

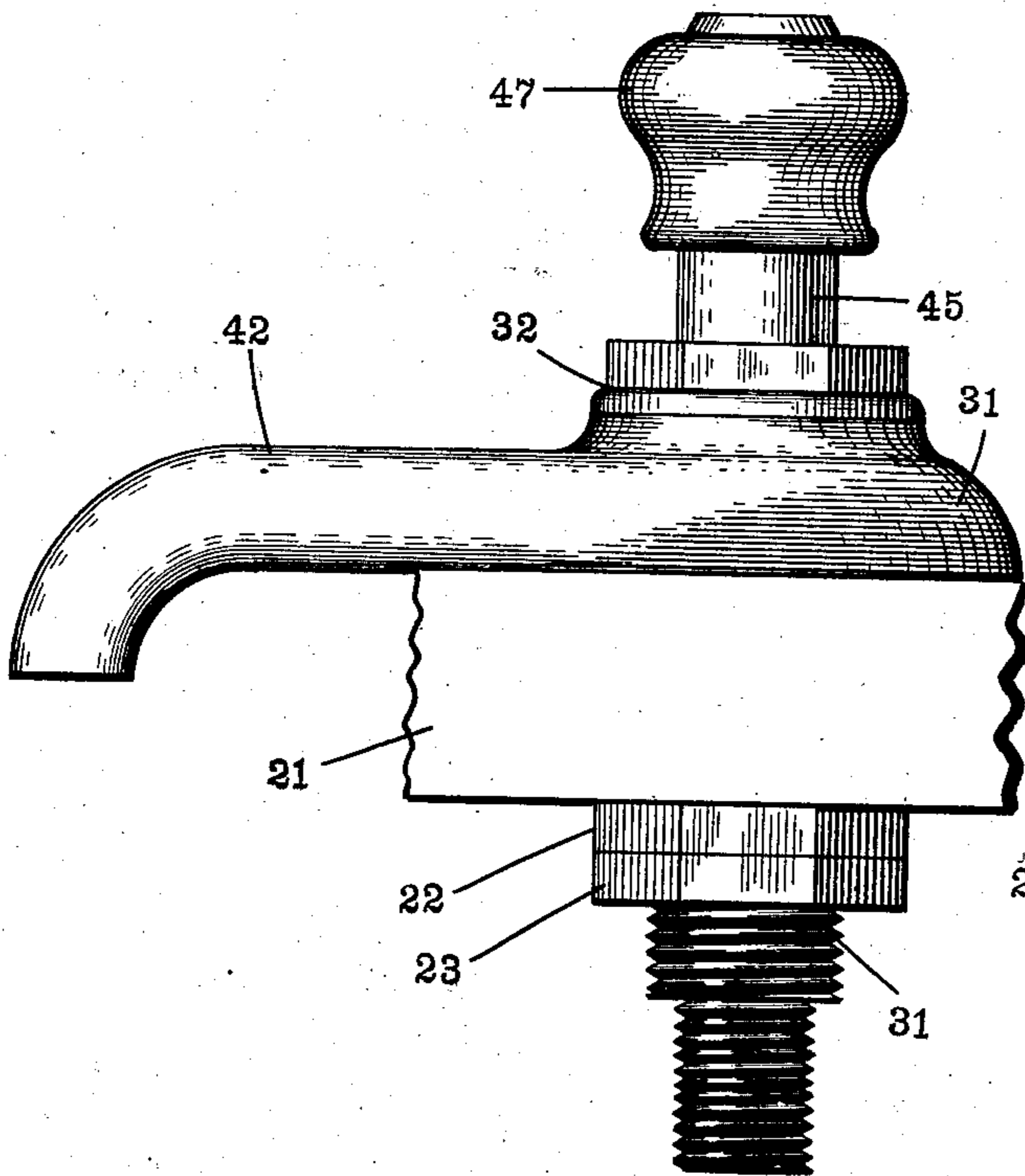
No. 891,285.

PATENTED JUNE 23, 1908.

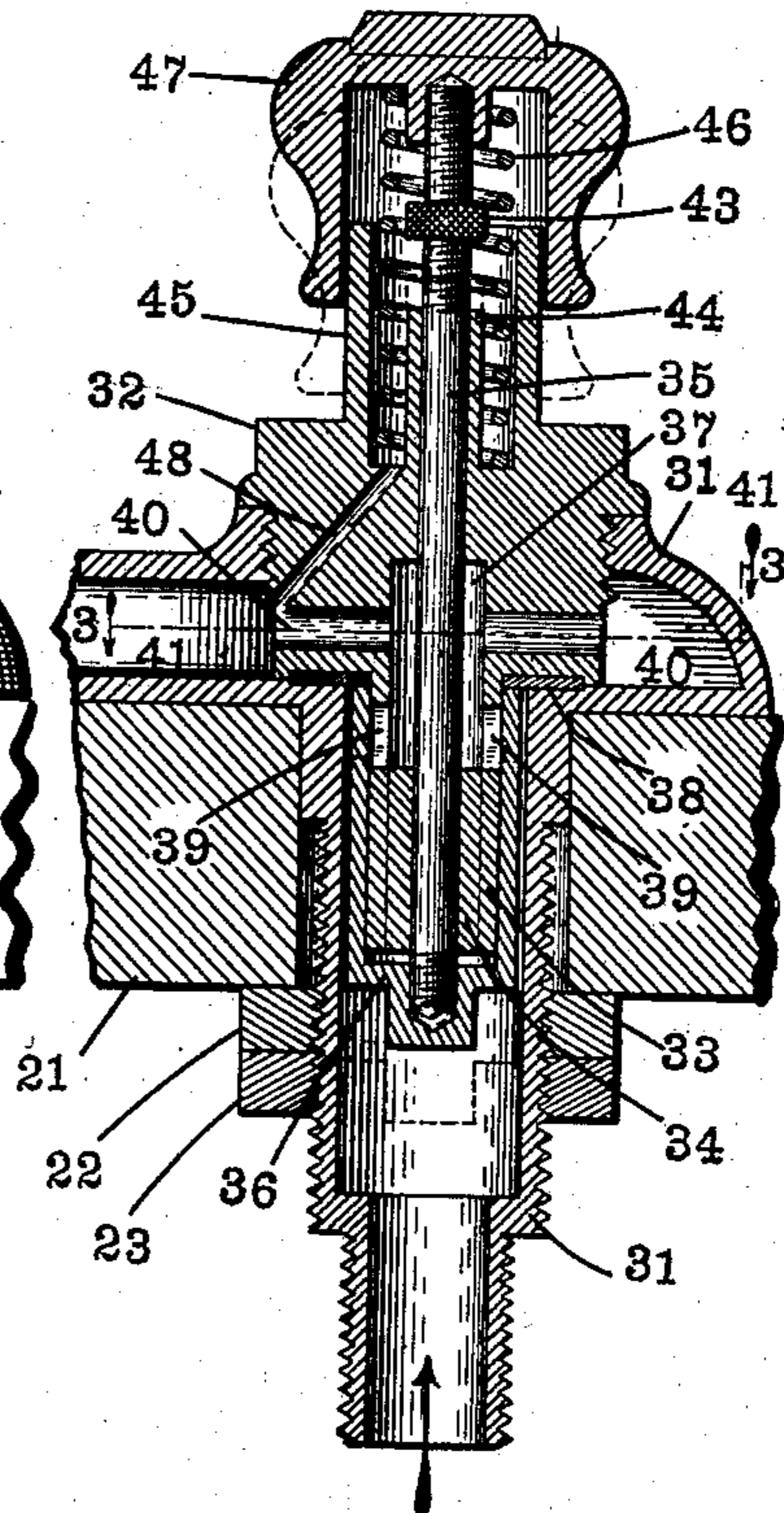
J. W. NETHERY.  
FAUCET.

APPLICATION FILED JULY 21, 1906.

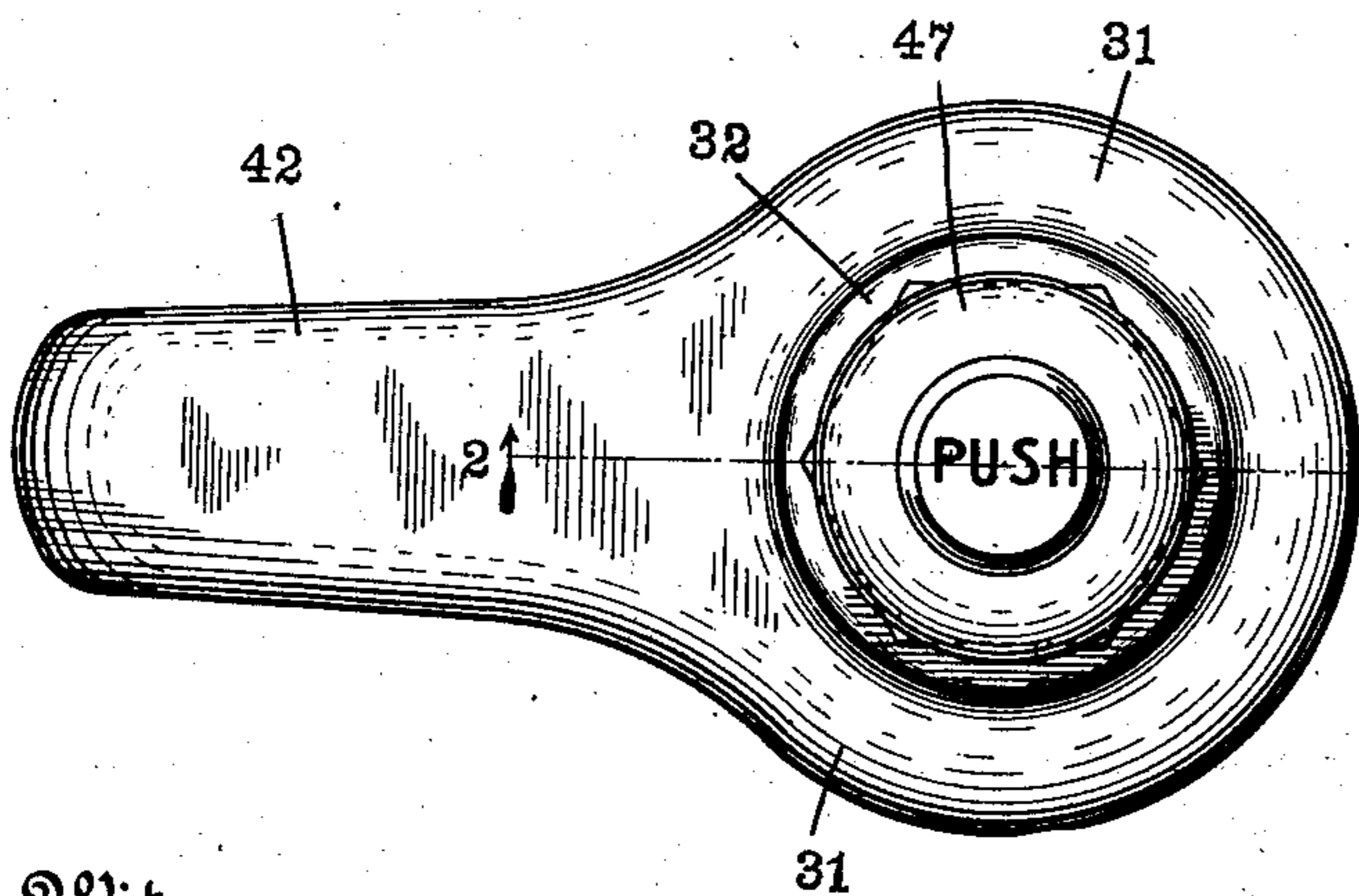
*Fig. 1.*



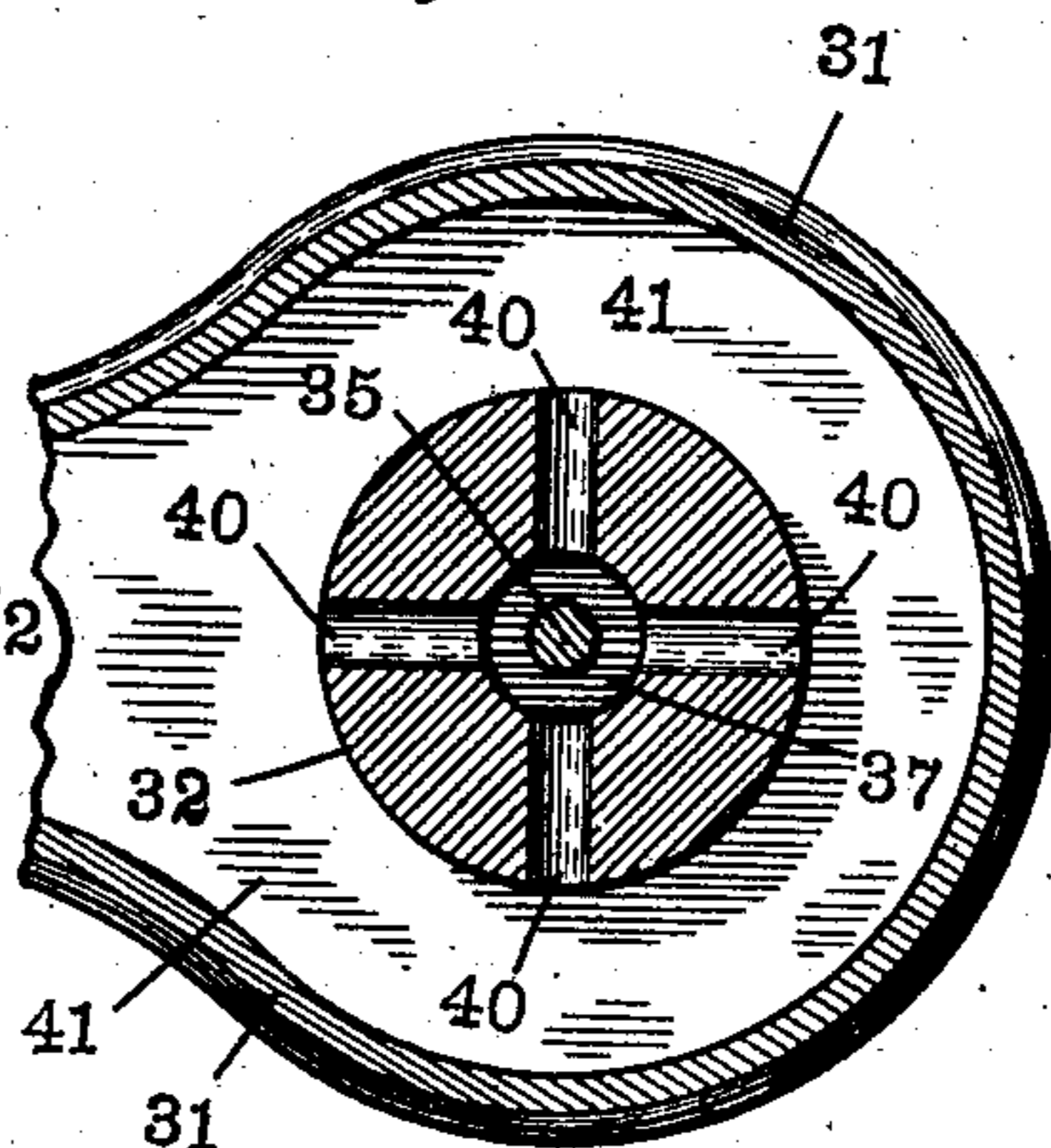
*Fig. 2.*



*Fig. 4.*



*Fig. 5.*



Witnesses  
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# UNITED STATES PATENT OFFICE.

JOSEPH W. NETHERY, OF INDIANAPOLIS, INDIANA, ASSIGNOR TO NETHERY VALVE COMPANY, OF AUGUSTA, MAINE, A CORPORATION OF MAINE.

## FAUCET.

No. 891,285.

Specification of Letters Patent.

Patented June 23, 1908.

Application filed July 21, 1905. Serial No. 270,690.

*To all whom it may concern:*

Be it known that I, JOSEPH W. NETHERY, a citizen of the United States, residing at Indianapolis, in the county of Marion and State of Indiana, have invented certain new and useful Improvements in Faucets, of which the following is a specification.

The principal object of my present invention is to produce a valve or faucet in which the working parts are removable so that they may be capable of renewal or repair without disturbing the valve body.

It further consists in certain improvements in the construction and operation of such a valve or faucet. In carrying out my said invention I have designed a faucet of that variety by means of which a limited quantity of fluid is discharged, whereupon the flow is automatically shut off.

The accompanying drawings illustrate a faucet (of the variety in question) which embodies my said invention.

Figure 1 is a side elevation of a faucet of the character in question; Fig. 2 a central vertical sectional view of the same as seen at the point indicated by the dotted lines 2 2 in Fig. 4; Fig. 3 a horizontal sectional view as seen when looking downwardly from the dotted line 3 3 in Fig. 2, and Fig. 4 a top or plan view of the faucet.

I have shown this faucet as it appears when mounted and in use, and have shown it as attached to a fragment 21 of an appropriate fixture, and as secured thereto by means of the ordinary jam nuts 22 and 23 which are mounted upon the downwardly projecting tubular portion of its main portion or body. This is shown as adapted at its lower end to be connected to a suitable fluid supply pipe, in the ordinary and well known manner.

The main body 31 is shown as having a screw-threaded opening in its upper side through which the structure embodying the valve and valve-seat may be introduced. The main member 32 of this structure is shown as screw-threaded into this opening. The lower end 33 of said structure contains a plug 34 which forms a guide for the valve stem 35 and also for the sides of the cylindrical valve 36. The valve stem passes through a central perforation in said plug 34 (said plug being in effect part of the portion 33), and the valve 36 passes up over the outside of said portion 33. It is necessary that there be a chamber 37 in the structure, and

this is formed by boring into the lower end of the part 33, and then, in order to provide the guide way for the valve stem, the plug 34 is inserted and the hole formed therethrough. Between the lower side of the part 32 and the adjacent portion of the main body 31 I insert a compressible member 38, which forms both a packing between the parts 31 and 32 and a valve seat against which the upper edge of the valve 36 will seat or come in contact.

Suitable orifices 39 are formed in the sides of the part 33 above the upper end of the plug 34 through which (when the valve is open) the water will enter the chamber 37. From this chamber 37 passages 40 are formed which lead out into the main chamber 41 within the body 31, and which communicates with the nozzle 42. The range of movement of the valve in opening is indicated by the dotted lines in Fig. 2. This range of movement is adjustable, and the adjustment is effected by means of the nut 43 on the valve stem 35 which comes in contact with the upper end of the sleeve or projection 44 formed for that purpose on the part 32. Another sleeve or annular wall 45 is formed on this part 32, and constitutes the wall of a chamber within which I prefer to place a compression spring 46 which also bears against the under side of the push button or cap 47 and aids in seating the valve. Where there is considerable water pressure this spring is unnecessary; but where the water pressure is low it is desirable as an auxiliary to said pressure. The outside of the wall 45 forms a guide for the chambered cap or button 47 by means of which the valve stem and valve are actuated. From the bottom of the chamber within which this spring is seated an inclined orifice 48 returns down into the main chamber 41. With this construction no stuffing-box is necessary to this valve; as whatever water escapes to the chamber within the wall 45 around the valve stem, will return down this passage 48 and be drawn away by the water escaping through the passageway 40 into the nozzle 42.

As will be noticed all the working parts are removable by merely unscrewing the part 32 from the screw-threaded opening in the main part 31. The valve seat 38 is practically a portion of said part 32, and the valve 36 is also carried by said part 32, being mounted and guided on the member 33 thereof. Whenever said working parts require repair

or renewal, therefore, all that is necessary is to unscrew said part 32 from its seat, when said working parts can either be repaired or a new structure inserted in the place, and this  
 5 without the aid of a plumber or other skilled workman. It is my purpose to have these removable parts made separately, and to keep the same on sale so that they can be bought by the user whenever required. As  
 10 all such parts are designed to be made interchangeable the user will always be able to procure what is in effect a new faucet at a much less cost than the ordinary expense of repairing an old one of the common type.

15 In operating this faucet, the push button or cap 47 is pressed down from the position indicated by the full lines in Fig. 2 to the position indicated by the dotted lines. This separates the valve 36 from its seat 38, and  
 20 at the same time uncovers the ingress openings 39. This movement will also move the lower end of the valve structure 36 (at the point where it is connected to the stem 35) away from the structure 33—34, leaving a  
 25 chamber between said parts. This chamber will fill with water as the valve is pushed down, the slight space between the parts 33 and 36 being sufficient to permit it to enter. As the valve rises when released, the water is  
 30 slowly expelled through the same passage, but as the parts are nearly closely fitted together, the movement is comparatively slow, and the valve is thus given time to discharge the predetermined quantity of water. The  
 35 time of the discharge may be regulated by means of the nut 43 and the strength of the spring 46. The openings 39 are intended to aggregate a smaller area than the aggregate of the area of the openings 40 so that the  
 40 force of the flow as it passes out of the faucet will be less than the water pressure in the pipes. Any water which may escape up around the stem to within the chamber formed by the sleeve like part 45, will escape  
 45 through the siphon-opening 48, so that no stuffing-box is required in a valve of this construction.

Having thus fully described my said inven-

tion, what I claim as new, and desire to secure by Letters Patent, is,—

1. The combination, in a faucet, of the main body portion comprising an inlet pipe and the discharge nozzle and having a threaded opening in line with the main discharge pipe above the nozzle passage, and a  
 55 valve structure threaded into said opening, said valve structure carrying a valve seat and a tubular portion projecting therefrom into the induction pipe of the main body with openings through the wall thereof ad-  
 60 jacent said valve seat, a tubular valve embracing said tubular portion and seated at its end on said valve seat, a valve stem passing through the valve structure and carrying the tubular valve at its inner end, a push on  
 65 the outer end of said stem, a spring chamber formed in the outer end of the valve structure and embraced by the push, a spring arranged within said chamber and engaging the push, and a nut threaded upon the valve  
 70 stem within the spring chamber and longitudinally adjusted on said stem whereby the travel thereof may be adjustably limited.

2. The combination, in a faucet, of a central structure containing a central chamber  
 75 and radially disposed discharge orifices leading from said chamber, a valve seat on the lower side of said structure, a cylindrical valve surrounding a prolongation of said structure and adapted to cover the ingress  
 80 orifice therein, a valve stem mounted centrally in said structure, a push on the upper end of said valve stem, said structure being provided with a chamber in its upper portion surrounding said valve stem and a drain ori-  
 85 fice leading from the end of said chamber to the discharge orifice leading to the nozzle.

In witness whereof, I, have hereunto set my hand and seal at Indianapolis, Indiana, this 19th day of July, A. D. one thousand nine  
 90 hundred and five.

JOSEPH W. NETHERY. [L. s.]

Witnesses:

CHESTER BRADFORD,  
 JAMES A. WALSH.