Aug. 22, 1939. W. BREWER 2,170,705

SIPHON FOR AERATED LIQUIDS

Filed July 3, 1937

Fig. 2

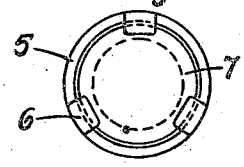
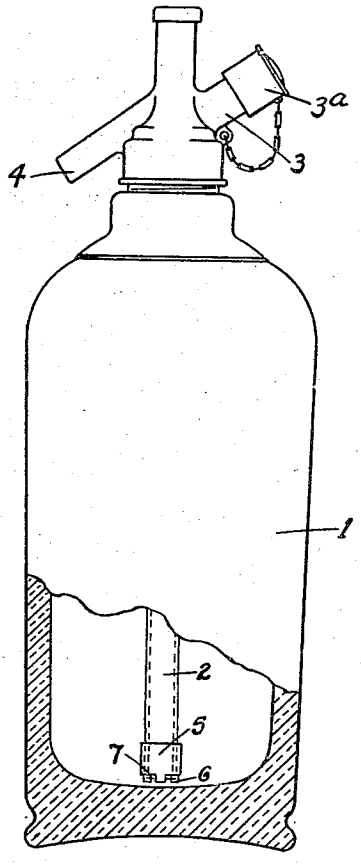


Fig. 1



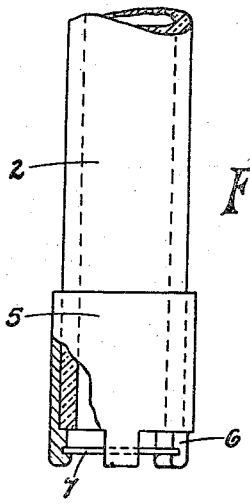


Fig. 3

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SIPHON FOR AERATED LIQUIDS

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1 Claim. (Cl. 261—121)

This invention relates to glass siphons for dispensing aerated liquids of the type in which water or solutions of appropriate salts are charged with carbon dioxide by the introduction into the siphon of carbon dioxide under pressure. It is usual to introduce the gas through a tube dipping into the liquid and extending nearly to the bottom of the siphon. If the compressed gas be allowed to escape from the said dip tube into the liquid too rapidly, there is a possibility that solid carbon dioxide may be formed. In the case of the well-known Sparklet siphon, in which the carbon dioxide is introduced into the liquid from a small capsule containing the gas under pressure, the said capsule being pierced by a hollow needle against which the mouth of the capsule is forced, there is only a remote possibility of solid carbon dioxide being formed owing to careless manipulation as the result of which the gas is introduced much too rapidly. In the unlikely event of solid carbon dioxide being formed, however, this will be forced through the dip tube onto the bottom of the glass siphon. By reason of the extremely low temperature of solid carbon dioxide, the glass in its neighbourhood is subjected to local strains which tend to weaken the glass so that the siphon may not be able to withstand internal pressures at which the siphon has originally been tested.

The object of this invention is to prevent the liability of the said weakening of the siphon.

According to this invention means are provided for preventing any solid carbon dioxide formed owing to careless manipulation from coming into contact with the glass bottom of the siphon. This may be effected by providing a baffle in or on the dip tube, for example by attaching to the lower end of the dip tube a sleeve, for example of pure tin, having a number of integrally stepped projections, which projections hold in position a disc, for example of stainless steel, the extreme ends of the projections being turned over the disc for this purpose. The distance between the lower end of the projections and the disc should be such as to provide a number of openings of sufficient total area to allow free passage of liquid when the siphon is operated.

When the carbon dioxide passes down the dip tube, it encounters the disc, which acts as a baffle, and is forced to pass out through the said openings in a direction approximately at right angles to the dip tube. In this way any solid carbon dioxide formed is dispersed in the surrounding liquid before it can come into contact with the glass base or walls of the siphon.

The baffle may be constructed in other ways. For example the end of the glass tube may be constructed so as to check any solid carbon dioxide without the use of any metal at all. Thus the end of the dip tube may be closed and widened somewhat, a number of longitudinal slots being provided around the sides thereof adjacent the lower end.

By providing means according to this invention, any danger of weakening the siphon in the unlikely event of the formation of solid carbon dioxide is effectively avoided.

The invention will be further described with reference to the accompanying drawing in which

Figure 1 shows a Sparklet siphon in which the dip tube is provided with a baffle in accordance with this invention,

Figure 2 is an underside plan view of the lower end of the dip tube and baffle of Figure 1 on an enlarged scale,

Figure 3 is an elevation, partly in section, of the dip tube and baffle of Figure 1 on an enlarged scale.

While in the drawing the baffle is shewn provided on the dip tube of a siphon of the Sparklet type, it will readily be understood that it is applicable to any type of siphon for aerated liquids in which carbon dioxide under pressure is admitted through the dip tube.

Referring to Figures 1, 2 and 3, the siphon shown consists, as usual, of a container 1 into which the liquid to be aerated is charged. Extending to a point adjacent the bottom of the container 1 is a dip tube 2 which is in communication through a non-return valve with a piercing pin within the screw-threaded portion 3 (covered by a loose cap 3a except during the actual charging operation) onto which the holder containing the gas capsule or "Sparklet" is screwed when charging the container 1 with carbon dioxide. The dip tube 2 also communicates through a valve actuated by a lever at the rear of the head with the outlet 4 through which the aerated liquid is discharged when desired.

To the lower end of the dip tube 2 is secured a sleeve 5 which may be of pure tin. This sleeve, in the example shown, is provided with three stepped projections 6 which are bent inwardly to hold in position a baffle plate 7 which may be of stainless steel. The distance between the baffle plate 7 and the lower end of the dip tube 2 is dimensioned so as to allow free passage for the aerated liquid when it is desired to discharge

the same from the siphon. If, during the charging of the container with carbon dioxide, the capsule containing the compressed gas is pierced too rapidly, the cooling effect may be so strong that solid carbon dioxide is formed. This is forced down the dip tube 2. Instead of falling onto the glass bottom of the siphon and subjecting the glass to local strains, as hitherto, the solid carbon dioxide is swept by the gas through the openings between the baffle plate 7 and the lower end of the dip tube 2 into the surrounding liquid in a direction substantially at right angles to the dip tube 2. The solid carbon dioxide is thus afforded ample opportunity to evaporate before it can contact with the glass wall or bottom of the container 1 and liability of strain consequent upon such contact is therefore avoided.

What I claim is:

A dip tube for a siphon for aerated liquid in which carbon dioxide under pressure is introduced into a liquid to be aerated through said dip tube and aerated liquid is adapted to be discharged through said dip tube, said dip tube being provided at its lower end with a baffle comprising a sleeve having notches forming spaced projections at the lower end of said sleeve, a baffle plate supported by said projections and closing the lower end of said dip tube, said notches providing radially directed openings allowing free passage of liquid upon operation of the siphon.

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