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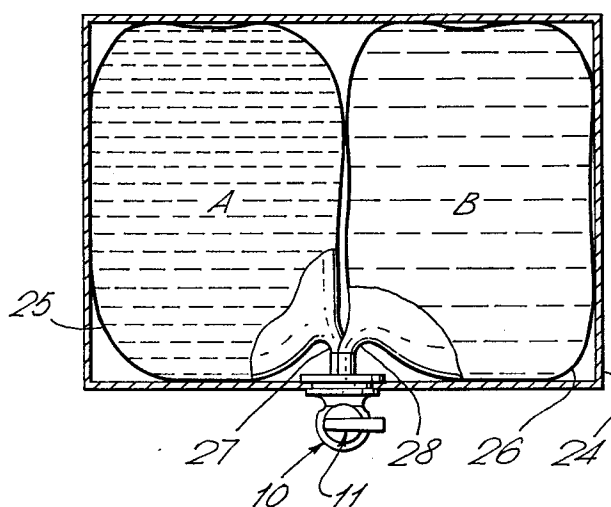
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Bag-in-box.

An article consisting of two or more flexible envelopes
such as plastics bags contained within a substantially rigid pro-
tective container such as a cardboard box. Both envelopes are
attached to a single liquid dispensing device. One of the en-
velopes may contain a liquid comprising a surfactant and the
other a liquid comprising a bleach.



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BAG-IN-BOX

This invention relates to a bag-in-box product.

5 Developments in packaging technology have permitted
the marketing of liquids packed in a bag-in-box, that is
to say a plastic bag fitted with some type of dispensing
device, physically protected by a rigid box normally made
from board. Wine, liquid soap and liquid fabric
10 conditioner are three examples of products of this type
which are on the market.

 We have now realised that this product form opens
opportunities for the marketing of liquids containing
15 otherwise incompatible substances.

 Accordingly the invention provides an article
comprising two or more flexible liquid impermeable
envelopes communicating with a single liquid dispensing
20 device contained within a substantially rigid, protective
container.

Normally the envelopes will be plastics bags welded to the dispensing device, or connected by tubes to it and the rigid protective container will be a cardboard box.

5 One of the most advantageous applications for the article in accordance with the invention is one in which one of the envelopes contains a liquid composition comprising a surfactant and the other a liquid composition comprising a bleach.

10

The liquid dispensing device may be a tap assembly or it may be a pump device such as a peristaltic pump.

15 The invention will be further described with reference to the accompanying drawings in which:

Figure 1 is a front elevation of a tap suitable for use in the article of the invention;

20 Figure 2 is a side view of the tap shown in Figure 1;

Figure 3 is a plan view from above of the tap shown in Figures 1 and 2;

25 Figure 4 is a rear view of the tap shown in Figures 1, 2 and 3; and

Figure 5 is a side view of a spindle for the tap shown in Figures 1 to 4.

30

Figure 6 is a plan view of an article in accordance with the invention using the tap of Figures 1 to 5.

35 Figure 7 is a plan view of a second article in accordance with the invention using the tap of Figures 1 to 5.

Referring first to Figures 1, 2 and 3, the tap consists generally of a body (10) and a spindle (11). The body, which will be formed from a thermoplastics material consists of two concentric circular flanges (12,13), separated one from the other by a spacer (14) and adapted to retain a layer of cardboard from the container into which the tap is intended to be inserted. Integrally formed with the flanges is a barrel member (15) which is circular in cross-section as is shown in Figure 3. The barrel member is provided with an air-vent (16).

Referring now to Figures 2, 3 and 4, two inlet tubes, one of which (17) is offset from the diameter of the flange (12) communicate through flanges (12, 13) and spacer (14) with the barrel member (15).

Referring to Figure 5 the spindle (11) of the tap is hollow and is formed with two apertures (22,23) in one side only communicating with the hollow centre and corresponding with the inlet tubes (17,18) of the body. It is capped with a circular flange which abuts against the top of barrel member (15) of Figure 1, and which carries a key-end (20). The lower end of the spindle (21) is tapered to assist dispensing.

Two articles using the tap of Figures 1 to 5 are shown in Figures 6 and 7. In these figures a substantially rigid, protective container in the form of a cardboard box (24) is provided with a cut-out to take the tap assembly (10,11). In Figure 6 the cardboard box contains two separate flexible, liquid-impermeable envelopes in the form of plastics bags (25,26). Each bag terminates in a feed tube (27,28) each of which is connected to one of the inlet tubes (17,18) of the tap assembly.

In Figure 7 the box contains a single plastics bag (29) containing an internal web (30), dividing the bag into two separate compartments. Each compartment is provided with separate feed tubes (31,32) individually
5 connected to the inlet tubes (17,18) of the tap assembly.

The plastics bags contain different liquids, A and B, and on opening the tap by rotation of key end (20) both liquids flow by both the pressure exerted by the
10 atmosphere and by gravity through the inlet tubes (17,18) of the tap assembly and into the hollow spindle where they mix and are dispensed. When the tap is turned off again, the air vent (16) is in communication with the upper
aperture (22) of the tap spindle, which helps to drain the
15 spindle completely.

CLAIMS:

1. An article comprising two or more flexible liquid impermeable envelopes communicating with a single liquid dispensing device contained within a substantially rigid protective container.
5
2. An article according to claim 1 wherein the envelopes are plastics bags welded to the dispensing device.
10
3. An article according to claim 1 or claim 2 wherein the rigid protective container comprises a cardboard box.
- 15 4. An article according to any one of the preceding claims wherein the liquid dispensing device comprises a tap assembly or a pump device.
- 20 5. An article according to claim 1, one of the envelopes containing a liquid composition comprising a surfactant and the other a liquid composition comprising a bleach.

Fig. 1.

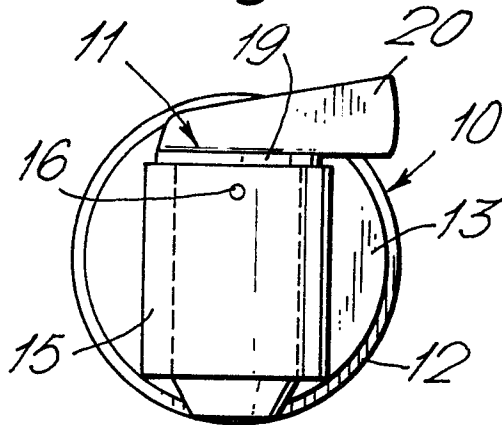


Fig. 2.

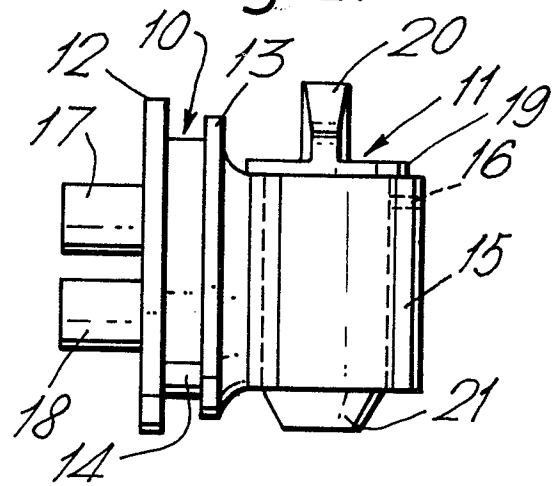


Fig. 3.

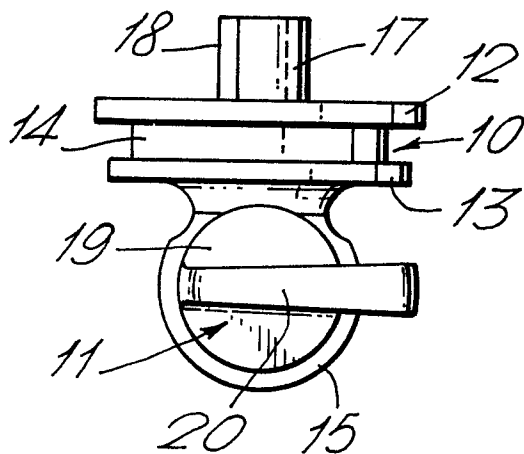


Fig. 4.

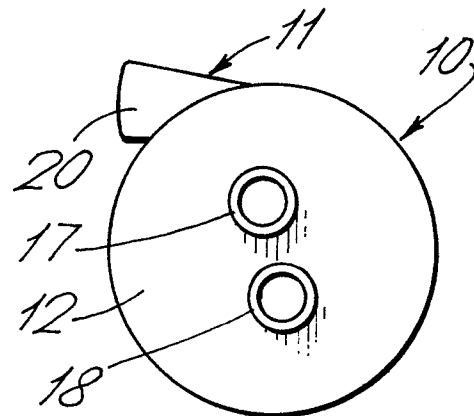


Fig. 5.

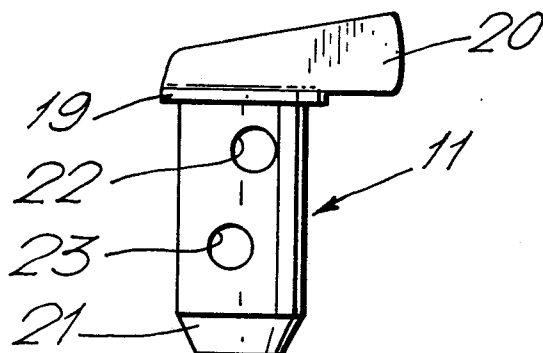


Fig. 6.

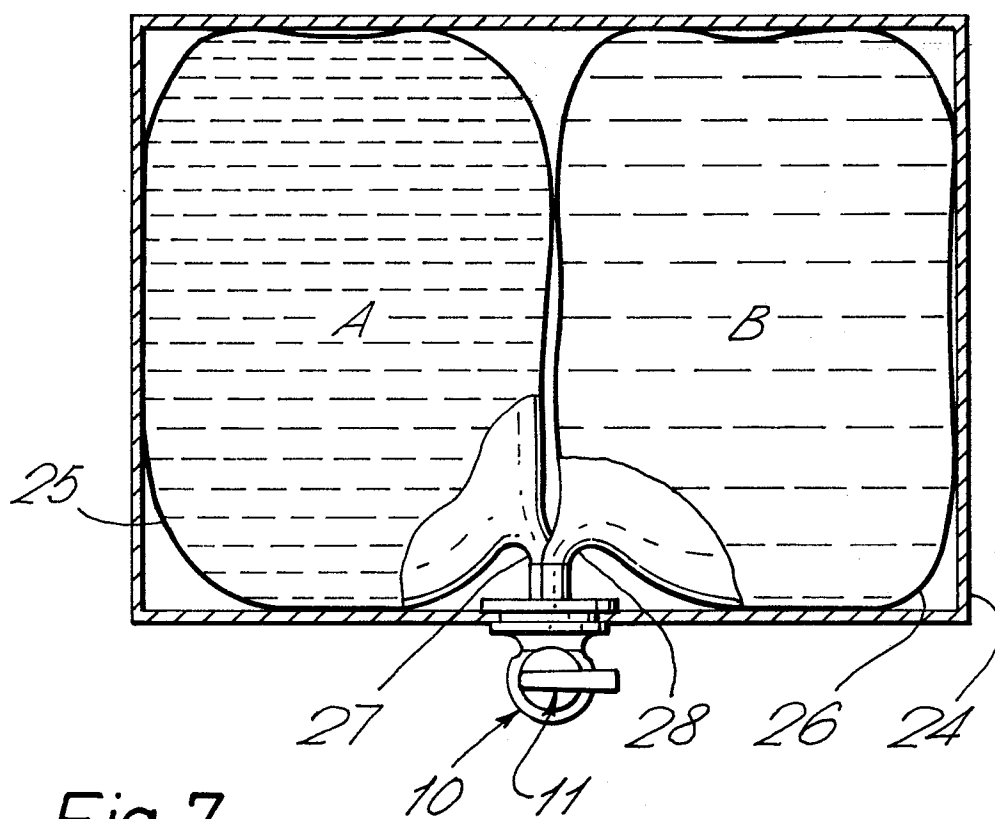


Fig. 7.

