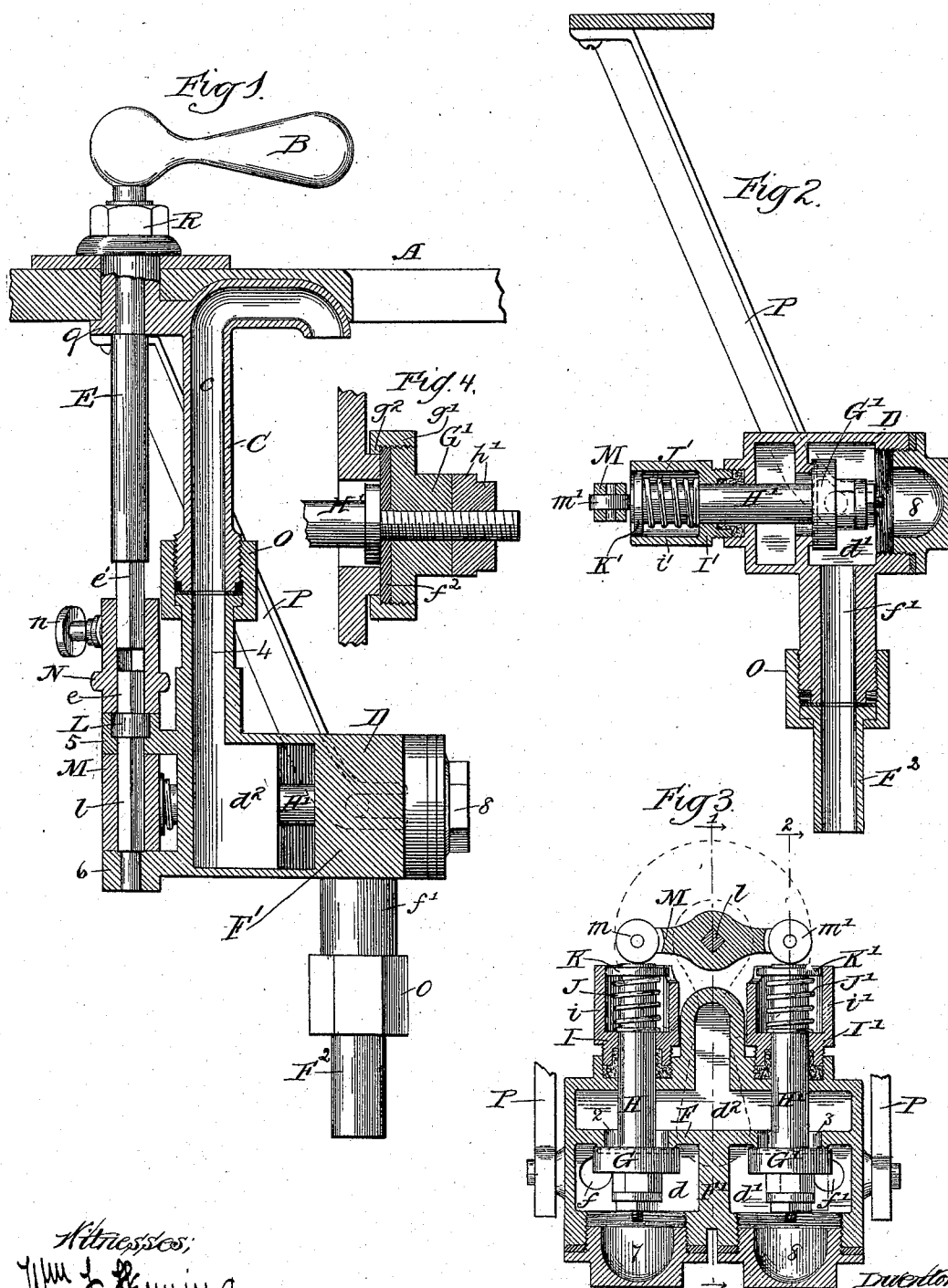


(No Model.)

H. S. TEAL.
DUPLEX SELF CLOSING FAUCET.

No. 535,468.

Patented Mar. 12, 1895.



Witnesses:
Wm. L. Fleming
V. Hugo.

By Raymond & Veder
2 H. S. Teal
Atty.

UNITED STATES PATENT OFFICE.

HARRY S. TEAL, OF CHICAGO, ILLINOIS, ASSIGNOR TO THE ADAMS & WESTLAKE COMPANY, OF SAME PLACE.

DUPLEX SELF-CLOSING FAUCET.

SPECIFICATION forming part of Letters Patent No. 535,468, dated March 12, 1895.

Application filed August 25, 1892. Serial No. 444,077. (No model.)

To all whom it may concern:

Be it known that I, HARRY S. TEAL, 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 Duplex Self-Closing Faucets, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming a part of this specification.

My invention relates to that class of faucets which are designed to enable water of different temperatures (as hot and cold) to be drawn separately through a single outlet, by manipulations of a single valve-actuating spindle, and more particularly to such faucets as are so constructed that when the handle is released, the spindle shall be automatically returned to its intermediate position, so as to enable either valve to automatically close; thus preventing waste of water, and adapting the valve for use in situations (such as in railway cars, steamboats, and the like) where but a limited supply is obtainable.

Among the primary objects of my invention is included that of producing a self-closing duplex faucet the valve-closing and spindle-returning springs of which shall be wholly isolated from contact with water flowing through the valve-casing; thereby avoiding all possibility of such injury to the springs by the water as will cause the springs to fail in their work, and consequently permit the water to be wasted.

A further primary object of my invention is to produce a faucet which, in addition to the advantages above enumerated, shall be simple, compact and durable in construction, capable of being readily placed in position and removed therefrom without necessitating any disorganization of the principal parts of the faucet, and the casing of which shall be so constructed as to permit ready access to the operative parts of the faucet, for purposes of inspection, repair, and the like.

To the above purposes, my invention consists in certain peculiar and novel features of construction and arrangement, as hereinafter described and claimed.

The more precise nature of my invention

will be better understood when described with reference to the accompanying drawings, in which—

Figure 1 is a central vertical section of a faucet embodying my invention; the plane of the section being indicated by the line 1—1 of Fig. 3, and the direction of view being that indicated by the arrows upon said line. Fig. 2 is a vertical section of the faucet, taken on the plane indicated by the line 2—2 of Fig. 3; the direction of view being that indicated by the arrows applied to said line. Fig. 3 is a horizontal section of the faucet, taken on the plane of its valves. Fig. 4 is a detached view, in cross-section, and also enlarged, showing one of the valves and certain of its immediate attachments.

In the said drawings, D designates the casing of the valve, this casing being formed with two transverse partitions or septums F and F' extending at right angles to each other and from the bottom of the casing to its top. The partition F forms, between itself and the rear wall of the casing D, an outlet-chamber d^2 which extends from bottom to top of the casing, and also from side to side thereof, while the partition F' extends from the front wall of the casing D to the partition F and forms, between itself and the sides of the casing, two inlet chambers d and d' ; these inlet-chambers also extending from bottom to top of the casing.

The chamber d may be the hot-water chamber and the chamber d' may be the cold-water chamber, and such waters are delivered into said chambers by two supply-pipes F^2 which lead from suitable sources of water, and which are connected by suitable couplings, such as O, to nipples f and f' pendent from the bottom of the casing D.

Communication is established between the water-inlet chambers d and d' through two valve-openings 2 and 3 which are formed in the partition F and one of which communicates with one chamber, and the other with the remaining chamber as shown. The water flows from the outlet-chamber d^2 upward through a nipple 4 which extends upward from the rear part of the top of the casing D and to the upper end of which is detachably

connected (as by a coupling O') the lower end of a discharge pipe or nozzle C; the upper end of said nozzle being shown as bent forwardly beneath the top A of the receptacle.

Two brackets or lugs 5 and 6 project horizontally rearward from the rear wall of the casing D and in said brackets is journaled a vertical rock-shaft *l* which carries a double horizontal rock-arm M; the shaft *l* being shown as polygonal in cross-section where it passes through the middle of the rock-arm M, so that said rock-arm shall always oscillate with the rock-shaft. At its ends the rock-arm M carries two rollers *m* which engage the rear ends of the two valve-stems H and H', to be hereinafter more fully described, and at its upper end the rock-shaft *l* is inserted removably into the lower end of a sleeve N; the entering end of the rock-shaft being polygonal in cross-section, so that the rock-shaft shall always oscillate with the sleeve, and a shoulder or enlargement L at the upper end-portion of the rock-shaft serving to support the sleeve. Into the upper end of the sleeve N is removably inserted the lower polygonal end of a vertical spindle E, which extends upward through the top A of the receptacle, and which carries a suitable handle B at its upper end; the lower end of the spindle being held removably within the upper end of the sleeve N by a set-screw *n*, and the upper end of said spindle being provided with a retaining-nut R, while the upper end-portion of the spindle turns in a rearward offset 9 of the upper end-portion of the discharge-nozzle C.

The casing D is supported in its required position beneath the top A of the receptacle, by a pair of hangers P the upper ends of which are detachably secured to the offset 9 and the lower ends of which are also detachably secured (as by screws, or equivalent devices) to the sides of the casing D. It will thus be seen that the entire casing D and its contained parts may be readily detached from the top of the receptacle, simply by detaching the ends of the hangers P from the sides of the casing D, disconnecting the couplings O and O' and loosening the set-screw *n*, and that said casing D may be as readily replaced by simply attaching the ends of the hangers P to the sides of the casing, connecting the couplings O and O', and tightening the set-screw *n*.

The fronts of the two inlet-chambers *d* and *d'* are formed by two nuts 7 and 8 which are screwed into the front wall of the casing D, and within said chambers *d* and *d'* respectively are located the outlet-valves G and G'; said valves finding their seats in the front sides of the valve-openings 2 and 3 in the partition F. These valves G and G' are carried upon the front ends of two valve-stems H and H' respectively. These valve-stems H and H' extend horizontally through the partition F and also through the outlet-chamber *d*², and the rear wall of the casing, and said

stems are of such length as to protrude rearwardly from said rear wall of the casing a sufficient distance to come into contact, at their rear extremities, with the rollers *m* at the extremities of the double rock-arm M, when said arm is in its intermediate or normal position.

Upon the rear wall of the casing D are screwed two stuffing-boxes I and I' through which extend respectively the stems H and H', said stems being tightly packed into the stuffing-boxes so as to prevent leakage at these points.

The rear end-portions *i* and *i'* of the stuffing-boxes I and I', respectively, are hollow, and within the cavities thus formed are placed spiral returning-springs J and J' which surround the rear end-portions of the valve-stems H and H' respectively; said springs being interposed between the front ends of the cavities and heads or enlargements K and K' upon the rear extremities of said valve-stems; and the springs acting against said heads or enlargements to seat the valves G and G' in the valve-openings 2 and 3. The arrangement is such that the springs J and J' are wholly isolated from the water which flows through the valve-casing D, so that such water cannot possibly produce any corrosion of said springs. Furthermore, the springs J and J' are sufficiently exposed to be readily accessible for adjustment and can be readily inspected whenever desired. The caps 7 and 8 also enable the valves G and G' to be readily inserted into and removed from the valve-casing, inasmuch as upon the removal of such caps, the valves can be readily so manipulated. In order to insure tight closing of the valve-openings 2 and 3 by the valves G and G', each of said valves is provided with a soft facing *f*² as in Fig. 4, secured to the valve by means of a retaining-ring G³ provided with an inwardly extending flange or shoulder *g*² for overlapping the outer edge of the facing. The retaining-ring G³ is threaded upon the valve, and each valve is secured to its spindle by means of jam-nuts *h'* which are screwed upon the externally screw-threaded and reduced front ends of the stems; the soft facings *f*² being held between the resulting shoulders of the valve-stems and the rear faces of the valves. Thus all liability of the soft facings to detach themselves from the valves when the latter are opened, is avoided, and consequently there will be no sticking of the facings in the valve-seats and no obstruction of the flow of water. Obviously, the described relation of the valves and their stems may be reversed, if desired, the stems in such event entering the valves from the front instead of from the rear, and the jam-nuts *h'* serving then to retain the facings in place.

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

A self-closing duplex faucet, comprising a

casing containing a plurality of valves, stems for said valves extending through the wall of the casing, a two-part oscillatory spindle having a detachable coupling for its parts and
5 carrying a double rock-arm the ends of which engage the ends of the valve-stems, returning-springs external to the casing and each surrounding one of the valve-stems, inlet- pipes detachably coupled to the casing, and a discharge-nozzle also detachably coupled to the casing, and hangers detachably connected to said casing, substantially as set forth.

HARRY S. TEAL.

Witnesses:

TODD MASON,
O. R. BARNETT.