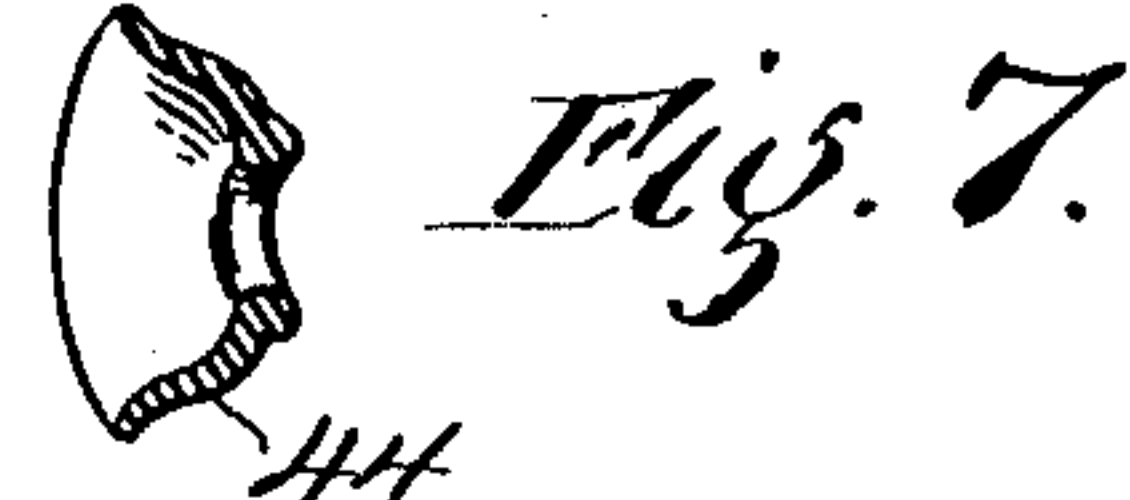
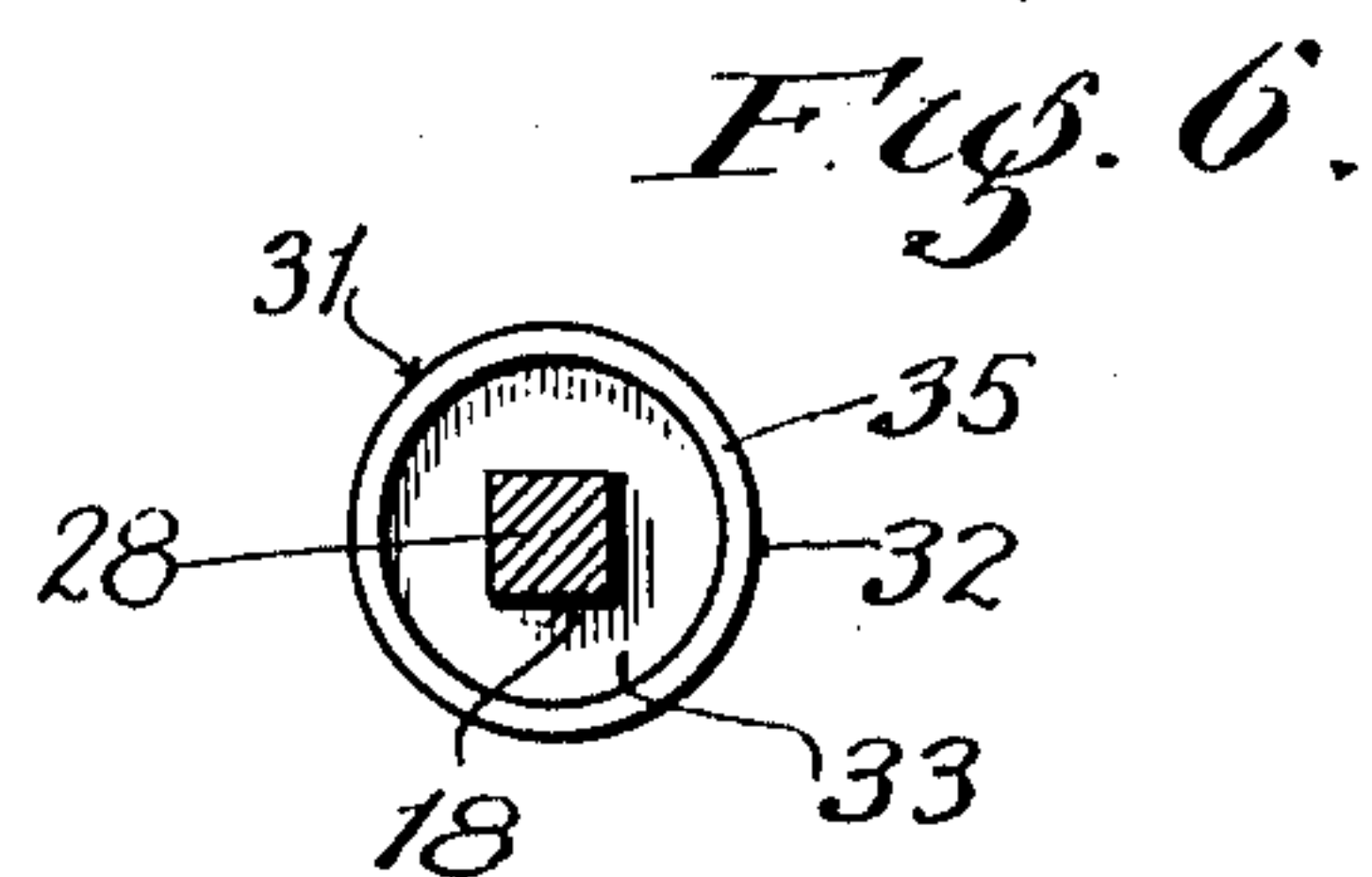
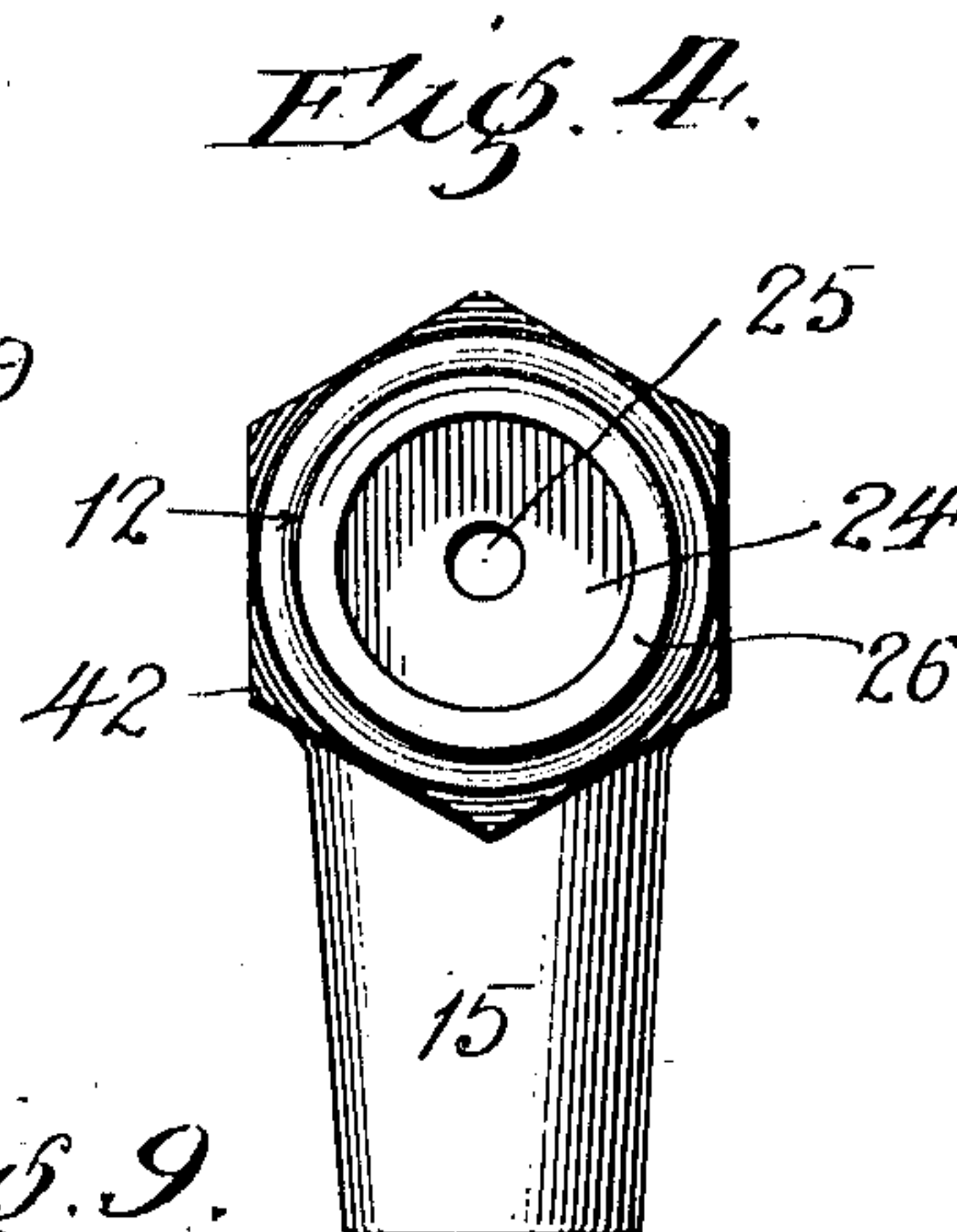
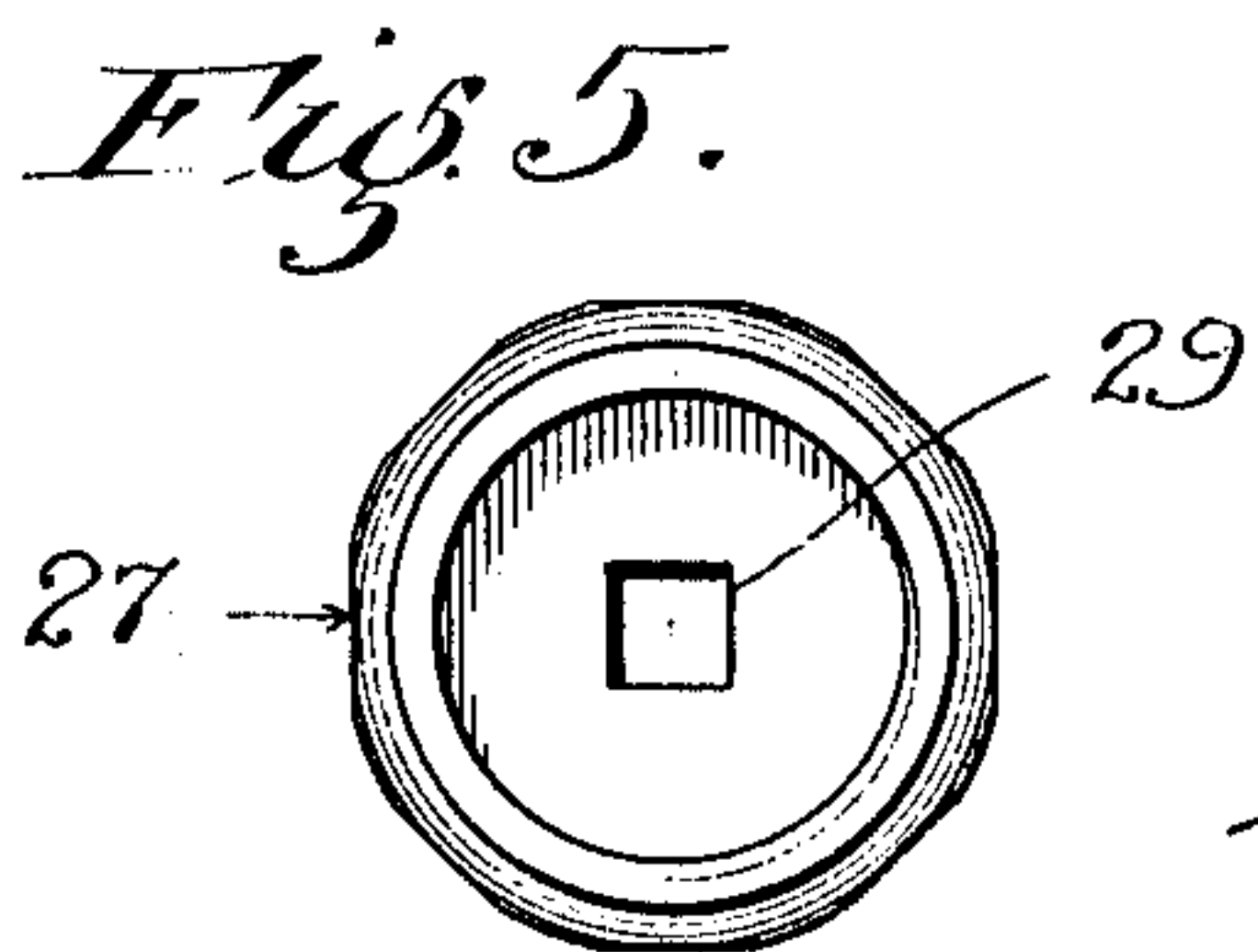
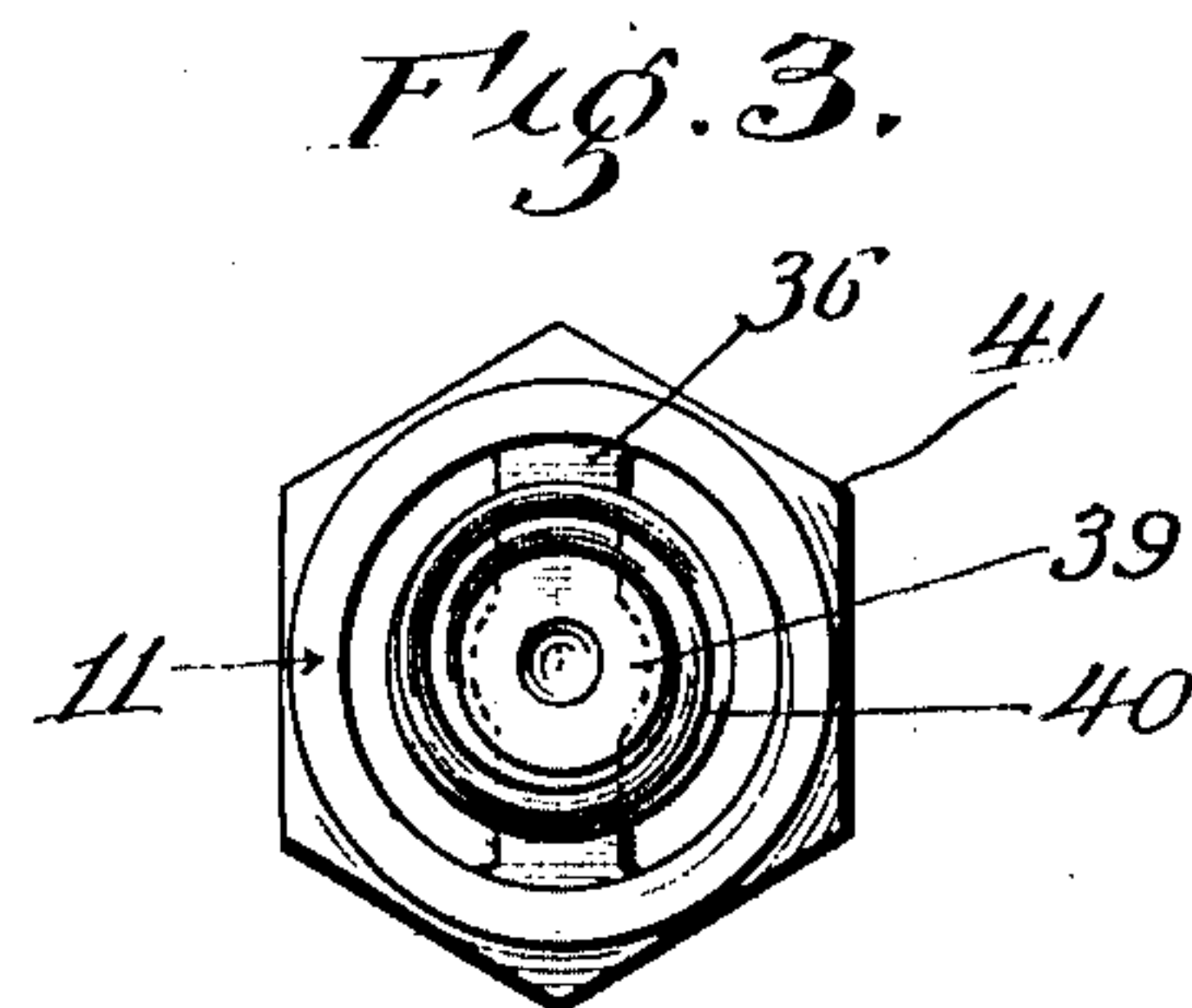
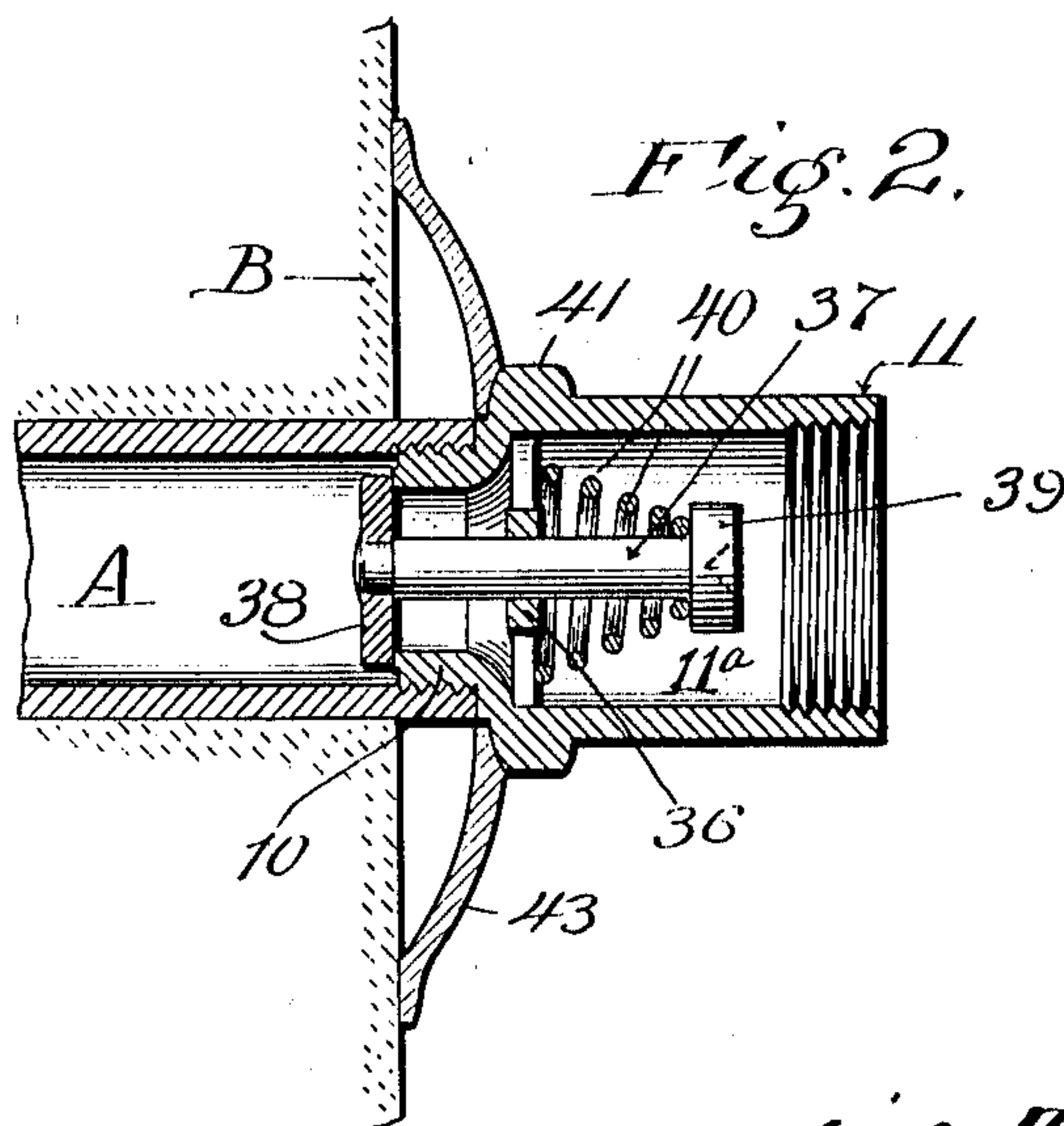
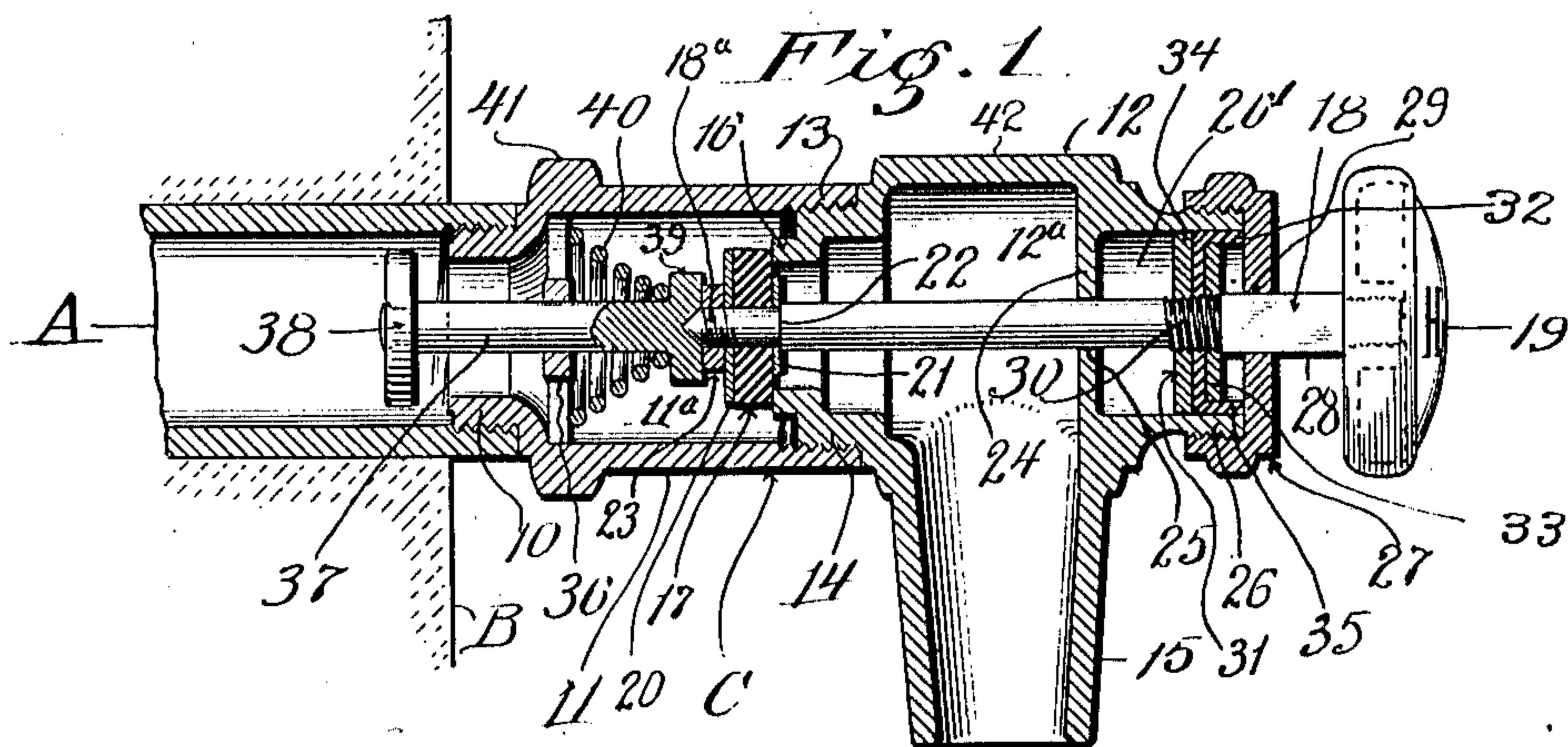


J. J. HANNIGAN.
FAUCET.
APPLICATION FILED MAR. 8, 1909.

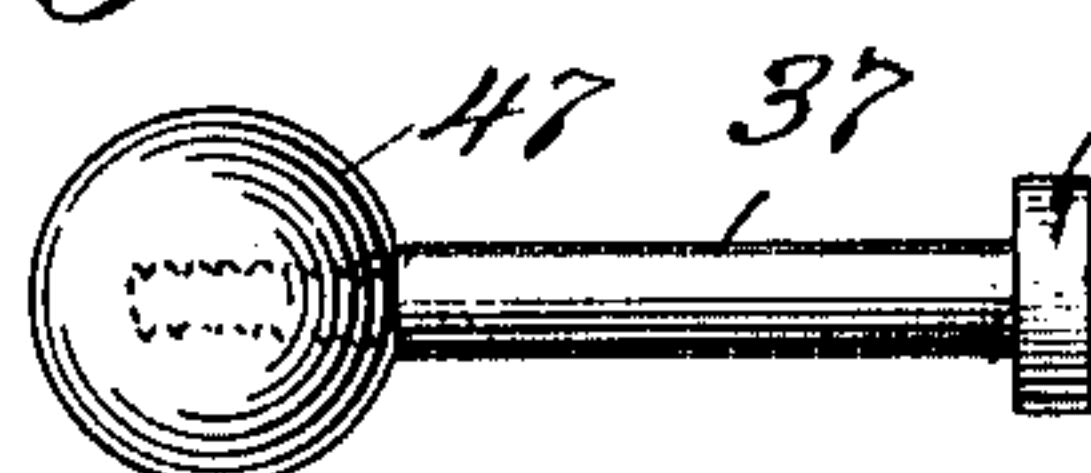
956,082.

Patented Apr. 26, 1910.



Witnesses: *Fig. 9.*

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UNITED STATES PATENT OFFICE.

JOHN J. HANNIGAN, OF CHICAGO, ILLINOIS.

FAUCET.

956,082.

Specification of Letters Patent.

Patented Apr. 26, 1910.

Application filed March 8, 1909. Serial No. 481,969.

To all whom it may concern:

Be it known that I, JOHN J. HANNIGAN, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented new and useful Improvements in Faucets, of which the following is a specification.

This invention relates to faucets and designs to provide an improved faucet for connection with the ordinary service pipe of a house and so arranged that the valve may be unseated by merely pressing upon a button.

Another object is to provide a two part faucet, whereby when said valve becomes worn, one section of the faucet may be detached from the other (without shutting off the water at the base) for the purpose of replacing the worn valve.

Another object is to provide means for preventing the shock or jar caused by the sudden closing of the valve due to the water pressure.

Another object is to provide a simple form of construction which may be readily assembled or taken apart for repairs.

To such ends this invention consists in certain novel features of construction and arrangement, a description of which will be found in this specification, and the essential features of which will be more definitely pointed out in the claims appended hereto.

The invention is clearly illustrated in the drawings furnished herewith, in which—

Figure 1 is a central, vertical, longitudinal section through a faucet containing my improvements and showing the same secured upon the service pipe of a building. Fig. 2 is a similar view with the removable section removed, Fig. 3 is an end view of the auxiliary valve mechanism, Fig. 4 is an end view of the casing of the removable section, Fig. 5 is an end view of a cap, Fig. 6 is an end view of a plunger and showing the valve stem or push rod in cross section, Fig. 7 is a sectional, perspective view of a modified form of cup for the plunger, Fig. 8 is a sectional perspective view of a pneumatic ring which may be used in connection with the device and Fig. 9 is a side view of a modified form of auxiliary valve.

A, represents the end of a water service pipe, which projects out from the wall, marble slab or the like, B, of the building, and C, represents the faucet as a whole, which as shown contains a threaded nipple 10,

which is screwed into the end of the service pipe A. The faucet is made up of two main casings 11, 12, which are united by a screw threaded connection as seen at 13. This connection is made by forming an externally threaded boss 14, upon the casing 12, which is threaded in an internal thread formed upon the end of the casing 11. The casing 12, forms the main body of the faucet and contains a water chamber 12^a, and the usual spout 15, through which the water escapes therefrom.

The chamber 12^a, communicates with the chamber 11^a, in the casing 11, through a nipple 16, against which seats a valve 17, preferably formed of rubber or composition and said valve 17, is actuated by a valve stem or push rod 18, which extends out through the end of the casing 12, and bears a button 19, upon its end which is rigidly secured thereto. The valve 17, is mounted upon a reduced end 18^a, of the push rod 18, and as shown is confined between washers 20, 21, mounted upon the reduced end. The washer 21, bears against the shoulder 22, of the push rod, and the valve and washers are secured in place thereon by a nut 23, which is screwed upon the screw threaded end of the reduced portion 18^a. By pressing inwardly upon the button 19, the valve 17, is forced back from its seat, and water is permitted to enter the main chamber 12^a, and flow out through the spout 15.

The casing 12, is formed with an internal flange 24, which is provided with a central opening 25, through which the push rod extends, and the casing is formed with an externally screw threaded boss 26, which extends beyond the internal flange 24, and provides a chamber 26', which is closed at the end by a cap 27, that is screwed upon the end of the boss 26. The push rod 18, is square in cross section at 28, and the cap 27, is formed with a square aperture 29, through which the square portion of the push rod moves. This arrangement provides means for holding the button in alinement, so that the lettering thereon will be held in an upright position and the stem will be held against turning when the nut 23, is screwed on or unscrewed from the stem. Beyond the squared portion the push rod is provided with a thread 30, upon which is secured a plunger 31, which works in the chamber 26', of the boss 26, and acts to prevent the jarring ordinarily caused by the pressure of the

water in the service pipe in closing the valve. One form of plunger consists in a leather or rubber packing ring 32, which is confined between washers 33, 34, secured upon the screw threaded portion 30, of the valve stem. The packing ring contains an annular flange 35, which fits snugly within the inner wall of the chamber 26', thus providing a compression chamber between the plunger 31, and cap 27. It is evident that when the push rod is pressed inward, the air space between the plunger and cap is increased in size, which then fills with air by reason of the leakage around the valve stem at the point where it passes through the cap. When, however, the push button is released, the water pressure suddenly forces the valve 17, back toward its seat, but the air within the air chamber is compressed, thereby checking the sudden movement of the valve 17, and causing it to close in a comparatively slow manner, so that the jar or shock is avoided. It is evident that the compressed air does escape around the valve stem, but not fast enough to prevent a compression thereof, consequently checking the closing movement of the valve.

It frequently happens that the valve 17, becomes worn and leakage occurs and it is necessary to uncouple the casing 12, from the casing 11, and replace the worn valve with a new one. It is often inconvenient to turn the water off at the base of supply in order to remove the faucet, and to overcome this objection, I have provided an auxiliary valve or shut off, which automatically closes the entrance to the casing 11, when the faucet proper is unscrewed therefrom. As shown the casing 11, is provided with a bridge 36, in which is guided a longitudinally extending valve stem 37, which bears upon its outer end a valve 38, (preferably in the form of a metal disk) which is arranged to seat upon the end of the screw threaded nipple 10, whenever the faucet proper is removed from the casing 11. The stem 37, is provided with a head 39, which is engaged by the push rod 18, when the faucet proper is screwed into place and the construction is such that when the faucet is screwed into place the push rod will force the valve 38, from its seat and permit the water to enter the chamber in the casing 11. If desired a spring 40, may be interposed between the bridge 36, and head 39, of the stem 37, to assist in closing the valve 38, whenever the push rod 18, is drawn out of its engagement with the valve stem 37. In the form shown the valve stem is provided with a pointed end which seats in a correspondingly shaped socket in the end of the stem 37, thereby assisting in maintaining the stem in perfect alinement. The spring 40, not only assists in closing the valve 38, but by reason of the fact that the stem 37,

is in contact with the stem 18, the spring holds the valve 17, upon its seat. It is evident that if the push button 19, be pressed, the valve 17, will be unseated and at the same time the valve 38, will be forced farther away from its seat, thus permitting a free flow of water through the faucet. As soon as the push button is released the spring 40, and water pressure partially close the valve 38, close the valve 17, and shut off the flow of water. If it is now desired to remove the faucet proper, the same is unscrewed from the casing 11, whereupon the spring 40, and water pressure cause the valve stem 37, to follow the push rod 18, as it is being withdrawn until the valve seats upon the nipple 10. The arrangement is such that the valve 38, will seat itself prior to the time that the faucet proper is completely unscrewed from the casing 11.

The stationary section is provided with a hexagon portion 41, which affords means whereby an ordinary wrench may be used to screw said casing in place in the service pipe and the removable section is provided with a hexagon portion 42, by means of which it may be turned. In Fig. 2 I have shown a ring 43, which provides a finish between the casing 11 and wall of the building and this ring may be a separate ring or if desired may be cast integral with the casing 11, as desired.

Fig. 7 shows a rubber cup 44, which may be slipped over the valve stem 18, and arranged between the cap 27, and disk 33. The packing ring and backing washer 34, may be omitted, when this cup is used, inasmuch as an air chamber will be formed between the cup and washer 33, in which the air is compressed when the valve is forced shut.

In Fig. 8 a tubular rubber ring 45, is shown which may be interposed between the cap and washer 33, to provide an air chamber. This ring should contain small perforations 46, to permit a slow escape of air when the ring is compressed by the closing of the valve 17.

In Fig. 9 a ball valve 47, is shown in place of the disk valve 38. It may be found desirable to employ this form of valve in the place of the flat disk.

I realize that more or less variation of the details of construction is possible without departing from the spirit of my invention, and I do not therefore desire to limit myself to the exact construction shown and described.

I claim as new and desire to secure by Letters Patent:

1. A faucet, comprising a stationary section which is screwed upon the service pipe, a shut-off therefor, a faucet section which is screwed upon the end of the stationary section, a nipple formed upon the faucet

section, a valve which seats upon said nipple for cutting off communication between the stationary and faucet sections, a sliding valve stem carrying said valve and arranged to continually unseat the shut-off, a single spring acting to close the shut-off and valve and a push button upon the end of the valve stem.

2. A faucet, comprising a stationary section having a reduced boss threaded upon the service pipe, a removable section having a reduced boss threaded in the stationary section, a flat shut-off adapted to be seated upon the end of the boss of the stationary section and operating to close the entrance to said stationary section whenever the removable section is removed therefrom, a sliding valve stem engaging with said shut-off to continuously hold it in an open position, and having means for maintaining the shut-off in alinement with said stem and a flat valve on said stem arranged to close the entrance to the removable section.

3. A faucet, comprising a stationary section, a removable section, a shut-off in the stationary section having a stem guided to move longitudinally of the sections, a non-rotatable sliding valve stem in the removable section, having a valve thereon and adapted to close the entrance to the removable section and continuously engaging with the shut-off stem to hold the shut-off in open position, and a spring engaging the shut-off stem and acting to close the shut-off and valve.

4. A faucet, comprising a stationary section, a removable section screwed thereon, a flat valve for closing the entrance to the stationary section, a valve stem therefor guided to move longitudinally of the sections, a non-rotatable sliding valve stem in the removable section, continuously engaging with the

valve stem in the stationary section to unseat the valve carried thereby, a valve threaded upon said second named valve stem for closing the entrance to the removable section, and a spring acting to close the shut-off and valve.

5. A faucet, comprising a stationary section, a removable section, a valve adapted to close the entrance to the stationary section, and having a valve stem guided to move longitudinally of the sections, a spring operating to close said valve, a longitudinally movable and non-rotatable valve stem in the removable section having a button upon its outer end and a centering device upon its other end normally engaging with the valve stem in the stationary section to continuously unseat the valve carried thereby, and a valve threaded upon said second named valve stem adapted to close the entrance to the removable section.

6. A faucet, comprising a casing having a water passageway and a boss separated therefrom by a wall, a cap threaded upon said boss and containing a square aperture, a stem having a squared portion extending through said cap and a round threaded portion extending through said wall and carrying a valve adapted to close the entrance to the water passageway, a washer abutting against the squared portion of the stem, a second washer threaded upon the stem and a flanged packing ring confined between said washers.

In witness whereof, I have subscribed my name to the foregoing specification at Chicago, Cook county, Illinois, this 6th day of March A. D. 1909.

JOHN J. HANNIGAN.

Witnesses:

BRUNO W. POKORNEY,
CHARLES O. SHERVEY.