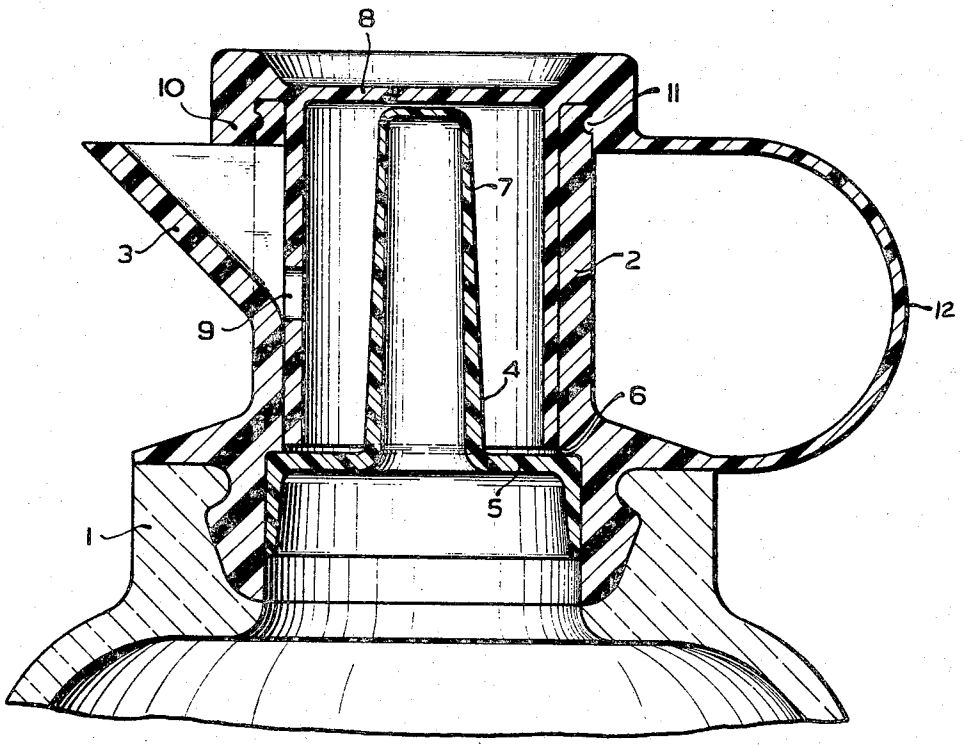
Oct. 8, 1968 W. WEBER 3,404,816

POURING MEANS AND CLOSURE

Filed March 20, 1967



United States Patent Office 3,404,816 Patented Oct. 8, 1968

3,404,816

POURING MEANS AND CLOSURE

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Filed Mar. 20, 1967, Ser. No. 624,395
7 Claims. (Cl. 222—545)

ABSTRACT OF THE DISCLOSURE

Container closure of three main parts, one part being locked to container and having a spout, another part being supported in first part and displaceable into container only, and a third part covering first part and concealing second part.

The sole figure is a sectional view of one embodiment of invention.

Detailed description of invention

The invention relates to closure means for liquid containers such as bottles, cans and the like, and more particularly to closure means having a sealing stopper which cannot be reinserted once it has been removed so that the consumer is always sure of having the original contents of the container provided the stopper has not been removed. The closure means may be detachably or undetachably secured to the container.

According to the invention, there is provided closure means for a liquid container comprising a hollow stub adapted to be carried by the container and provided with a lateral pouring means, and a sealing cap fitted rotatably into the stub and containing a lateral pouring aperture, the pouring aperture in the cap being arranged to be brought into and out of registry with the pouring means on the stub by turning the cap, and a sealing stopper sealingly engaged in the stub below the sealing cap and removable only in the direction of the container.

There is further provided, according to the invention, closure means for a liquid container comprising a substantially cylindrical hollow stub adapted to be carried by the container and provided with a lateral pouring means, and a sealing cap fitted rotatably into the stub and containing a lateral pouring aperture, the pouring aperture in the cap being arranged to be brought into and out of registry with the pouring means on the stub by turning the cap, and a sealing stopper an annular shoulder of which is sealingly engaged below an annular shoulder inside the stub and which can be removed only in the direction of the container.

In the preferred applications of the invention, the sealing stopper is used to retain the contents of the container during storage and transportation, i.e., until the container is opened for the first time, the annular shoulder on the stub preventing the stopper from sliding out under the pressure of the contents. Before the closure means is opened for the first time, the cap is removed from the stub and the stopper is pushed out of the stub and into the interior of the container by pressure from above so that the container contents can pass out of the container into the stub. The cap is now reinserted into the stub, where in the closed position, it will prevent the contents from evaporating and running out. By turning the cap in the stub, a pouring aperture provided in the side of the cap can now be brought into registry with the lateral pouring means on the stub as required, whereupon the filling material can be poured out of the container.

To facilitate pouring of the contents of the container without dripping, the pourer on the stub is preferably in the form of a pouring spout integral with the stub. This also has the advantage that once pouring is over any drops

left on the pourer will flow back to the aperture in the cap and pass through it to the inside of the container.

As it is desirable in many cases to design the closure means so that even when carelessly handled no parts of it will get lost, the cap is preferably fixed on the stub in such a way that it can neither slip off nor inadvertently be pulled off. For this purpose the cap preferably has a strap attached to an outer rim thereof, and is provided with a protrusion which engages in an annular groove extending along the outside of the stub as far as the pouring means. In addition, a stop may be provided on the stub in such a way that the strap of the cap abuts the stop in the position in which the pouring aperture in the cap registers with the pouring spout on the stub.

When the closure is opened for the first time, the stopper inside the stub is desirably in the interior of the container so it is particularly advantageous for the top of the stopper to project into the stub adjacent the top edge thereof and for the external diameter of the part projecting into the stub to be substantially less than the internal diameter of the stub. This creates a gap between the top end of the stopper and the inner wall of the stub so that, when the stub is pressed in with a finger, the fingernail comes to rest in this gap; this both makes it easier to press in the stopper and eliminates any danger of the top edge of the stub being damaged by the fingernail.

The closure means according to the invention can be made of any suitable material, but it has been found particularly advantageous to mold the components from a resilient plastics material. As a number of filling materials migrate through certain resilient plastics materials, cause them to swell or otherwise produce changes in them it is desirable to insure that the apparatus is made of a plastics material which is neutral in respect of the filling material. It is generally sufficient if just the stopper is made of a material not susceptible of being attacked by the contents since, before the container is used for the first time, it is the stopper that protects the other parts of the closure from the action of the liquid. This is particularly important since the closure means will easily and frequently come into contact with the contents during storage and transportation, whereas once the container has been opened it is normally kept upright. In this way the closure means can be designed for a large number of filling materials which cannot be accommodated in bottles with conventional guarantee seals because of their action on resilient plastics materials, particularly polyethylene.

Finally, the separately made parts of the closure means, particularly the stopper on the one hand and the cylindrical stub and cap on the other can be made of plastics materials of different colors; this does not create any extra work but makes it easier for the consumer to see whether the container has already been opened.

As shown in the drawing, a cylindrical stub **2** is placed on and undetachably joined to the neck **1** of a liquid container and is provided with a pouring spout **3**. The sealing stopper **4** is inserted in the stub **2** from below and its annular shoulder or skirt **5** lies tightly against the annular shoulder or abutment **6** inside the stub **2**. The cylindrical top or extension **7** of the stopper extends to a position adjacent the top of the cylindrical stub.

The sealing cap **8** is fitted into the stub **2** from above and can be turned therein in a liquid-tight manner. When, however, the cap **8** reaches a certain position in the course of rotation, the slot-like pouring aperture **9** is brought into registry with the pouring spout **3** so that the contents of the bottle can be discharged. A strap **10** on the cap **8** extends beyond the top edge of the stub **2** and the cap has a protrusion **11** engaging in a corresponding groove which extends along the outer wall of the stub **2** at a uniform spacing from the top edge thereof as far as the pouring spout. When the closure means is opened for the first time,

the strap **10** is bent outwardly far enough to free the protrusion **11** from the groove in the stub **2**, and the cap **8** is pulled in an upward direction. The stopper **4** is then pushed into the inside of the container by applying slight finger pressure from above whereafter the cap **8** is pushed back onto the stub **2** until the protrusion **11** again engages in the corresponding groove in the latter. The cap **8** can be connected to stub **2** by a connecting piece **12**.

It will be seen that in the illustrated closure means, the stopper can be removed only into the inside of the container, and cannot, without great inconvenience, be subsequently reinserted after part of the original contents have been taken out. On opening the closure means for the first time, the user can therefore tell immediately whether some of the original contents have already been taken out or all the original contents poured out and replaced by a different material. Another advantage is the fact that the cap, instead of being placed over the stub from the outside is fitted into the inside thereof and rotatably mounted so that a pouring spout can be molded onto the stub. In conjunction with the lateral pouring aperture in the cap, this spout provides a means for removing small quantities of filling material from the container and at the same time prevents drips from running down the outer wall of the container and thus soiling it.

What is claimed is:

1. A closure and pouring means for a container, said pouring means being provided with a passage for communicating with the interior of the container and including abutment means adjacent said passage, and stopper means in said passage to obturate the same, said stopper means being displaceable from said passage into the interior of the container but being prevented by said abutment means from being withdrawn from the passage to the exterior of the container, said stopper means including a skirt section frictionally engaging said pouring means adjacent said abutment means and an extension extending from said skirt outwardly through part of said passage to receive an opening force.

2. A closure as claimed in claim **1** comprising a cap on said pouring means to close said passage and conceal said extension, said cap and pouring means including cooperating locking means for detachably holding the cap on the pouring means.

3. A closure as claimed in claim **2** wherein the pouring means includes a spout and said cap includes a depending section engaged in said passage and provided with an opening selectively registrable with said spout.

4. A closure as claimed in claim **3** wherein said pouring means includes means for locked engagement with said container.

5. A closure as claimed in claim **4** comprising means connecting the cap to said pouring means while permitting displacement therebetween.

6. A closure as claimed in claim **5** wherein the said extension is substantially smaller than said passage and said depending section.

7. A closure as claimed in **6** wherein said depending section and pouring means are relatively rotatable.

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