

(No Model.)

G. W. RENTON.  
FAUCET.

No. 476,170.

Patented May 31, 1892.

Fig. 2.

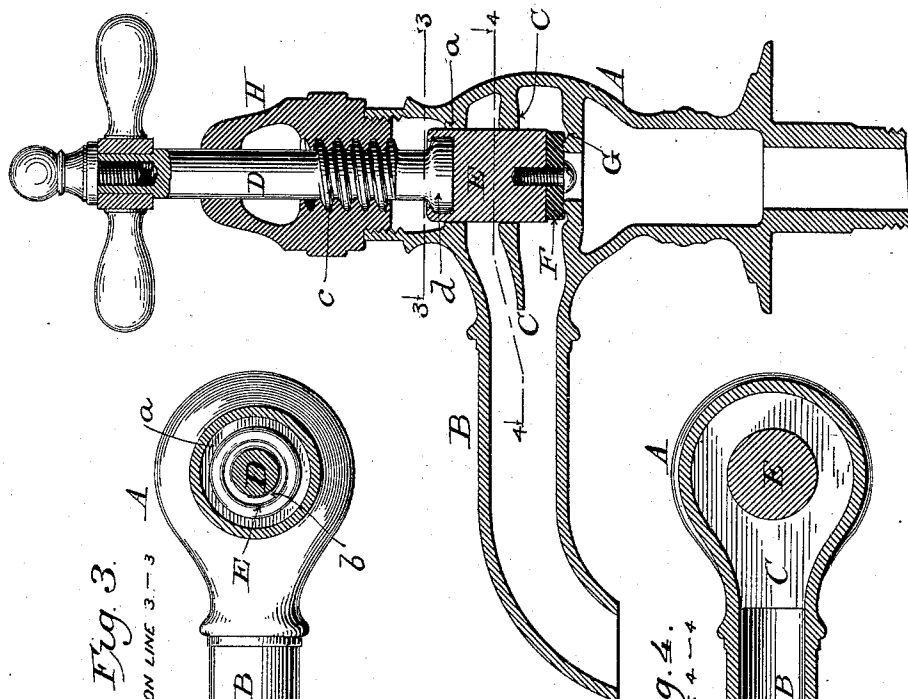


Fig. 3.

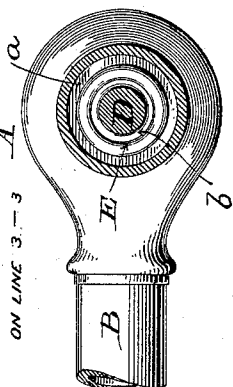


Fig. 4.

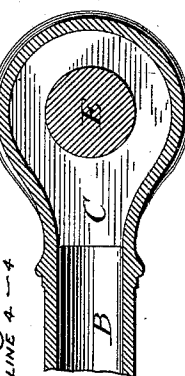
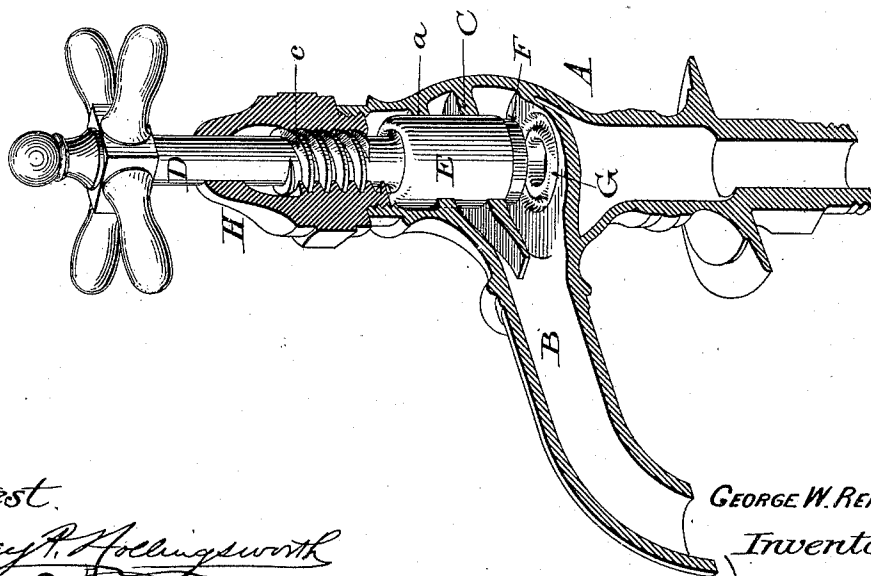


Fig. 1.



Attest.  
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Inventor  
by his attorneys  
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# UNITED STATES PATENT OFFICE.

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## FAUCET.

SPECIFICATION forming part of Letters Patent No. 476,170, dated May 31, 1892.

Application filed December 4, 1890. Serial No. 373,593. (No model.)

*To all whom it may concern:*

Be it known that I, GEORGE WM. RENTON, a citizen of the United States, residing at Brooklyn, in the county of Kings and State of New York, have invented certain new and useful Improvements in Faucets, of which the following is a specification.

This invention relates to that class of faucets set forth in Letters Patent of the United States No. 245,016, issued August 2, 1881, to Fergus A. Renton; and the present invention is designed to overcome a defect developed in the practical use of the patented faucet which is well known under the trade-name of "Ejector Faucet." The principle involved in both is the use of a bridge or diaphragm extending part way across the valve-chamber and into the delivery pipe or spout of the faucet, whereby the fluid passing outward through the delivery-spout produces a partial vacuum above the bridge or diaphragm to carry away all leak-water out of the chamber above the bridge or diaphragm. As represented in the patent before referred to and as originally manufactured, the valve plug or cylinder was made integral with the threaded stem, by which it was moved toward and from its seat in the bridge, and as a result of such former construction it has been found in practice that the disk or washer forming the face of the valve plug or cylinder would rapidly cut or grind by reason of its rotation upon its seat in the act of closing and opening the faucet. To remedy this defect, said Renton, in manufacturing his faucets, substituted for the solid valve and stem a valve connected to the stem by a swivel-joint, by means of which he obviated the objection as to the wearing away of the packing on the face of the valve; but in doing this he fell into another difficulty—viz., that as the valve no longer had any lateral support except on the single bearing formed in the bridge or diaphragm, and as the fit could not be very close, the valve was liable to tip under unequal pressure and leave an opening between it and the seat wider on one side than on the other and produced a consequent vibration accompanied by a singing noise, which was objectionable; and, besides, the valve was liable when thus inclined to stick in the bridge, so that it could not be closed or

opened, and when that occurred the stem was liable to be torn from the socket in the valve plug or cylinder. To remedy these defects, I have considerably elongated the valve-plug and provided above the bridge or diaphragm, which constitutes one bearing for the plug or cylinder, a second bearing above the diaphragm C, and have thereby overcome the tendency of the plug or cylinder to cramp or bind in moving through the supports or bearings. I also make the plug or cylinder separate from the threaded stem by which it is moved and connect the two parts by a swivel-joint.

Referring now to the drawings, Figure 1 is a sectional perspective view of my improved faucet; Fig. 2, a vertical central section through the body of the faucet and the valve cylinder or plug, the stem being only partially broken away; Figs. 3 and 4, horizontal sections, respectively, on the lines 3 3 and 4 4.

In said drawings, A indicates the body or shell of the faucet; B, the delivery spout or nozzle; C, the bridge or diaphragm extending across the body of the shell and into the delivery-spout; D, the threaded stem provided with a suitable handle at the top by which to rotate it; E, the valve plug or cylinder provided with a facing-disk F to bear upon the seat G, and H an internally-threaded cap or nut constituting the top of the faucet and the support for the stem D.

At a point suitably removed from and above the bridge or diaphragm there is formed a second bridge *a*, having a central opening which is in axial alignment with a corresponding opening formed through the bridge or diaphragm C, both of said openings being of a size to receive and permit the free movement of the plug or cylinder E, which, as represented in the drawings, is made of such length as to permit a proper longitudinal movement without passing out of contact with its supports in the bridges C and *a*. These two bearings hold the valve-plug in alignment, so that it cannot become cramped, as in the case where a single bearing was used and a flexible connection between the valve stem and plug was provided. As shown in Figs. 1 and 2, the stem D has a threaded portion *c*, meshing with a corresponding thread in the cap or nut

H, so that when the stem D is rotated it is caused to longitudinally move the valve plug or cylinder E, its bearing in the cap, by reason of the flexible connection with the valve, 5 being independent of the bearings of the valve. The lower end of the stem D is formed with a circular head or enlargement *d*, which is seated in a cavity or recess of corresponding form in the upper end of the valve plug or 10 cylinder E, and the walls of the recess or opening in the valve plug or cylinder are bent inward or crimped over upon the enlargement *d* sufficiently to prevent the two parts from becoming disconnected; but due freedom or 15 looseness is afforded to permit the free rotation of the stem D independently of the plug or cylinder and also to permit a slight lateral movement of either in relation to the other.

It is obvious that the precise manner of 20 forming the swivel-joint is immaterial and that the head and the recess may be reversed, or that any common form of swivel-joint suitable for such a device may be adapted in lieu of that shown, the important features 25 being that the one part shall be free to rotate independently of the others and that a limited amount of play shall be afforded. When the threaded opening of the nut and the openings through which the valve stem or 30 plug moves are in perfect alignment, there is no necessity for even a limited lateral movement of the stem or cylinder of one in relation to the other; but in view of the difficulty of securing always such absolute align- 35 ment it is advisable to permit a slight play.

By my construction above set forth I entirely obviate the difficulties heretofore encountered—that is to say, I prevent the grinding or wearing out of the washer, permit the plug or cylinder to move longitudinally without 40 rotating, prevent the tendency to cramp or bind in passing through the annular bearing or support, and secure through the use of the second bridge an additional guard against the passage of water into the upper chamber 45 or space of the valve-casing. These advantages are found in practice to be very marked, and the faucet thus improved meets with great favor where the other has met with but indifferent success or with disapproval. 50

Having thus described my invention, what I claim is—

In a faucet, the combination of a shell or body provided with diaphragms *a* C and valve-seat G, the diaphragm C extending forward 55 into the discharge-nozzle, an elongated valve-plug E, having bearings in the diaphragms *a* and C, a valve-stem D, flexibly connected with the plug E, and a cap H, having a threaded bearing for the valve-stem, whereby 60 the valve-plug is enabled to seat itself freely and accurately and the escape of water around the valve-stem is prevented.

In witness whereof I hereunto set my hand in the presence of two witnesses.

GEORGE WM. RENTON.

Witnesses:

ALONZO GAUBERT,  
FRANK. G. DU BOIS.