

Nov. 12, 1968

B. MORANE

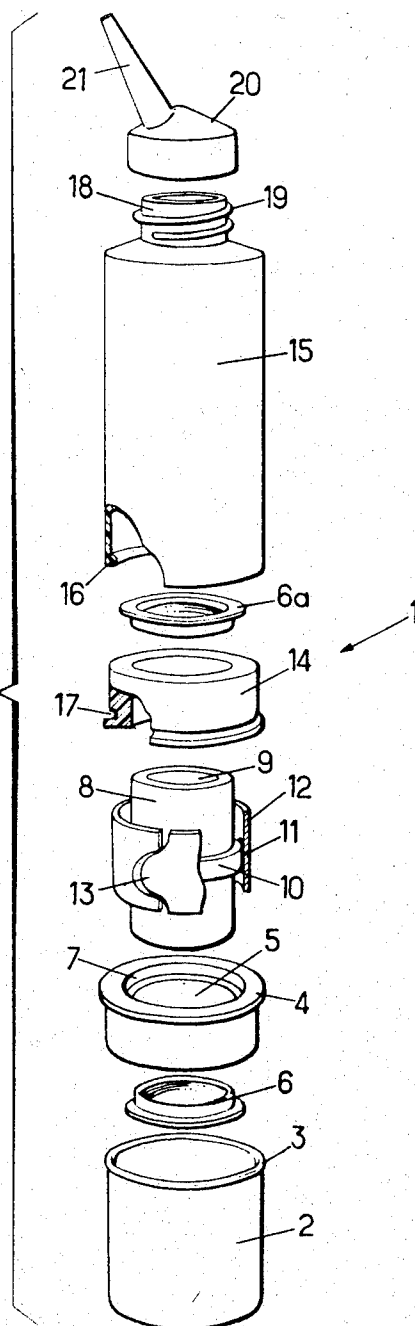
3,410,444

CONTAINER HAVING SEPARATE CHAMBERS AND PROVIDED
WITH MEANS FOR CONNECTING SAID CHAMBERS

Filed Oct. 2, 1967

2 Sheets-Sheet 1

FIG. 1



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FIG. 2

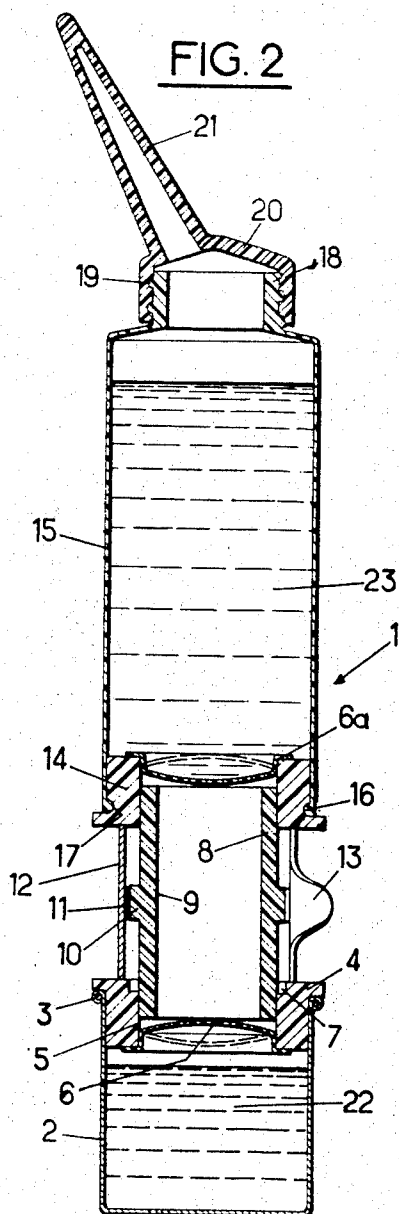
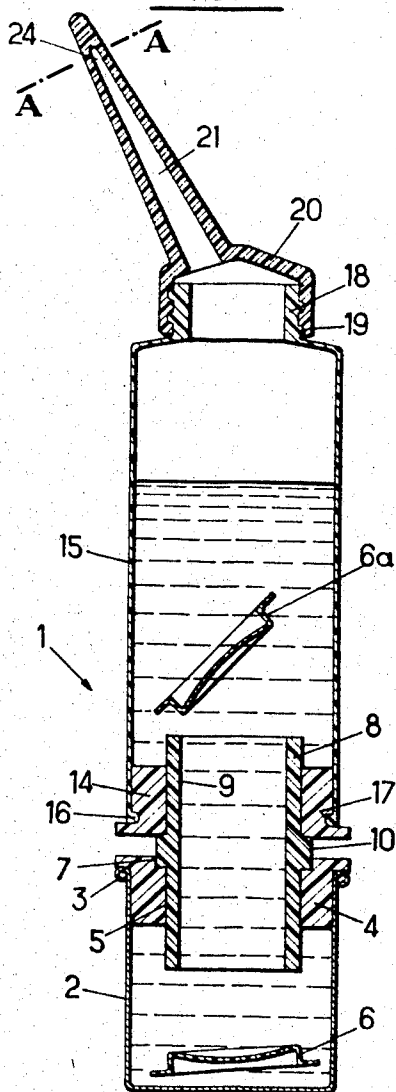


FIG. 3



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3,410,444 CONTAINER HAVING SEPARATE CHAMBERS AND PROVIDED WITH MEANS FOR CON- NECTING SAID CHAMBERS

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ABSTRACT OF THE DISCLOSURE

A container having two stoppered chambers for keeping two constituents separate, a connecting cylinder having an end slidable in the mouth of each chamber, and removable spacer means for preventing said cylinder from sliding far enough into said mouth to eject said stoppers until said spacer is removed at the moment of use.

This invention relates to a container capable of containing, in at least two separate compartments, liquids or other products which must not mix until the moment of use for various reasons, such for example, as oxidation or reduction of one product by the other. The compartments may be put in communication with one another by a manual action on the compartments which creates openings in their walls.

The object of the present invention is to provide a new article of manufacture consisting of a container essentially characterized by the fact that it includes in combination: at least two hollow members containing products to be mixed, at least one of said members having a pouring spout; one or more connecting sleeves between the removable lower portion of one of the hollow members and the mouth of another, the sleeve or sleeves being mounted so as to permit said members to be brought together, the mouths of said members being stoppered by means of plugs which may be ejected by the sleeves, the extent of this ejection being limited by a shoulder and a retaining ring.

In order that the invention may be more clearly understood, one embodiment thereof comprising two containers and one sleeve will not be described, purely by way of example, with reference to the accompanying drawings.

In these drawings:

FIGURE 1 is an exploded view of the container according to the invention, showing its component parts;

FIGURE 2 is an axial section taken through the container of FIGURE 1 while in storage; and

FIGURE 3 is an axial section similar to FIGURE 2, showing the container of FIGURE 1 after the sleeve has been pushed all the way in.

FIGURE 1 shows a container 1 according to the invention, consisting of member 2 having a rolled edge 3, made for example of a light metal. On this member 2 is mounted a socket 4 having a central opening 5 which may be fitted with a stopper 6 on the inside of member 2. The socket 4 is provided, along the inner edge of the mouth 5, away from the stopper 6, with a circular ledge 7. The stopper 4 is made of a plastic material which may easily be worked to a precision such that the fit of the socket 4 in the member 2 and of the stopper 6 in the socket 4 may be very close, so as to provide a very tight seal preserving the product held in the member 2. This socket may be advantageously manufactured from the plastic material sold under the commercial name "Lucoflex" which meets the required conditions.

The stopper 6 may be made of a light, compressible material, such as polypropylene, so as to give a close fit.

On the socket 4 is mounted the sleeve 8, the exterior surface of which has very close to the same diameter as the inner bore of the socket 4.

This sleeve 8 has an inner mouth 9 and an outer shoulder 10 the diameter of which corresponds to that of the ledge 7 in the socket 4.

On this shoulder 10 and attached at several points distributed around its periphery, there is a thin, concentric ring 12 which has a tab 13 to permit the separation of the ring 12 from the sleeve 8.

A socket 14 is mounted on the sleeve 8, on the side opposite the member 2. This socket is made of a material with a hard finish, and is blocked by a plug 6a. In the position of FIGURE 2, the sleeve 8 is prevented from contacting the plugs 6 or 6a by the ring 12.

On the outside of the socket 14 is mounted a member 15 having a certain elasticity, which may be made, for example, of some plastic material which facilitates the manufacture of tubes by extrusion, such as polyethylene. An inner cushion 16, is formed at the end of the tube. This cushion, by reason of its elasticity, can retract into an associated groove 17 in the socket 14 so as to tightly close the member 15, which has at its other end an opening 18 which may, for example, be provided with threads 19 which receive a screw-on cap 20 provided with a pouring spout 21.

FIGURE 3 shows the container at the moment of operation. In the position shown in FIGURE 2 a force has been exerted on the tab 13 of the ring 12, breaking the attachments 11 and removing the ring 12 from the space between members 2 and 15.

By exerting a force in the axial direction with respect to the two members so as to bring them together, the sleeve 8 may be inserted into sockets 4 and 14. One end of the sleeve meets plug 6, while the other end meets plug 6a, simultaneously or successively and the force pushes these plugs into the respective members 2 and 15 (FIG. 3). They slide through a very tight passage so that the products 22 and 23 contained in members 2 and 15 cannot escape. The bringing together of the two members ceases when the shoulder 10 strikes the shoulder 7 of socket 4 on the one hand, and the socket 14 on the other hand. After the plugs have been ejected the product 23 in member 15 flows by gravity into member 2 to mix with product 22.

The mixture of the two products is, if necessary, homogenized by stirring. Since the container 1 is air-tight, a certain reserve of air inside it facilitates the mixing.

For use, it is sufficient to cut pouring spout 21 along AA to obtain an opening 24 through which the mixture of products 22 and 23 may be poured. If opening 24 does not permit a normal flow, pressure may be exerted on member 15.

From the above description, it is seen that a container according to the invention is useful for preparations whose properties alter with time especially for hair dyes and the like, when the dye may be placed in member 2 and the oxidant in the member 15 fitted onto the sleeve.

The mixing is particularly easy and sure since the force bringing the two members together must be sustained to eject the plugs. At the time of manufacture the choice of materials makes it possible to ensure a sufficiently tight fit to keep the sockets in place on the members.

There are many possible methods of mass producing these members, both from the point of view of standardization of the members and their combination to provide a large number of preparations at the time of use.

In the above example of hair dye, for example, a variety of members 2 holding appropriate dyes may be provided along with identical members 15, all containing the same oxidant. According to need, the sleeve with its

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protecting ring may be mounted on the members containing the dye and, just as it is shipped to the manufacturer the member containing the oxidant is put in place to provide an assembly as shown in FIG. 2.

For storage purposes, the members may be separated or partially assembled.

The cost of such containers may thus be relatively low for a package which ensures the safe storage and proper mixing of the components of a mixture which can be used only in proportions exactly determined in advance by the manufacturer.

It will be appreciated that the embodiment hereinbefore described has been given purely by way of example, and may be modified as to detail without thereby departing from the basic principles of the invention.

In particular, in the embodiment described, only two members are employed for mixing two products but if there are three or more products to be mixed, intermediate members having a removable bottom like that of member 15 and a mouth like that of member 2 in the above described embodiment may be used by adding sleeves like the one shown in the drawing.

What is claimed is:

1. A container comprising two hollow chamber-defining members formed with facing orifices, a stopper closing each orifice, a hollow cylinder connecting said members and having two ends, each of which is slidably positioned in one of said orifices, and removable spacer means

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outside said cylinder positioned to keep said members a predetermined distance apart, each cylinder end being positioned to drive out a stopper when said spacer means is removed and said members forced toward each other.

2. A container as claimed in claim 1 comprising external shoulder means on said cylinder positioned to contact the edges of said orifices when said cylinder is forced a predetermined distance into said members.

3. A container as claimed in claim 1 in which said removable spacer means is a frangible sleeve encircling said cylinder.

4. A container as claimed in claim 1 comprising aligned first, middle and third hollow chamber-defining members, with the middle member having an orifice and stopper at each end, and two sleeves, one positioned between said first and middle members and the other between said middle and third members.

References Cited

UNITED STATES PATENTS

2,753,868	7/1956	Seemar	215—6 X
3,190,619	6/1965	Penny et al.	
3,326,400	6/1967	Hamelin	215—6

FOREIGN PATENTS

536,023	3/1955	Belgium.
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