Jan. 14, 1930. J. M. TRAVIS 1,743,738

FAUCET

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Fig. 1.

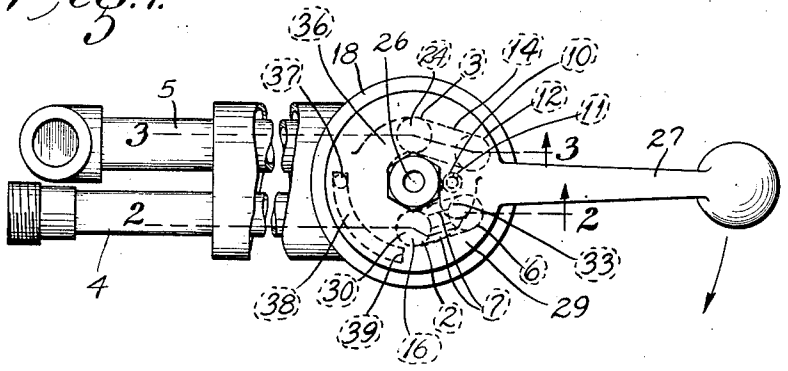

Fig. 2.

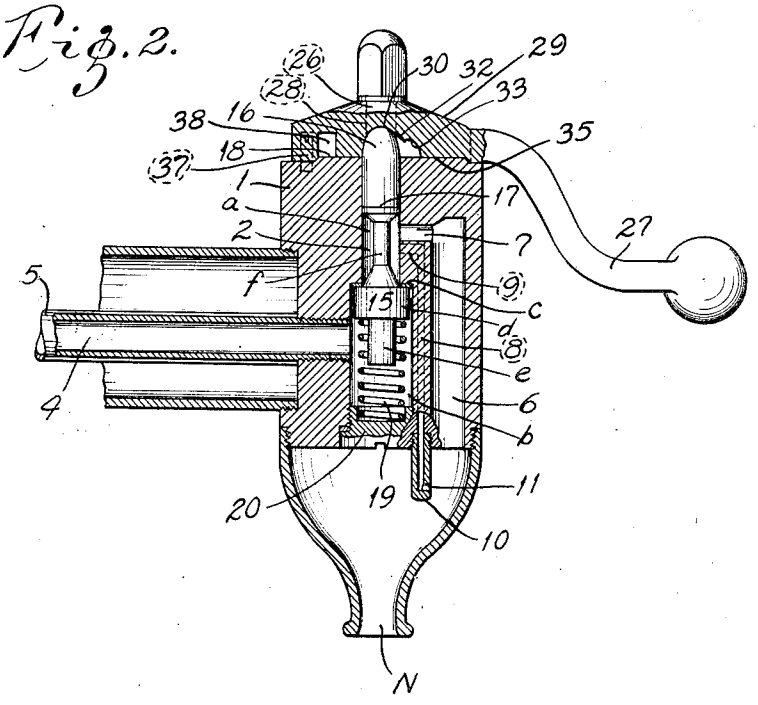

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Fig. 3.

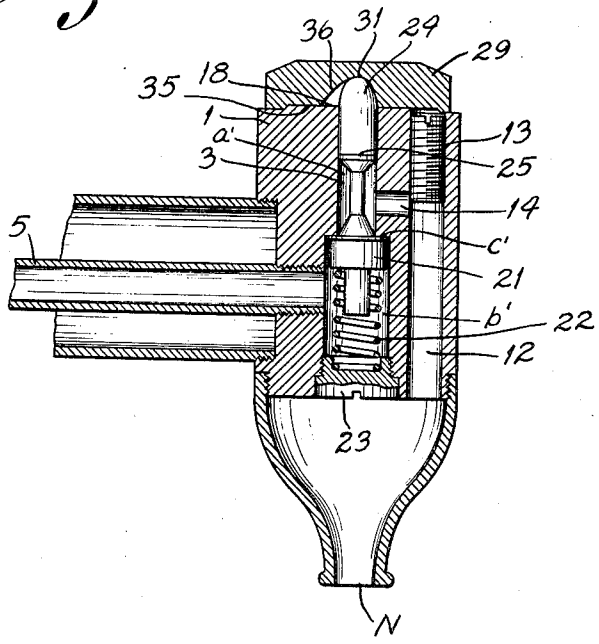


Fig. 4.

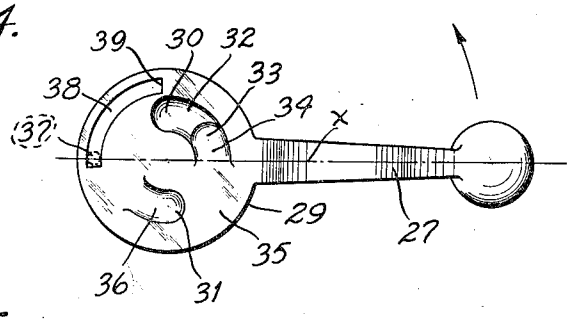
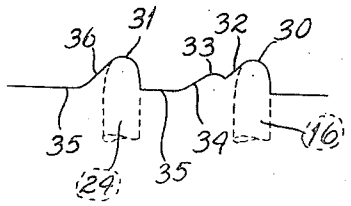


Fig. 5.



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Patented Jan. 14, 1930 1,743,738

UNITED STATES PATENT OFFICE

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FAUCET

Application filed March 1, 1928. Serial No. 258,223.

The present invention relates to improvements in faucets of the duplex type, that is, those having the property of discharging two different fluids at the same time, and is an improving departure over my Patent No. 1,619,278 dated March 1, 1927.

As in the patent referred to, the present invention embodies two water ports and a syrup port, one of said water ports discharging a high velocity stream of water which commingles with the syrup simultaneously discharged to form a frothy drink, the other water port discharging a comparatively coarse low velocity stream simultaneously with the syrup to produce a flat drink. However, the present invention differs from that of Patent No. 1,619,278 in that the faucet handle is moved in but one direction to produce both of these results instead of in opposite directions. The performance of both functions of the faucet handle in but one direction avoids confusion and more readily enables the dispenser to control the exact consistency of the drink since the handle does not have to be moved through the closed position from one dispensing position to the other. These advantages will be better apparent from a detailed description of the invention in connection with the accompanying drawings, in which:

Figure 1 represents a plan view of my improved faucet with parts of the connections thereto broken away; Fig. 2 is a vertical longitudinal section taken on the line 2—2 of Fig. 1; Fig. 3 is a vertical longitudinal section taken on the line 3—3 of Fig. 1; Fig. 4 is a bottom plan with the faucet handle showing the cam formations for actuating the water and syrup valves; and Fig. 5 is a diagrammatic development of the cams in the handle which operates the valves.

Referring to the drawings, 1 represents a casing in which are symmetrically disposed a water valve chamber 2 and a syrup valve chamber 3, the upper part *a* of said chamber 2 being of a smaller bore than the lower part *b*, there being thus formed a shoulder *c* at about the middle of the chamber 2. The syrup valve chamber 3 is similarly formed, having its upper part *a'* smaller than its lower part *b'*, and a shoulder *c'* at the juncture of the bores *a'* and *b'*. A pipe 4 is screw-threaded into the casing 1 so as to communicate with the enlarged part *b* of valve chamber 2 and a pipe 5 is screw-threaded into said casing so as to communicate with the enlarged part *b'* of syrup valve chamber 3, the pipe 4 leading to the carbonated water supply and the pipe 5 leading to the syrup supply.

The casing 1 is provided with a water port 6 on the same side with the valve chamber 2, said port 6 communicating with the part *a* of chamber 2 by means of a plurality of transverse passageways 7. Alongside the port 6 is an auxiliary port 8 of small diameter, said port 8 also communicating with the chamber *a* by means of a transverse passageway 9 disposed in a plane below the passageway 7, and a nozzle 10 is screwed into the lower end of the auxiliary port 8, said nozzle having a small aperture 11 in its lower extremity. The casing 1 is also provided with a syrup port 12 adjacent to the valve chamber 3, said syrup port extending entirely through the casing and being closed at the upper end by a syrup gage screw 13 which is adapted to be screwed inwardly or outwardly to control the amount of passageway 14 that communicates with port 12, said passageway 14 also communicating with the port *a'* of valve chamber 3.

A valve 15 is disposed in the chamber 2, said valve comprising a cylindrical part *d* from which extends downwardly a reduced portion *e* and upwardly a reduced portion *f*. A valve tip 16 is disposed in the part *a* of chamber 2, said tip bearing against a gasket 17 disposed between the tip and the upper end of valve portion *f*, the rounded nose of the valve tip 16 projecting upward beyond the top surface 18 of casing 1. A spring 19 is coiled about the stem *e* and is held in the part *b* of chamber 2 by a screw plug 20, said spring exerting its tension to maintain the cylindrical part *d* of the valve (which is the valve proper) against the shoulder *c*, thus shutting off communication between the parts *b* and *a* of the chamber 2. This is the closed position of the valve and in this position it will be noted the passageway 7 leading to port 6 is slightly below the gasket 17, the passageway

9 leading to port 8 being below the passageway 7 so that a partial movement of the valve 15 downwardly is possible to unseat the valve proper *d* without closing the passageway 7 and a further movement of the valve downwardly will shut off the passageway 7 from communication with the part *a* of chamber 2.

Within the valve chamber 3 is a valve 21 shaped similarly to valve 15 and a spring 22 is held in the part *b'* of chamber 3 by a plug 23, said spring operating to maintain the valve on the shoulder *c'* unless its tension is overcome. Valve 21 is also provided with a valve tip 24, the rounded nose of which extends above the top surface 18 of casing 1 and by referring to Fig. 3, it will be seen that the gasket 25 is capable of its maximum downward movement without closing off the passageway 14 leading from the part *a'* of chamber 3 to syrup port 12. Thus, for any amount of downward movement of the valve 21, the valve will be unseated and allow free communication between the part *b'* of chamber 3 and port 12.

It will be seen that the port 8 is in close proximity to the syrup port 12 and if the nozzle 10 is turned to the proper position, the aperture 11 will point directly at the port 12 so that when carbonated water is discharged from said aperture, it will be projected into the stream issuing from port 12, thus churning up the syrup which together with the velocity of the stream of carbonated water issuing from said aperture, produces a frothy drink.

A stud 26 projects upwardly from the center of the top surface 18 of casing 1 and has a handle 27 mounted for rotation upon it, the stud passing through an opening 28 in the cam disc 29 of the handle, a nut 30 being screwed over the extremity of the stud 26 to hold the handle in place. On the inside of the disc 29 there are oppositely disposed depressions 30, 31 to receive the valve caps 16 and 24 when the handle 27 is in its normal position, that is, the position in which the faucet valves are closed.

An inclined arcuate cam surface 32 extends from the depression 30 around toward the center line *x* (Fig. 4) of the handle a short distance where said surface intersects a second depression 33 from which a second cam surface 34 continues at the same pitch as the surface 32, the cam surface 34 finally merging with the innermost surface 35 of the cam disc 29. It will be observed that the rise of cam surface 32 and cam surface 34 is the same as is also the length of said surfaces. An inclined arcuate cam surface 36 extends from the depression 31 in a direction opposite to that of cam surface 32, said cam surface 36 being of the same length as cam surface 32 but having twice the lift thereof. When the handle 27 is rotated to cause valve tip 16 to ride upon the inclined surface 32, the valve will be depressed one-half of its full extent and will be unseated, allowing water to discharge through the passageway 7. At the same time, the valve 21 will also be unseated since its plunger 24 will be depressed by the cam surface 36 to its fullest extent, allowing syrup to be discharged through the ports 14 and 12. However, if the rotation of the handle 27 is continued so as to cause valve tip 16 to ride over the inclined surface 34, the valve tip 16 will be moved downwardly sufficiently to cover the port 7 and allow water to be discharged through ports 9 and 8 to the nozzle 10 from which the water will issue in a high velocity stream. This continued movement of the valve handle to cause the high velocity jet to be put into operation will have no effect whatever on the syrup valve because the valve tip 24 thereof will merely ride along the plane surface 35 of valve disc 29, the valve, of course, remaining open. It is, thus, apparent that the operator can draw from the faucet a mixture to produce a drink of any consistency desired, by a slight back and forth movement of the handle after having moved it to the half-way point. In order to arrest the movement of the handle 27, confining said movement between the limits necessary to effect the operation of the valves as just described, a stop pin 37 projects upwardly from the casing 1, said pin being located on the center line *x* of the handle when it is in its normal position, but riding in the arcuate depression 38 until it encounters the end wall 39 which defines the limit of movement of the handle.

Having described my invention, I claim:

1. A faucet comprising a casing having valve-controlled syrup and water ports, and an auxiliary water port, and a handle on said casing movable in a certain direction for operating said valves, oppositely disposed cam formations on said handle, one of said cam surfaces being a two-step cam and operative on the water valve to effect a discharge of a coarse or fine stream, the other cam surface being adapted to open the syrup valve to effect a discharge of syrup with both of said water streams.

2. A faucet comprising a casing having a syrup port, a water port and an auxiliary water port, a valve for controlling the flow of syrup from the syrup port, and a valve for controlling the flow of water from both the water port and auxiliary water port, a handle for operating said valves, and means effective on the valves with a movement of the handle in a given direction for opening the syrup port and the water port, and means effective on the valves with a further movement in said direction for maintaining the syrup port open and opening the auxiliary water port.

In testimony whereof I hereunto affix my signature.

JOHN M. TRAVIS.