

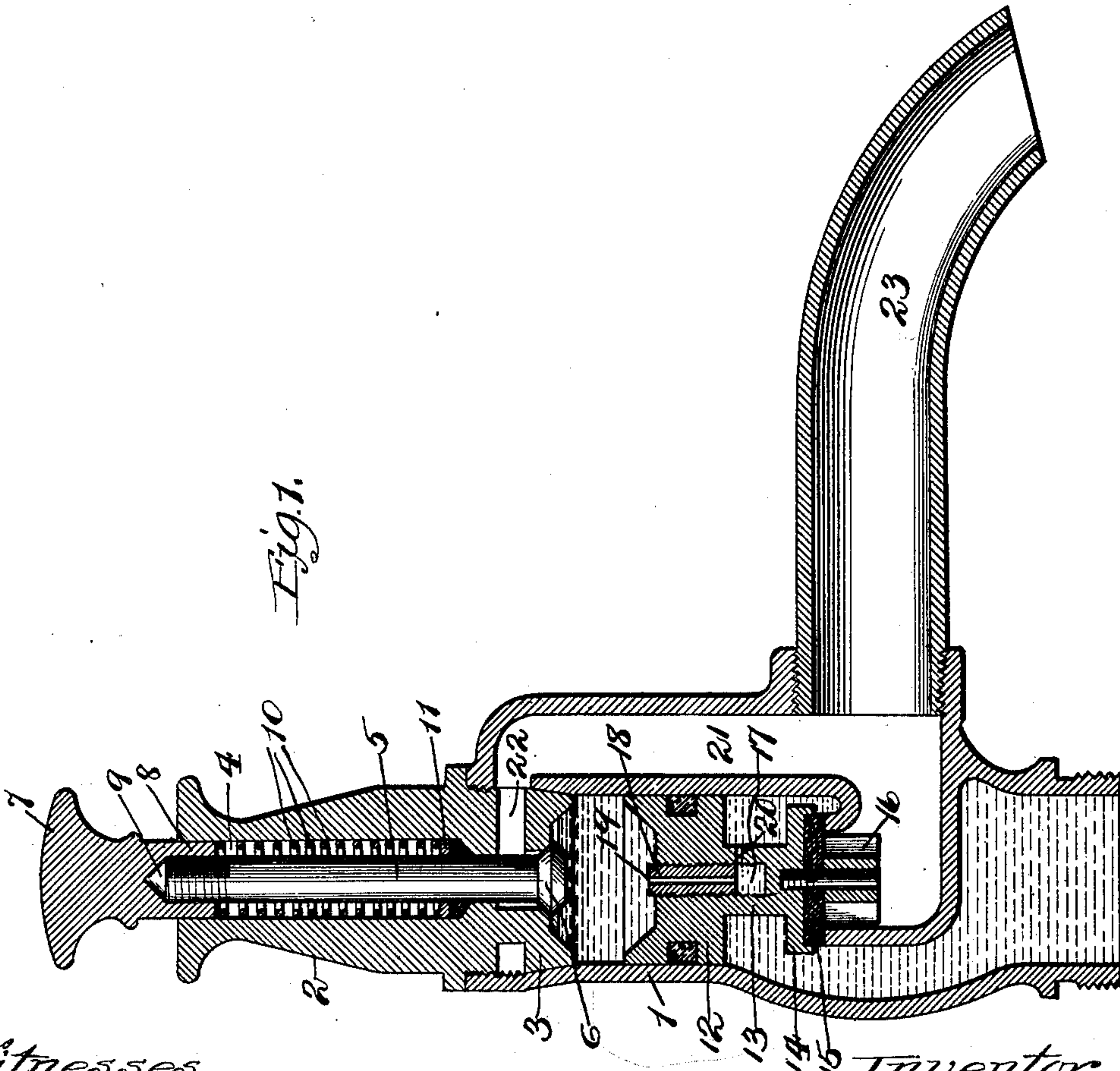
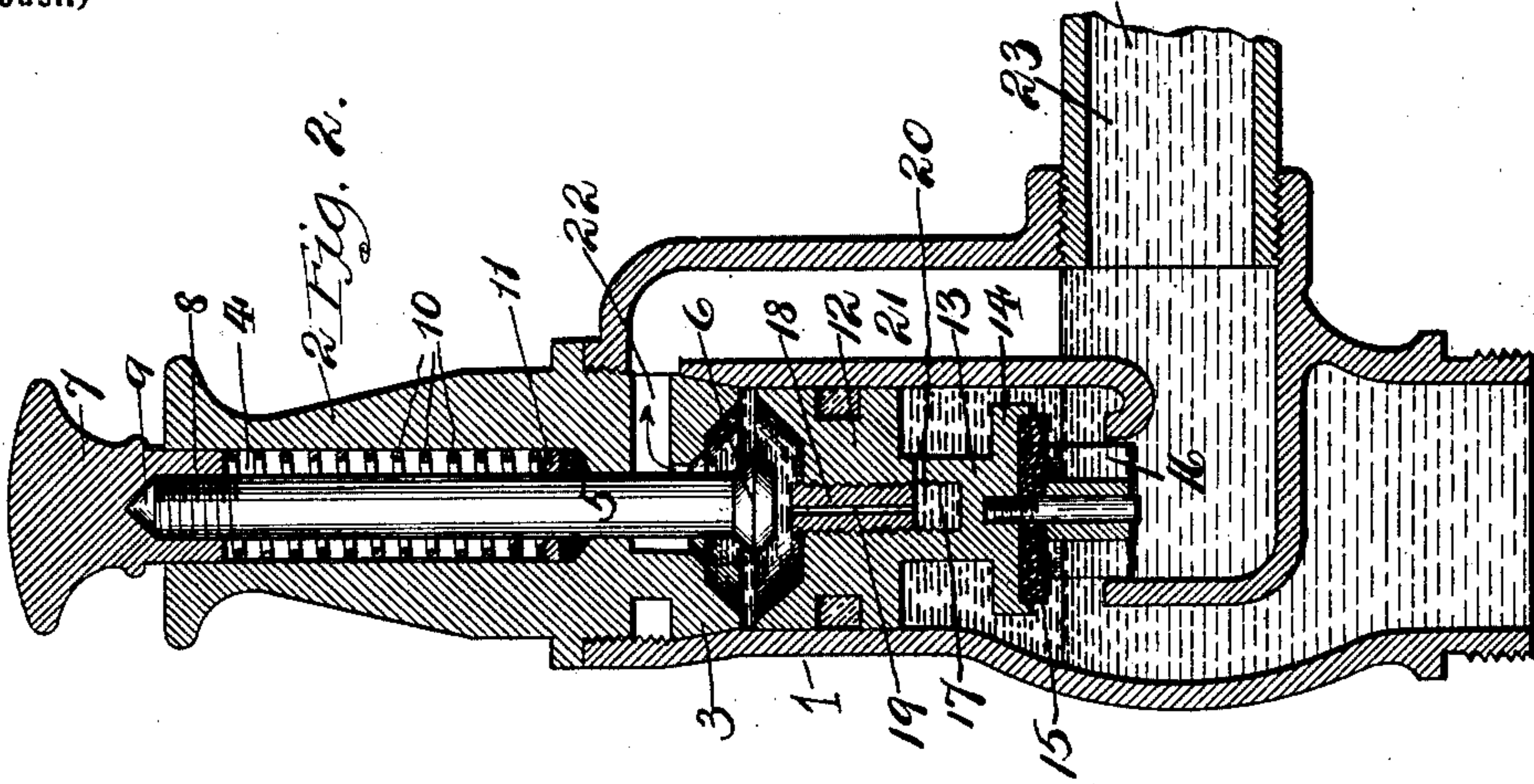
No. 674,844.

H. KUPSCH.  
FAUCET.

Patented May 21, 1901.

(Application filed May 31, 1900.)

(No Model.)



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# UNITED STATES PATENT OFFICE.

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## FAUCET.

SPECIFICATION forming part of Letters Patent No. 674,844, dated May 21, 1901.

Application filed May 31, 1900. Serial No. 18,615. (No model.)

*To all whom it may concern:*

Be it known that I, HERMANN KUPSCH, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Faucets, of which the following is a specification, reference being had to the accompanying drawings.

My invention relates to faucets or cocks for controlling the flow of water or other liquids, being primarily designed for household use in obtaining water from the usual supply-pipes. Such faucets or cocks as usually constructed are either of the type where the water is allowed to flow continuously after the valve is opened until shut off by the user or of the type where the flow of water continues only so long as the user holds the valve open, the valve in this last-named construction being seated by a spring immediately upon the release of the handle by the user. Both of these common forms are open to objections under some circumstances, particularly where the faucet or cock is employed for drawing water to fill a comparatively small receptacle—as, for example, an ordinary washbowl. In such a situation the first-named construction is liable to be left open too long, so that more water is allowed to flow than is necessary to fill the bowl, and with the second-named construction no water can be had without the user being compelled to remain by the bowl and through the handle hold the valve open.

It is one object of my invention to provide a faucet or cock that will be free from these objections and in which provision is made for automatically closing the valve, and thus shutting off the flow of water after the flow has continued for a long enough time to provide the bowl or other receptacle with the desired quantity. I accomplish this automatic shutting off of the flow of water by a construction that permits the pressure of the stream of water from the supply-pipe into the faucet or cock to so act as to gradually close the main valve. A second object is to provide means for so regulating the automatic closing of the valve that a greater or less amount of water will be discharged through the faucet or cock to suit different require-

ments. I accomplish these objects by the means shown in the drawings and as herein-after fully described.

That which I claim as new will be pointed out in the claims.

In the accompanying drawings, Figure 1 is a longitudinal vertical section, showing the position of the parts when the faucet or cock is closed; and Fig. 2 is a similar view showing the parts in the position assumed to permit the discharge of water.

Referring to said figures of the drawings, 1 indicates the hollow body portion of the faucet or cock, adapted to be secured at its lower end in any suitable manner to a water-pipe or other source of supply. Its open upper end is adapted to have removably secured thereto a head 2, the lower end 3 of which is preferably slightly tapered and fits snugly, so as to form a water-tight joint in the upper portion of the body 1. The head 2 has a central passage 4 through it, in which is located the stem 5 of a valve 6, the seat of said valve 6 being formed on the under face of the lower end 3 of the head 2.

7 indicates a button whose shank 8 fits in the upper end of the passage 4 and to which shank the upper end of the stem 5 is attached. As shown, the attachment of the stem to the shank is by a screw-thread cut on the upper end of the stem and entering a screw-threaded socket 9 in said shank.

10 indicates a coiled spring in the passage 4, surrounding the stem 5 and bearing at its upper end against the lower end of the shank of the button 7 and at its lower end against a washer 11, placed in the construction shown near the bottom of the passage 4, beneath which washer may be placed a suitable packing. As shown, the lower end of the passage 4 is suitably contracted, so as to just permit the passage of the stem 5, which construction properly guides the stem 5 in its limited longitudinal movement.

12 indicates a piston the upper portion of which fits closely against the wall of the body portion 1 and is preferably provided with an ordinary packing-ring, the groove for which is shown in the drawings. 13 indicates a central dependent neck portion on the piston 12, below which is the main valve 14, suitably



faced with a ring or rings of rubber 15 or other suitable material and having depending from it, as shown, an ordinary winged guide 16.

5 17 indicates a screw-threaded central longitudinal opening in the enlarged upper portion of the piston 12, said opening also extending into the neck portion 13, as shown. 18 indicates a screw-plug in the opening 17, 10 through which plug extends from end to end a central passage 19, and in the neck portion 13 is a cross-passage 20, connecting the opening 17 with the interior of the body 1, said passage 20 being adapted to be partially closed 15 to any desired extent by the lower end of the screw-plug 18.

21 indicates a passage formed in the body 1, at one side thereof, and communicating at its upper end with a short passage 22, which 20 leads to that portion of the interior of the body 1 above the piston 12, (which passage 22 is controlled by the valve 6,) and communicating at its lower end with that portion of the interior of the body 1 below the enlarged upper 25 portion of the piston 12, said last-named means of communication being controlled by the said piston.

23 indicates the discharge-spout.

30 With the parts in their normal position, as shown in Fig. 1, in which the valves are seated to prevent the flow of water from the faucet or cock, it will be seen that the interior of the body 1 will be filled with water, both above and below the piston 12, as communication 35 between the upper and lower portions of the interior is maintained by the small passages 19 and 20 in the screw-plug 18 and neck portion 13, respectively. The pressure of the water therefore keeps the main valve normally 40 pressed down on its seat. Now if it be desired to draw water through the faucet or cock the button 7 is pushed down, thus moving the valve 6 away from its seat and allowing the water above the piston to pass out 45 through the passages 22 and 21 and spout 23. This action will take place owing to the pressure from the source of supply being maintained through the small passages 20 and 19; but on account of these last-named passages 50 being quite small the pressure of the water above the piston 12 will after the discharge of water, as just described, be temporarily practically destroyed, and the pressure of the water will be exerted against the under face of the 55 enlarged upper portion of the piston, causing it to be lifted from its seat, and thereby permitting the water to escape directly to the spout. During the direct escape of the water in this manner, however, some water will be passing 60 above the piston 12 through the small passages 20 and 19, and as the amount increases its effect will be to gradually force the main valve down and eventually force it against its seat, and thus shut off entirely the flow of 65 water. It will be understood, of course, that the button 7 need not be held down, but that a simple pushing of it and then instantly re-

leasing it will be all that is required to start the flow of water, as described, the spring 10 of course immediately returning it to its seat. 70 The amount of water to be delivered at one operation of the faucet or cock can be regulated by adjusting the screw-plug 18 so as to regulate the size of the stream passing through the small lateral passage 20, as it is evident 75 that the quicker the space above the main valve is filled the quicker the main valve will be closed and the supply shut off thereby.

That which I claim as my invention, and desire to secure by Letters Patent, is— 80

1. In a faucet or cock, the combination with a piston in the body portion thereof, a valve carried by said piston and operating to normally close the water-passage through the faucet or cock, a water space or chamber 85 above said piston, a passage through said piston to allow water to pass to said space or chamber, an adjustable plug having an opening therein located in said piston, a passage communicating with the opening in said plug 90 and adapted to be partially closed by said plug, means for discharging the water from the space or chamber above the piston, and means for shutting off the flow of water from said space or chamber, substantially as and 95 for the purpose specified.

2. In a faucet or cock, the combination with a piston in the body portion thereof, a valve carried by said piston and operating to normally close the water-passage through the 100 faucet-cock, a water space or chamber above said piston, a passage through said piston to allow water to pass to said water space or chamber, a screw-threaded plug located in a suitable screw-threaded opening in the piston and adapted to be moved to partially 105 close said passage, said plug being provided with a passage extending through it from end to end, a second valve controlling the opening for the escape of water from said water 110 space or chamber, and means for operating said second valve, substantially as and for the purpose specified.

3. In a faucet or cock, the combination with the piston 12 provided with a central dependent neck portion 13 carrying at its lower end 115 a valve 14 operating to normally close the water-passage through the faucet or cock said piston and neck having a central longitudinal screw-threaded opening 17 and said neck 120 having a cross-passage 20 that connects the opening 17 with the interior of the body of the faucet or cock, a screw-plug 18 through which extends a passage 19, said plug 18 being located in the opening 17, a second valve 125 controlling an opening for the escape of water from said water space or chamber, and means for operating said second valve, substantially as and for the purpose specified.

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