

No. 714,684.

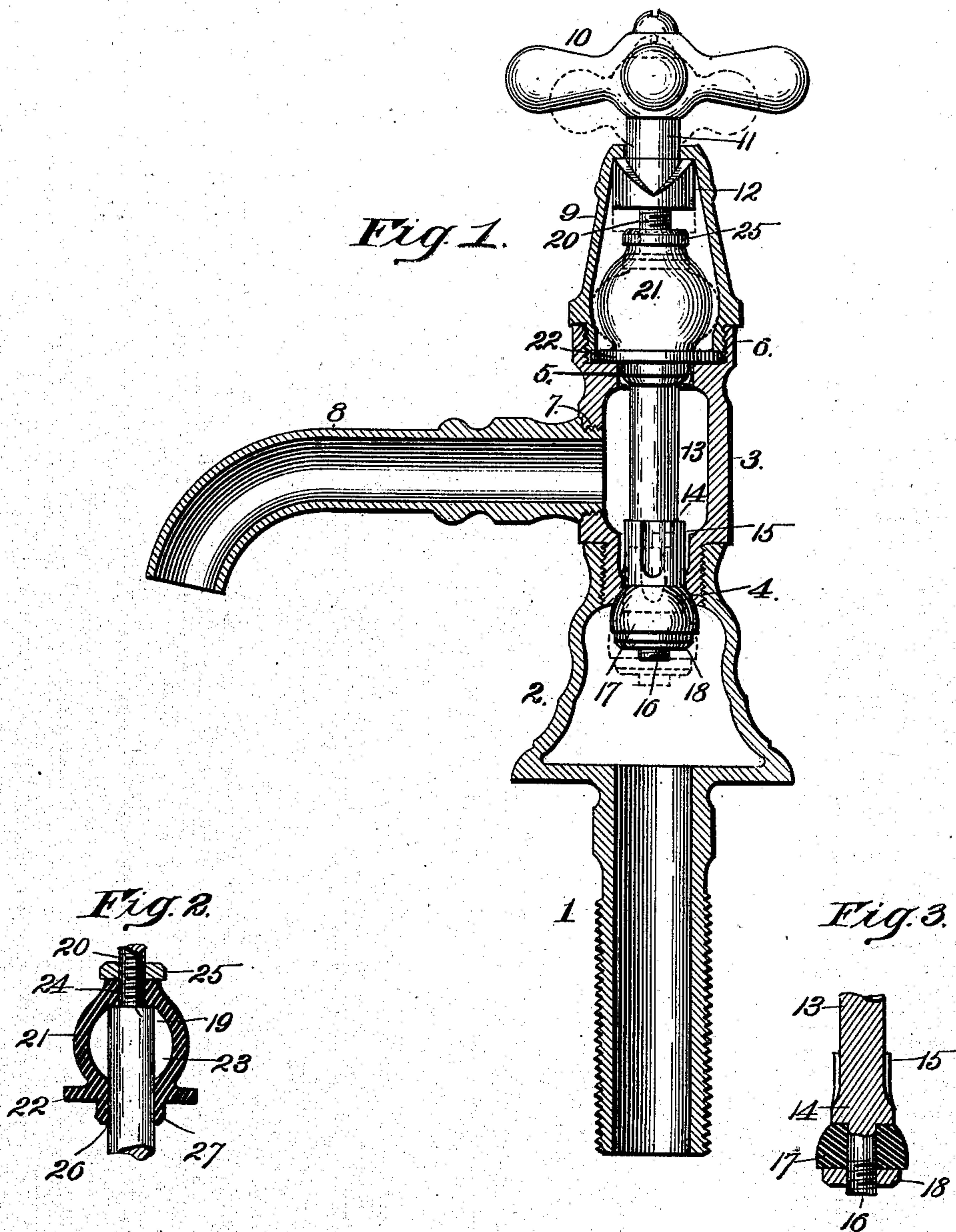
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J. P. FARLEY.

BASIN COCK.

Application filed July 19, 1902.

(No Model.)



Witnesses:
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UNITED STATES PATENT OFFICE.

JOHN P. FARLEY, OF KANSAS CITY, MISSOURI.

BASIN-COCK.

SPECIFICATION forming part of Letters Patent No. 714,684, dated December 2, 1902.

Application filed July 19, 1902. Serial No. 116,299. (No model.)

To all whom it may concern:

Be it known that I, JOHN P. FARLEY, a citizen of the United States, residing at Kansas City, in the county of Jackson and State of Missouri, have invented certain new and useful Improvements in Basin-Cocks, of which the following is a specification.

My invention relates to basin-cocks, and more particularly to that class which close with the pressure, my object being to provide means for reseating the valve which is entirely automatic and operates slowly irrespective of the desire or attempt on the part of any one to expedite such operation, to the end that water-hammering shall be entirely eliminated and the life of the valve and plumbing generally lengthened.

A further object is to provide means of the character described which are of simple, strong, durable, and cheap construction.

To these ends the invention consists in certain novel and peculiar features of construction and organization, as hereinafter described and claimed, and in order that it may be fully understood reference is to be had to the accompanying drawings, in which—

Figure 1 represents a vertical section of a basin-cock embodying my invention. Fig. 2 is a vertical section of a part of the same. Fig. 3 is a central vertical section of the lower end of the valve-stem with the valve thereon.

In the said drawings, 1 designates the usual threaded stem, and 2 the hollow base surmounting the stem.

3 designates the hollow body portion, screwed down into said base and provided with a valve-seat 4 at its lower end, with an opening 5 vertically above the same, with an internally-threaded flange 6 at its upper margin and concentrically surrounding opening 5, and with a threaded opening 7 in its front wall to receive the usual spout 8.

9 designates the hollow cap, screwed down into threaded flange 6 and provided with the usual depending cams of approximately V shape. (Not shown, but common in self-closing cocks.)

10 designates the usual handle, having its stem 11 depending vertically through and journaled in the top of said cap and provided with the usual cam-actuated collar 12, which as the handle is turned rides upon the V-

shaped cams above referred to and effects the vertical descent of the handle and of the valve, as hereinafter described.

13 designates the valve-stem, extending vertically through the hollow body portion and provided with the usual enlargement 14, having waterways or grooves 15, and below said enlargement with the threaded stem 16, upon which the valve 17 is mounted, said valve being secured in position by the usual clamping-nut 18. It will be noticed by reference to Fig. 3 that the waterways do not contract or taper toward their exit ends, the result being sand and other foreign substances entering the waterways pass there-through without danger of clogging, as frequently occurs with the ordinary waterways.

Within the cap the valve-stem is diametrically reduced to provide an upwardly-disposed shoulder 19, the reduced portion 20 of the stem projecting upwardly and bearing against collar 12 in the usual manner.

21 designates a rubber cushion, the same being provided at its lower margin with the outwardly-projecting annular flange 22, interposed and clamped firmly between the upper end of the body portion and the lower end of the cap. It is also provided centrally with a cavity 23, of spherical form by preference, and with a vertical hole 24 in its upper end, in which tightly fits the reduced portion 20 of the valve-stem, the upper end of the cushion having a slight prolongation or increased thickness forming a flat upper face of less diameter than the nut 25, engaging said stem portion 20, and by engagement with the said flat face clamping the upper end of the cushion tightly down upon shoulder 19 of the stem. It is desirable that the said prolongation be of smaller diameter than nut 25, so that the lower corners or margin of the latter shall not come into contact with the cushion, it having been found in practice that such objectionable contact eventually cuts into, and therefore shortens the period of service of, the cushion.

Vertically below hole 24 the cushion is provided with a larger hole 26, in which the stem fits tightly, and with an annular flange 27, marginally surrounding said hole and depending loosely into the opening 5 of the body portion 3.

In practice the cushion is normally expanded, as shown in the drawings, by reason of the fact that atmospheric pressure, both internally and externally, is uniform. When, however, a person grasps and turns handle 10, the cam mechanism forces the valve-stem downward in the usual manner to unseat the valve. Incidentally the pressure of nut 25 on the upper end of the cushion collapses the latter to the position shown in dotted lines, Fig. 1, the sides of the cushion bowing outwardly at their thinnest, and therefore weakest, point. In this collapse the downward pressure vertically over the center of the cushion tends to not only bulge the walls outwardly, as indicated, but also tends to spread or flare depending flange 27, the flange 22, clamped tightly between the body portion 3 and cap 9, serving as a fulcrum or hinge-point for this action. By thus flaring outward slightly the air is permitted to exhaust from cavity 23 of the cushion, and therefore affords practically no resistance to the unseating of the valve, which may be accomplished slowly or quickly, at the will of the operator. As the pressure is removed by the release of the handle the water reseats valve 17, this action being comparatively slow, however, for the reason that the stem fits so snugly in hole 26 and the registering flange 27 that the entrance of air necessary to re-expand the cushion is retarded, it being understood, of course, that the action of the valve and cushion is synchronous, both being operated at a speed proportionate to the rapidity with which the cushion is recharged with air. This being so, it is obvious that the reseating of the valve is entirely automatic and cannot be expedited in the slightest degree by manipulation of the handle.

From the above description it will be apparent that I have produced a basin-cock which embodies the features of advantage enumerated as desirable in the statement of invention, and while I have illustrated and described the preferred embodiment it is to be understood that it is susceptible of modification in minor particulars without departing from the spirit or scope or sacrificing any of the advantages of the invention.

Having thus described the invention, what I claim as new, and desire to secure by Letters Patent, is—

1. A basin-cock, provided with an opening in the upper end of its body portion, a valve-stem extending therethrough, and provided at its lower end with a valve closing with the pressure, an air-cushion having alined holes through which the stem snugly extends, and provided with an internal air-chamber adapt-

ed to open to the atmosphere only through the hole of said cushion nearest the valve, and with an external outwardly-projecting flange resting upon the upper end of the body portion, a cap inclosing said cushion and clamping said flange tightly down upon the body portion, and means for unseating the valve by forcing said stem downwardly, substantially as described.

2. A basin-cock, provided with an opening in the upper end of its body portion, a valve-stem extending therethrough, and provided with a valve at its lower end closing with the pressure, and reduced above said body portion to form an upwardly-disposed shoulder, an air-cushion having alined holes through which the stem snugly extends, the upper hole embracing the reduced portion of the stem, and provided with a central air-chamber registering with said holes and adapted to communicate with the atmosphere only through the lower one, and provided also with an outwardly-projecting flange resting upon the upper end of said body portion, a nut upon the reduced portion of the stem to clamp the upper part of the cushion firmly down upon the said upwardly-disposed shoulder, a cap clamping said outwardly-projecting cushion-flange tightly down upon the body portion, and means for depressing said stem and unseating the valve, substantially as described.

3. In a basin-cock, a cushion provided with alined holes, a central air-chamber communicating with the atmosphere only through said holes, and an external outwardly-projecting flange occupying a plane at right angles to the axis of said holes, substantially as described.

4. In a basin-cock, a hollow air-cushion, provided with vertically-alined holes in its upper and lower ends, the former being smaller than the latter, and provided with a horizontal marginal flange projecting outwardly from its lower end, and also provided with a vertically-depending flange marginally of said lower hole, substantially as described.

5. In a basin-cock, a hollow air-cushion, provided with vertically-alined holes in its upper and lower ends, an external flange projecting outwardly from its lower end, and a vertically-depending flange extending marginally of the lower hole, substantially as described.

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

JOHN P. FARLEY.

Witnesses:

H. C. RODGERS,
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