

1

**DISPENSING STRUCTURE WITH AN
OPENABLE MEMBER FOR SEPARATING
TWO PRODUCTS**

CROSS REFERENCE TO RELATED
APPLICATION(S)

Not applicable.

STATEMENT REGARDING FEDERALLY
SPONSORED RESEARCH OR DEVELOPMENT

Not applicable.

REFERENCE TO A MICROFICHE APPENDIX

Not applicable.

TECHNICAL FIELD

This invention relates to a system or structure for dispensing a product from a container. The dispensing structure is particularly suitable for use in storing an additive or additional ingredient which can be initially maintained separated from material in a container and subsequently mixed with the material in the container.

BACKGROUND OF THE INVENTION AND
TECHNICAL PROBLEMS POSED BY THE
PRIOR ART

A variety of container closures have been designed to accommodate opening of the closure by pulling or breaking a portion of a membrane across the container opening. While such closures may function generally satisfactorily in the applications for which they have been designed, it would be desirable to provide an improved dispensing system or dispensing structure which can be even more easily used.

Further, it would be advantageous if such an improved dispensing structure could accommodate the separate storage of an additive or ingredient for subsequent mixing with another material in the container.

Further, it would be beneficial if such improved dispensing structure could provide a readily releasable system for maintaining the structure in a sealed closed position and for providing evidence of tampering or evidence of an initiation of the closure opening process.

Additionally, it would be desirable to provide an improved closure that could, if desired, readily accommodate a design in which a frangible sealing system across the dispensing opening can be incorporated solely within a closure structure which is separate from the container to which the closure structure is attached. Advantageously, such a dispensing closure or dispensing structure should provide a very effective seal when the dispensing structure is closed (1) so as to avoid subjecting the material in the container (and/or the interior dispensing structure) to prolonged exposure to the ambient atmosphere, and (2) so as to prevent contamination of the materials within the container by preventing contaminant ingress.

Such an improved dispensing structure should also accommodate designs which permit incorporation of the dispensing structure as a unitary part, or extension, of the container and which also accommodate separate mounting of the dispensing structure on the container in a secure manner.

It would also be beneficial if such an improved dispensing structure could readily accommodate its manufacture from a variety of different materials.

2

Further, it would be desirable if such an improved dispensing structure could be provided with a design that would accommodate efficient, high-quality, large volume manufacturing techniques with a reduced product reject rate.

5 Preferably, the improved dispensing structure should also accommodate high-speed manufacturing techniques that produce products having consistent operating characteristics unit-to-unit with high reliability.

10 The present invention provides an improved dispensing structure which can accommodate designs having the above-discussed benefits and features.

BRIEF SUMMARY OF THE INVENTION

15 According to one aspect of the present invention, a dispensing structure is provided for a container that has an opening to the container interior. The dispensing structure includes a body for extending around the container opening. The body defines an access passage for establishing communication through the container opening. The body includes a chamber for receiving an additive product for adding to the contents within the container. The chamber has an initially closed upper end and has a bottom end defining a bottom end opening which is initially closed.

25 According to one aspect of the invention, a movable closure means is provided for releasably closing the chamber bottom end opening. The dispensing structure also includes a deformable cover means for mounting to the body to accommodate deformation from an undeformed condition, at which the movable closure means closes the chamber bottom end opening, to a deformed condition at which the movable closure means is engaged and moved by the cover means to a position that opens the chamber bottom end opening.

30 According to another aspect of the invention, the dispensing structure includes a bottom end closure member which is movable between (1) a closed position occluding the chamber bottom end opening, and (2) an open position away from the closed position. A vertically movable push member is provided and is disposed in the chamber. The push member has an upper end. The push member has a lower end which is adapted to move the bottom end closure member from the closed position to the open position when the push member is pushed downwardly. At least one flexible support arm is connected at one end with the body and at the other end with the push member. The flexible support arm is normally biased to an upwardly displaced configuration. The flexible support arm accommodates movement of the support arm and push member to a downwardly displaced configuration.

40 A cover is provided for accommodating movement between (1) a closed position over the body, and (2) an open position away from the closed position. The cover includes a peripheral frame for mounting on the body. The cover also has a top that (i) has interior and exterior surfaces, (ii) is connected with the frame, (iii) is normally biased to an upwardly convex configuration as viewed from outside the cover, and (iv) accommodates flexure of the top to a self-maintained, inverted, downwardly concave configuration for moving the flexible arm and push member to the downwardly displaced configuration. The cover also has an actuating member which projects from the top interior surface and which is adapted to push the push member downwardly when the cover top is moved to the inverted, downwardly displaced configuration.

65 Numerous other advantages and features of the present invention will become readily apparent from the following