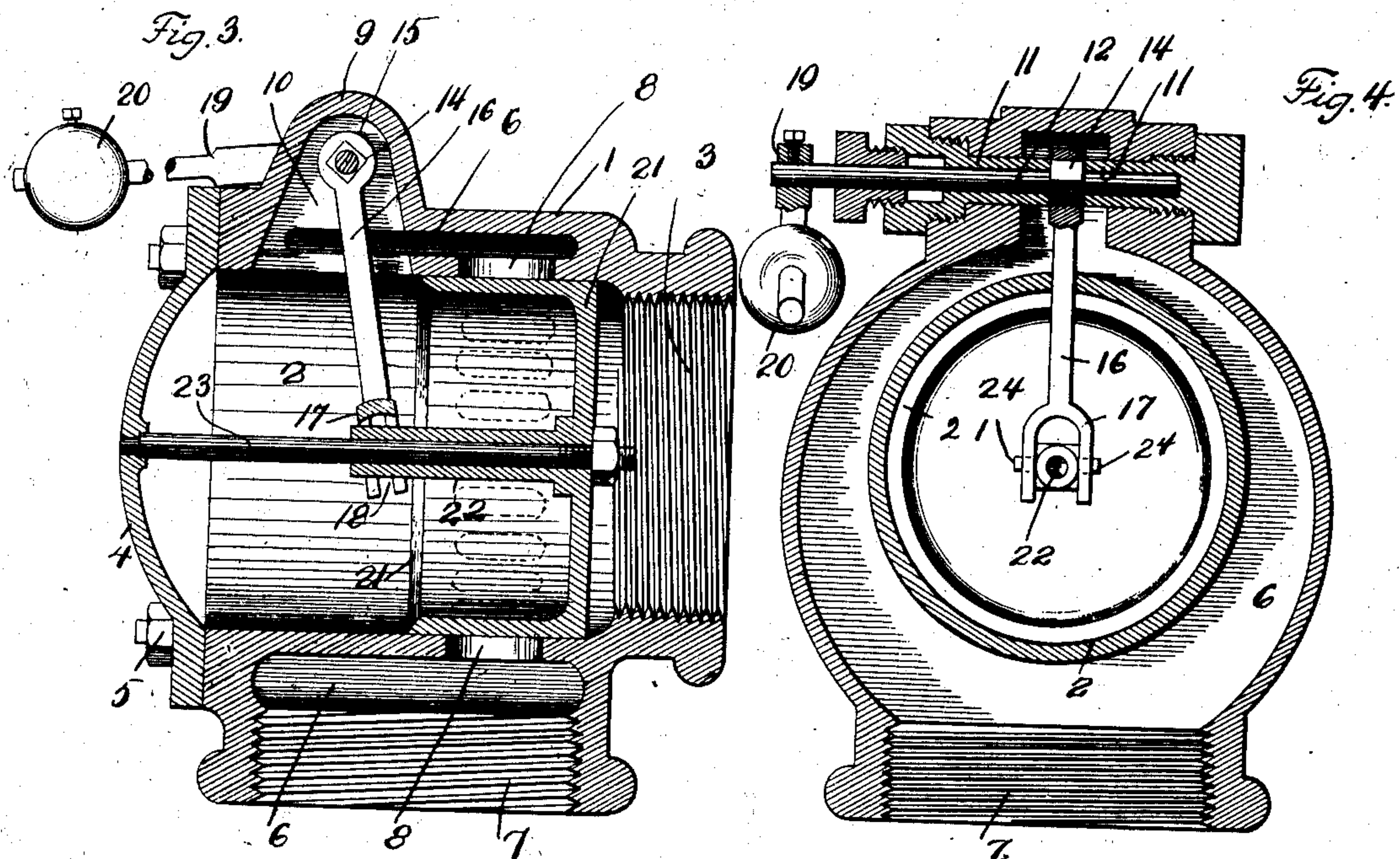
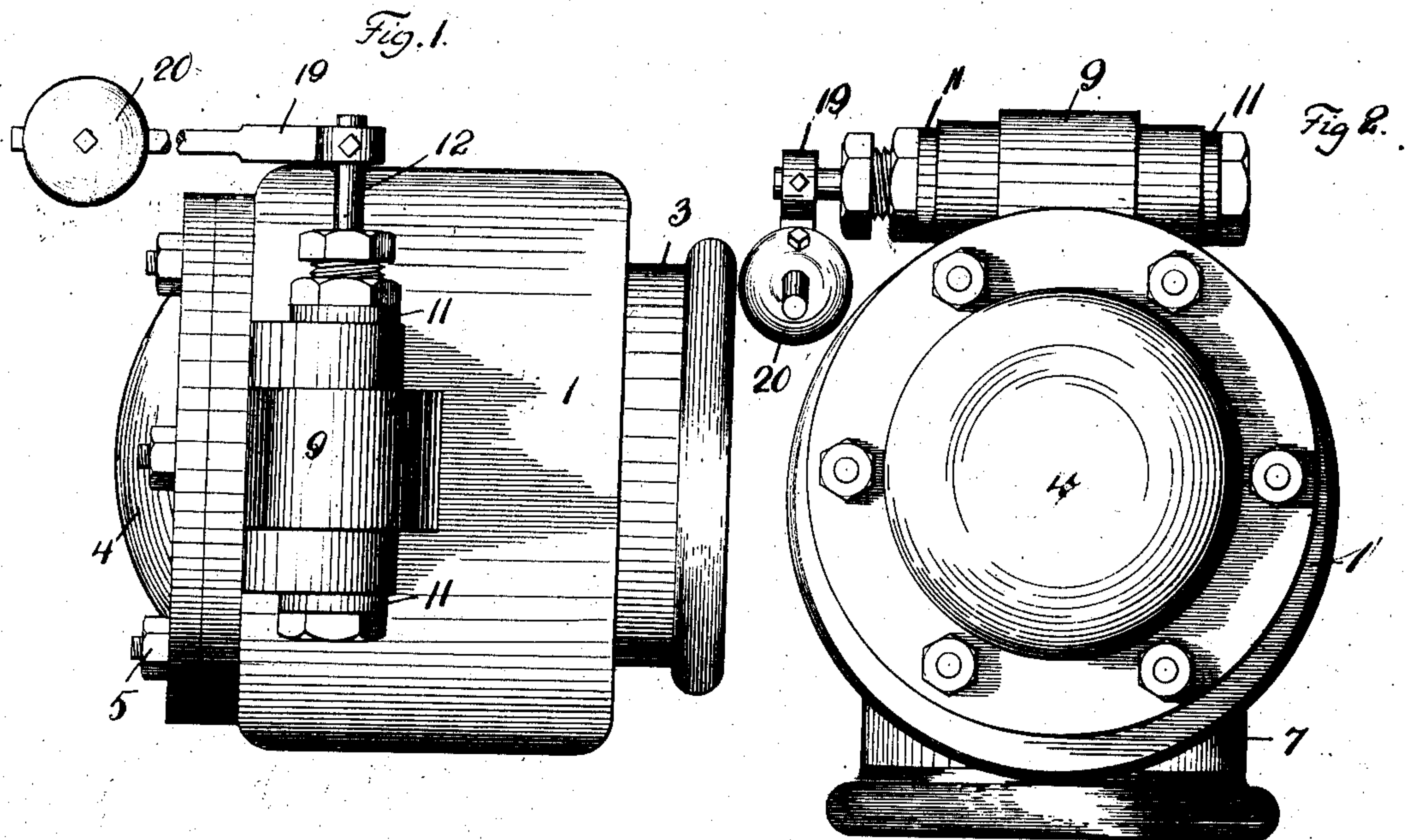
No. 874,017.

PATENTED DEC. 17, 1907.

G. L. LEWIS & J. R. FRANKENBERG.
GAS REGULATOR.

APPLICATION FILED MAR. 20, 1907.

2 SHEETS—SHEET 1.



WITNESSES:

A. H. Rabsag,

A. H. Rabsag

INVENTORS

George L. Lewis

John R. Frankenberg,

By

H. C. Everett & Co.

Attorneys

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2 SHEETS—SHEET 2.

Fig. 5.

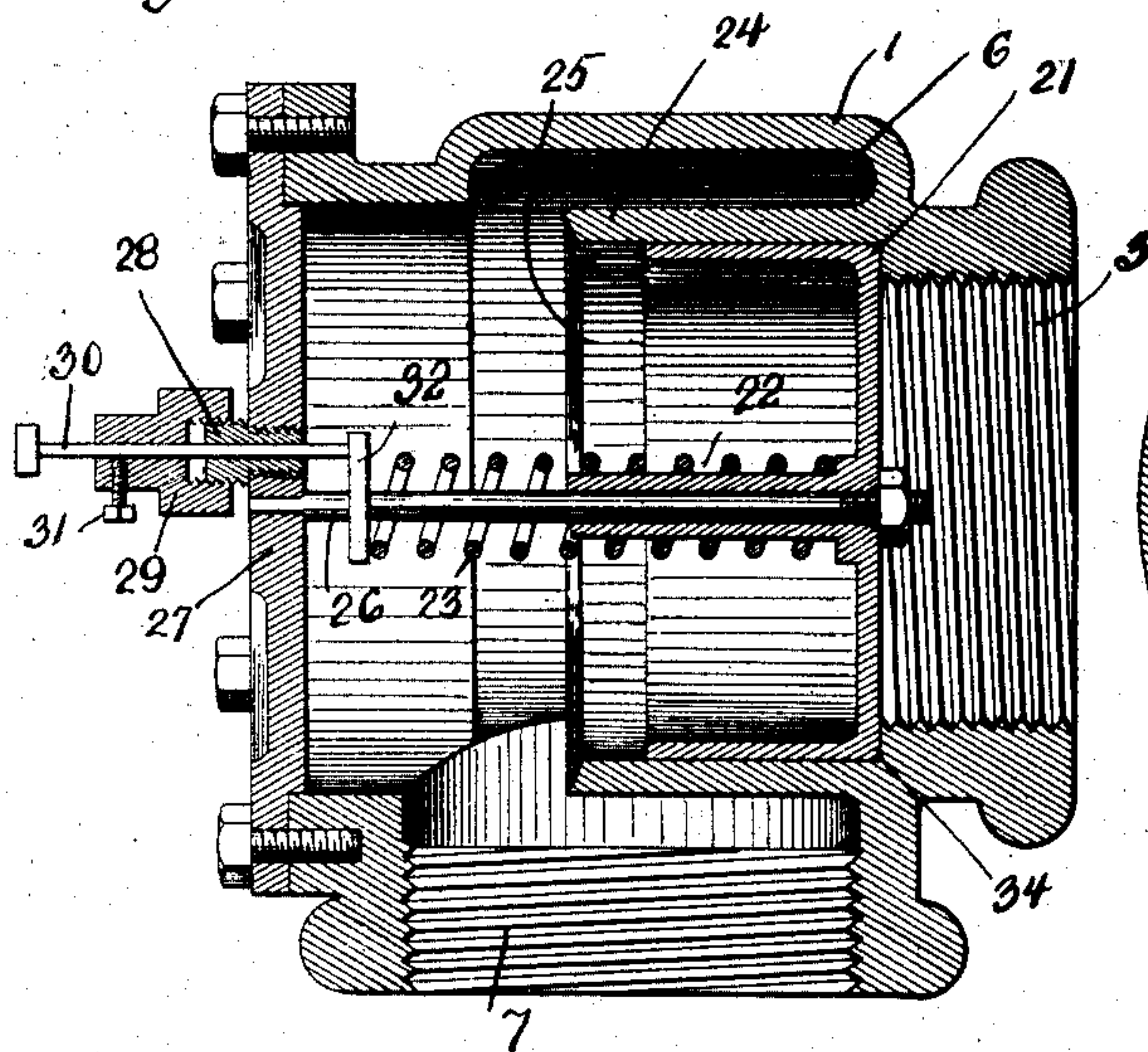


Fig. 6.

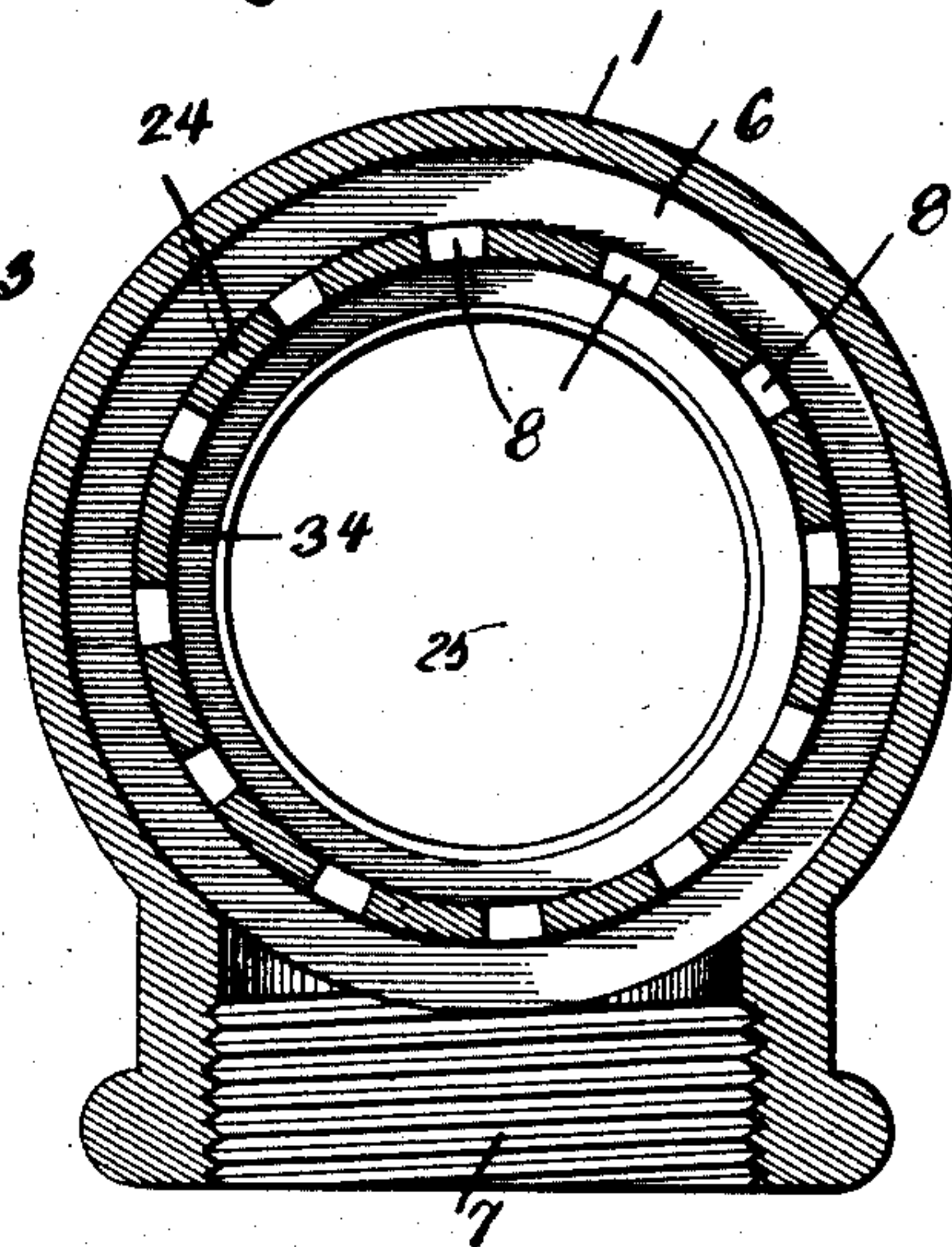


Fig. 7.

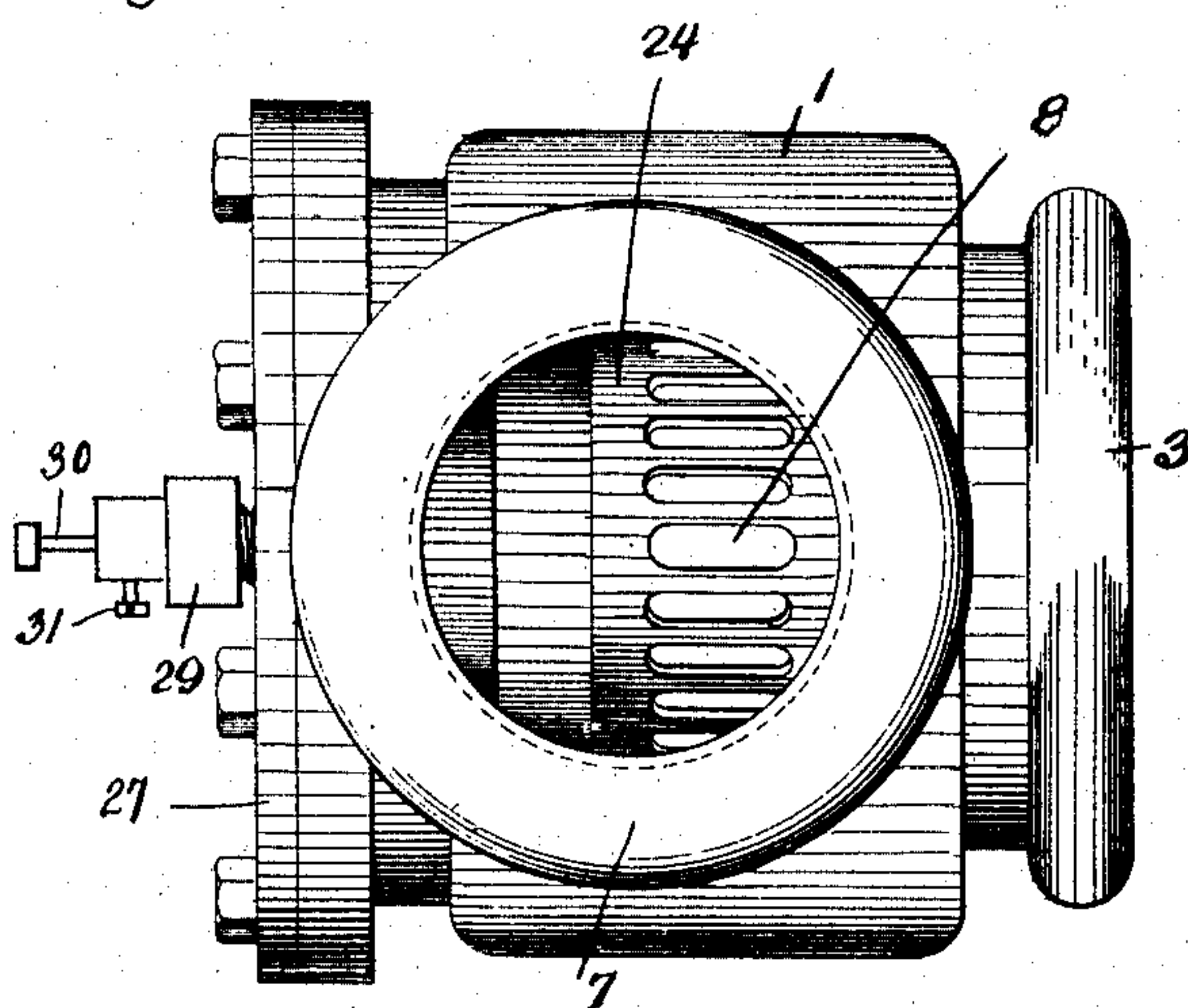
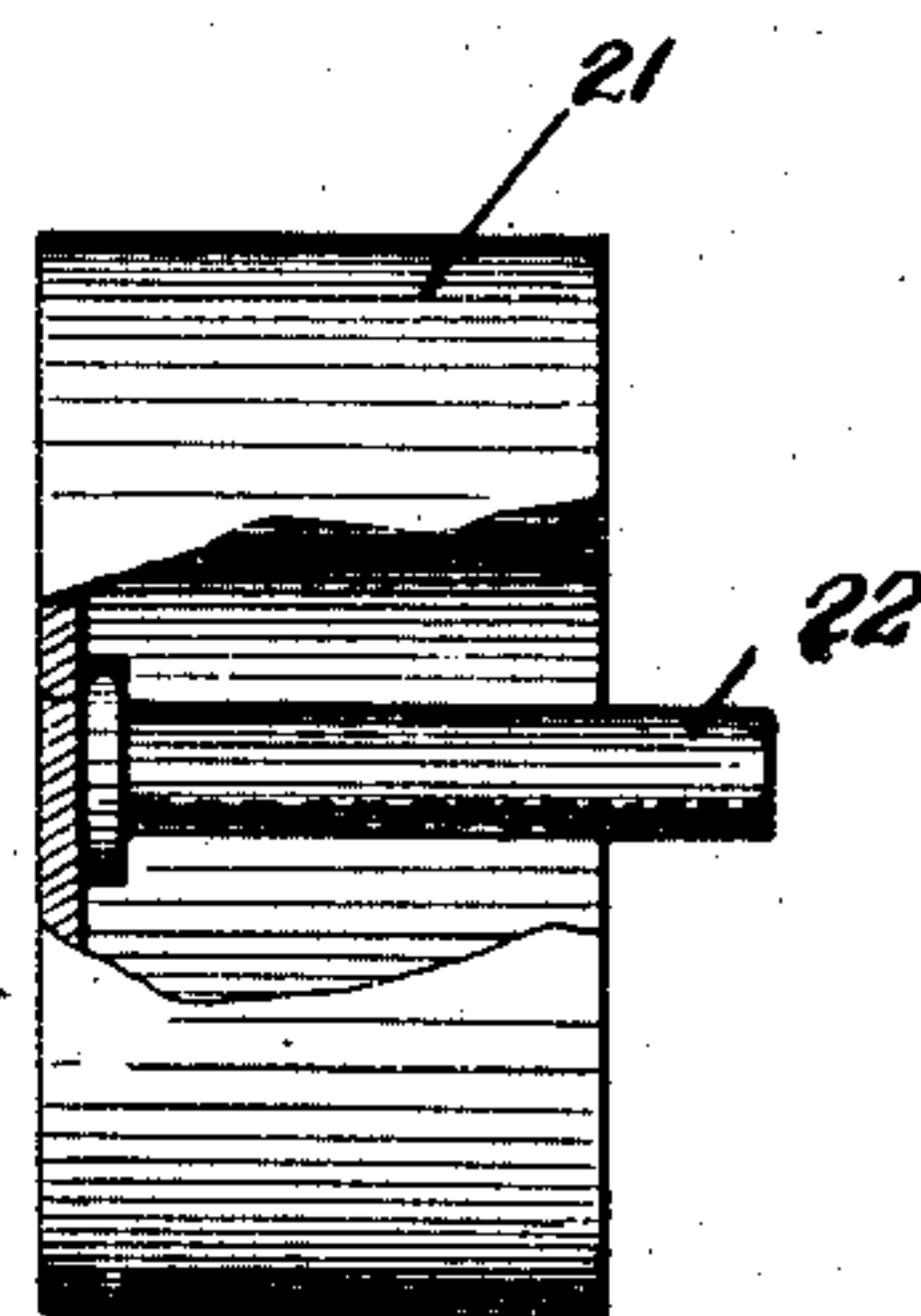


Fig. 8.



WITNESSES:

A. H. Rabsaig

A. H. Rabsaig

INVENTORS

George L. Lewis
John R. Frankenberg

By

W. H. Everett & Co.

Attorneys

UNITED STATES PATENT OFFICE.

GEORGE L. LEWIS, OF EDGEWOOD, AND JOHN R. FRANKENBERG, OF PITTSBURG,
PENNSYLVANIA.

GAS-REGULATOR.

No. 874,017.

Specification of Letters Patent.

Patented Dec. 17, 1907.

Application filed March 20, 1907. Serial No. 363,369.

To all whom it may concern:

Be it known that we, GEORGE L. LEWIS and JOHN R. FRANKENBERG, citizens of the United States of America, residing at Edgewood and Pittsburg, in the county of Allegheny and State of Pennsylvania, have invented certain new and useful Improvements in Gas-Regulators, of which the following is a specification, reference being had therein to the accompanying drawing.

This invention relates to gas regulators, and the invention has for its object to provide a novel device for regulating the pressure of gas as it passes through a meter.

Another object of this invention is to provide a simple and inexpensive gas regulator adapted to be located upon a gas pipe between a meter and gas burner, our improved device being constructed to retard the flow of gas in a pipe and automatically shut off the gas should the pressure of the same decrease to a predetermined point.

With the above and other objects in view, which will more readily appear as the invention is better understood, the same consists in the novel construction, combination and arrangement of parts to be hereinafter more fully described and then specifically pointed out in the appended claims.

Referring to the drawing forming part of this specification, like numerals of reference designate corresponding parts throughout the several views, in which:

Figure 1 is a plan of our improved gas regulator, Fig. 2 is an end view of the same, Fig. 3 is a vertical sectional view of the regulator, Fig. 4 is a cross sectional view of the same, Fig. 5 is a longitudinal sectional view of a regulator illustrating a modified form of construction, Fig. 6 is a cross sectional view of the same, Fig. 7 is a bottom plan, Fig. 8 is an elevation partly in section of a movable head used in connection with the regulator.

To put our invention into practice, we provide a metallic body portion 1 substantially cylindrical, said body portion having a bore or cylinder 2, terminating in an interiorly threaded nipple 3. The opposite end of the bore or cylinder 2 is closed by a cap 4, said cap being suitably secured to the body portion 1 as at 5.

Formed within the body portion 1 and surrounding the bore or cylinder 2 is a chamber 6, said chamber communicating with an interiorly threaded nipple 7 formed at right angles to the nipple 3:

The side walls of the cylinder or bore 2 are provided with a plurality of circumferentially arranged oblong openings or slots 8, said openings or slots establishing communication between the bore or cylinder 2 and the chamber 6. The top of the body portion 1 is provided with an enlargement 9 having a compartment 10 formed therein, said compartment communicating with the chamber 6 and with the cylinder or bore 2. Detachably mounted in the enlargement 9 transversely thereof are two sleeves 11, said sleeves extending into the compartment 10. Journaled in the sleeves 11 is a shaft 12, said shaft being provided with a rectangular enlargement 14 between the ends of said sleeves, and surrounding said enlargement is the spanner end 15 of a lever 16, said lever extending downwardly through the compartment 10 into the bore or cylinder 2, where it has its end bifurcated as at 17, and slotted as at 18. One end of the shaft 12 protrudes outwardly over the body portion and is provided with a detachable arm 19 carrying an adjustable weight 20.

In the bore or cylinder 2 is slidably mounted a head 21, said head carrying a central rearwardly extending sleeve 22, which telescopes a guide rod 23 carried centrally of the cap 4. The rear end of the sleeve 22 is provided with diametrically opposed pins 24, said pins extending into the slots 18 of the lever 16.

To place our improved regulator in use, the gas pipe leading from the meter is connected to the nipple 3 while the pipe leading to the gas burner is connected to the nipple 7. The weighted arm 19 normally maintains the head 21 in the position illustrated in Fig. 3 of the drawings, said head closing the openings or slots 8 and cutting off communication between the nipples 3 and 7. The pressure of gas passing into the nipple 3 and striking the head 21 is adapted to move said head rearwardly a sufficient distance to allow gas to pass through the openings or slots 8 into the chamber 6 and the nipple 7, the distance said

head is moved depending upon the pressure of the gas entering the nipple 3. By adjusting the weight 20 upon the arm 19, the head 21 can be held at a certain tension to resist and retard the gas entering the nipple 3, therefore preventing a free flow of gas that would otherwise take place if the head 21 was dispensed with.

By referring to Fig. 4 of the drawings, it will be observed that we form the cylinder or bore 2 eccentric with relation to the cylindrical body portion 1, therefore providing free and easy passage for the gas within the chamber 6, towards its exit, after the gas has passed through the openings or slots 8.

In Figs. 5 to 8 inclusive, we have illustrated a slight modification of our invention, wherein the weighted arm 19, shaft 12 and lever 16 are dispensed with and the interior of the cylindrical body portion 1 slightly modified to conform to the structure which we use in lieu of the weighted arm 19. Instead of making the cylinder or bore 2, the entire length of the body portion 1, we simply form a collar or cylindrical shell 24 within the body portion, the chamber 6 being in direct communication with the interior of the cylindrical body portion and the nipple 7. The collar 24 is provided with openings or slots similar to the openings or slots 8 previously described, and in the bore or cylinder 25 of said collar are mounted a head and sleeve similar to the preferred form, said sleeve telescoping a guide rod 26 carried by a cap 27, said cap being slightly different from the cap 3 inasmuch as it is provided with a plug 28 having a conventional form of stuffing box 29. Extending through the stuffing box and plug is an adjustable rod 30, said rod being normally held in a fixed position by a screw 31. The rod protrudes into the cylindrical body portion and is provided with a head 32 surrounding the guide rod 26, said head bearing against the coiled spring 33 which surrounds the guide rod 26 and the sleeve 22. The coiled spring 33 is employed to normally hold the head 21 in a seat 34 formed at the inner end of the nipple 3. The head 21 is adapted to close the openings or slots 8 when the gas supply is shut off, and move rearwardly when the gas is turned on.

In the preferred form the position of the weight 20 upon the arm 19 governs the flow of gas into the nipple 7 while in the modified form, the tension of the spring 33 accomplishes the same purpose.

It will be apparent from the illustration of our invention, that we have devised a simple and inexpensive structure for positively retarding the flow of gas through a meter, thereby really decreasing the action of a meter and reducing the expense of using gas as a fuel or for illuminating purposes.

We do not care to confine ourselves to the two forms of our invention as illustrated, as various changes in the size, proportion and minor details of construction as are permissible by the appended claims, may be resorted to without departing from the spirit and scope of the invention.

What we claim and desire to secure by Letters Patent, is:

1. A gas regulator consisting of a cylindrical body portion having interiorly threaded nipples, said body portion having a bore or cylinder formed therein the side walls of which are provided with circumferentially arranged openings, said body portion having a chamber formed therein surrounding said bore or cylinder and communicating therewith and with one of said nipples, a cap carried by said body portion, a guide rod carried thereby, a head slidably mounted in said bore or cylinder and having a sleeve adapted to telescope said guide rod, and means to normally hold said head over said opening, said means consisting of a revoluble shaft, a weighted arm carried thereby, and a bifurcated lever connecting with said sleeve and with said shaft.

2. A gas regulator consisting of a cylindrical body portion having interiorly threaded nipples, said body portion having a bore or cylinder formed therein, the side walls of which are provided with circumferentially arranged openings, said body portion having a chamber formed therein surrounding said bore or cylinder and communicating therewith and with one of said nipples, a cap carried by said body portion, a guide rod carried thereby, a head slidably mounted in said bore or cylinder and having a sleeve adapted to telescope said guide rod, and means engaging said head to normally hold the same over said openings.

3. A gas regulator embodying a body portion having nipples, said body portion having a cylinder or bore formed therein eccentric with said body portion, a chamber surrounding said bore or cylinder and communicating therewith, a head slidably mounted in said bore or cylinder, a cap carried by said body portion, means carried by said cap to guide said head in its movement, means protruding into said body portion for normally holding said head in a fixed position, and means to adjust the last named means.

4. In a gas regulator, a body portion having a cylinder formed therein, a chamber surrounding said cylinder and communicating therewith, a head slidably mounted in the bore of said cylinder, and means engaging said head to normally hold the same in position to close the inlet to the cylinder of said body.

5. In a gas regulator, a body portion having an inlet and an outlet at right angles to

each other, said body portion having a cylinder formed therein, a chamber surrounding said cylinder and communicating therewith, a stationary guide-rod extending
5 axially of the cylinder, a head slidable on said guide-rod, and adjustable means for normally holding said head in position to close the inlet.

In testimony whereof we affix our signatures in the presence of two witnesses.

GEORGE L. LEWIS.

JOHN R. FRANKENBERG.

Witnesses:

MAX H. SROLOVITZ,

K. H. BUTLER.