(No Model.)

D. MORRISON.

FAUCET.

No. 255,881. Patented Apr. 4, 1882.

Fig. 6

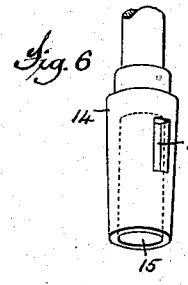


Fig. 1.

Fig. 2

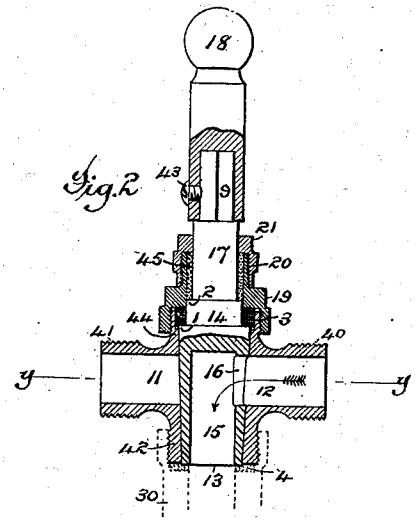


Fig. 3

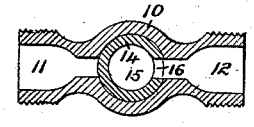


Fig. 4

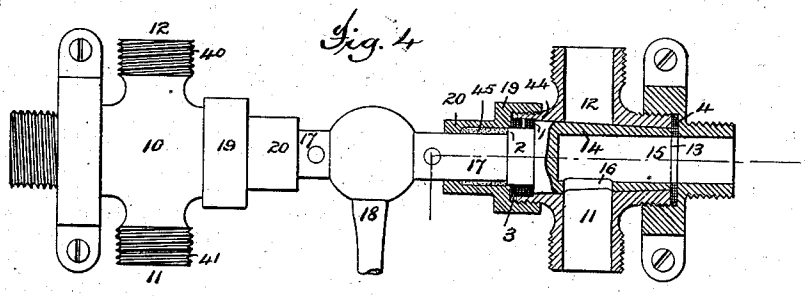
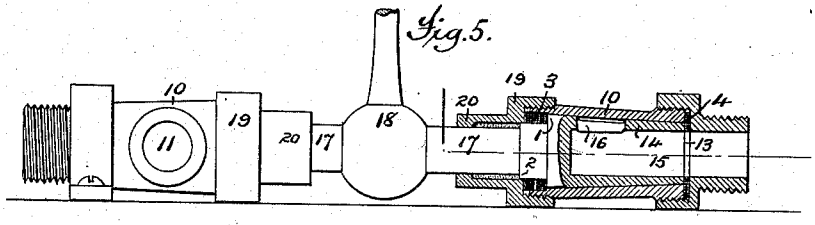


Fig. 5.



Attest;
Geo. H. Graham
A. P. Jasbera

Inventor,
David Morrison,
by Munson & Philipp
Attys.

N. PETERS. Photo-Lithographer, Washington, D. C.

UNITED STATES PATENT OFFICE.

DAVID MORRISON, OF NEW YORK, N. Y.

FAUCET.

SPECIFICATION forming part of Letters Patent No. 255,881, dated April 4, 1882.

Application filed January 12, 1882. (No model.)

To all whom it may concern:

Be it known that I, DAVID MORRISON, a citizen of the United States, residing in the city of New York, county of New York, and State of New York, have invented certain new and useful Improvements in Faucets, fully described and represented in the following specification and the accompanying drawings, forming a part of the same.

This invention relates to that class of faucets or cocks by which water or other liquid or fluid received from either of two sources of supply is delivered through the same nozzle, or vice versa, and which are known in the art as "three-way" faucets or cocks. Some of its features, however, may be applied with equal advantage to faucets of other constructions.

It is the object of this invention to produce a faucet or cock which shall be more satisfactory in its operation and which will be less liable to become leaky in use than those heretofore produced; and to that end the invention consists in certain details of construction and combinations of parts, all of which are hereinafter too fully explained and pointed out to make an extended preliminary description necessary.

In said drawings, Figure 1 is a side elevation of a three-way cock embodying my invention; Fig. 2, a transverse vertical section upon the line *x x* of Fig. 1; Fig. 3, a horizontal section upon the line *y y* of Figs. 2 and 4. Fig. 4 is a plan view, partly in section, of a compound three-way cock embodying the invention; Fig. 5, a side elevation, also partly in section, of the cock shown in Fig. 4, the plugs, however, being in a different position; and Fig. 6, a perspective view of the plug.

The casing or shell 10 of the cock is provided with two lateral projections, 40 41, both of which are provided with screw-threads, so as to afford a means for readily attaching the pipes leading from the two sources of supply. These projections are provided with longitudinal passages 11 12, which open into the vertical passage 13, containing the plug 14.

The opening 13 and the plug 14, which fits it accurately, are of the usual shape, being cylindrical and slightly tapered toward their lower ends.

Into the lower end of the plug 14 extends the duct 15, into which opens the port 16, which is so located that as the plug is turned it will register with the openings 11 and 12. (See Figs. 2 and 3.)

Surrounding the lower end of the plug 14 is the annular projection 42, which is also screw-threaded, and to which is secured the pipe 30. This pipe may be in the form of an elbow, as shown in Fig. 1, and carry at its end the nozzle 31, or it may be of any desired form or length to conduct the water to the point desired.

From the foregoing it will be readily understood that when the ports are in the position shown in Figs. 2 and 3 the water will flow from the pipe connected with projection 40 through opening 12 and port 16 into duct 15, as indicated by the arrow, and thence into pipe 30 and to the place of use, the opening 11 being at this time closed by the solid wall of the plug 14. If, however, the plug be given a half-turn, which can be readily done by the handle 18, secured to its projecting upper end, 9, the operation will be reversed, opening 12 will be closed, and port 16 will be brought into register with opening 11, so that water will be drawn from the other source of supply, while that from the first is entirely cut off. When it is desired to cut off both supply-pipes the plug is given a quarter-turn from the position shown in Figs. 2 and 3, which brings the ports in such position that both openings 11 and 12 are closed by the solid walls of the plug.

Cocks constructed upon this plan will be found very convenient in connection with wash-bowls, bath-tubs, sinks, &c., when both hot and cold water are used.

The upper end of the plug 14 is cut away so as to form upon it the shoulder 1 and 2, and terminates in the spindle 17, to which the lever 18 is attached in any convenient manner. As shown in the present case, the lever 18 is made in the form of a key or wrench, which fits onto the square portion 9 of the spindle, being held in place by the set-screw 43. The plug is constantly forced downward and held firmly in its seat in the shell or casing of the cock by the spring-washer 3, contained in an annular chamber formed between the plug and the upward projection 44 of the shell 10, and resting upon the shoulder 1. This spring 3 is con-

fined and pressed against the shoulder 1 by the cap 19, which screws onto the projection 44.

The cap 19 is provided with the upwardly-projecting flange 20, between which and the stem 17 there is (owing to the latter being cut away to form the shoulder 2) an annular chamber, which is filled with a packing, 45, of any suitable material. This packing is confined in the chamber by the cap 21, which screws onto the flange 20.

In faucets or cocks of this class as commonly constructed the accuracy with which the plug fits into its seat is the only provision against leakage. Experience, however, proves that this is not sufficient, and that it is difficult, if not impossible, to construct a cock upon this plan which will in use remain perfectly water-tight for any considerable length of time. The packing 45 cures this defect and prevents the possibility of the cock leaking upon its upper side.

With the construction shown the packing 45, when worn, can be readily renewed without the necessity of removing the plug and consequently of cutting the water off from the building. This is done by loosening set-screw 43, removing lever 18, and then unscrewing and removing cap 21.

To prevent leakage through the joint between the lower end of the plug and the extension 42 of the shell, the packing 4 is provided. This packing rests upon a shoulder formed on the pipe 30, and is of sufficient width to cover both the ends of projection 42 and the shell of plug 14. This packing likewise can be renewed by unscrewing pipe 30 without cutting off the water in the service-pipes.

It is evident that a cock constructed upon this plan may receive water from three or even more different sources of supply and deliver it through the same nozzle, it being only necessary to provide the shell with a corresponding number of projections, as 40 41, and openings, as 11 and 12.

Cocks of this construction are also well adapted for use in regulating the flow of liquids and fluids generally, as well as of water; and it is also evident that by reversing the direction of the flow of the liquid or fluid through the cock they may be used to draw the substance from a single source of supply into either of two or more receptacles or eduction-pipes.

In Figs. 4 and 5 this invention is shown as applied to a compound three-way cock, which consists of two three-way cocks so mounted with relation to each other that their plugs can be simultaneously operated by a single lever or handle. The purpose and operation of these compound cocks, being well known in the art, need no specific description. In these figures is shown a slight modification in the devices for holding the packing 45 in place. The annular chamber formed between the spindle 17 and flange 20 of cap 19, instead of being open at its top and provided with a cap, 21, for holding the packing in place, is closed at its top by an inward projection upon flange 20, which fits tightly around spindle 17. To insert the packing 45, the cap 19 is unscrewed from projection 44 and the packing inserted from the side next the shell, after which the cap is screwed back into place, thus holding in place both packing 45 and spring 3. Although this means of packing is herein shown and described only as applied to three-way cocks, yet it is evident that it may be applied to ordinary two-way cocks with equal advantage.

What I claim is—

1. The combination of the shell, the plug, the packing 4, covering the joint between the lower end of the plug and the shell, means for holding said packing in place, and the packing 45, surrounding the stem of the plug and held in place by a screw-cap, substantially as described.

2. The combination of the shell, the plug, the spring 3, held in place by a screw-cap, and the packing 45, surrounding the stem of the plug, and also secured in place by a screw-cap, substantially as described.

3. The combination of the shell, the plug having the shoulders 1 and 2, the spring seated on shoulder 1, the cap 19, holding the spring in place, the packing 45, surrounding the spindle 17, and the cap 21, holding the packing in place, all substantially as described.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

DAVID MORRISON.

Witnesses:
GEO. H. GRAHAM,
A. N. JASBERA.