

No. 664,739.

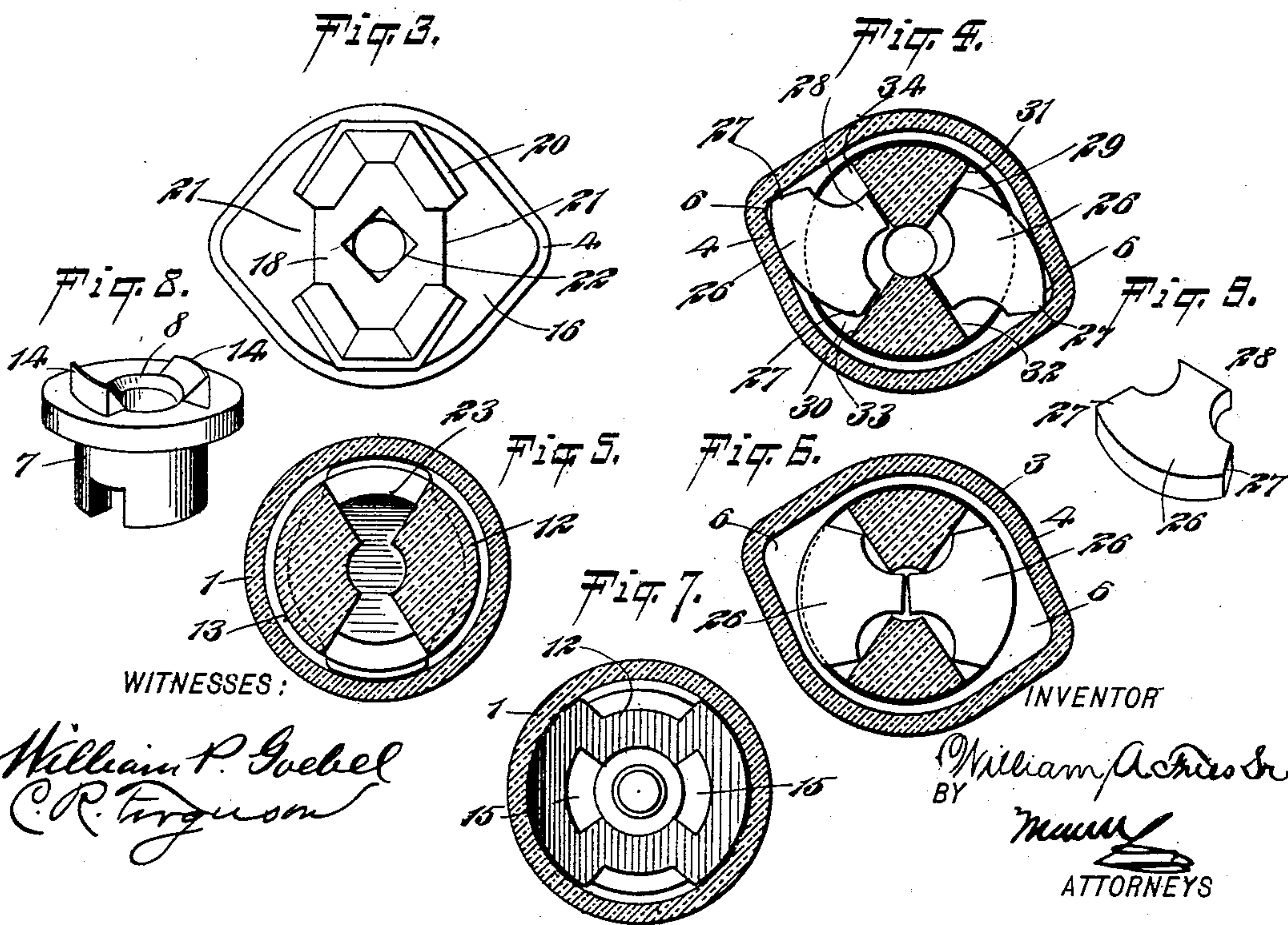
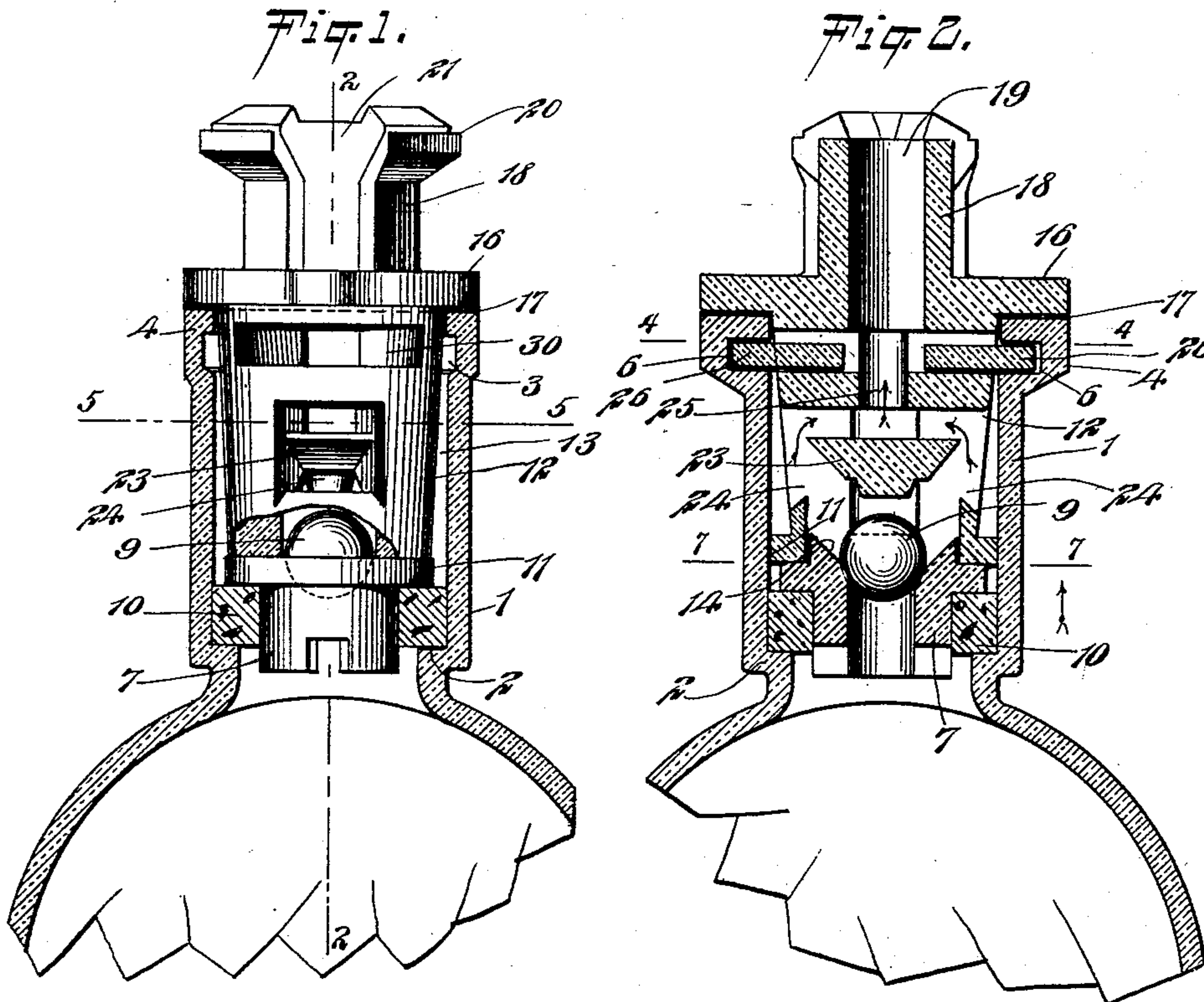
Patented Dec. 25, 1900.

W. A. FRIES, SR.
BOTTLE.

(Application filed Jan. 16, 1900.)

(No Model.)

2 Sheets—Sheet 1.



WITNESSES:

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2 Sheets—Sheet 2.

Fig. 11.

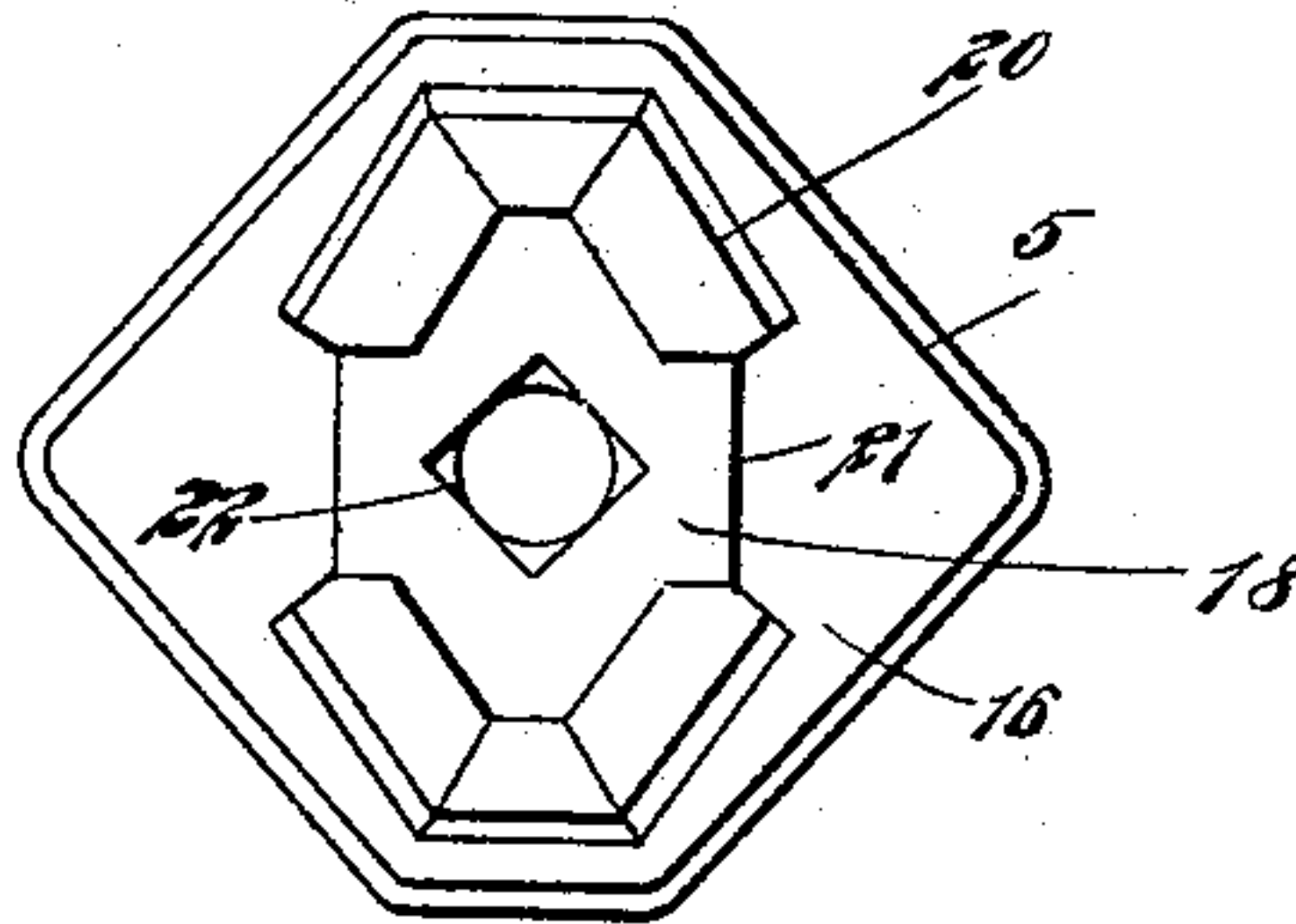


Fig. 10.

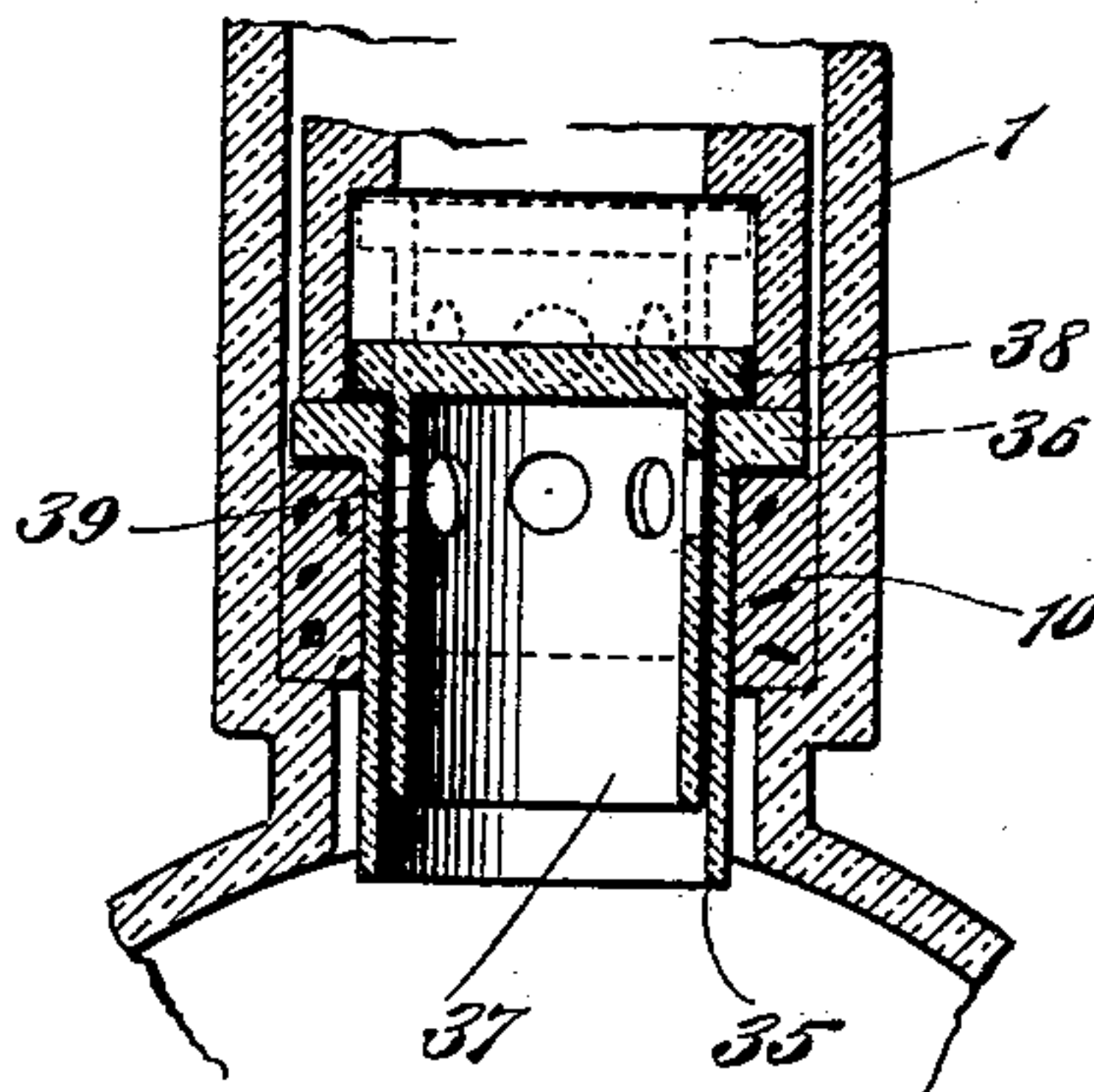


Fig. 12.

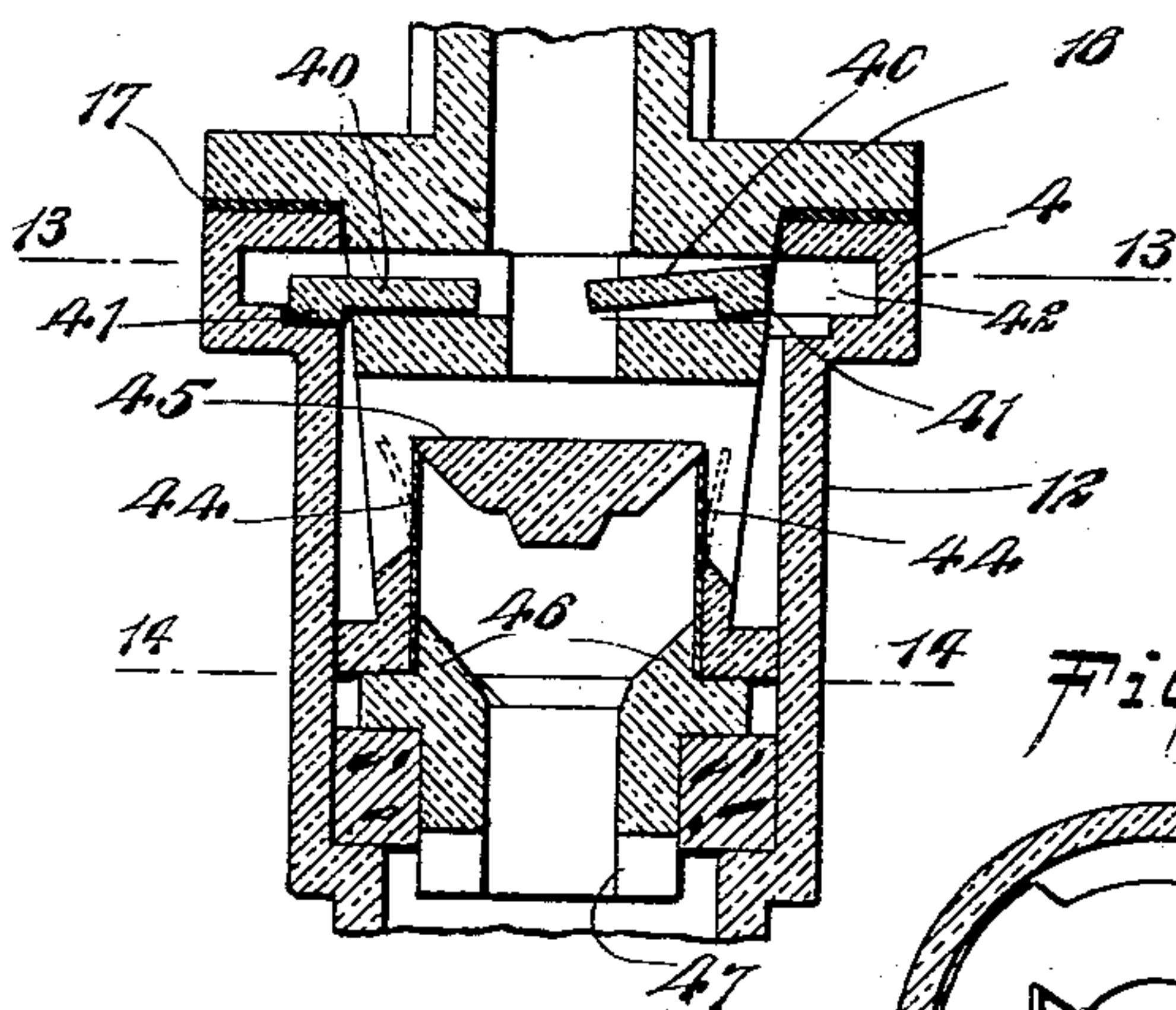


Fig. 13.

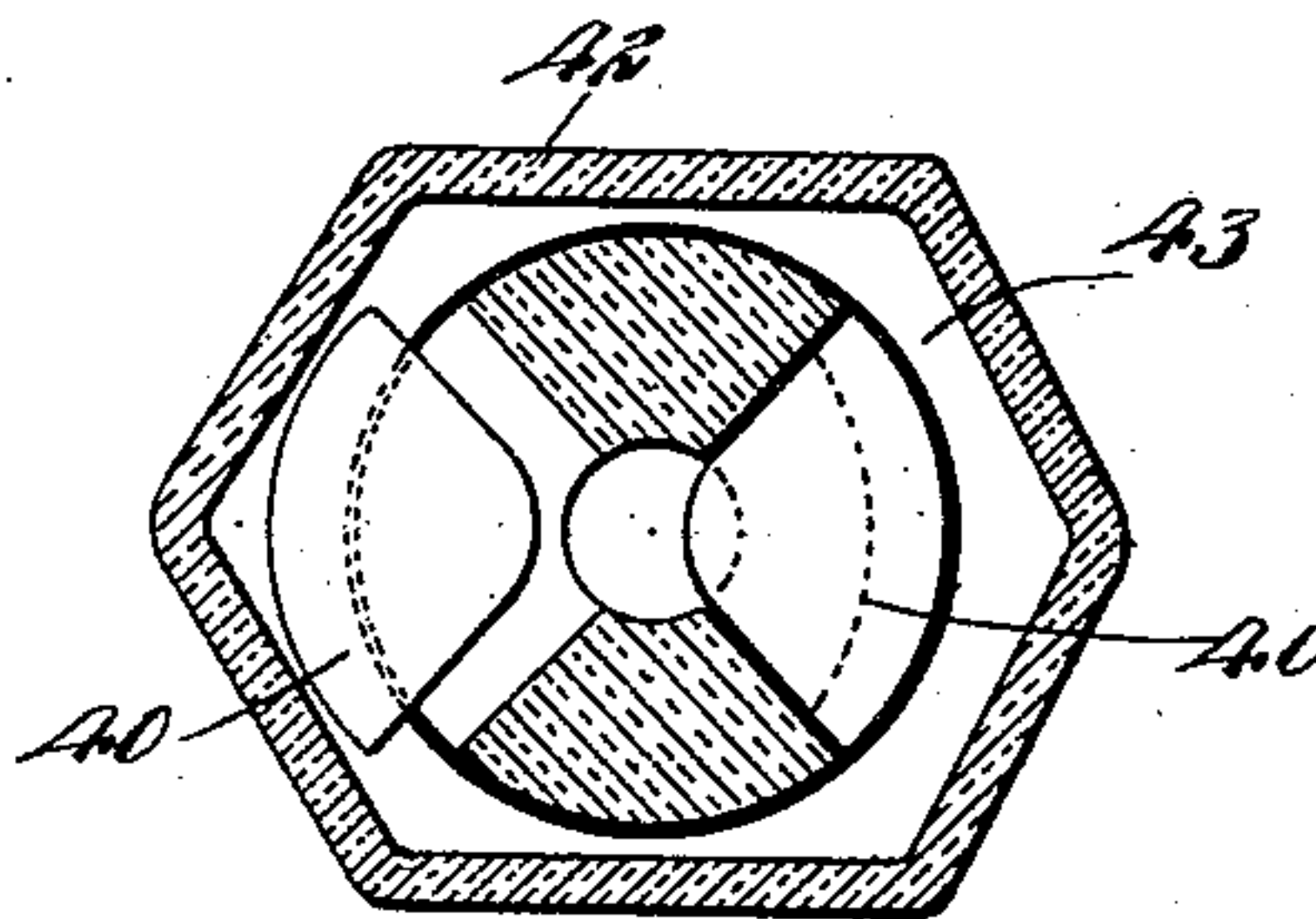
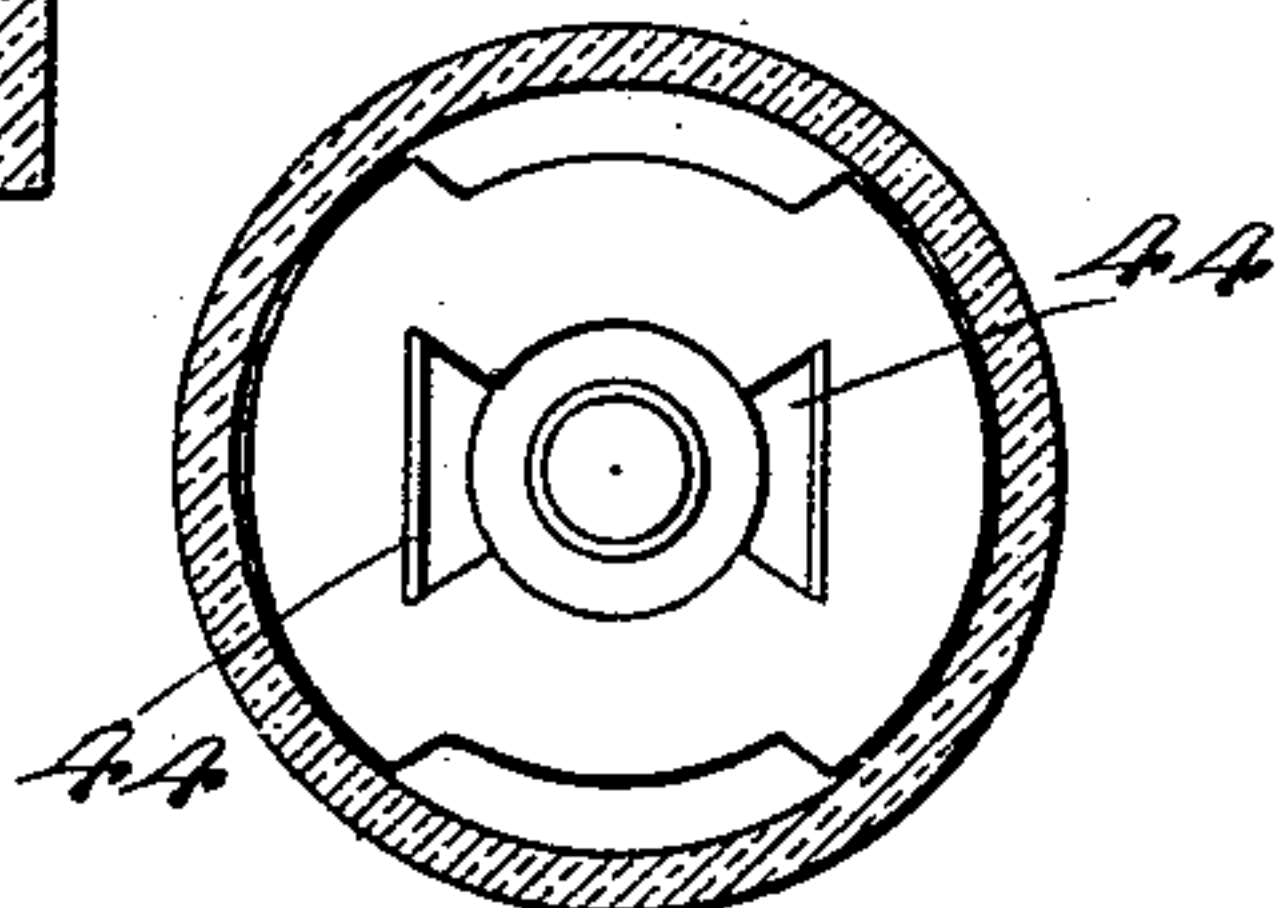


Fig. 14.



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UNITED STATES PATENT OFFICE.

WILLIAM ARMSTRONG FRIES, SR., OF NEW YORK, N. Y.

BOTTLE.

SPECIFICATION forming part of Letters Patent No. 664,739, dated December 25, 1900.

Application filed January 16, 1900. Serial No. 1,651. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM ARMSTRONG FRIES, Sr., a citizen of the United States, and a resident of the city of New York, borough of Brooklyn, in the county of Kings and State of New York, have invented a new and Improved Bottle, of which the following is a full, clear, and exact description.

This invention relates to improvements in bottles of the non-refillable class; and the object is to provide a bottle of this character that shall be practical and comparatively cheap to make and so constructed that the refilling of the bottle will be effectively prevented, and, further, to provide a novel locking mechanism for the valve-casing.

Some of the patented devices of the above-mentioned class cannot be made by the ordinary methods of blowing and molding and others can be made only with great difficulty, making the cost so great that they are not commercially practical.

I will describe a bottle embodying my invention and then point out the novel features in the appended claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the figures.

Figure 1 is a sectional elevation of a bottle embodying my invention. Fig. 2 is a section on the line 2 2 of Fig. 1. Fig. 3 is a top view of the bottle. Fig. 4 is a section on the line 4 4 of Fig. 2. Fig. 5 is a section on the line 5 5 of Fig. 1. Fig. 6 is a section on the same line as Fig. 4, but showing parts in a different position. Fig. 7 is a section on the line 7 7 of Fig. 2. Fig. 8 is a perspective view of a valve-seat employed. Fig. 9 is a perspective view of a locking-key employed. Fig. 10 is a vertical section of a modified form of valve. Fig. 11 is a plan view of a modified form of valve-casing top. Fig. 12 is a vertical section of a modified form of valve and locking devices. Fig. 13 is a section on the line 13 13 of Fig. 12, and Fig. 14 is a section on the line 14 14 of Fig. 12.

Referring to the drawings, 1 designates the neck portion of a bottle having an interior annular shoulder 2 in its lower portion and having at its upper end an annular extension, in which is formed a channel 3 for receiving

a locking device, as will be hereinafter described. This upper annular extension 4 is preferably made elliptical, as shown in plan in Fig. 3; but it may be made angular, as indicated at 5 in Fig. 11, in which figure said top portion is made six-sided. The object in making this upper portion of irregular outline is to prevent the possibility of attaching a pipe or tube thereto, which might by some possible means be operated to force liquid into the bottle. The channel 3 corresponds in shape to this upper portion 4, and therefore it is provided at opposite sides with offsets 6.

Arranged in the lower portion of the neck 1 is a tube 7, having a valve-seat 8 at its upper end for receiving a ball-valve 9. Surrounding this tube 7 is a washer 10, of cork or similar yielding material, which fits snugly within the neck of the bottle and rests upon the shoulder 2, and the tube 7 is provided at its upper end with an annular flange 11, which engages upon the upper side of the washer.

Arranged in the neck portion of the bottle is a valve-casing, comprising a body portion 12, which is shown as longitudinally tapered, the smaller end being downward, thus providing an air-space 13 between it and the inner surface of the bottle-neck. This will permit the liquid to more readily flow out of the bottle. On the upper end of the tube 7 are segmental lugs 14, adapted to engage in similarly-shaped recesses 15, formed at the lower end of the body portion 12 of the valve-casing. (See Fig. 7.) By this arrangement a rotary motion of the valve-casing relatively to the tube is prevented. At the upper portion of the body 12 a flange 16 is formed, which rests upon the upper end of the bottle-neck and corresponds in outline to the outline of the portion 4. A packing 17, preferably of cotton wicking, is placed between the flange 16 and the upper surface of the portion 4 of the bottle-neck. This packing will effectually prevent any leakage between said parts. A mouth portion 18 extends upward from the flange 16, and this mouth portion has a discharge-opening 19. This upward extension 18 is of irregular outline, as plainly indicated in Fig. 3, and at its top it may have opposite outwardly-extended flange portions 20, between which and extended down the sides of said portion 18 are channels 21. By

thus forming the part 18 a tube cannot be readily placed thereon by means of which liquid might possibly be forced into the bottle. If any liquid were forced through the pipe, it would discharge through the channels 21. The upper portion of the outlet 19 is preferably made angular, as indicated at 22, so that a small pipe or discharge-nozzle cannot be easily fitted thereon.

Arranged in the body portion 12, slightly above the valve 9, is a stop-bridge 23, which will prevent the valve from moving too far away from its seat, and will also prevent the introduction of a wire or similar instrument to dislodge or force the ball-valve out of its seat for the purpose of refilling the bottle. Opposite ports 24 are formed in the wall of the body portion 12, so that liquid after passing through the tube 7 will pass outward through said ports 24, thence over the top of the bridge 23, and thence through a reduced opening 25 to the mouth or discharge-opening 19. The object in making the opening 25 of reduced diameter or of smaller diameter than the ball-valve is to prevent the introduction of a tool adapted to drill a hole through the bridge 23 sufficiently large to permit the ball to be removed through it and also to prevent the insertion of a wire to engage around the valve to move it from its seat.

The valve-casing or body portion 12 is held in place by means of keys 26. As shown in the drawings, these keys 26 have bearing-points 27, extended in opposite directions from a stem section or portion 28. The valve-casing or body portion is provided at a point opposite the channel 3 with recesses 29 30, in which the keys are movable. The recess 29 has opposite divergent walls 31 32, and the recess 30 has opposite divergent walls 33 34.

When placing the valve-casing in the neck of a bottle, the keys 26 must be in the position indicated in Fig. 6. Then after the said body portion shall have been properly placed in the neck portion a flat piece of metal or similar device is to be inserted through the opening 19 and engaged with the ends of the stem portions 28 of the keys, so that by giving a rotary motion to said flat piece of metal or the like the keys will be moved bodily outward until the projections 27 at one side engage in the offsets 6 in the channel 3, while the other or opposite projections 27 will engage with their flat surfaces against the walls of the recesses 29 and 30, and the stem portions 28 will engage against the other walls of said recesses, as plainly indicated in Fig. 4. When the keys are in this position, it will not be possible to release them.

All of the above-described parts excepting the washer 10 are to be made of glass, although it is obvious that they may be made of other material without departing from the spirit of my invention.

Instead of the ball-valve 9 I may employ a valve such as shown in Fig. 10. This con-

sists of a tubular valve-casing 35, having at its upper end an annular flange 36 to engage upon the cork washer 10, and movable in this casing 35 is a valve 37, closed at its top and having an annular flange 38 to engage upon the upper end of the tube 35 when the valve 37 is in its lowermost position, and when in this position ports 39 through the wall of the valve 37 will be closed by said tube 35, as indicated in Fig. 10. When the bottle is inverted, the valve 37 will slide in the tube 35, so as to bring the ports 39 above the upper ends of said tube, as indicated by dotted lines in Fig. 10. When the valve is in this position, liquid may flow out through said ports 39 and thence around the flange 36 and out of the bottle, as before described.

In Figs. 12 and 13 I have shown locking-keys for the valve-casing as consisting of segmental plates 40, having at the outer edge downwardly - extended flanges 41. These keys 40 are movable outward in recesses 42, and when so moved outward, as indicated at the left-hand side of Fig. 13, the flange portions 41 will engage their inner edges over or against the sides of the valve-casing. The said flange portions being projected into the recesses or channels 42 will prevent the valve-casing or body portion from being moved outward, and owing to the engagement of the flange portions 41 with said valve-casing the keys will be prevented from inward movement or toward the center of the casing. In this example of my improvement, in addition to the ball-valve or without employing said ball-valve, I may use flexible valves 44. A good material for these valves is thin sheets of mica. The upper free ends of these valves 44 engage normally against the sides of the bridge 45, which in this instance has its opposite sides made parallel. The valves 44 are held in place by having their lower portions engaged between the inner surface of the valve-casing and lugs 46 on a tube 47, the outer surfaces of these lugs and the corresponding surface with which the outer sides of the valves 44 engage being made straight or parallel, as indicated in Fig. 14. With this construction when the bottle is tilted or inverted pressure of the liquid will force the valves open, permitting said liquid to pass out.

In operation the bottle is to be filled before the device is placed in the neck thereof. The tube 7, with its surrounding washer, is then introduced into the neck of the bottle along with the ball-valve, after which the body portion 12 is introduced with the keys supported, as indicated in Fig. 6, and then when the said body portion is fully inserted the keys are to be turned, as before mentioned. After the parts are so placed a small cork may be placed in the outlet or mouth 19, and, if desired, a suitable seal may be placed over the cork. By making this small outlet for the mouth 19 a small cork is used. Therefore the corks employed will be of very much less

expense than large corks, such as are ordinarily employed for bottles. A label strip or the like may be cemented around the parts 4 and 16, covering the joint between the same.

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

1. A bottle, having an interior channel at its upper portion, the said channel having 10 offset portions, a valve-casing adapted to be seated in said upper portion, recesses formed in said casing and adapted to register with said channel, the said recesses having opposite divergent walls, and substantially T- 15 shaped keys arranged in said recesses and designed to be turned to project into the offsets of the channel to lock the valve-casing in place, substantially as specified.

2. A bottle, having an interior channel at 20 the upper portion of its neck, the said channel having opposite offsets, a valve-casing adapted to be seated in the neck and having recesses, the opposite walls of said recesses being divergent, and locking-keys movable 25 in said recesses and in the offsets of the channel, said locking-keys each having a shank portion and oppositely-extended projections, one projection to engage when turned in the divergent portions of the recesses and the other

projection with the shank to engage with the 30 valve-casing, substantially as specified.

3. In a bottle, a valve-casing arranged in the neck thereof, a flange on said casing for engaging upon the upper end of the bottle-neck, the said flange having an irregular out- 35 line, and a mouth portion extended from the flange, and also having an irregular outline, substantially as specified.

4. In a bottle, a valve-casing secured in the neck portion thereof, the outlet or mouth 40 of said valve-casing being made angular in cross-section and a mouthpiece extended from the casing and having an irregular outline, substantially as specified.

5. A bottle having a neck portion attached 45 to the body, an extension-neck portion of irregular outline adapted to be secured to the first-named neck portion, a valve-casing attached to the extension-neck and extended 50 into the bottle-neck, and a valve in said casing, substantially as specified.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

WILLIAM ARMSTRONG FRIES, SR.

Witnesses:

JNO. M. RITTER,

C. R. FERGUSON.