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 272; 220/85-B, 89-A, 20, 20.5

[56] **References Cited**

UNITED STATES PATENTS			
2,290,337	7/1942	Knauth.....	220/85-B
2,339,876	1/1944	Phillips.....	220/85-B
2,815,755	12/1957	Anastor.....	215/6-X
3,380,451	4/1968	Porter.....	128/218-M
3,424,218	1/1969	Vanderbur et al.....	128/272-X

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[54] **COMPARTMENTED CONTAINERS HAVING A RUPTURABLE DIAPHRAGM BETWEEN COMPARTMENTS**
 3 Claims, 4 Drawing Figs.

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 B65d 81/32, A61j 1/00

ABSTRACT: A container having an upper and lower compartment separated by a transverse diaphragm of rupturable material, the upper compartment containing a slidably plunger for movement toward the diaphragm.

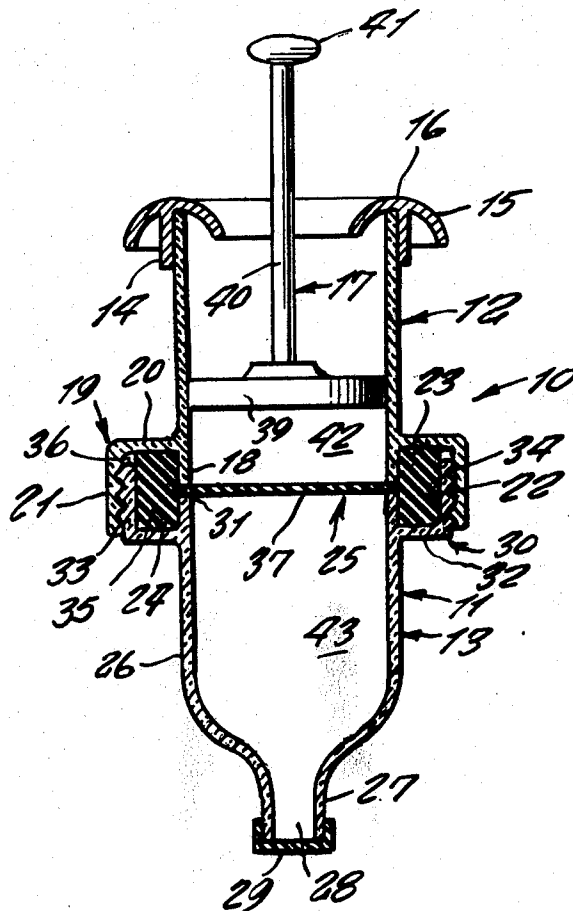


Fig. 1

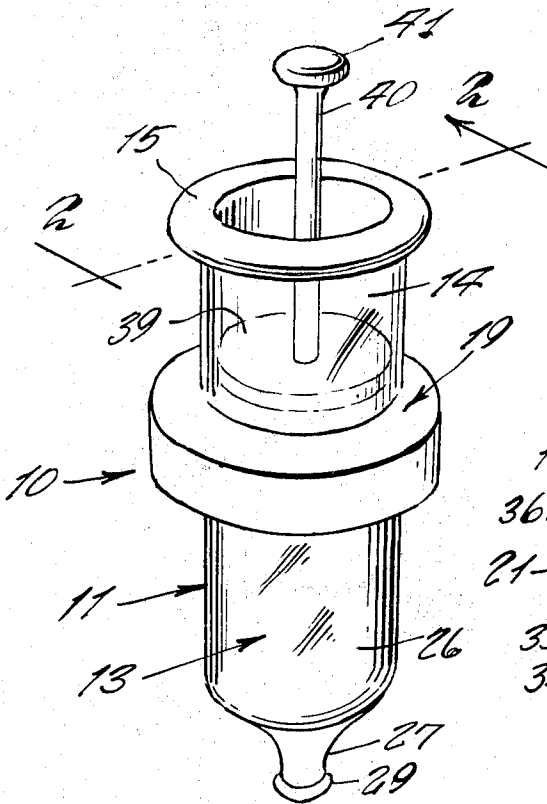


Fig. 2

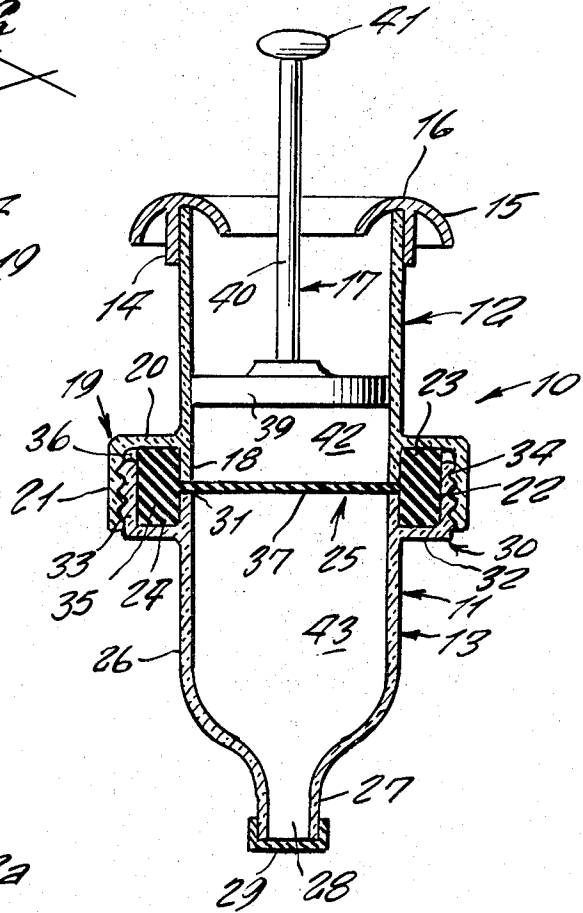


Fig. 3

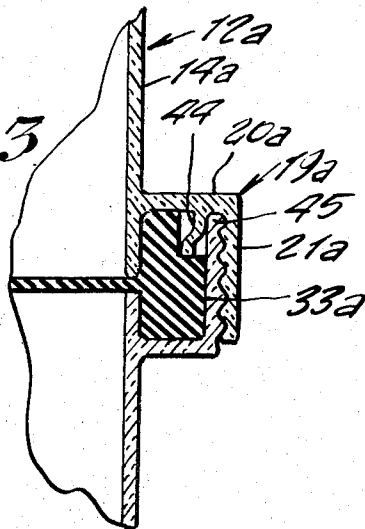
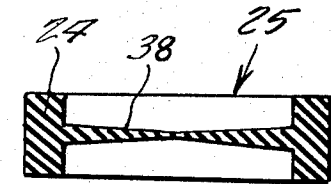


Fig. 4



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COMPARTMENTED CONTAINERS HAVING A RUPTURABLE DIAPHRAGM BETWEEN COMPARTMENTS

This invention relates generally to compartmented containers separated by a frangible wall.

A principal object of the present invention is to provide a two or more part construction of compartmented containers having a rupturable diaphragm between the compartments.

Another object of the present invention is to provide a device as alone described and which includes a slidable plunger within one of the compartments.

Other objects are to provide a two or more part construction of compartmented containers having a rupturable diaphragm between compartments, which is simple in design, inexpensive to manufacture, rugged in construction, easy to use and efficient in operation.

These and other objects will be readily evident upon a study of the following specification and the accompanying drawing wherein:

FIG. 1 is a perspective view of the present invention.

FIG. 2 is a cross-sectional view taken on line 2-2 of FIG. 1.

FIG. 3 is an enlarged cross-sectional detail of FIG. 2 showing a modified construction.

FIG. 4 is a cross-sectional view of a modified form of diaphragm.

Referring now to the drawing in detail, the reference numeral 10 represents a Two or More Part Construction of Compartmented Containers Having a Rupturable Diaphragm Between Compartments according to the present invention wherein there is a cylindrical barrel assembly 11 comprised of an upper barrel member 12 and lower barrel member 13 which are threadingly secured together.

The upper barrel member 12 comprises a sleeve like element of glass or the like, and which comprises a collar 14 having stop 15 adjacent and around its upper edge 16, the stop being of semicircular cross-sectional configuration so to form a radially inwardly flange that serves to arrest slidable travel upwardly of a plunger 17 contained within the barrel. The collar has a lower edge 18. An outwardly extending flange 19 a short distance above the edge 18 is integral with the collar, the flange 19 being of L-shaped cross-sectional configuration so to have a horizontal element 20 and vertical element 21, the latter having an internal screw thread 22. It is understood that element 21 is parallel to the side of the collar 14 and concentrically spaced therefrom by a space 23 into which there is fitted a rim 24 of a rupturable, circular diaphragm 25.

The lower barrel member 13 comprises a sleeve like element of glass or the like, and which is comprised of a cylindrical side wall 26 which at its lower end is turned inwardly to form a narrow neck 27 having opening 28 therethrough. A closure cap 29 is fitted over the end of the neck so to close the opening. The upper end of the lower barrel member 13 is provided with an outwardly extending flange 30 near the upper edge 31 thereof, the flange being of L-shaped cross-sectional configuration and including horizontal element 32 and vertical element 33, the vertical element having an external screw thread 34 that engages thread 22 of the upper barrel member 12. It is likewise understood that element 33 is parallel to the side of the cylindrical side wall 26 and concentrically spaced therefrom by a space 35 which together with space 23 form a circular enclosure 36 receiving the diaphragm rim 24.

The diaphragm 25 comprises a molded member of rupturable material such as rubber or the like. The diaphragm rim 24 comprises a thick ring around the periphery of a relatively thin film 37 across the center thereof and integral therewith. The film 37 may be of equal thickness throughout as suggested in FIG. 2 or it may be most thin at its center and of gradually increasing thickness toward its peripheral edge where it enjoins the rim, as suggested in FIG. 4 by the reference numeral 38. The barrels may also be secured by an interlocking fit and fusing or the like.

The plunger 17 comprises a piston head 39 slidable with the barrel, and a piston rod 40 extending from the head, the rod 40 projecting upwardly outward of the barrel and having an enlarged knob 41 on the end thereof.

It is to be noted that when the parts are assembled, that the diaphragm film 37 is fitted between the lower edge 18 of the upper barrel member and the upper edge 31 of the lower barrel member.

In operative use, the movement of the plunger with upper compartment 42 of the barrel will rupture the diaphragm that separates compartment 42 from a lower compartment 43 of the barrel.

In FIG. 3 a modified construction is shown wherein the flange 19a of the upper barrel member 12a includes a concentric wall 44 between the sidewall of collar 14a and internally threaded wall 21a, the wall 44 extending a short distance from flange wall 20a so to form a separate pocket 45 into which the end of externally threaded wall 33a is fitted.

While various changes may be made in the detail construction, it is understood that such changes will be within the spirit and scope of the present invention.

I claim:

1. A container comprising a lower compartment and an upper compartment divided by a rupturable diaphragm secured transversely between the compartments, wherein the compartments are of cylindrical shape having inner adjoining ends for securing the diaphragm therebetween, each of said ends having opposing channels forming a peripheral cavity about the compartments surrounding the diaphragm, said diaphragm having an enlarged integral peripheral rim fitting in said cavity, said ends having inner circumferential edges in tight opposing abutment with the diaphragm adjacent to the rim, said rim extending equidistant from both sides of the diaphragm, said channels having outer overlapping longitudinal flanges secured together causing compressive sealing of the rim and the diaphragm between the inner adjoining ends of the compartment, in further combination with a radially inward flange secured to the upper compartment and a plunger snugly engaging the inner surface of the upper compartment and of larger diameter than the radially inward flange preventing thereby removal of the plunger, and wherein the lower compartment has a reduced lower aperture

2. A container as in claim 1, wherein the rim has an outer annular groove adjacent the outer flanges of one of the channels, in further combination with an intermediate circumferential wall extending from one of the ends into said groove in compressive contact with the rim.

3. A container as in claim 2, wherein the diaphragm tapers radially from a thicker outer portion to a thinner inner portion.