

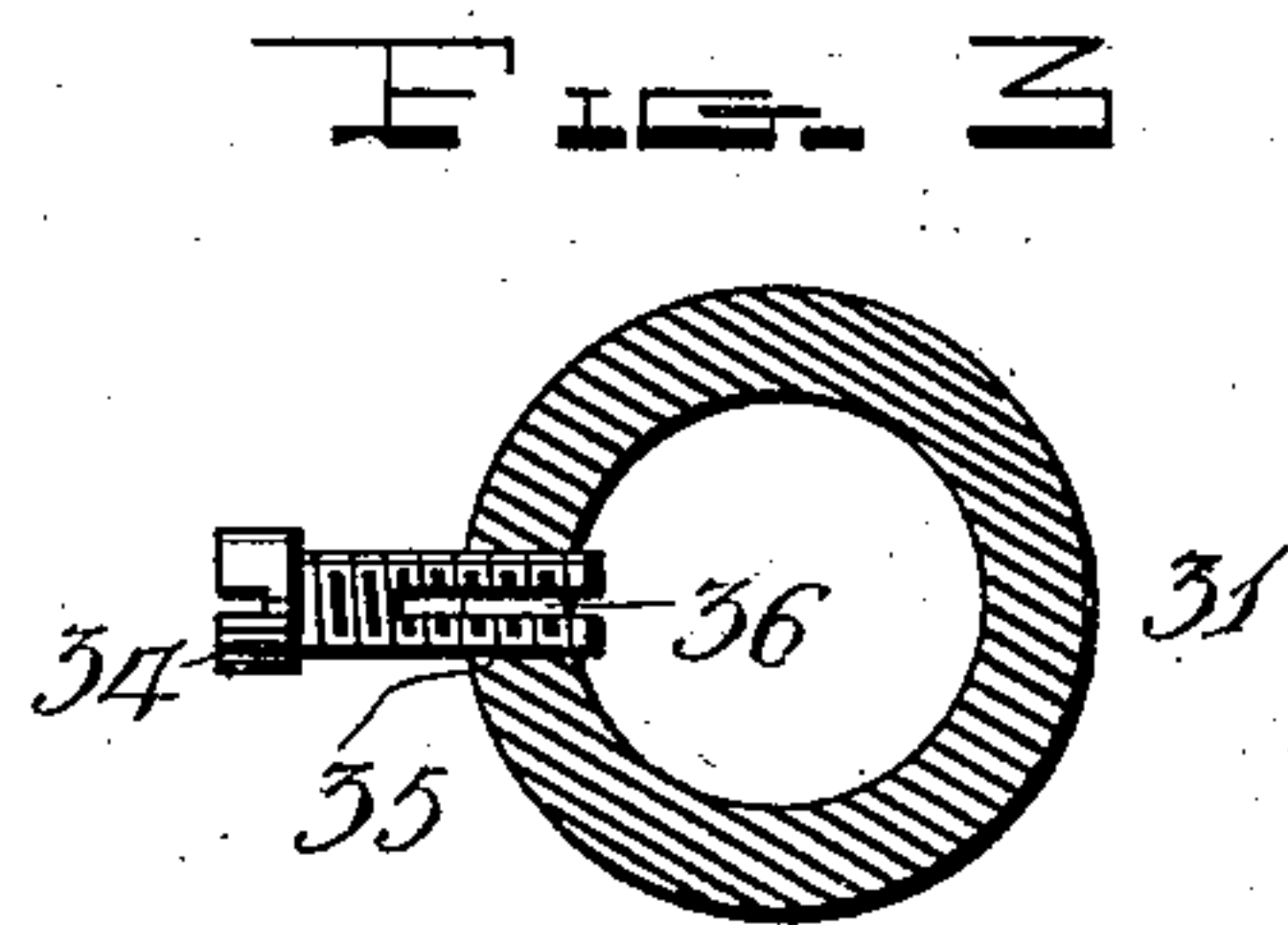
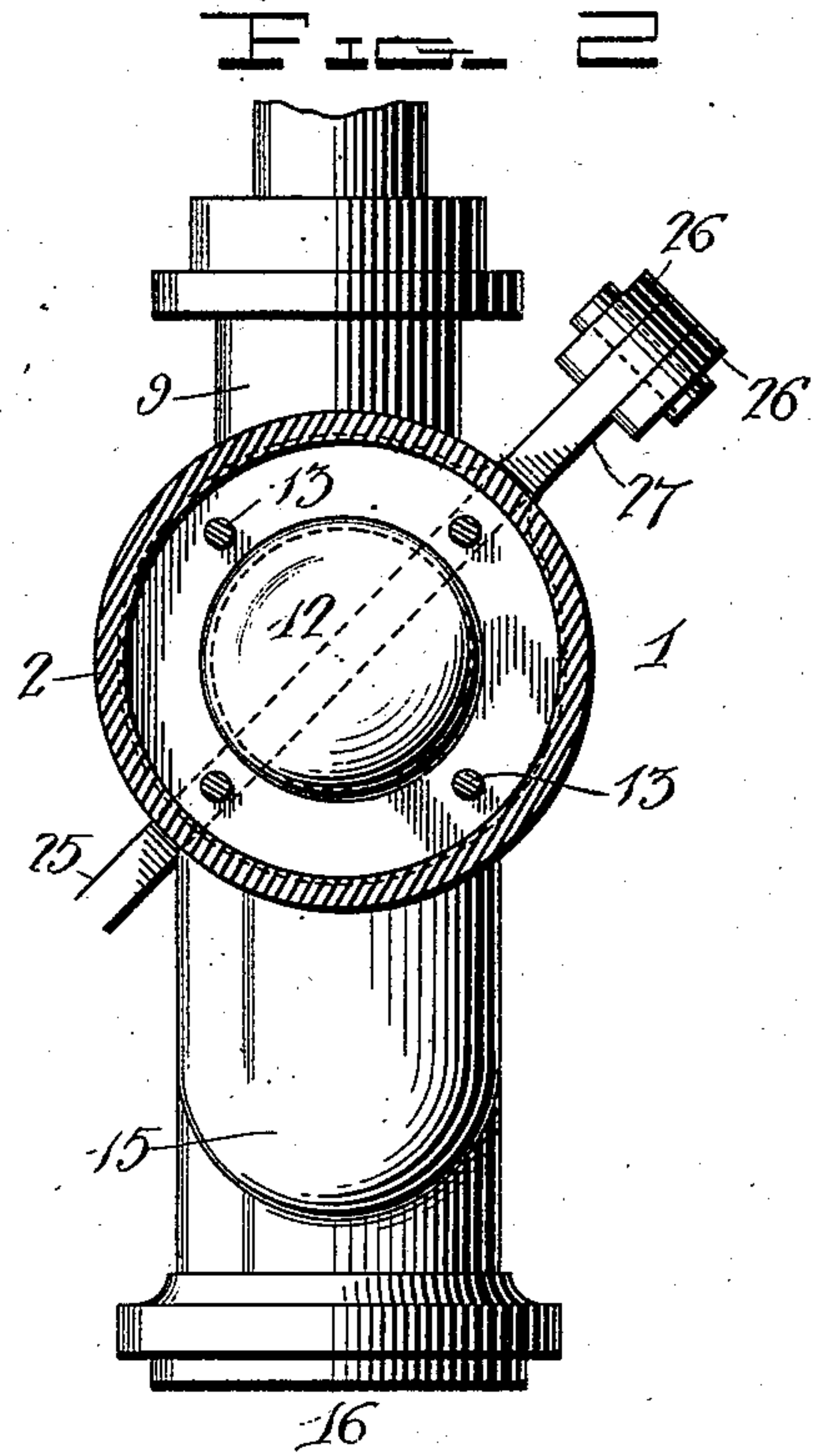
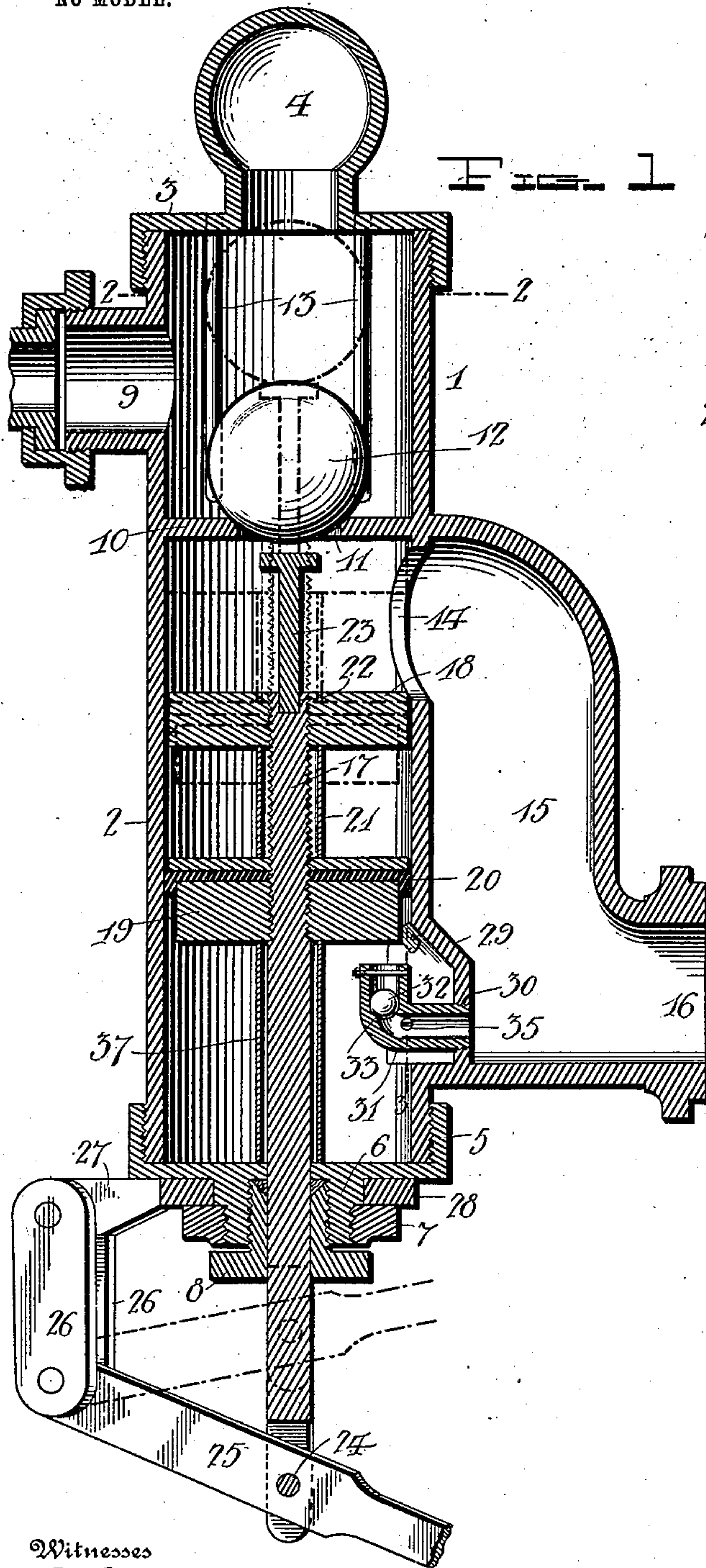
No. 723,612.

PATENTED MAR. 24, 1903.

H. O. KRAKOW.  
WATER CLOSET.

APPLICATION FILED JULY 17, 1902.

NO MODEL.



Witnesses

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# UNITED STATES PATENT OFFICE.

HENRY O. KRAKOW, OF DUBUQUE, IOWA.

## WATER-CLOSET.

SPECIFICATION forming part of Letters Patent No. 723,612, dated March 24, 1903.

Application filed July 17, 1902. Serial No. 115,986. (No model.)

*To all whom it may concern:*

Be it known that I, HENRY O. KRAKOW, a citizen of the United States, residing at Dubuque, in the county of Dubuque and State of Iowa, have invented certain new and useful Improvements in Water-Closets; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as it appertains to make and use the same.

This invention relates to water-closets, and contemplates an improved appliance for flushing the bowl, the object of the improvement being the production of a simple, durable, and reliable structure which dispenses with the usual overhead water-tank.

The nature of the improvement will be readily comprehended, reference being had to the following detailed description and to the accompanying drawings, illustrating the invention in its preferred form, it being understood that various modifications may be made without departing from the spirit of the invention as defined by the claims.

In the drawings, Figure 1 is a vertical central sectional view of a flushing appliance embodying my invention. Fig. 2 is a horizontal sectional view on line 2 2 of Fig. 1. Fig. 3 is a detail sectional view on line 3 3 of Fig. 1.

Referring to the drawings by numerals, 1 denotes a casing having a main cylindrical body 2 the upper and lower ends of which are open and externally threaded to receive threaded heads, the upper one, 3, being equipped with an air-chamber 4, and the lower one, 5, having a neck 6, a portion of which is reduced and threaded to receive a nut 7. The lower head is apertured to slidably receive a piston-stem, presently to be described, the aperture in the neck being enlarged and threaded and receiving a packing-nut 8 to provide a fluid-tight joint around the stem. Near the upper end of the cylinder 2 is an opening 9 for the admission of water from the supply-pipe. Below the opening is a horizontal partition 10, having an opening 11, at which is a seat for a ball-valve 12, the latter being guided in its movements to and from the seat by bars 13 13, screwed at one end into and depending from the head 3. Below the partition 11 is an opening 14, formed in the cylinder-wall, preferably at the

side opposite to that in which is provided the inlet-opening 9. The cylinder communicates by the opening 14 with a chamber 15, the walls of which are preferably formed integrally with the cylinder-wall. At the bottom of the chamber is an opening 16 for the discharge of water to the bowl through a suitable connection.

The piston-stem 17, which, as previously stated, is slidable in the packed opening of the lower head 5, is threaded at its upper portion and to it are secured two pistons, the upper one, 18, loosely fitting the cylinder and the lower one, 19, fitting the cylinder closely, being provided with a leather packing 20. The pistons are separated from each other by the threads on the stem and by a spacing-sleeve 21, which encircles the stem. In the upper end of the stem is a socket 22, receiving the lower end of a headed rod 23. To the lower end of the stem is pivoted, by means of a pin 24, a lever 25, one end of which is free and is formed to be conveniently grasped by the hand, and the other end is fulcrumed, by means of links 26 26, to an arm 27 on a ring 28, encircling the neck 6 and confined between the head 5 and nut 7. Obviously by loosening the nut 7 the position of the parts may be shifted to enable the lever to be grasped by either the right or left hand, the nut being again tightened.

In an offset 29 of the cylinder-wall is a threaded opening 30, into which is screwed one end of an elbow 31. The elbow, which affords communication between the cylinder below the piston 19 20 and the chamber 15, is provided with a ball-valve 32, which normally rests on a seat 33 in the elbow-opening to close the stated communication. Below the valve 32 is a controllable air-vent consisting, preferably, of a screw 34, inserted in a threaded opening 35 in the elbow and having a slot 36, forming the air-passage, the area of the passage being controlled by adjusting the screw, as will be readily understood.

In the operation of the appliance the parts, which normally assume the lower position, (shown in full lines in Fig. 1,) are elevated by raising the handle end of the lever to the position shown in dotted lines in said figure. In such lowered position of the parts, the extent of which is limited by a sleeve 37, encir-



clinging the stem 17, the ball-valve 12 is seated, and the flow of water through the cylinder by the opening 11 is checked. Upward movement of the lever, which, as previously stated, is accomplished by hand, elevates the stem and pistons, and through the medium of the rod 23 the valve is unseated. In the elevated position of the parts the piston 18 contacts with the under side of the partition, closing both openings 11 and 14. The pressure and weight of the water, together with the weight of the pistons, stem, lever, and valve, operate to depress the parts, and the openings 11 and 14 being thereby uncovered the water passes to the bowl through such openings, the chamber 15, and the bowl connection. To retard the downward movement of the valve 12, and thereby enable the proper volume of water to pass to the bowl, the elbow 31, previously described, is provided. This elbow affords communication between the cylinder below the piston 19 20 and the outer air through the chamber 15, the bowl connection, and bowl. The upward movement of the piston 19 20 tends to create a partial vacuum in the cylinder below it, which is filled by air entering through the elbow, the incoming air-pressure raising the valve 32 from its seat. In the downward movement of the piston the valve 32 is forced to its seat and the air is compelled to escape by the slot-opening in the screw 34, which opening may be governed in size in the manner stated to regulate the discharge of the air, and consequently the length of time before the ball-valve is seated. By this means the movement of the parts may be readily controlled to effect a greater or less discharge of water, and this regardless of different pressures in water-mains.

It will be noted that all of the parts, including the air-vent elbow, are arranged within the casing, thereby preventing leakage.

The appliance is very simple in construction, and hence may be inexpensively produced and is not liable to disorder. The construction, moreover, is compact and slightly,

and, as before stated, it dispenses with the usual unsightly overhead tank.

I claim as my invention—

1. A flushing appliance for water-closets and the like, consisting of a casing having toward its upper end a water-inlet, an opening with a valve-seat below said inlet and a water-discharge passage leading from below said opening, a gravity-valve at said opening, an impact-piston having means for engaging said valve and movable to said opening to unseat said valve, a piston connected to the impact-piston, a fluid-chamber in which said piston moves, hand means for elevating the pistons, a combined inlet and exhaust passage between the fluid-chamber and water-discharge passage, a gravity inlet-valve in said passage and a restricted controllable outlet below said inlet-valve.

2. A flushing appliance for water-closets and the like, consisting of a casing having at its upper end an air-chamber and toward said upper end a water-inlet and having below said water-inlet an opening with a valve-seat and below said opening a water-outlet communicating with a water-discharge passage, a gravity-valve at said opening, an impact-piston having means for engaging said valve and movable to said opening to unseat said valve, a piston connected to the impact-piston, a fluid-chamber in which said piston moves, an elbow affording a combined inlet and exhaust passage between the fluid-chamber and water-discharge passage, a gravity inlet-valve in said elbow, a restricted controllable outlet in said elbow below the valve, a stem depending from the piston, a lever pivoted to the stem, and a fulcrum-piece for the lever shiftable to position the lever for right or left hand use.

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

HENRY O. KRAKOW.

Witnesses:

W. S. NORTON,  
F. L. BROWNE.