Aug. 29, 1939. M. ROSENWALD ET AL 2,171,373

SIPHON VALVE STOPPER FOR BOTTLES

Filed Sept. 22, 1936

Fig. 3.

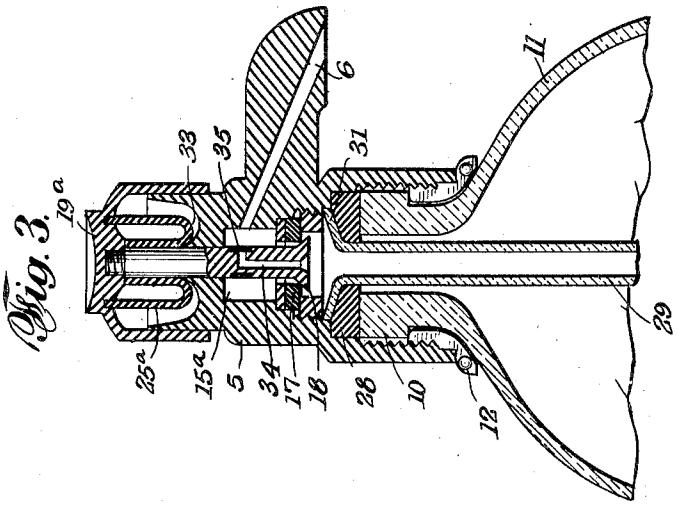


Fig. 2.

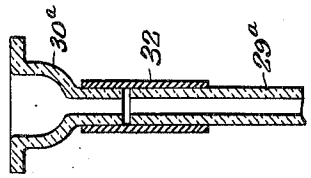
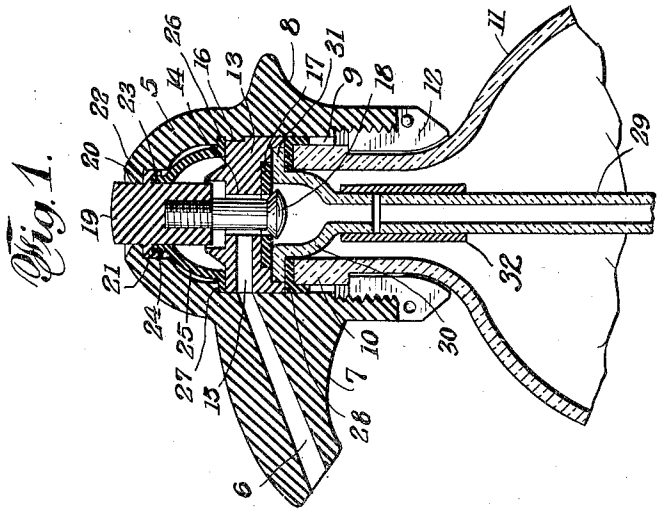


Fig. 1.



INVENTORS
MOSES ROSENWALD
LUDWIK EKES
BY Percy Freeman
ATTORNEY

Patented Aug. 29, 1939

2,171,373

UNITED STATES PATENT OFFICE

2,171,373

SIPHON VALVE STOPPER FOR BOTTLES

Moses Rosenwald, Brooklyn, N. Y., and Ludwik Ekes, Lwow, Poland

Application September 22, 1936, Serial No. 101,980
In Poland October 21, 1935

2 Claims. (Cl. 215—4)

This invention relates to improvements in siphon valve stoppers for bottles and more particularly to siphon heads employed on bottles for dispensing carbonated or other gas charged liquids.

For many years, siphon heads have been made of block tin or of alloys of which block tin was the major ingredient. There are, however, many limitations in the use of metallic siphon heads. They are relatively costly—difficult to be made artistically—and finishes and colors may not readily be applied. The interior of these siphon heads, prior to this invention, have always been fitted with metallic parts, including springs, valve stems, etc. It is believed by many, that gas charged beverages may be subject to contamination from constant contact with the metal of the siphon heads.

Hence a major object of the invention is to overcome all the above and other difficulties and objections and to provide a siphon head made entirely of non-metallic parts and to provide a siphon head which is sanitary, economical to construct, which may be made in various and varied colors and which is attractive and pleasing to the eye as well as being simply and well constructed to perform the functions desired.

Another object resides in the provision in a siphon head, of non-metallic resilient valve closing means, in place of the springs usually used in such heads.

Another feature resides in the provision of means for relieving excess gas pressure from the container or bottle to which the head is applied.

With the above and other objects, features and advantages in mind, the invention resides in the novel combination and arrangement of parts as shown in the illustrated embodiments of the invention in the accompanying drawing and described in the following detailed specification.

In the drawing:

Fig. 1 is a vertical sectional view through a preferred form of siphon head as at present contemplated.

Fig. 2 is a similar view of the upper end of a siphon tube showing an alternate form of construction.

Fig. 3 is a view similar to Figure 1 of a modified form of siphon head.

Referring to the drawing in greater detail, the siphon head is formed of a head or hood 5 of non-metallic material capable of withstanding the chemical attack of CO_2. This head, as shown, is formed with thick, sturdy walls to withstand the pressure of the gases in the liquid and also to stand up under continual and ofttimes careless handling. The head is provided with a discharge nozzle 6, formed with a finger-engaging portion 8 positioned on the opposite side of the head to the nozzle.

It will be noted that the head is formed with a chamber 9 adapted to receive the structural working parts of the siphon head which are insertable into said chamber from the bottom thereof and adapted to be held in proper working position by the neck 10 of a bottle or container 11 as by the usual form of split nut 12.

Within the chamber 9 is preferably placed a pressure plate 13 having a vertical passage 14 and a lateral passage 15 connecting the passage 14 with the discharge nozzle 6. To insure proper alignment of the passages 15 and 6, means such as shown at 16 may be employed to effect a keying engagement between the head and the pressure plate.

The bottom of the pressure plate 13 may be provided with a compressible valve seat 17 for association with a valve 18 carried by the push button 19. This button projects through an opening 20 in the head 5 and is provided with a flange 21 for engagement with an abutting shoulder 22 on the head. The flange is provided with a seat 23 for the reception of the cylindrical neck portion 24 of a hood or domed diaphragm 25.

The diaphragm is formed with a flange 26 adapted to be confined between a shoulder 27 in the head 5 and the pressure plate 13. This flange together with neck portion 24 serves to seal the interior of the diaphragm from atmosphere as passed through the opening 20.

The pressure plate is forced against the flange 26 by a sealing ring 28 positioned between it and the bottle neck 10 and the siphon tube 29 through the medium of its upper bell-like portion 30 and the flange 31 is held in clamped engagement between the sealing ring 28 and the pressure plate 13.

From the above it can be seen that the siphon head is capable of quick assembly and disassembly for the replacement of worn parts and for thorough cleaning and sterilizing; that the diaphragm 25 not only acts to seal the interior of the assembly from leakage but also serves as resilient means for effecting the return of the valve 18 to seated condition on its seat upon release of the push button 19; that excess pressure in the bottle will be relieved by yielding of the valve seat to said excess pressure which may then blow through the passages 14, 15 and 6; and that the

structure presents a desirable head capable of withstanding a considerable amount of rough usage.

In siphon bottles, the siphon tube has a propensity to break since it is necessary to remove the head with said tube when filling the bottles. In order to afford more resiliency and hence more resistance to shock and for the purpose of providing a tube capable of more economical replacement, the form of siphon tube shown in Figure 2 may be employed. In this form the tube 29*a* is shown as separately formed from the bell 30*a* and connected together as by a preferably flexible sleeve 32.

Should the tube 29*a* break, it can be readily replaced by another inexpensive glass tube leaving the relatively more expensive bell 30*a* in the head.

In the form of the invention shown in Figure 3, the push button may be replaced by a plunger 19*a* connected to the valve 18. In this form, the diaphragm may be formed as a ringed member 25*a* having a U-section with the base of the U arranged in a seat 33 in the head 5.

In this form, also, provisions may be made for relieving excess pressure in the bottle 11. As shown, a passage 34 is provided in the valve stem and a resilient and elastic band or ring 35 is positioned around said stem and closing the upper end of said passage. Excess pressure in the bottle will cause a bulge in said ring so the gases may seek egress through the passage 15*a* and nozzle 6.

In other respects the modified form of Figure 3 is substantially similar to the form shown in Figure 1 and as can be seen from comparison of these two forms similar results may be obtained although the detailed design of the working parts may be quite different. Therefore, it can be seen that the siphon head may be further varied without effective departure from the principles of the invention as hereinafter claimed.

From the foregoing it can be readily seen that there has been provided siphon head designs of high efficiency and utility; and that the structures have been conceived so they readily lend themselves to be formed entirely of non-metallic parts resistant to CO_2 or other such gases.

We claim:

1. A siphon comprising a bottle adapted to be filled with carbonic gas-charged liquid, a head removably secured to the neck of said bottle, a dispensing valve in said head, a siphon tube, said siphon tube comprising a portion clamped between said head and said bottle neck, a second portion, and yieldable means for separably connecting said portions.

2. A siphon comprising a bottle adapted to be filled with carbonic gas-charged liquid, a head removably secured to the neck of said bottle, a dispensing valve in said head, a siphon tube, said siphon tube comprising a portion clamped between said head and said bottle neck, a second portion, and yieldable means for separately connecting said portions, and resilient means for sealing against leakage the liquid forced through said tube through said valve when said valve is open, said sealing means comprising a resilient, non-metallic member.

MOSES ROSENWALD.
LUDWIK EKES.