June 30, 1925. 1,543,715

H. J. McCUE

DRAFT ARM FOR SODA FOUNTAINS

Filed March 25, 1921

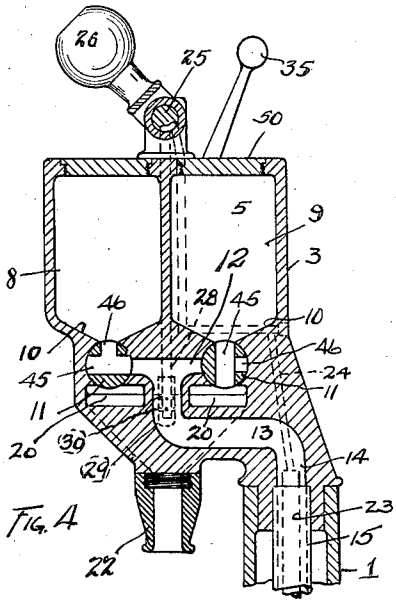

Fig. 4

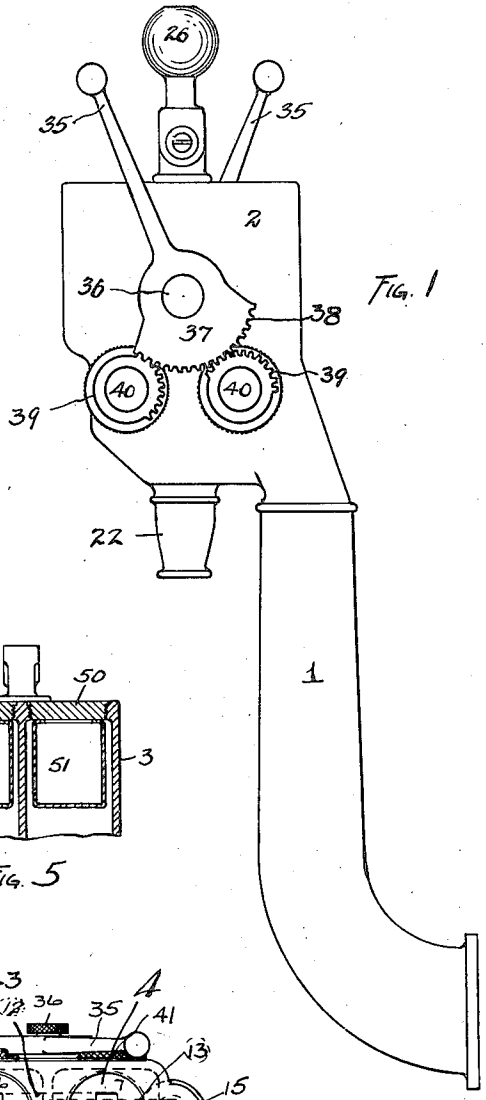

Fig. 1

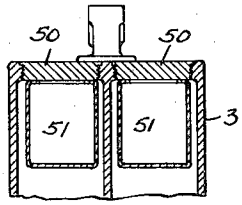

Fig. 5

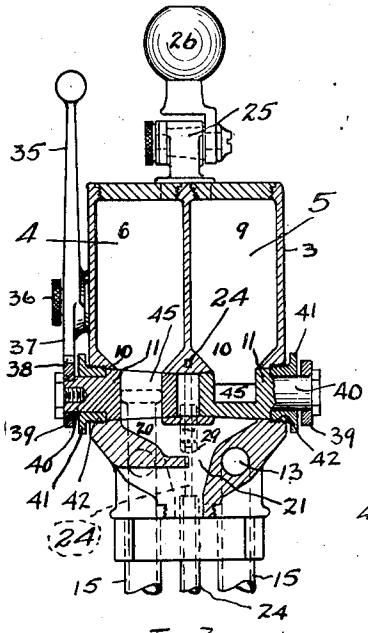

Fig. 3

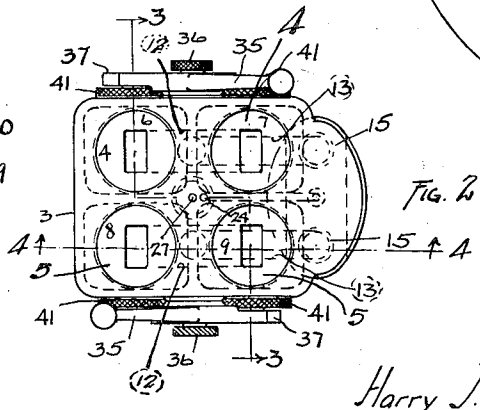

Fig. 2

Inventor

Harry J. McCue

By Fay, Oberlin & Fay

Attorneys

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UNITED STATES PATENT OFFICE.

HARRY J. McCUE, OF CLEVELAND, OHIO, ASSIGNOR TO THE H. J. McCUE COMPANY, A CORPORATION OF OHIO.

DRAFT ARM FOR SODA FOUNTAINS.

Application filed March 25, 1921. Serial No. 455,376.

To all whom it may concern:

Be it known that I, HARRY J. McCUE, a citizen of the United States, and a resident of Cleveland, county of Cuyahoga, and State of Ohio, have invented a new and useful Improvement in Draft Arms for Soda Fountains, of which the following is a specification, the principle of the invention being herein explained, and the best mode in which I have contemplated applying that principle so as to distinguish it from other inventions.

The present invention relates as indicated to liquid dispensing means and more particularly to draft arms for soda fountains in which provision is made for dispensing a predetermined amount of flavoring syrup at each operation of the draft arm and also to a dispensing means in which provision is made for supplying more than one flavor of syrup through the same draft arm. To the accomplishment of the foregoing and related ends, said invention, then, consists of the means hereinafter fully described and particularly pointed out in the claims.

The annexed drawing and the following description set forth in detail certain mechanism embodying the invention, such disclosed means constituting, however, but one of various mechanical forms in which the principle of the invention may be used.

In said annexed drawings:—

Fig. 1 is a side elevation of my draft arm; Fig. 2 is top plan view of the draft arm as shown in Fig. 1 with covers 50 removed; Fig. 3 is a vertical section of my device as indicated by the section line 3—3 Fig. 2; Fig. 4 is vertical section through my device at right angles to Fig. 3 and along the line 4—4 shown in Figure 2; and Fig. 5 is detail of construction.

As shown in Fig. 1, my device comprises an upstanding arm or conduit 1 to the upper end of which is fastened the syrup dispensing mechanism 2. This mechanism 2 consists of a rectangular shaped container 3 divided in its upper section into two series of syrup containing compartments 4 and 5 each series consisting of two compartments 6 and 7 and 8 and 9 respectively.

The lower portion of each of these compartments 6 and 7 and 8 and 9 terminates in a funnel shaped or reduced portion 10 across the outlets of which are disposed two way valves 11. One valve is supplied for each syrup containing compartment and the valves for each series of compartments are interconnected and are operated by the same mechanism, as will be explained later. As will be seen best in Fig. 4, the two syrup containing compartments in each series are connected between the valves 11 by passage ways 12 and these passage ways 12 are in turn connected to second passage ways 13 which terminate in inlets 14 in the lowermost portion of the container 3. It will be seen from the drawings (Fig. 2) that there are two of such passageways 13, one for each of the series 4 and 5 of the syrup containing compartments. Passing upwardly through the upstanding arm 1 are two feed pipes 15 which are connected to the inlets 14 in the container 3 and lead therefrom to the syrup reservoirs (not shown) which are generally disposed in the cooling chambers in the soda fountain proper.

Disposed below each of the valves 11 are syrup conveying passage ways 20 which lead into a syrup dispensing chamber 21 which has at its outlet the usual nozzle 22, through which the syrup is supplied to the receptacle.

Passing up through the upstanding arm 1 is a smaller conduit 23 adapted to convey water or soda to the syrup in the receiving receptacle and this conduit 23 is connected to the lower portion of the container 3 and leads by means of the passage way 24 to a valve 25 mounted on the upper surface of the container 3, and operated by means of the handle 26. From this valve 25 a passage way 27 is provided extending downwardly through the center portion of the container between the syrup containing compartments 6—7—8 and 9 and terminates in a pipe 28 which has attached to its lowermost end a distributing nozzle 29 which is provided with a plurality of outlets 30 adapted to spray the water against the walls of the syrup dispensing chamber 21 and cleanse the same of any syrup which may have been left therein after the passage of the syrup therethrough at the same time that the required amount of water or soda is supplied.

The means for operating the valves is clearly illustrated in Figs. 1 and 3 and consists of operating handles 35 pivotally mounted on bearings 36 carried on the sides of the container 3. The ends of the operating handles 35 terminate in arcuate shaped members 37 provided with gear teeth 38

forming in effect segmental gears. The teeth 38 on those members 37 are adapted to engage with segmental gears 39 mounted on reduced portions 40 of the valves 11. The valves 11 are of the usual tapered plug type and have bearings in the container 3 at their inner ends and are held in position in the container 3 by means of threaded bushings 41 which engage threaded apertures 42 in the side walls of the container. These bushings 41 act as bearings for the outer ends 40 of the valve 11.

The relative positions of the valves 11 in each series is best shown in Fig. 4 in which it will be seen that each valve is provided with an opening 45 passing completely through the valve and a second opening 46 at right angles to the opening 45, the openings 45 in each series being at an angle of 90° to each other.

The operation of the device is simple and as follows: The operating handle 35 is pushed back placing the valves 11 in the positions shown in Fig. 4 whereupon the pressure in the syrup reservoir will force syrup through the pipe 15 and the passage way 13 into the chamber 8. The handle 35 is then pulled forward closing the opening 45 in the valve 11 leading to the chamber 8 from communication with the passage way 13 and positioning the opening 45 at 90° to its original position and placing it in alignment with the passage way 20 which leads to the outlet 21 and the nozzle 22, thereby permitting the syrup contained in the chamber 8 to flow out through the nozzle. During the same movement of the lever 35 the valve 11 communicating with the chamber 9 has been turned 90° and the opening 45 therein has been brought into register with the passage way 13 permitting the chamber 9 to be filled with the same kind of syrup as the chamber 8 was. By this arrangement it will be seen that it is possible to supply for each soda or mixed drink a predetermined amount of syrup. The second pipe 15 in the arm 1 is connected at its lower end to a reservoir containing syrup of a flavor different to the syrup in the first mentioned reservoir and this pipe 15 is connected with the series of syrup containing compartments 6 and 7 which are operated by means of a similar operating handle 35 and its component parts.

In mixing some drinks a smaller amount of syrup is required than in others and in order to compensate for this difference I have provided the means shown in Fig. 5. Each of the compartments 6, 7, 8 and 9 is provided with a threaded cap or cover 50 whereby access is obtained to the interior of the compartments for cleaning them out, or for removing any sugar deposits which may accumulate therein.

When a smaller amount of syrup is required, I provide the caps 50 with projections or sealed chambers 51 attached to their lower surfaces and adapted to extend into the interior of the compartments. The cubical contents of each of these projections is equivalent to the difference between the required amount of syrup and the contents of the compartment and therefore only permit the desired amount of syrup to enter the compartment.

By the use of my device it is seen that the required amount of syrup is supplied for each mixture every time and not left to the judgment of the dispenser. It is also rapid in operation as it is only necessary to move the handle 35 either back or forward to fill each glass as required, for while each compartment is being emptied, the other one of the series is being filled and this cycle of operation continues as long as the handle 35 is being operated. By means of this arrangement no time is lost waiting for the syrup compartment to be refilled as one compartment is being filled while the other one in the series is being emptied.

My device also does away with the number of draft arms required as each arm is equipped to dispense two different kinds of syrup. It is also sanitary because no syrup is permitted to accumulate below the valves 11 as the water or soda with which the soft drinks are mixed, is forcibly sprayed within the chamber 21 and thoroughly cleanses it during the period that the mixture is being completed.

Other modes of applying the principle of my invention may be employed instead of the one explained, change being made as regards the mechanism herein disclosed, provided the means stated by any of the following claims or the equivalent of such stated means be employed.

I therefore particularly point out and distinctly claim as my invention:—

1. In a dispensing arm for soda fountains, the combination of a hollow standard, a plurality of conduits enclosed within said standard and carrying flavored syrup and carbonated liquid, respectively, an enlarged casing of substantially rectangular shape mounted at the upper end of said standard and projecting forwardly therefrom, four liquid measuring compartments occupying the respective quarters of said casing, a constricted passageway common to said measuring compartments having a discharge orifice located centrally beneath said casing, transverse openings extending from side to side through said housing and communicating with openings in the base of said measuring chambers, tapered valve plugs for each individual measuring chamber inserted within said transverse openings upon opposite sides of said housing, a T-shaped passageway in each of said valve

plugs for alternately establishing communication between said measuring compartments and a source of syrup supply or between said measuring compartments and the discharge orifice of said housing, said T-shaped passageways in adjacent valves at each side of the housing being oppositely disposed with respect to each other, and separate means on each side of said housing for simultaneously operating the valves of each laterally disposed pair of chambers.

2. In a dispensing arm for soda fountains, the combination of a hollow standard, a plurality of conduits enclosed within said standard and carrying flavored syrup and carbonated liquid, respectively, an enlarged casing of substantially rectangular shape mounted at the upper end of said standard and projecting forwardly therefrom, four liquid measuring compartments occupying the respective quarters of said casing, a constricted passageway common to said measuring compartments having a discharge orifice located centrally beneath said casing, variable displacement caps inserted within the upper ends of said respective chambers, inclined walls at the base of each compartment, transverse openings extending from side to side through said housing and communicating with openings in the base of said measuring chambers, tapered valve plugs for each individual measuring chamber inserted within said transverse openings upon opposite sides of said housing, a T-shaped passageway in each of said valve plugs for alternately establishing communication between said measuring compartments and a source of syrup supply or between said measuring compartments and the discharge orifice of said housing, said T-shaped passageways in adjacent valves at each side of the housing being oppositely disposed with respect to each other, and separate means on each side of said housing for simultaneously operating the valves of each laterally disposed pair of chambers.

Signed by me, this 17th day of March, 1921.

HARRY J. McCUE.