

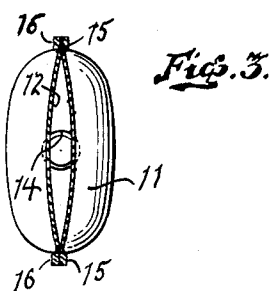
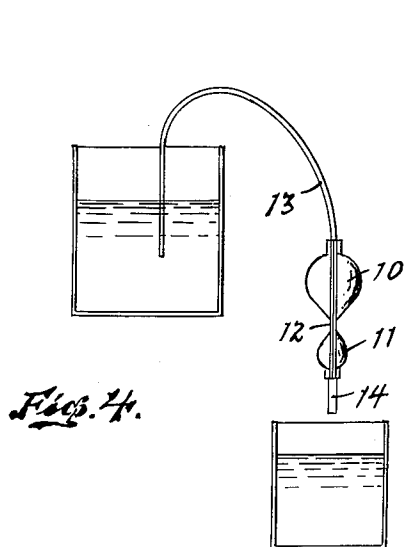
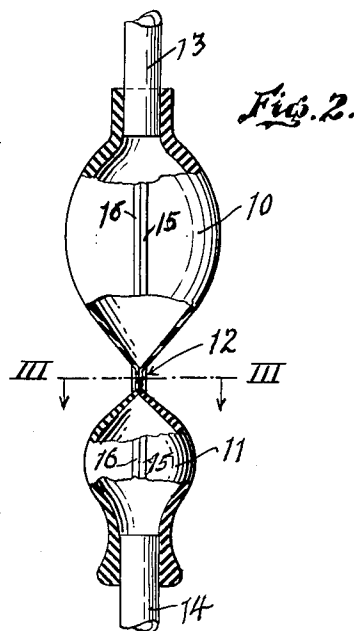
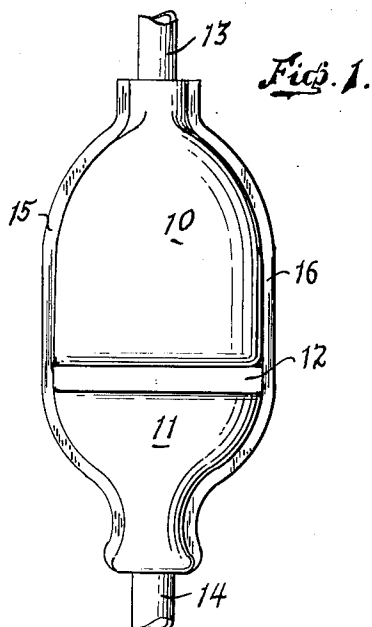
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G. F. PERSSON

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SIPHON PUMP

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INVENTOR.
GUSTAV FOLKE PERSSON.
BY

G. F. Persson
ATTORNEY

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SIPHON PUMP

Gustav Folke Persson, Lindbyvagen 26, Lillnaset,
Ytterhogdal (Aby), Sweden

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This invention relates to fluid-transferring devices and more particularly to a combined pump and siphon arrangement constructed entirely of elastoplastic material.

An object of the invention is to provide a simple and inexpensive means for transferring liquids from one container to another, which operates in part on the principle of a self-energizing siphon.

Another object of the invention is to provide a unitary combined suction pump and siphon of simple, sanitary and inexpensive construction for the transfer of liquids from one container to another in a practical and safe manner.

Other objects and advantages will be in part evident to those skilled in the art and in part pointed out hereinafter in connection with the accompanying drawing wherein there is shown by way of illustration and not of limitation a preferred embodiment of the invention.

In the drawing:

FIGURE 1 is a front view of the device constructed in accordance with the invention.

FIGURE 2 is a sideview of the device as shown in FIGURE 1, with parts broken away to show details of construction.

FIGURE 3 is a sectional view taken along line III-III of FIGURE 2, showing further details of construction with the central portion of the device spread apart, and

FIGURE 4 is a view showing an application of the device in transferring fluid from one vessel to another.

It happens often that a siphon is useful for transferring liquids from one container to another. Usually a tube is used, which is filled by sucking with the mouth. This can be rather unpleasant and even dangerous if the liquids are contaminated, poisonous or have a disagreeable taste. To overcome these disadvantages there are many devices described in literature regarding patents. Many of these devices employ a siphon with a rubber bulb with an attached non-return valve that opens and closes in response to pressure at opposite sides thereof. As distinguished from other earlier devices the advantage of this invention is a more simple construction as the non-return valve is formed as an integral part of the suction bulb and produces a freer flowing area and is also easier to clean and therefore more sanitary.

As shown in the drawing the device consists essentially of a suction bulb that is constructed with two bulbular portions 10 and 11 that are separated by a cinch or pinch 12 therebetween which operates as a valve as will be hereinafter pointed out. The bulbular part 10 is provided at its upper end with an opening for the reception of a piece of hose or pipe 13 having a length depending upon the nature of the use to which the device is to be put and at its lower end the bulbular portion 11 has a similar opening for connection with a length of tube or pipe 14 through which the fluid will discharge when the device is in operation.

To form the suction bulb with its two bulbular parts 10 and 11 separated by the cinch 12 it has been found more practical to form the bulb in two parts or halves that can be cemented or vulcanized together when assembled. To facilitate this procedure the halves of the suction bulb are shown as having a flange or flat beads 15 and 16 which extend along each side thereof so that when the two halves with their flanges or beads 15 and 16 are brought into meeting relation they may be easily cemented or vulcanized to complete the bulb structure. In addition, these flanges or flat beads 15 and 16 serve

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to reinforce the walls of the bulbular portions 11 and 12, and tension the walls thereof at the cinch or pinch 12 and thus form a deformable elastic closure between the two bulbular portions 10 and 11 in response to pressure conditions at either side thereof.

By referring to FIGURE 2 of the drawing it will be noted that the walls of the bulbular portions 10 and 11 are thinned out as the cinch or pinch 12 is approached and at the cinch 12 the two meeting walls carried by the halves of the bulb are held flatwise in contact with each other so that when the bulbular portion 10 is compressed with the hose or tube 13 immersed in a fluid and released suction will be created at the pinch 12 which will operate to cause the two meeting walls to be drawn together due to atmospheric pressure and thus provide stop or valve-like action that will hold the suction effect on the hose or pipe 13. Then as the bulbular portion 10 fills up with fluid the suction will be relieved and the fluid will flow into the lower bulbular portion 10 and out through the hose or pipe 14 in a continuous manner as long as the pipe or tube 13 is immersed or until the desired amount of fluid has been transferred from one receptacle to another.

As shown in FIGURE 3 of the drawing, when the cinch or pinch 12 is opened for the flow of siphoned water, the two opposed walls thereof which are normally in close contact will spread out as here indicated and thus provide a free passage through the bulbular portion 11 of the pump.

In operation, as shown in FIGURE 4 of the drawing, the siphon pump works as follows: With the pipe or hose 13 projected into fluid to be transferred from one vessel to another and with the latter vessel at a lower elevation, a squeezing of the bulbular portion 10 will exhaust the air therefrom. Then upon release of this portion a suction will be produced therein which will draw water from the upper vessel and at the same time cause the meeting walls of the bulb at the cinch 12 to come into close contact and form a no-return seal which will cause the bulbular portion 10 to be effective in sucking fluid from the upper vessel. Then as the fluid flows into the bulbular portion 10 the meeting walls of the pump at the cinch 12 will part and permit the continuous flow of fluid through the bulbular portion 11 to be discharged through the pipe or hose 14 into the lower vessel.

While I have, for the sake of clearness and in order to disclose my invention so that the same can be readily understood, described and illustrated a specific form and arrangement, I desire to have it understood that this invention is not limited to the specific form disclosed, but may be embodied in other ways that will suggest themselves to persons skilled in the art. It is believed that this invention is new and all such changes as come within the scope of the appended claims are to be considered as part of this invention.

Having thus described my invention, what I claim and desire to secure by Letters Patent is:

1. A siphon pump system of the character described, comprising a depending intake hose for connection with an elevated source of fluid to be siphoned, an elongated bulb having a transverse pinch intermediate its ends forming two bulbular cavities which normally operate one above the other with said pinch forming a valve therebetween connected to the lower end of said intake hose, and an outlet conduit leading from the lower cavity of said bulb characterized by the fact that the transverse pinch in said bulb will form a seal when suction is established in the upper one of said bulbular cavities by a compression and release thereof and open upon a flow of fluid through said upper one of said cavities.

2. A siphon pump system as in claim 1, characterized by the fact that said elongated bulb is constructed of two

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similar longitudinal half-portions of elastomeric material vulcanized together as a unit.

3. A siphon pump system as in claim 2, characterized by the fact that the similar half-portions of said elongated bulb have externally formed beads with contacting surfaces that are secured together in air-tight relation with each other.

4. A siphon pump system as in claim 1, characterized

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by the fact that the walls of said bulbular cavities are thinned out as they approach the pinch therebetween, whereby greater elasticity will be established at said pinch.

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References Cited in the file of this patent**UNITED STATES PATENTS**

241,551 Lathe et al. ----- May 17, 1881