A. B. HOLMES AND T. M. DUGAN.

SPRAY VALVE.

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Fig. 1.

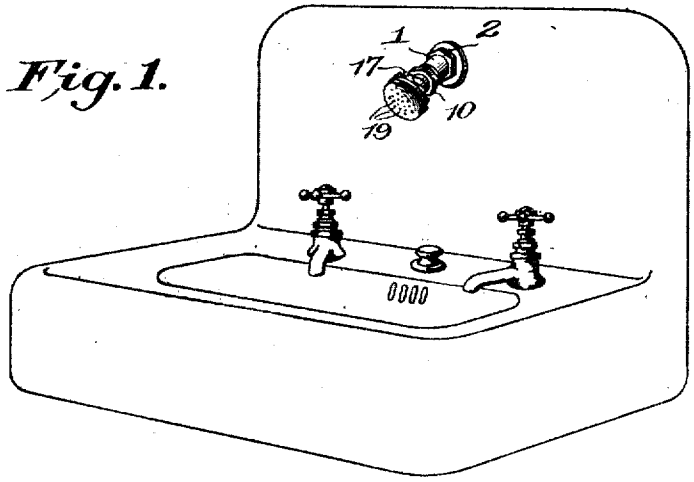
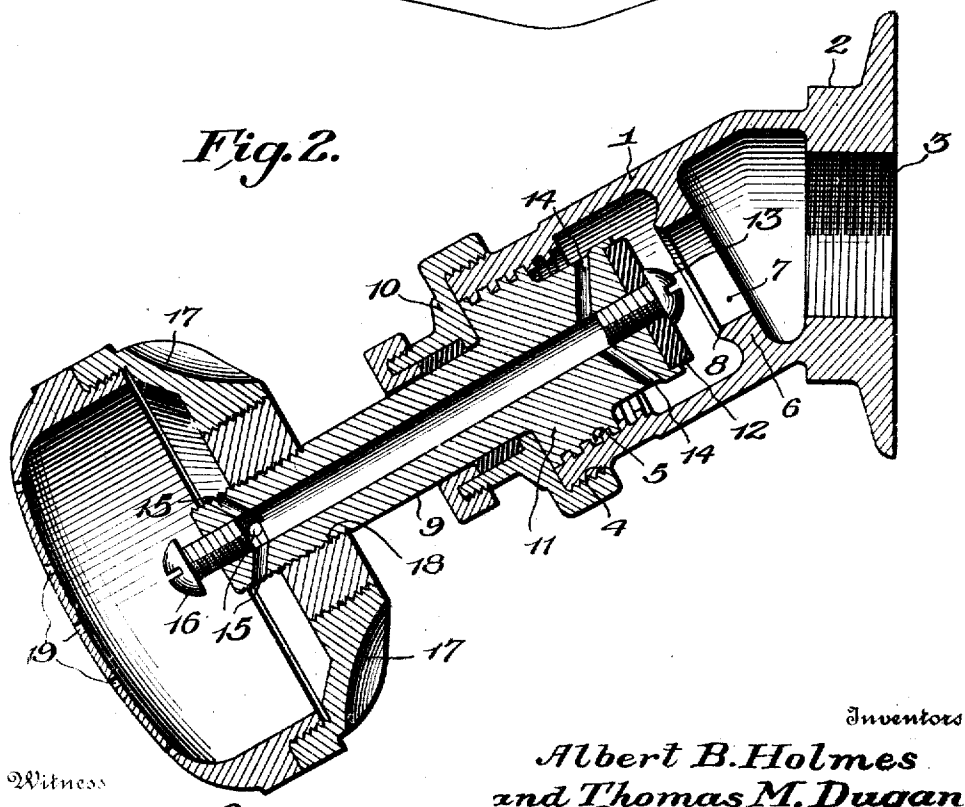


Fig. 2.



Witness

Clee. L. Griesbauer.

H. D. Stubard.

Inventors

Albert B. Holmes

and Thomas M. Dugan,

By D. A. Mosier,

Attorneys

UNITED STATES PATENT OFFICE.

ALBERT B. HOLMES AND THOMAS M. DUGAN, OF McKEESPORT, PENNSYLVANIA.

SPRAY-VALVE.

1,337,516. Specification of Letters Patent. Patented Apr. 20, 1920.

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To all whom it may concern:

Be it known that we, ALBERT B. HOLMES and THOMAS M. DUGAN, both citizens of the United States, and residents of McKeesport, in the county of Allegheny and State of Pennsylvania, have invented certain new and useful Improvements in Spray-Valves, of which the following is a specification.

This invention relates to valves, and the object of the invention is to provide an improved valve particularly applicable for use in connection with wash basins, and to effect a spray discharge, whereby one may wash his hands in running water in a very convenient and satisfactory manner.

A further object of the invention is to provide for the opening and closing of the valve through the manipulation of a combined handle and discharge spout, the preferred embodiment of the spout being that of a rose or spray head.

With these and other objects in view, the present invention consists in the combination and arrangement of parts, as will be hereinafter more fully described, shown in the drawings, and particularly set forth in the appended claims, it being understood that changes in the form, proportion, size and minor details may be made, within the scope of the claims, without departing from the spirit or sacrificing any of the advantages of the invention.

In the drawings,

Figure 1 is a perspective view showing the valve of the present invention employed in conjunction with a wash basin.

Fig. 2 is an enlarged longitudinal sectional view embodying the features of the present invention.

Referring, first, more particularly to Fig. 2 of the drawings, it will be seen that the present invention includes a casing 1, which, in the present embodiment, is in the form of a cylinder which is open from end to end. One end of this cylindrical casing is provided with a coupling designated 2, which, in the present embodiment of the invention, is in the form of an enlarged head or external flange provided with interior screw threads 3, whereby the casing may be connected to a pipe or other suitable source of supply. In the present instance, the coupling is a rigid or integral part of the casing. Furthermore, the coupling is disposed obliquely across the end of the casing, in order that the latter may have the desired downward inclination when mounted above a wash basin, but it is, of course, apparent that the coupling might be concentric instead of eccentric, according to the desired disposition of the casing with respect to the support to which it is applied.

The outer or forward end of the casing is externally threaded, as at 4, and the same end of the casing is provided with interior threads 5 which are coarse or of great pitch for a purpose as will be hereinafter described. At an intermediate point, the valve casing is provided with a transverse partition 6 pierced by a central opening 7. An outstanding cylindrical flange 8 surrounds the opening 7 and constitutes a valve seat.

Extending longitudinally through the outer end of the casing is a tubular valve stem 9 having its intermediate portion extending through a gland or stuffing box 10 provided upon the outer end of the valve casing and engaging the external threads 4 thereof. This stem is provided at its inner end with an enlarged circular head 11, provided on its periphery with coarse threads fitting the threaded portion 5 of the valve casing, so that a relatively great endwise movement of the valve stem may be obtained by a slight rotation thereof. A valve disk 12 in the form of a rubber, leather or other disk washer is secured to the inner end of the valve stem in any suitable manner, say for instance, by means of a screw 13 passing through the middle of the valve and engaging a threaded opening in the end of the stem. Branch passages 14 extend diagonally outward from the longitudinal passage in the valve stem and open outwardly through the periphery of the head between the valve 12 and the threaded part of the head. The head of the valve stem, at the inner side of the threaded portion thereof, is somewhat reduced so as to provide an annular space between the head and the walls of the casing. At the outer end of the valve stem there are diagonal or oblique passages 15 communicating with the central passage and opening through the periphery of the valve stem. A regulating screw 16 extends into a threaded opening in the outer end of the valve stem and may be moved into and out of the outer end of the

longitudinal passage of the stem so as to control the branch passages 15 and regulate the passage of water therethrough.

A combined handle and spray head 17 is provided upon the outer end of the stem. This spray head is hollow and round or substantially spherical in shape. The back wall thereof is provided with a threaded opening 18 receiving the external threaded portion of the forward end of the stem, which latter projects into the interior of the head. The front wall of the head is provided with perforations 19 for the passage of water therethrough.

In using the valve, the combined spray head and handle is grasped in the hand and turned to the left, thereby moving the valve disk 12 away from its seat and permitting the water to flow around the inner end of the valve stem, through the branch passages 14, thence along the central passage, then out through the outer branch passages 15 into the head, and finally escaping through the perforations 19 in the form of a spray or shower, whereby one may very conveniently wash his hands in the running water issuing from the spray head. After the hands have been washed and also rinsed by the clear running water, the valve is closed by grasping the combined handle and spray head and turning the valve stem to the right so as to seat the valve disk. It will here be noted that this last operation of closing the valve is done with clean hands, and the water issuing from the valve will be directed all around the head or handle, thereby cleansing the same and leaving it in a clean and sanitary condition after each use thereof.

Having thus described the invention, what we claim is:—

1. A spray valve comprising a casing having a valve seat, a rotatable valve stem extending through the casing, a hollow spray head carried concentrically on the outer end of the valve stem, said head having a series of perforations therein, a valve disk on the inner end of the valve stem, said disk being arranged to engage the valve seat in closing the valve, said valve stem having an aperture connecting the interior of the casing with the interior of the spray head and said spray head forming a handle for turning the valve stem to move the valve disk toward and away from the valve seat.

2. A spray valve comprising a casing having a valve seat, a rotatable valve stem extending through the casing, a hollow spray head carried concentrically on the outer end of the valve stem, said head having a series of perforations in the wall thereof, a valve disk on the inner end of said valve stem, said disk being arranged to engage the valve seat in closing the valve, said valve stem having an aperture connecting the interior of the casing with the interior of the spray head and said spray head forming a handle for turning the valve stem to move the valve disk toward and away from the valve seat and adjustable means within the spray head for regulating the flow of fluid into the spray head.

3. A spray valve comprising a casing having a valve seat, a rotatable valve stem extending through the casing and having a screw threaded connection therewith, a hollow spray head carried concentrically on the outer end of the valve stem, said head having a plurality of perforations in the wall thereof, a valve disk on the inner end of said valve stem, said disk being arranged to engage the valve seat in closing the valve, said valve stem having an aperture connecting the interior of the casing and hollow spray head and said spray head forming a handle for turning the valve stem to move the valve disk toward and away from the valve seat and adjustable means within the spray head for regulating the flow of fluid into the spray head.

4. A spray valve comprising a casing having a valve seat, a rotatable valve stem extending through the casing and having a screw threaded connection therewith, a hollow spray head carried concentrically on the outer end of the valve stem, said head having a plurality of perforations in the wall thereof, a valve disk on the inner end of said valve stem, said disk being arranged to engage the valve seat in closing the valve, said valve stem having an aperture connecting the interior of the casing with the interior of the spray head and said spray head forming a handle for turning the valve stem to move the valve disk toward and away from the valve seat.

5. A spray device for wash basins comprising a casing having an inlet port, a valve for the port, an axially rotatable valve stem for controlling the valve, and a combined handle and spray nozzle disposed concentrically upon the outer end of the valve stem, the stem having a conduit leading from the interior of the casing and discharging into the nozzle, whereby the acts of opening and closing the valve subjects the hand of the operator to the spray issuing from the nozzle while the hand is engaged with the nozzle.

In testimony whereof we have hereunto set our hands.

ALBERT B. HOLMES.
THOMAS M. DUGAN.