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N. POTASH

3,063,462

RESILIENT VALVE

Filed June 23, 1960

Fig. 1

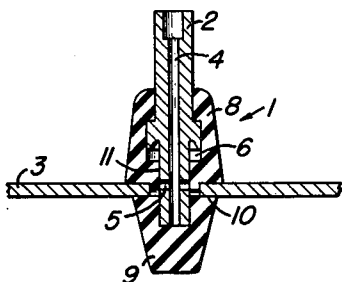


Fig. 2

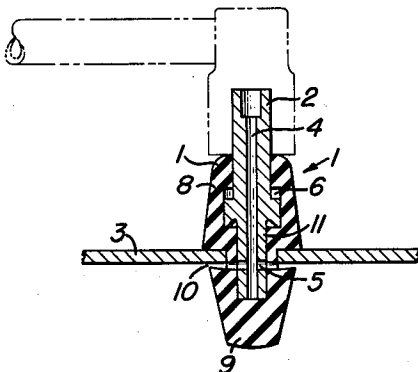


Fig. 3

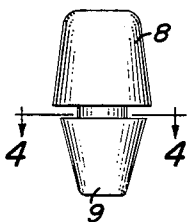


Fig. 4

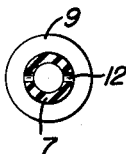


Fig. 5



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3,063,462

RESILIENT VALVE

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2 Claims. (Cl. 137-223)

(Granted under Title 35, U.S. Code (1952), sec. 266)

The invention described herein may be manufactured and used by or for the Government of the United States of America for governmental purposes without the payment to me of any royalty thereon.

This invention relates to a device designed to be a valve for pressurized containers such as lift rafts, air mattresses, tubeless tires and the like. This device consists of an integral piece of an elastomer operatively associated with an inlet plastic or metal tube or adapter.

The device is relatively simple in design and operation; hence, it possesses obvious commercial advantages over the prior art devices. For example, no complex internal valve parts are necessary for this valve as contrasted with the prior art devices. In the assembly of the device into the container all that is required is a simple rod to push the integral valve through the somewhat narrower opening of the container wall. This is facilitated by the conical section on the bottom of said valve.

Applicant's prior Patent 2,845,203, issued July 29, 1958, represents a similar device but it is structurally different than the instant invention.

In the drawings:

FIG. 1 shows a cross-sectional view of the valve in place in the container.

FIG. 2 shows a cross-sectional view of the valve during filling.

FIG. 3 shows the elastomer portion per se.

FIG. 4 shows a cross-sectional view of FIG. 3 at 4-4.

FIG. 5 shows a modified view similar to FIG. 4.

In the drawings the valve is represented by 1. The adapter tube is shown by 2. The valve 1 is shown in FIG. 1 sealed to the container by the inherent resiliency of the valve 1 and the fluid pressure in the container. The axial hole 4 in adapter tube 2 is connected to the radial openings 5 in adapter 2. The adapter has an enlarged portion adapted to slide in the enlarged hole 6 of said valve 1. The lower portion 11 of the adapter is also free to slide in the valve 1. The webs 7 connect the upper portion 8 to the lower conical portion 9 and the spaces between said webs define inlet openings 12 for the admission of a fluid as is shown in FIG. 2. The number of webs 7 can be of any convenient number as can be seen by FIGS. 4 and 5. Alternatively, the valve can be manufactured as a unit with no openings 12 and the holes added later by permanently deforming the elastomer.

In operation, one attaches an air hose or the equivalent to the adapter 2 thereby depressing said adapter downward against the resilient conical portion 9. This action results in the unsealing of holes 5 to permit entry of the

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air or other fluid which is to be inserted into the container as is shown by FIG. 2 of the drawing. The downward movement of the adapter also causes the enlarged portion of the adapter to press downward on the upper portion 8 of valve 1, thus preventing leakage during the filling operation. Upon completion of the filling operation, the air hose is withdrawn and the inherent resiliency of the valve pulls the lower portion back against the container wall thus sealing the container at 10.

The accompanying figures of the drawings are presented for illustration only and are not to be taken as limitations of the claims.

I claim:

1. A valve for positioning in an opening in a rigid wall comprising a resilient body including an upper portion, an extensible central recessed portion and a lower portion, said body having a blind axial opening through said upper portion and recessed portion and projecting into said lower portion, said axial opening having an enlarged section of greater diameter within said upper portion and said central recessed portion having radial openings connecting with said axial opening, a rigid inlet tube disposed within said axial opening, said inlet tube having a centrally enlarged portion corresponding in diameter to said enlarged section in said axial opening but of less axial length than said enlarged section to provide for limited axial movement of said inlet tube within said axial opening, said inlet tube having radial openings near the end adjacent the lower portion, said radial openings in said inlet tube being normally exposed to said radial openings in said recessed portion when said inlet tube is depressed axially into said body portion.

2. A valve comprising a resilient body including an upper portion, an extensible central recessed portion and a lower portion, said body having a central blind axial opening through said upper portion and recessed portion, said axial opening having a section of different width within said upper portion, said central recessed portion having radial openings communicating with said axial opening, tube means in said axial opening of a width which varies according to the width of said axial opening in each section but of less axial length to provide for limited axial movement of said tube means within said axial opening, said tube means having radial openings near the end adjacent the lower portion which communicate with said radial openings in said recessed portion when said tube means is depressed axially against said lower body portion and normally closed when said tube means is in its normal position.

References Cited in the file of this patent

UNITED STATES PATENTS

1,218,252	Gibney	Mar. 6, 1917
1,930,040	Crowley	Oct. 10, 1933
2,845,203	Potash	July 29, 1958

FOREIGN PATENTS

1,002,623	France	Nov. 7, 1951
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