

J. D. O'DONNELL.

Draft-Cocks for Soda-Water and other Liquids.

No. 143,777.

Patented Oct. 21, 1873.

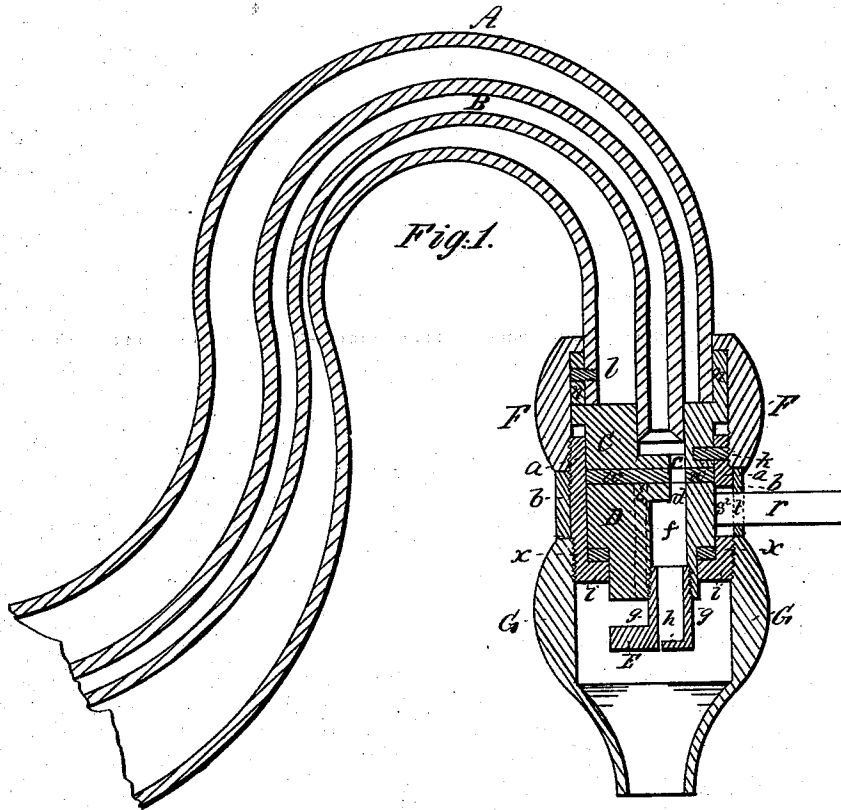


Fig. 2.

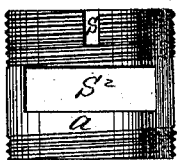


Fig. 3.

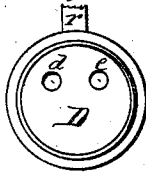


Fig. 4.

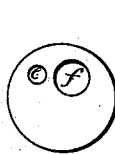


Fig. 5.

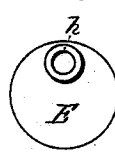
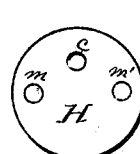


Fig. 6.



Witnesses

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IMPROVEMENT IN DRAFT-COCKS FOR SODA-WATER AND OTHER LIQUIDS.

Specification forming part of Letters Patent No. 143,777, dated October 21, 1873; application filed October 3, 1873.

To all whom it may concern:

Be it known that I, JAMES D. O'DONNELL, of the city of Washington and District of Columbia, have invented new and useful Improvements in Draft-Cocks for Soda-Water and other Liquids, of which the following is a specification:

The nature of my invention consists in making valve work horizontally in its seat against disk of leather or other suitable material, which may be so compressed, by screwing up nut of coupling, that a leak occurring may be stopped instantly.

In constructing apparatus for drawing soda-water the valve is made with two longitudinal orifices, so arranged that two streams—the one in large volume dashed into spray, the other in fine stream with full force of pressure of gas in the fountain—may be drawn through the same nozzle. In drawing other liquids only one orifice is used—as, for instance, in cocks for basins, bath-tubs, &c.

In order to enable those skilled in the art to manufacture, I will herein give a true and explicit description of same, reference being had to the accompanying drawings forming a part of these specifications, of which—

Figure 1 shows sectional view of draft-cock attached to arm of soda-draft with valve open, as in drawing small stream. Fig. 2 shows view of cylinder in which valve works, having two slots in same and thread cut on either end. Fig. 3 shows view of valve, having two orifices in same. Fig. 4 shows view of end of valve-spindle with one of the orifices enlarged. Fig. 5 shows view of top of ledge attached to end of valve-spindle. Fig. 6 shows view of valve-seat having one orifice in, and two lugs on, same.

A represents the arm of soda-draft; B, the tube for conducting aerated water from fountain to valve; C, the body of valve-seat inverted above the valve, recessed at upper end, and having large orifice, into which tube B is soldered, connecting with small orifice, by means of which communication is established between valve and fountain; D, the valve rotating in its seat, having two longitudinal orifices and horizontal handle tapped into same laterally; E, the ledge having tubular stem with fine orifice extending through other side

of same; F F, the section of nut, coupling with cylinder, and clamping valve and valve-seat together; G G, the section of nozzle through which soda-water is discharged; H, Fig. 6, the valve-seat with one orifice in the same, and two lugs to prevent washer from rotating; a, Fig. 2, the cylinder, in which valve works, having horizontal and vertical slot in same, and screw cut on either end; b b, the section of band rotating around cylinder a, and covering horizontal slot in same; c, the orifice in valve-seat; d and e, the orifices in valve; f, the large orifice connecting with orifice d near face of valve; g g, the section of tubular eccentric stem to ledge E, by which ledge is connected with valve; h, the orifice in same, terminating in fine orifice in bottom of ledge, through which fine stream is discharged; i i, the sections of flange, on inside of cylinder, at end of same; k, the lug on side of valve-seat; l, one of three screws securing together body of valve-seat and arm of draft; m m', the lugs on valve-seat; n n, the sections of body of valve-seat inclosing arm of draft and forming collar to hold nut in position; r, the horizontally-working handle of valve tapped into side of valve between orifices and equidistant from each; S S², the slots in cylinder a, the vertical one of which fits over lug k, which thus prevents cylinder a from rotating; t, the orifice in rotating band, through which valve-handle is passed; w w, the sections of washer of leather, or other suitable material, against which valve works; x x, the section of washer of leather, or other suitable material, on which valve rests.

In order to make connection between the draft-cock and arm of draft, the tube B having been previously fitted into orifice and securely soldered to body of valve-seat, then the other end of tube passed through arm A after nut has been slipped over end of arm, the arm is inserted in recess of body of valve-seat, and there secured by means of screws. The washer having been fitted over spindle of valve the valve is placed inside of cylinder a, the ledge E screwed into end of valve-spindle, the rotating band is fitted over cylinder a, the handle of valve inserted through orifice in band and screwed into side of valve, the nozzle screwed on end of cylinder a, the washer adapted to valve-seat, the cylinder slipped over end of

valve-seat and coupled with nut F F, nut screwed down hard, and draft apparatus for soda-water completed.

In adapting valve to drawing other liquids only a slight modification is necessary. The orifice *e* in valve is omitted. The orifice *d* is made V-shaped, the apex not quite reaching center of valve. The orifices in valve-seat and washer made also of same shape. The ledge E is omitted. The horizontal slot in cylinder *a*, likewise rotating band, nozzle, and screw which couples nozzle and cylinder, are omitted. Spindle of valve is elongated. Vertical opening is made in same communicating with orifice *d*. Into this orifice is screwed tube, bent at either end, and handle to work valve and discharge liquid is formed.

In fitting up basin-cock a tubular standard, similar to those in general use, and about two inches high above shoulder, with diameter about same as valve-seat, is made to couple by screw with valve-seat body by means of screw cut on inside of recess in body of valve-seat. This joint is luted with white or red lead to make a fixed and water-tight joint, and the fitting up of cock finished as in the other case. Nut must be placed in position over end of standard before valve-seat body and standard are coupled together.

It will be seen that, by using a bent tube of proper diameter and coupling with valve-seat body in same manner, a cock for bath-tub, dish-sink, &c., or for drawing other liquids is formed. Thus cocks, for the several purposes named, may be devised without any material departure from the general principle of construction.

In operating to draw soda-water the handle of valve is pushed to termination of slot S², then to opposite side, then to center of slot. The water discharged through orifice *e* dashes against top of ledge E and is broken into spray, falling into receiver below without splashing, while the water, passing through orifice *d*, is conveyed, by means of enlarged orifice, to a point near center of nozzle and discharged with great force in perpendicular line. The object of drawing large stream is to draw the water rapidly without loss of gas, while the office of the fine stream is to mix the sirup and water intimately. Any obstruction occurring must necessarily be inside of tubular stem to ledge E; and, in such an event, after nozzle has been detached from cylinder, ledge E may be unscrewed and the obstructions removed without any delay.

The superiority of my invention consists in its simplicity, effectiveness, and cheapness. Its simplicity can be seen at a glance. Its effectiveness will be appreciated when the mode of operation is understood; and the impossibility of any derangement of same occurring will be seen when it is shown that there is not a spring in the whole mechanism. There being but one joint—the valve itself—there is only one-half the liability to leakage there is when there are two, as is usually the case in such apparatus. A leak may be readily stopped by screwing down nut F F, which causes valve to compress washer, and thus leaks may be stopped until washer is so compressed as to be worthless, when a new one may be substituted in a few minutes. Its cheapness will be understood when the simplicity of the mechanism is appreciated. Its advantage over the swivel-cock for basins is in its durability, the simple renewal of washer making it almost indestructible. Its advantage over the compression-cocks is that the valve, not being lifted from its seat, requires no muscular exertion to screw it down on its seat tight enough to prevent a leak, as is the case with compression-cocks, on account of the screw being made to raise valve rapidly, giving very little leverage to work it back again. A cork-washer may be substituted, with great advantage, for the draft of hot water which rapidly rots and destroys the leather.

I claim as my invention—

1. The combination of the tube B, the horizontally-working valve D, having two orifices, the one of which is enlarged at its outer end, with the valve-seat C provided with lug *k*, washer *w*, cylinder *a*, and nut F, substantially as and for purpose specified.

2. The combination of the horizontally-working valve D, provided with two orifices, washer *x*, cylinder *a*, the tubular eccentric stem *g*, and the ledge E, substantially as and for the purpose specified.

3. The combination of the casing A, the tube B, the valve-seat C, lug *k*, the washer *w*, the valve D, provided with two orifices, one of which is enlarged at its outer end, and provided with stem *r*, with the band *b*, the washer *x*, the tubular eccentric stem *g*, the ledge E, and nozzle G.

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Witnesses:

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