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N. POTASH

2,845,203

FILLING AND SEALING DEVICE

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Fig. 1.

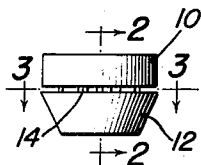


Fig. 2.

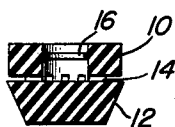


Fig. 3.

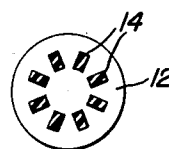


Fig. 4.

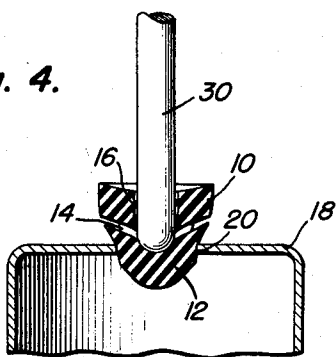


Fig. 5.

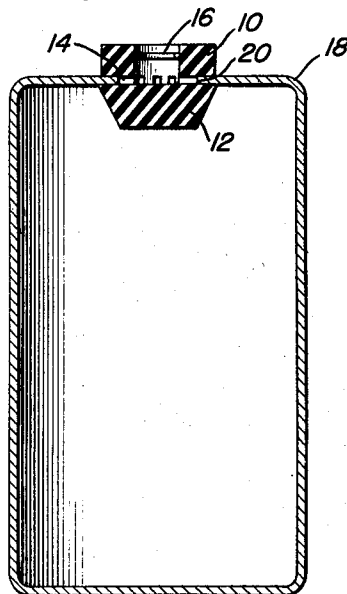


Fig. 6.

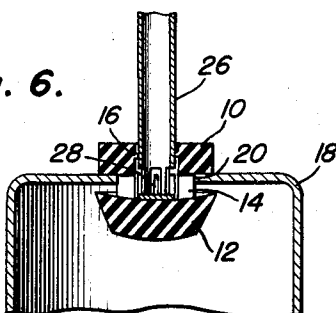


Fig. 7.

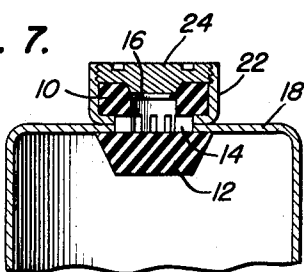
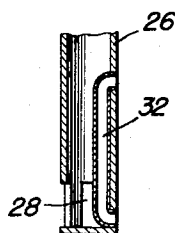


Fig. 8.



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2,845,203

FILLING AND SEALING DEVICE

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6 Claims. (Cl. 222—394)

(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 filling plug for a container. More particularly, it relates to a sealing plug which is inserted in a hole in the container wall and serves both for filling and dispensing from said container.

In the drawings, Fig. 1 shows a side view of the plug. Fig. 2 is a section at 2—2 of Fig. 1. Fig. 3 is a section at 3—3 of Fig. 1. Fig. 4 is a section of the plug and container showing the inserting tool and deformation of the plug during insertion. Fig. 5 shows a section of the plug and container after insertion. Fig. 6 shows a section of the plug and container while the plug is extended by the filling pipe. Fig. 7 shows a section of plug and container including a necked receptacle for sealing in the plug for extended storage. Fig. 8 shows a special filling and dispensing tool equipped with a vent to allow entrance or exit of air during the filling or dispensing operation.

In the drawings, 10 is the body of the plug and 12 is the tapered bottom or valve portion which is attached to the body 10 by web 14. 16 is a projecting ring which serves as a seal with the filling pipe 26. 18 is the container body having opening 20. 22 is an additional flanged cap which can be fitted to container 18 by any means such as soldering or welding. It fits around the body 10 of the plug and can be fitted with a plug 24 which can be screw fitted as shown or may simply be pressed in. The sealed modification shown in Fig. 7 is useful where prolonged storage is contemplated and it is desired to fit the plug with permanent positive sealing means. The filler pipe 26 is fitted with slotted openings 28 around the bottom thereof. A modified filling tube is shown in Fig. 8. It includes an inserted tube 32 to vent air during the filling or dispensing operation.

The plug can be fitted into any type of container which may be made from any material including metal, plastic or glass. All that is necessary is a container having a proper sized opening in the wall thereof. The plug is then lubricated and the bottom conical valve section is pushed through the opening of the container. The web 14 may be made slightly shorter than the wall thickness which results in a clamping action of the plug around the edges of the opening. This insures a pressure tight fit, and any additional pressure within the container merely serves to seal the plug ever more tightly in the opening.

In the process of filling the container the slotted filling pipe 26 is pushed down into the opening in the plug thereby extending the connecting web 14 and unsealing the valve portion 12. Liquid material will now flow

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freely into the container through the slots 28 in the filling pipe and the corresponding slotted openings in the web 14. The filling pipe is sealed in the plug by the sealing ring 16. On withdrawing the filler pipe 26, the webs 14 again draw the valve section 12 into sealing position against the walls of the container. The same procedure can be used to dispense fluids from the container. In addition, where the container is used for certain medicinals, the contents thereof may be dispensed by pushing a hypodermic needle through valve portion 12 and inverting the container to fill the syringe.

Under some circumstances, it may be desirable to vent the container during the filling or dispensing operation. In these circumstances a filler pipe as shown in Fig. 8 may be used. This pipe is constructed like the pipe in Fig. 6 except that a portion of the lower circumference is not slotted and instead is fitted with a curved vent pipe 32 which is welded into the side of the larger pipe.

Although only one physical modification of the plug is shown, it is obvious that it can be made in different sizes and shapes without departing from the principal of the invention.

I claim:

1. A filling and dispensing valve for pressurized containers comprising an upper body portion and a lower valve portion connected by an intermediate necked portion said necked portion being axially extensible and of lesser diameter than both said body and valve portions, said necked portion having radial openings therethrough and said body and necked portions having an axial opening connecting with said radial openings.

2. A filling and dispensing valve in accordance with claim 1 wherein the upper body portion is cylindrical and the lower valve portion is in the form of a frustum of a cone to assist in inserting the valve into a container wall opening.

3. A filling and dispensing valve in accordance with claim 2 wherein the valve is made in one piece from an elastomer.

4. A filling and dispensing valve in accordance with claim 3 wherein the body portion has an integral sealing ring on the interior of the axial opening.

5. A dispensing container for pressurized fluids having a perforated wall, a filling and dispensing valve positioned in said wall opening, said valve comprising a resilient body portion on the outside and a resilient valve portion on the inside of said container, said body and valve portions being joined by a resilient necked portion under tension through the wall opening, said body and valve portion being larger than the wall opening, an axial opening extending centrally through said body and neck portion and radial openings through said neck portion connecting with said axial opening.

6. A combination in accordance with claim 5 wherein the resilient valve portion is in the form of a frustum of a cone.

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