

H. F. WALTER AND G. R. McNEELY.

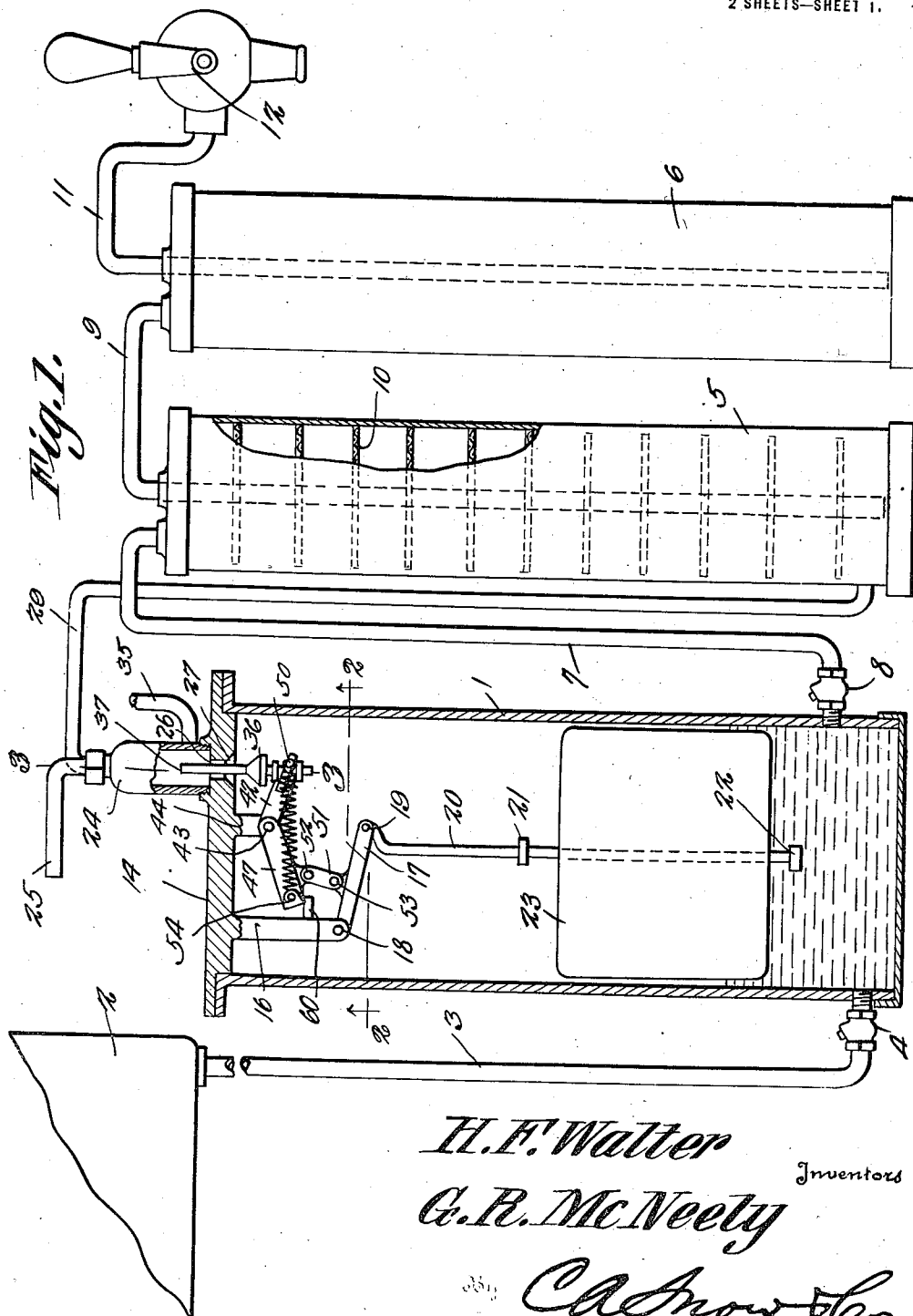
CARBONATOR.

APPLICATION FILED JUNE 12, 1922.

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Patented Nov. 7, 1922.

2 SHEETS—SHEET 1.



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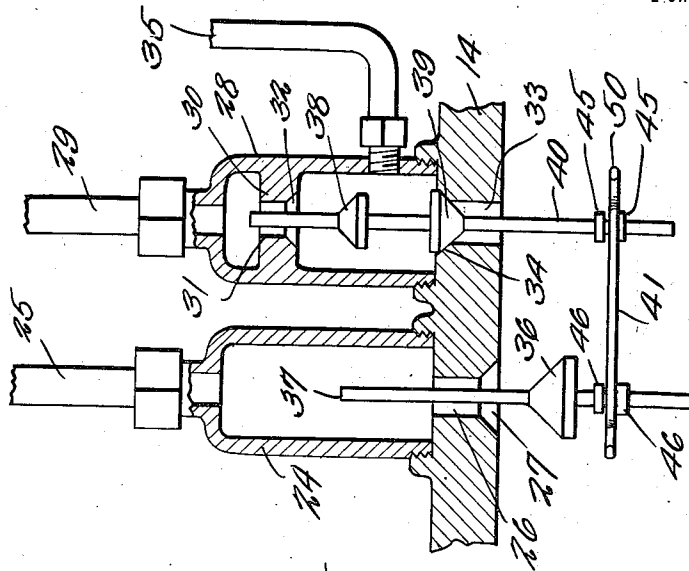


Fig. 3.

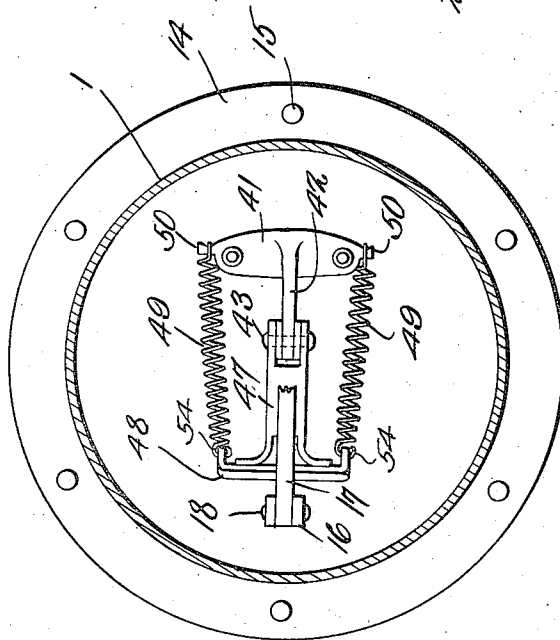


Fig. 2.

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UNITED STATES PATENT OFFICE.

HARVEY F. WALTER AND GEORGE R. McNEELY, OF KINSTON, NORTH CAROLINA.

CARBONATOR.

Application filed June 12, 1922. Serial No. 567,784.

To all whom it may concern:

Be it known that we, HARVEY F. WALTER and GEORGE R. McNEELY, citizens of the United States, residing at Kinston, in the county of Lenoir, State of North Carolina, have invented a new and useful Carbonator, of which the following is a specification.

This invention aims to provide novel float-actuated means whereby the supply of water and gas in a soda fountain may be controlled.

It is within the province of the disclosure to improve generally and to enhance the utility of devices of that type to which the invention appertains.

With the above and other objects in view, which will appear as the description proceeds, the invention resides in the combination and arrangement of parts and in the details of construction hereinafter described and claimed, it being understood that within the scope of what is claimed, changes in the precise embodiment of the invention shown can be made without departing from the spirit of the invention.

In the drawings:—

Figure 1 shows in elevation, a device constructed in accordance with the invention, parts being broken away and parts appearing in section; Figure 2 is a transverse section taken approximately on the line 2—2 of Figure 1; and Figure 3 is a section taken approximately on the line 3—3 of Figure 1.

In carrying out the invention there is provided a water receiver 1. A liquid inlet or source of water supply of any desired sort is provided, the source in the present instance being in the form of a tank 2 connected to the water receiver 1 by a pipe 3 wherein a check valve 4 is interposed, the check valve opening toward the water receiver 1. Any desired number of mixing chambers are provided, but, for the sake of simplicity, but two mixing chambers 5 and 6 are shown in the drawings. A liquid outlet in the form of a pipe 7 leads from the lower portion of the water receiver 1 to the upper portion of the chamber 5, and in the pipe 7, a check valve 8 is interposed, the check valve opening toward the mixing chamber 5. A pipe 9 extends between the top of the mixing chamber 6 and the chamber 5, the pipe 9 being extended downwardly through screens or baffles 10 located in the chamber 5. From the mixing chamber 6 extends an outlet pipe 11 provided with a faucet 12 of any desired sort.

A lid 14 is attached by securing elements 15 to the water receiver 1 and forms part thereof. The lid 14 carries a depending bracket 16 whereon a radius arm or lever 17 is fulcrumed as indicated at 18, the radius arm being pivoted at 19 to a support or rod 20 carrying an upper stop 21 and a lower stop 22, a float 23 being mounted for reciprocation on the support 20 between the stops 21 and 22.

A casing 24 is mounted by threading or otherwise on the lid 14 of the water receiver 1, a pipe 25 communicating with the casing. The casing 24 and the pipe 25 form a vent for the water receiver 1. The lid 14 has an opening 26 which establishes communication between the water receiver 1 and the casing 24. A seat 27 is fashioned in the lid 14 at the lower end of the opening 26. A casing 28 is threaded or mounted otherwise on the lid 14 of the water receiver 1 and forms part of a gas conduit. A pipe 29 communicates with the upper portion of the casing 28 and leads to the lower portion of the mixing chamber 5, the pipe forming part of the gas conduit. The casing 28 is provided intermediate its ends with a partition 30 having an opening 31 there being a seat 32 formed in the partition, at the lower end of the opening. The lid 14 is provided with an opening 33 establishing communication between the water receiver 1 and the lower part of the casing 28. A seat 34 is formed on the lid 14 at the upper end of the opening 33. A gas supply pipe 35 discharges into the casing 28 between the partition 30 and the lid 14 of the water receiver 1.

An upwardly closing valve 36 cooperates with the seat 27 and is carried by a stem 37. An upwardly closing valve 38 cooperates with the seat 32 in the partition 30 of the casing 28. A downwardly closing valve 39 cooperates with the seat 34. The valves 38 and 39 are carried by a stem 40. The stems 37 and 40 pass through the head 41 formed on the outer end of an arm 42. The arm 42 is mounted at its inner end on a pivot element 43 carried by a hanger 44 depending from the lid 14. Collars 45 on the stem 40 connect the said stem with the head 41 of the arm 42. Collars 46 on the stem 37 connect the said stem with the head 41. An arm 47 is mounted at one end on the pivot element 43. The arms 42 and 47 project in opposite directions from the pivot element 43. At its outer end, the arm 47

is supplied with a transverse head 48. Retractable springs 49 are connected at 54 with the head 48 of the arm 47 and are mounted on lugs 50 at the ends of the head 41 of the arm 42. The numeral 51 marks a link. The lower end of the link 51 is pivoted at 53 to the intermediate portion of the lever 17. The upper end of the link 51 is pivoted at 52 to the arm 47, intermediate the ends of the arm.

Let it be supposed that the faucet 12 is closed, that the valve 36 is in open position, the valve 39 being in closed position, and the valve 38 being in open position. Gas delivered through the pipe 35 enters the casing 28 and, passing through the opening 31 in the partition 30, traverses the pipe 29 and is delivered into the mixing chamber 5 to effect a carbonating of the water therein. The gas pressure in the mixing chamber 5 is not transmitted to the water receiver 1, owing to the presence of the check valve 8 in the pipe 7. Water flows from the tank 2 through the pipe 3 into the receiver 1 and air leaves the receiver 1 through the opening 26, and the pipe 25. When the level of the water rises in the receiver 1, the float 23 moves upwardly and, cooperating with the stop 21 on the rod 20 raises the rod 20, the lever 17 swinging upwardly on its fulcrum 18. When the lever 17 swings upwardly, the arm 47 is swung upwardly on its fulcrum 43, motion being transmitted to the arm 47 by the link 51. When the point of connection between the springs 49 and the lever 47, represented by the part 54, passes above a horizontal plane passing through the pivot element 43, the springs 49 exert on the arm 43, a force which tends to swing the arm 42 upwardly, suddenly. When the arm 42 moves upwardly, the stems 37 and 40 are carried upwardly. The valve 36 is moved to a closed position, the valve 39 is moved to an open position, and the valve 38 is moved to a closed position. When the valve 36 is closed, the receiver 1 no longer is vented through the casing 24 and the pipe 25. The pipe 29 is closed by the action of the valve 38 and the gas supplied through the pipe 35, passes through the opening 33 into the receiver 1, the check valve 4 holding the water in the tank. When the faucet 12 is opened the carbonated water in the connecting chambers 5 and 6 may be drawn off, since the liquid in the receiver 1 the pipe 7 and the chambers 5 and 6 is under gas pressure. When, due to the operation of the faucet 12, the water level in the receiver 1 is

lowered sufficiently, the float 23 moves downwardly, and cooperating with the lower stop 22 on the rod 20 restores the parts to the positions depicted in Figures 1 and 3, whereupon the operation of discharging water into the receiver 1 again takes place.

When the arms 47 and 42 swing downwardly into the position shown in Figure 1, under the action of the springs 49, the downward swinging movement of the arms is limited by a stop 60 mounted on the bracket 16, and extended beneath the arm 47.

What is claimed is:—

1. A device for controlling the flow of gas and liquid, embodying a receiver provided adjacent to its lower end with a liquid inlet and with a liquid outlet, the receiver being provided in its upper end with a vent and being supplied at its upper end with a gas conduit communicating with the receiver; means for supplying gas to the conduit intermediate the ends thereof; a valve mechanism which is upwardly movable to close the upper portion of the conduit and to permit a flow of gas from said means into the receiver, the valve mechanism being downwardly movable to cut off communication between the conduit and the receiver and to open the upper portion of the conduit thereby permitting a flow of gas from said means into the upper portion of the conduit; a valve which is upwardly movable to close the vent; a float responsive to changes of level in the receiver; and mechanism for operatively connecting the float with said valve mechanisms.

2. A device for controlling the flow of gas and liquid, constructed as set forth in claim 1 and further characterized by the fact that the mechanism for operatively connecting the float with said valve mechanisms embodies a support whereon the float has limited movement; a bracket carried by the receiver and having a stop; a radius arm pivoted to the bracket and to the support; arms having their inner ends mounted pivotally on the receiver, the outer end of one arm being connected operatively with the valve mechanisms; a retractile spring connecting the arms, the outer ends of the other arm coacting with the stop under the action of the spring; and means for connecting said other arm with the radius arm.

In testimony that we claim the foregoing as our own, we have hereto affixed our signatures.

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