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P. MUELLER

DOUBLE COCK

Filed March 8, 1920

Fig. 2.

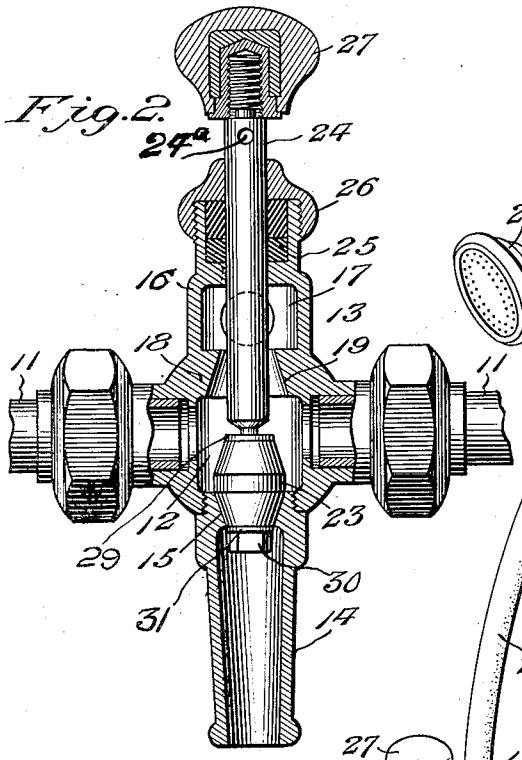
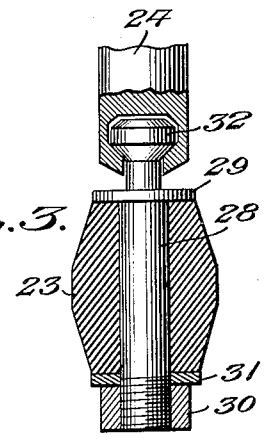


Fig. 1.

Fig. 3.



Witness

Edwin L. McKee

Inventor

Philip Mueller

By Lyon, Lyon & Rea

Attorney

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UNITED STATES PATENT OFFICE.

PHILIP MUELLER, OF DECATUR, ILLINOIS, ASSIGNOR TO ADOLPH MUELLER, TRUSTEE, OF DECATUR, ILLINOIS.

DOUBLE COCK.

Application filed March 8, 1920. Serial No. 364,029.

To all whom it may concern:

Be it known that I, PHILIP MUELLER, a citizen of the United States, residing at Decatur, in the county of Macon and State of Illinois, have invented new and useful Improvements in Double Cocks, of which the following is a specification.

The present invention relates to cocks or faucets and has for one of its objects to provide a cock of improved construction having two discharge openings and one single valve for controlling the openings.

Other objects of the invention are to provide a cock of this double type which is simple in construction and efficient in operation; in which the connection between the valve stem and the valve head is such as to insure proper seating of the latter on the valve seats; and to provide an improved double-headed valve which may be readily removed and inserted without taking down the valve casing or fixture.

In the present disclosure I have illustrated my improved cock as embodied in a sink fixture, but it is to be understood that the present disclosure is merely illustrative and not restrictive of the invention, as the cock is readily adaptable to uses other than the particular use herein disclosed.

In the drawings:

Figure 1 is a view in perspective of the fixture in which my improved cock is incorporated.

Figure 2 is a sectional view taken vertically through my improved center cock, and

Figure 3 is an enlarged sectional view through the valve and the connection between the valve and its stem.

Referring to the drawings by numerals, like numerals indicating like parts in the several views, 10 designates faucets of any suitable construction, which are located at any suitable distance from each other upon a supporting surface, such as a wall behind the sink, or a basin slab. One of these cocks is connected in the usual manner to a suitable hot water supply and the other to a cold water supply.

Extending from the faucets 10 are supply pipes 11 which deliver to the valve chamber 12 of my improved cock 13. The cock 13 has extending from the valve chamber 12 a downwardly projecting removable spout or nozzle 14 having at its upper end a conical valve seat 15. The neck portion of the cock is somewhat enlarged, as at 16, and internally recessed so as to provide an annular chamber 17 about the operating stem of the valve. The chamber 12 is divided off from the chamber 17 by a partition 18 having a centrally disposed opening, the wall of which opening is inclined or tapered to provide a conical valve seat 19.

The chamber 17 has a discharge opening which receives a nipple 20 to which is connected a rubber tube 21 leading to a spray head 22.

The flow of water through the valve seats 15 and 19 is controlled by means of the double-headed valve 23 carried by a push-rod 24 which passes through a suitable stuffing box 25 in the upper end of the neck portion of the cock body, the stuffing box being enclosed, as is usual, by a cap nut 26. Upon the outer end of the push rod 24 is an operating knob 27 which is preferably threaded upon the outer end of the stem so that it may be readily removed in disassembling the cock parts.

In order that the knob 27 may be readily removed from or affixed to the stem 24, it is necessary that the stem be provided with means to prevent its rotation while the knob is being manipulated. Various devices may be employed, but as one convenient means, I have shown the stem 24 as provided with an aperture 24^a which is designed to receive a pin or tool of any suitable type so that the stem 24 may be held against rotation and the knob 27 given a movement of rotation relative to the stem, to effect its removal.

That such construction is desirable is obvious, for the knob and stem being the only parts accessible and the valve on the stem being rotatable, the knob could not be readily removed unless means for holding the stem against rotation is provided.

The valve head 23 comprises an elastic body having its opposite ends bevelled to provide conical seating surfaces. The head has a central through opening which receives a pin or rod 28 having a fixed collar 29 adjacent its upper end, forming an abutment against which the valve head is maintained by means of a nut 30 threaded upon the lower free end of the rod 28, a washer 31 being preferably inserted between the valve and the nut 30.

The conical surfaces of the valve 22 are so disposed as that they come to their seats with a wedging action, so that the valve will, when once brought to closed position, retain that position; the frictional engagement of the stem 24 with its packing 25 tending also to maintain the valve 22 in closed position.

It is to be noted that the seating surfaces of the valve head 23 taper to correspond with the conical valve seats 15 and 19. To insure proper seating of the valve, the valve head, preferably, is connected to the valve stem by means of a swivel, so that, should the valve stem be slightly out of alignment with the valve seats, the head may be properly seated, as would not be true in the event that the head was rigidly carried by the stem. The rod 28, at its upper end, terminates in a circular head 32, the upper and lower edges of which are bevelled. This head is received in a recess or cavity in the lower end of the push-rod 24, which cavity is of substantially the same configuration in cross section as the head, said cavity being slightly larger than the head. This gives a rotatable and rocking connection, which is substantially a universal joint, and provides sufficient clearance to allow movement of the head within the cavity so as to insure free play of the valve for seating and permit it to hang always vertically from the stem.

It will be noted that the valve head 23 controls the flow of water through the spout or nozzle 14 and the discharge nipple 20. The faucets 10 are operated in the usual way to admit hot and cold water, in the desired proportions, to the valve chamber 12. When the push rod 24 is pulled upwardly it closes the valve seat 19, thus preventing a flow through the spray device and allowing a discharge through the spout 14. When the rod 24 is pushed downwardly, the opening through the valve seat 15 is closed and the water passes through the seat 19, nipple 20 and tube 21 to the spray head 22.

It will be clear that, if desired, the valve 23 may be adjusted to a mid-position between the upper and lower seats and the water permitted to flow through both upper and lower ports.

The valve head 15, due to its swivel connection with the stem 24, may always be properly brought into engagement with either of its seats 15 and 19. By making the head 23 circular in form, beveling its edges, and having the cavity correspond in cross sectional configuration to the head, the valve cannot be angularly displaced relative to the valve seats 15 and 19.

Preferably, the spout 14 is removably connected to the cock body by means of screw threads and the screw threaded opening in the body which receives the spout, is of greater diameter than the ball valve to permit removal of the head from the cock. To remove the head, the spout 14 is screwed from position, the knob 27 is removed from the push rod and the latter is forced downwardly through the packing gland 25. With the construction described it will be seen that by merely removing the spout 14 and the knob 27, the valve, its operating stem, and the stem-packing, may be renewed or repaired without disturbing the fixture.

It is, of course, understood that my invention is susceptible of various modifications and changes which would be within the spirit of the invention without departing from the scope of the following claims.

I claim:

1. A cock comprising a body portion having a valve chamber provided with two cone-seated outlets having seating surfaces of relatively large area, a valve stem mounted for reciprocal movement in said cock body, a double-coned valve having a rocking and rotatable connection with said stem, the coned surfaces of said valve being adapted to engage wedgingly the opposed cone-seated outlets over substantially their entire area so as to alternately close either of said outlets.

2. A cock comprising a body portion having a valve chamber provided with two cone-seated outlets, a valve stem mounted for reciprocal movement in said cock body, a double-coned valve having a connection with said stem, the cone surfaces of said valve being adapted to engage the opposed cone-seated outlets over substantially their entire areas so as to alternately close either of said outlets, said valve being shaped to fit in said seats with a wedging action.

3. A cock comprising a body portion having a valve chamber provided with two cone-seated outlets, a plunger valve stem mounted for reciprocal movement in said cock body, a double-coned valve having a connection with said stem, the cone surfaces of said valve being adapted to engage the opposed cone-seated outlets over substantially their entire areas so as to alternately close either of said outlets, said valve being of elastic material and shaped to fit in said seats with a wedging action.

4. A cock comprising a body portion having a valve chamber provided with two cone-seated outlets, a plunger valve stem mounted for reciprocal movement in said cock body, a double-coned valve having a rocking and rotatable connection with said stem, the cone surfaces of said valve being adapted to engage the opposed cone-seated outlets over substantially their entire areas so as to alternately close either of said outlets, said valve being shaped to fit in said seats with a wedging action.

5. A cock comprising a body portion having a valve chamber provided with two cone-

seated outlets, a plunger valve stem mounted for reciprocal movement in said cock body, a double-coned valve having a rocking and rotatable connection with said stem, the cone surfaces of said valve being adapted to engage the opposed cone-seated outlets over substantially their entire areas so as to alternately close either of said outlets, said valve being of elastic material and shaped to fit in said seats with a wedging action.

In testimony whereof I have hereunto set my hand.

PHILIP MUELLER.