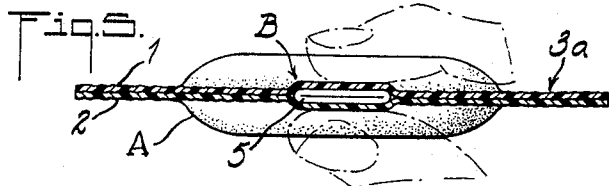
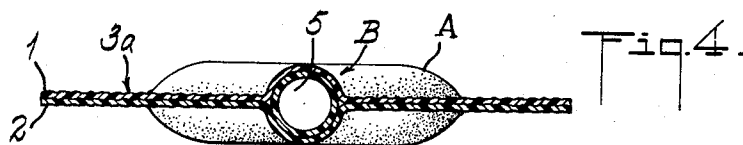
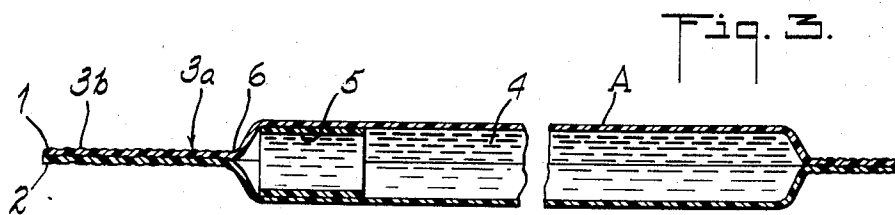
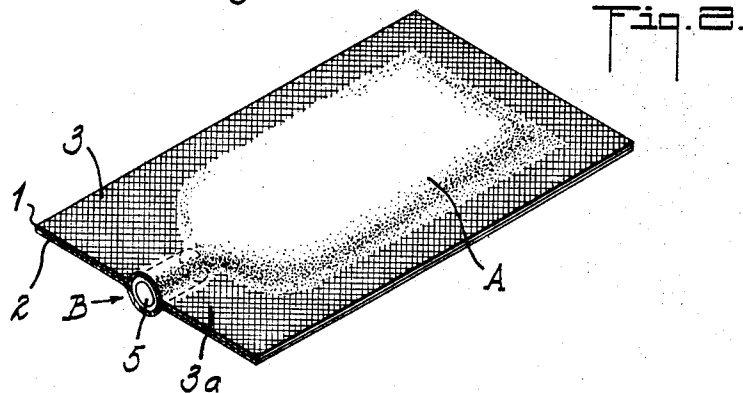
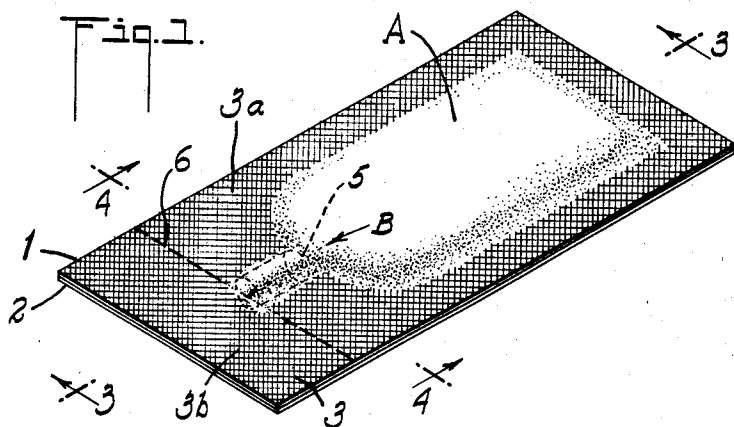


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L. I. VOLCKENING
PACKAGE FOR FLUENT COMMODITIES

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PACKAGE FOR FLUENT COMMODITIES

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1 Claim. (Cl. 222-107)

This invention relates in general to packages or containers for dispensing fluent substances or materials such as liquids, paste or powder, for example, cod liver oil, nose drops or sprays, eye drops, iodine or the like, and more particularly, the invention contemplates a package of the type comprising at least two flexible layers or sheets of packaging material such as cellophane, Pliofilm or Saran and the like sealed together tightly and permanently in zones forming and bounding between said layers a compartment containing a fluent commodity and also forming and bounding between said layers a restricted or reduced discharge passage for said compartment and providing a seal for said passage. Packages of this character are generally openable by tearing the layers of packaging materials along a line transverse of the discharge neck.

It has been found that in packages of this type, the portions of the layers of packaging material forming the side walls of the discharge passage may adhere together so as to interfere with the discharge of the fluent commodity from the compartment or cause such discharge to be in the form of objectionable spurts instead of drops or free flowing streams when the package is squeezed.

Therefore, a primary object of the present invention is to provide a package of this type which shall include a novel and improved discharge passage or neck which shall be normally self-sustained in open condition but can be closed by pressure on the layers of packaging material at opposite sides of the discharge neck when desired, for example, while tearing the packaging layers to open the package and thereby prevent unintended discharge of the fluent commodity through the discharge neck.

Another object is to provide such a package wherein the discharge neck shall include a resilient-walled tube formed of suitable material such as a synthetic resin, for example, polyethylene, and the inherent resiliency of whose walls shall normally sustain the tube in open condition, that is, with the passage therethrough unobstructed, thereby to prevent the walls of the discharge neck from adhering to each other in such a way as to hinder or impede the flow of the fluent commodity from the compartment through the neck.

Still another object is to provide a package of this character wherein said neck tube shall be held in position by the sealed zones or by adhesive or thermoplastic connection to the portions of the packaging layers that form the side walls of the discharge passage.

Still another object of the invention is to provide such a package wherein the walls of the discharge neck shall be resilient and normally expanded to provide a free passage through the neck but can be momentarily squeezed or pressed together to prevent flow of a commodity through said passage and will then automatically return to normal condition, whereby the walls of the neck may serve as a valve to control the discharge of the fluent commodity from the compartment.

Other objects, advantages and results of the invention

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will be brought out by the following description in conjunction with the accompanying drawing in which

Figure 1 is a perspective view of a complete package embodying the invention, showing the package in closed or sealed condition;

Figure 2 is a similar view showing the package in open condition;

Figure 3 is an enlarged vertical longitudinal sectional view approximately on the plane of the line 3-3 of Figure 1 with portions broken away;

Figure 4 is an enlarged transverse vertical sectional view approximately on the plane of the line 4-4 of Figure 1; and

Figure 5 is a view similar to Figure 4 showing the discharge neck temporarily closed by flattening or squeezing together the walls of the neck tube.

Referring to the drawings, the package or container includes a flexible-walled compartment A of any desired dimensions and capable of retaining the desired fluent commodity such as a liquid, vapor, paste or powder. The compartment has a reduced or restricted discharge neck B that is normally sealed to prevent escape of the commodity from the compartment A but can be manually opened when it is desired to discharge the commodity from the compartment through said neck; and the neck has resilient walls which are normally expanded to provide a free passage through the neck but can be momentarily squeezed or pressed together to close said passage and prevent flow of the fluent commodity from the compartment.

More specifically describing the package, it is shown as comprising at least two layers 1 and 2 of suitable flexible packaging material such as cellophane, Pliofilm, Saran or the like that may be inherently thermoplastic or fusible or have a thermoplastic or fusible coating so that the two layers can be thermoplastically sealed under heat and pressure as indicated at 3 to bound and form the compartment and the discharge passage B between the two layers. Obviously the layers in contact with the fluent commodity such as a liquid or paste 4 in the compartment must be inert, that is, it must not affect or be affected by the commodity or permit seeping of the commodity through the layers. As shown, the discharge passage or neck is preferably elongate and a resilient-walled tube 5 is interposed between the portions 3a of the packaging layers that form the discharge neck. The layers 3 are sealed together in a zone 3b that extends transverse of the outer end of the neck tube 5 so as normally to seal the commodity within the compartment, as shown in Figures 1 and 3. The discharge neck is opened by tearing the packaging layers 1 and 2 transversely across the outer end of the neck tube and preferably a line of scoring 6 is provided in the layers to facilitate the tearing of the layers and the breaking of the seal of the discharge neck. Figure 2 shows the sealing portion or flap 3b removed so as to open the discharge neck for flow of the commodity from the compartment when the flexible walls of the compartment are squeezed or compressed toward each other.

The neck tube 5 may be formed of any suitable material, for example, a synthetic resin such as polyethylene, and its walls are resilient and normally self-sustained or expanded so as to maintain a free opening or passage through the tube as best shown in Figures 3 and 4, but it is also desirable that the walls of the tube be such that they may be easily compressed or squeezed together between the thumb and index finger of the user of the package as shown in Figure 5, for example, during the tearing of the sealing flap 3b to open the compartment, and thereby prevent accidental or unintentional discharge of the commodity from the compartment. Also, after the discharge neck has been opened, the walls of the neck

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may be alternately compressed and released so as to serve as a valve to permit discharge of the commodity in small quantities such as drops.

The neck tube 5 preferably is secured in position by the sealed zones 3 that connect the packaging layers together, portions of the layers 1 and 2 being drawn tightly into contact with the exterior surface of the tube during the sealing of the layers between sealing dies. However, if desired, the tube might be secured to the layers 1 and 2 adhesively or thermoplastically.

The invention makes it possible to produce inexpensively from flimsy and non-self-sustaining sheet material, packages for fluent commodities, having discharge necks the walls of which cannot become accidentally or unintentionally closed by the collapse and sticking together of the layers, and the invention also provides a simple and inexpensive valve for controlling the discharge of the fluent commodity from the compartment.

It will be understood that the package may be shaped and decorated as desired and that preferably the walls of the compartment or at least one thereof will be transparent so that the commodity in the compartment can be easily seen by the user of the package. Furthermore, while the now preferred form of the invention has been illustrated and described for the purpose of illustrating the principles of the invention, many modifications and changes may be made in the construction of the package or container within the spirit and scope of the invention.

What I claim is:

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A package for a fluent commodity comprising at least two layers of flat thin flexible sheet material providing a commodity-containing compartment with a reduced narrow elongate discharge passage between them, the portions of said layers forming the side walls of said passage having an inherent tendency to collapse and adhere to each other and close said passage, and separate reinforcing means between said portions and normally holding them in spaced relation to each other to maintain said passage open, said reinforcing means being a resilient-walled cylindrical tube secured in fluid-tight relation to and between said portions of the packaging layers forming said discharge passage, and said tube being self-sustaining but resilient-walled providing for momentary closing of the discharge passage by application of pressure exteriorly on said portions of the layers that form the side walls of said passage to force said portions toward each other.

References Cited in the file of this patent

UNITED STATES PATENTS

1,438,487	Greene	Dec. 12, 1922
2,222,267	Schnabel	Nov. 19, 1940
2,428,261	Bogoslowsky	Sept. 30, 1947
2,663,461	Brown	Dec. 22, 1953
2,705,579	Mason	Apr. 5, 1955
2,896,827	Stern	July 28, 1959