June 30, 1936. C. J. MUEND 2,046,030

FAUCET

Filed Aug. 8, 1933

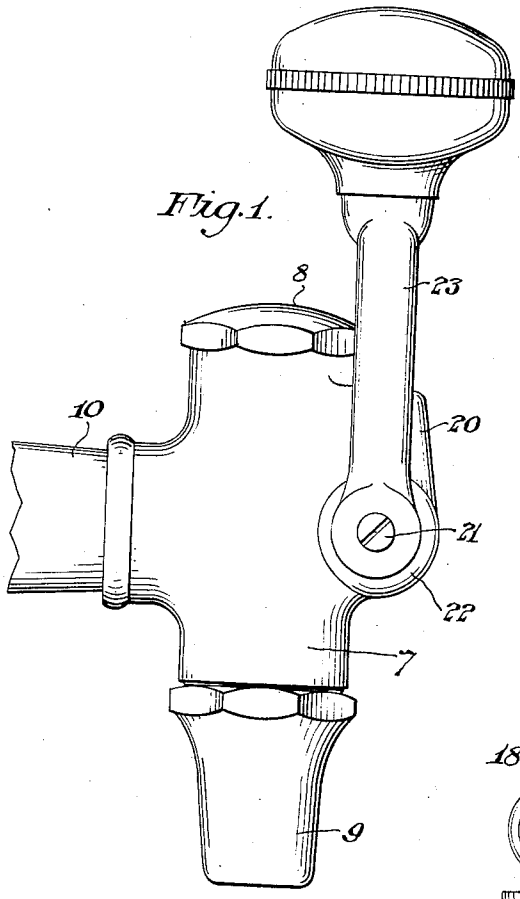


Fig. 1.

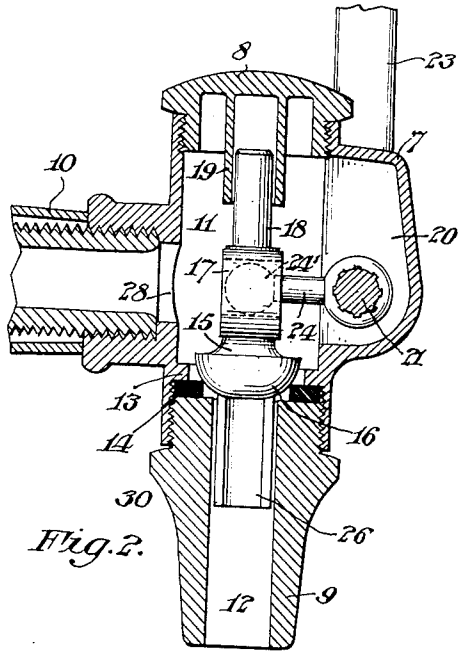


Fig. 2.

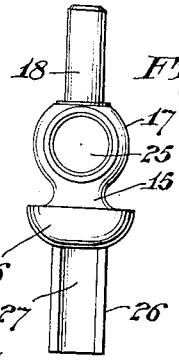


Fig. 3.

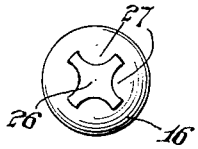


Fig. 4.

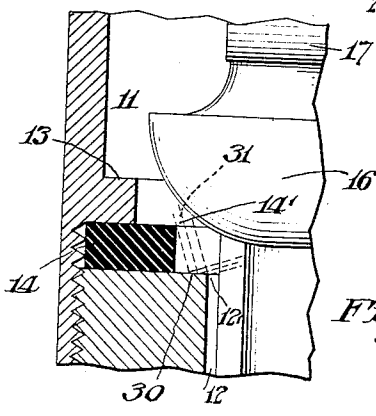


Fig. 5.

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UNITED STATES PATENT OFFICE

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FAUCET

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Application August 8, 1933, Serial No. 684,146

1 Claim. (Cl. 251—167)

The invention relates to faucets, especially faucets for liquids under pressure.

The object is to provide a faucet which will discharge the liquid without spurting or splashing.

The device is particularly adapted for controlling the flow of beverages under pressure, when the same delivers to a mug or glass or similar receptacle, so that the discharging liquid will not splash.

It is known that, in such devices, where the valve opens directly into the discharge channel of the faucet, the liquid, upon the first break of the valve with its seat, spurts or issues in a jet which striking the bottom of the mug or other receptacle is liable to splash.

I have discovered that this objection may be overcome by providing a valve seat which is offset from the margin of the discharge channel, so that upon the break of the valve from the seat the liquid strikes a surface intermediate the seat and the margin of the discharge channel, thus breaking or baffling the spurt or jet. This results in an even smooth flow from the end of the discharge nozzle.

The invention therefore comprises such means, and other means in combination therewith, for controlling the discharge flow from the nozzle as herein described.

Referring to the drawing which illustrates merely by way of example suitable means for the embodiment of my invention:—

Fig. 1 is a side elevation of a faucet in accordance with my invention.

Fig. 2 is a central vertical section of same.

Fig. 3 is an elevation of the valve element, at right angles to that shown in Fig. 2.

Fig. 4 is an underside plan of same.

Fig. 5 is a sectional detail on an enlarged scale.

Similar numerals refer to similar parts throughout the several views.

As shown in the drawing the faucet comprises the housing 7, having the cap 8 threaded on the top thereof, the nozzle element 9 threaded into the bottom thereof and the supply pipe 10 threaded into the side thereof and delivering into the chamber 11, formed in the housing. The nozzle element 9 is provided with a straight channel 12 from top to bottom and delivers from the chamber 11. Between the top of the nozzle element 9 and an annular flange 13, within the lower interiorly threaded portion of the housing 7, is clamped a valve seat 14, which is preferably of medium hard rubber.

This valve seat 14 projects inwardly beyond the inner margin of flange 13. The inner margin of this seat 14 does not extend to the margin of channel 12, but is spaced back a substantial distance from said channel margin, as shown in Figs. 2 and 5.

A valve element 15, which is preferably rigid, has a convex lower end 16 for cooperation with the upper inner margin of valve seat element 14. This valve element 15 has a yoke or upwardly extending recessed portion 17, and extending above portion 17, is a post 18 extending into the sleeve or tubular part 19 projecting downwardly from the underside of the cap 8. The sleeve or tube 19 forms a guide for post 18. In an offset recess 20 of the housing is journalled a shaft 21 projecting through and having bearings in the lugs 22 formed on the wall of housing 7. This shaft 21 is connected on the outside of the housing to the operating handle 23. Mounted upon shaft 21, within the offset recess 20, is an actuating arm 24, having a ball 24′ on its outer or free end projecting into the recess 25 of valve element 15, and serves to communicate the movement of handle 23 to the valve element 15 to cause its vertical actuation.

The guide element 26 extends downwardly from the valve proper 16 of valve element 15, and is longitudinally fluted, as at 27, as shown in Fig. 3, to form liquid passages between said guide and the surrounding wall of channel 12. This guide also cooperates with the baffle between the margin of the valve seat and the margin of the nozzle channel, in modifying the flow as herein more particularly described.

It will also be noted that the supply inlet port 28, between pipe 10 and chamber 11, is positioned above the valve 16 and valve seat element 14.

In operation

When the handle 23 is rocked in one direction, the valve 16 is lifted from its seat, and when rocked in the opposite direction the valve is closed. Due to the post 18 and cooperating guide tube 19, and the guiding element 26 having a slidable fit in the nozzle channel 12, the up and down motion of valve is vertical. This is permitted, without binding, by the loose fit of ball 24′ in the circular or cylindrical opening 25.

When the valve 16 is seated, the pressure of the liquid in chamber 11, and especially due to the great area of the valve body presented to said pressure, the valve is held upon its seat effectively to prevent any leak. The slight yielding of the medium hard rubber seat to the hard metal face of the valve, also contributes to the

sealing efficiency, and the tendency of the seat element to wear or distort is reduced to a minimum.

When the valve is actuated to break from the seat, the break may not always be uniform or simultaneous throughout the circle of valve contact, but there may be a momentary first break at a portion only of the circle of content, when the liquid is under pressure there is a tendency for the liquid to spurt at said point of first break, which causes a jet of liquid to strike the bottom of a receptacle which will cause the liquid to splash, which is wasteful and otherwise objectionable. This is the trouble with the conventional faucet now in common use.

I have found that by having the margin, as at 12' of the nozzle bore or channel 12, positioned in advance of the inner margin of the valve seat, as at 14', as clearly shown in Fig. 5, or with the margin 14' spaced back a substantial distance from margin 12', a shelf or abutment or baffle 30 is provided, which encounters the spurt, indicated by the dotted lines 31 in Fig. 5, and breaks the jet before it enters the nozzle bore, the result being to overcome the objectional jet and splash, above referred to. That is to say, the liquid flows into and through the nozzle bore without undue velocity or objectionable violence. The nullifying action upon the spurt or jet as above described, is also augmented by the fluted walls of the element 26, since the lines of force of the jet or spurt, especially at the first break between valve and seat, are deflected or baffled before delivering to and from the nozzle 9. Thus we secure an even and smooth flow from the nozzle, irrespective of the pressure of delivery to chamber 11.

What I claim is:—

In an anti-splash faucet, the combination of a body having a chamber with inlet and discharge openings, a discharge nozzle associated with said body and having a channel communicating with the said discharge opening, a valve-seat member and a cooperating valve, the valve-seat member comprising an annular body having an opening of diameter substantially less than that of the said discharge opening, and substantially greater than that of the nozzle channel, said valve-seat member having a thickness corresponding substantially to the distance between its inner margin and the margin of the said channel, thereby providing baffles in step formation between said discharge opening and said channel.

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