A. R. GROSS.

CARBONATING FAUCET.

APPLICATION FILED OCT. 12, 1912.

1,067,021.

Patented July 8, 1913.

Fig. 1.

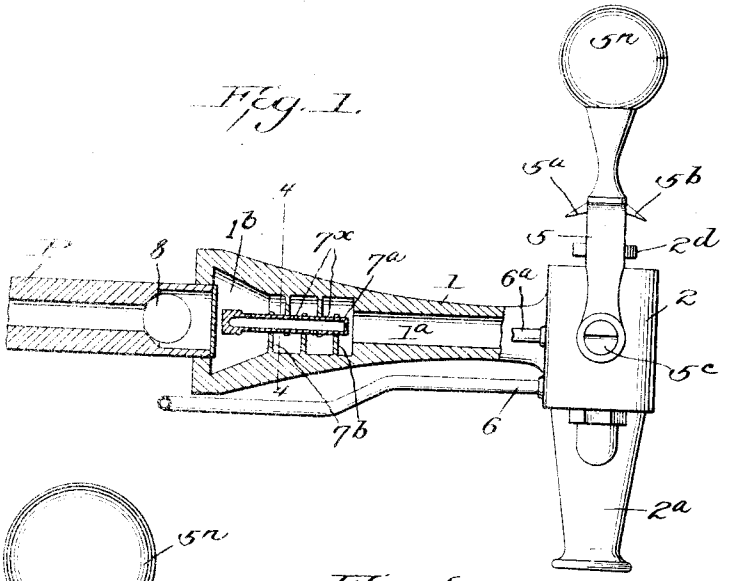


Fig 2

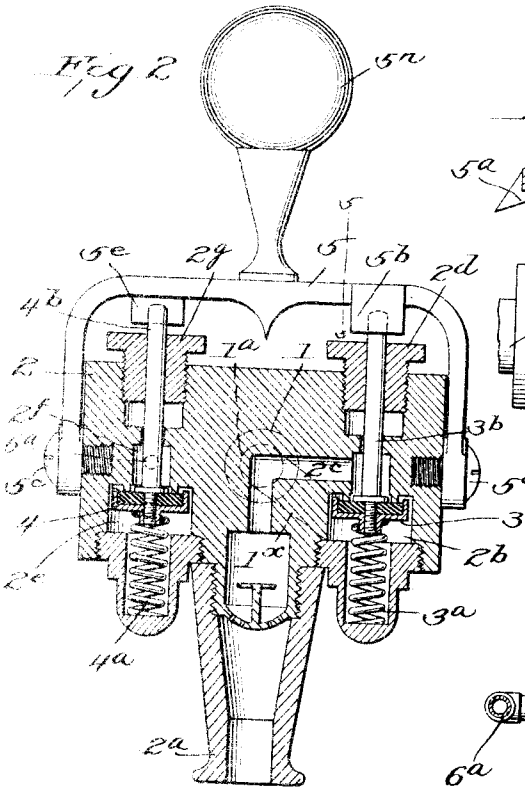


Fig. 5

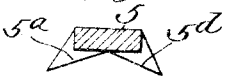
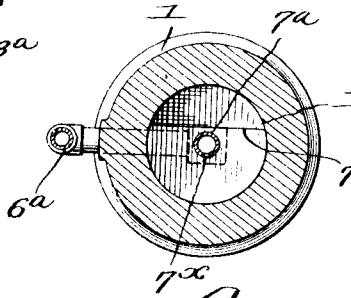


Fig 32g

Fig. 4.



WITNESSES

Allen W. Holmes

James B. Mansfield

INVENTOR

Angus R. Gross.

By: Williamson & Ferrell

Attorneys

UNITED STATES PATENT OFFICE.

ANGUS ROY GROSS, OF CATONSVILLE, MARYLAND, ASSIGNOR OF ONE-HALF TO ERNEST C. TRACEY, OF BALTIMORE, MARYLAND.

CARBONATING-FAUCET.

1,067,021. Specification of Letters Patent. Patented July 8, 1913.

Application filed October 12, 1912. Serial No. 725,459.

To all whom it may concern:

Be it known that I, ANGUS R. GROSS, of Catonsville, in the county of Baltimore and State of Maryland, have invented certain new and useful Improvements in Carbonating-Faucets: and I hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, which form part of this specification.

This invention is a novel faucet for carbonating liquids and is especially designed for carbonating or charging water at dispensing fountains. Its object is to provide a novel faucet in which plain water can be carbonated by mixing carbonic acid gas therewith as it passes through the faucet, and whereby charged water or plain water may be delivered as desired from the same faucet.

The invention consists in the novel construction of the faucet adapted to be operated by a lever which when moved in one direction will cause the admission of both water and carbonic acid gas into the faucet, and when moved in the reverse direction will cause plain water alone to be discharged. The faucet is provided with a gas and water mixing chamber whereby the water and gas are thoroughly commingled in their passage through the faucet; and it is also provided with means to prevent gas passing backwardly to the water reservoir.

The invention is embodied in the faucet illustrated in the accompanying drawings and I will explain same in detail with reference thereto and summarize in the claims the parts for which protection is desired.

In said drawings—Figure 1 is a part longitudinal section and part side elevation of the faucet. Fig. 2 is an enlarged transverse sectional view thereof through the valves. Fig. 3 is a detail plan view of Fig. 1 partly in section. Fig. 4 is an enlarged transverse section on line 4—4, Fig. 1. Fig. 5 is a detail section on line 5—5, Fig. 2.

As shown in the drawings the faucet resembles the ordinary dispensing faucet used on soda fountains, and it comprises a hollow shank 1 which is adapted to be connected to a water supply pipe P, and a head 2 in which are the water and gas valves, and which is provided with a single discharge nozzle 2^a of the usual type.

The shank 1 has a longitudinal passage 1^a, for the water, which communicates at its front end by a port 1^x with a chamber 2^b in one side of the head, and said chamber communicates with a passage or port 2^c in the head leading to the discharge nozzle 2^a. Between the chamber 2^b and the port 2^c is a water controlling valve 3, which valve 3 may be of any suitable construction and is shown as of an ordinary type. The valve 3 is normally closed in the direction of the flow of the water by means of a spring 3^a, but may be unseated by means of a stem or push rod 3^b, which projects upwardly through a suitable stuffing box or gland 2^d in the top of the head 2 as shown.

The upper end of the valve rod 3^b is preferably rounded and is adapted to be engaged by a double cam piece having a rearwardly inclined cam face 5^a and a forwardly inclined cam face 5^b; said cam piece is attached to the upper bar of a U-shaped lever 5 which normally extends across and above the head 2, the ends of said lever being bent downwardly beside the ends of the head and pivoted thereto as shown at 5^c. When the lever is swung forwardly cam surface 5^a will engage and depress the stem 3^b and open the valve 3; and when the lever is swung rearwardly the cam surface 5^b will engage and depress the stem 3^b and open valve 3. When the valve is closed the end of the rod 3^b lies intermediate the cam surfaces 5^a and 5^b. In the opposite side of the head is a chamber 2^e and a port 2^f, the communication between the said chamber and port being normally closed by a valve 4, similar to valve 3, normally held closed by a spring 4^a and having a stem 4^b extending above the head through a stuffing box 2^g. The stem 4^b is adapted to be engaged by a cam 5^e, having a rearwardly inclined cam surface attached to the lever 5, so that when the valve lever 5 is drawn forwardly or in one direction the gas valve 4 will be opened, but when the lever is swung in the opposite direction the gas valve will remain closed. Lever 5 may be provided with a handle 5^n to conveniently operate it. In its normal position the lever 5 is vertical and does not affect either valve 3 or 4.

Carbonic acid gas may be admitted to the chamber 2^e by means of a pipe 6 connected to the head and to any suitable carbonic acid gas supply. The port 2^f is connected by a pipe 6^a with a gas and water mixing

device in an enlarged chamber 1^b of the passage in the shank 1. This gas and liquid mixing device preferably comprises a perforated tube 7^a the rear end of which is connected with the gas supply pipe 6^a, and around this perforated pipe 7^a and within the chamber 1, are placed a series of baffles 7^b; which are preferably arranged in alternation so as to cause water flowing through the faucet to repeatedly change its course; and the tube 7^a is perforated intermediate the baffles as shown at 7^x so that gas is introduced into the interrupted or broken current of water in a most effective manner and the construction being such that by the time water reaches nozzle 2 it is thoroughly charged with the gas. A check valve 8, of any suitable construction, is interposed between the point of admission of the gas into the shank 1 and the water supply; and is preferably located adjacent the faucet as shown in the drawings so that if there should be any great pressure of gas it could not force its way back to the water supply.

It will be seen from the above description that when the parts are properly constructed and connected to the water and gas supplies if the operator desires to draw charged water he moves lever 5 in one direction thereby causing cams 5^a, 5^c to simultaneously open the gas and water valves and the gas mixes with the water as it flows through the mixing chamber 1^b and faucet and by the time the water escapes from the nozzle 2^a it is thoroughly charged. If the operator desires to draw only plain water he simply moves lever 5^a in the opposite direction, which causes cam 5^c to open the water valve while the gas valve remains closed.

What I claim is:

1. A carbonating faucet comprising a tubular shank; a head connected therewith having a discharge nozzle, a water passage connecting the tubular shank with the nozzle, and a gas chamber and gas port adjacent the water passage and port; with a valve normally closing the water passage in said head; a valve for normally closing the communication between the said gas chamber and gas port in said head; means for supplying gas to the gas chamber; a conduit for conducting gas from the gas port in said head into the hollow shank of the faucet; and means for simultaneously operating the said valves, substantially as described.

2. A carbonating faucet comprising a tubular shank, a gas and liquid mixing device in the shank; a head connected therewith having a discharge nozzle, a water passage connecting the tubular shank with the nozzle, a gas chamber and a gas port in said head adjacent the water passage and port; with a valve normally closing the said water passage, a valve for normally closing communication between the said gas chamber and gas port; a conduit for supplying gas to the gas chamber; a conduit for conducting gas from the gas port to the gas and liquid mixer in the shank, and means for simultaneously operating the valves, substantially as described.

3. A carbonating faucet comprising a tubular shank, a gas and liquid mixing device in the shank comprising a perforated tube, and baffle plates around said tube; a head connected with the shank having a discharge nozzle, a water passage connecting the tubular shank with the nozzle, a gas chamber and a gas port adjacent the water passage and port; with a valve normally closing the said water passage; a valve normally closing communication between the said gas chamber and gas port, the stems of the gas and air valves extending above the top of the head; means for supplying gas to the gas chamber; a conduit for directing gas from the gas port to the said mixing device; a pivoted lever, and cam pieces attached to said lever adapted to engage the stems of the valves to open both valves when the lever is moved in one direction; and a cam piece on the lever adapted to engage the stem of the water valve and open the latter only when the lever is moved in the opposite direction.

In testimony that I claim the foregoing as my own, I affix my signature in presence of two witnesses.

ANGUS ROY GROSS.

Witnesses:
E. C. TRACEY,
HOWARD D. ADAMS.