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A. A. GREENBERG

2,487,236

COMPARTMENTED CONTAINER HAVING A RUPTURABLE PARTITION

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FIG. 1.

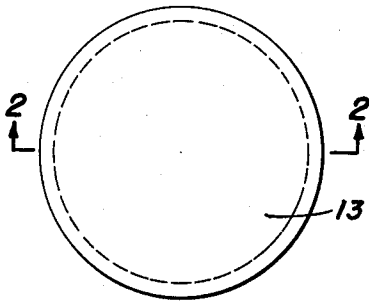


FIG. 2.

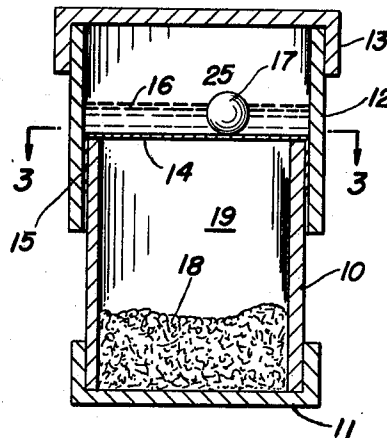


FIG. 3.

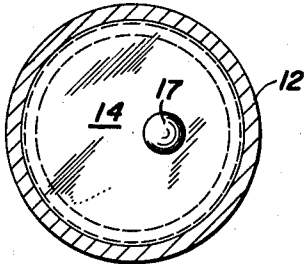


FIG. 4.

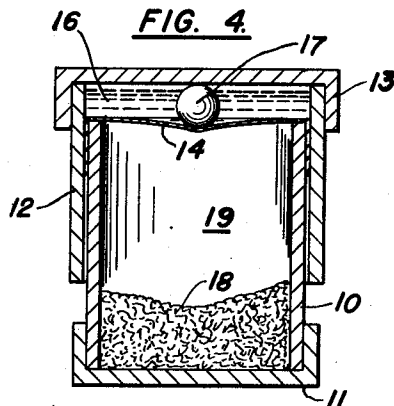


FIG. 5.

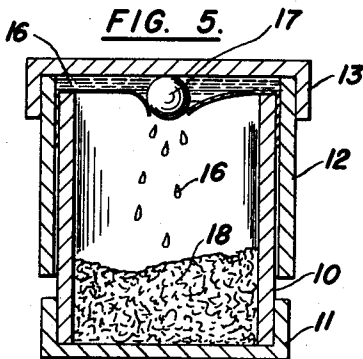
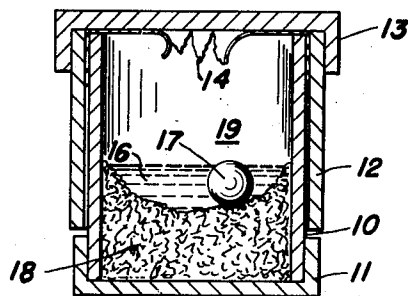


FIG. 6.



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COMPARTMENTED CONTAINER HAVING A
RUPTURABLE PARTITION

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3 Claims. (Cl. 206-47)

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This invention relates to the compounding of chemicals and the use of containers for them. It pertains especially to those suitable for dental work.

It is an object of this invention to provide a new and improved container for dental materials that will avoid one or more of the disadvantages and limitations of the prior art.

An additional object of this invention is to provide a container having compartments and means for giving an audible signal when the compartment material is punctured during the mixing operation.

An additional object of this invention is to provide a new and improved container for dental materials that will enable them to be accurately apportioned, made ready for instant use, and in a form that can be carried around or stored away for future use without danger of deterioration or damage, under normal conditions.

An additional object of this invention is to provide a new and improved container for dental materials that will keep the various materials placed therein, separated from each other until they are to be mixed together and used.

An additional object of this invention is to provide a new and improved telescopic container for the storage of materials to be later mixed when the container is collapsed sufficiently enough to break through the barriers and allow the materials to intermix with each other.

Other objects will become apparent as the invention is more fully set forth.

This invention consists of a container designed to hold dental materials, of different kinds and types, and retain them separately from each other, so the opportunity to combine ahead of time, will be avoided; yet the structure is such that a minor mechanical manipulation of the container will bring all the ingredients into contact with each other and made ready for use in their combined form, and easily taken from the container to be put to that use.

The invention will be understood from the attached drawings and the following description, and its principles appreciated. These drawings and description indicate a single form of the invention simply by way of example, while the scope of the invention is more fully appreciated from the claims, wherein its characteristics are more emphatically pointed out.

In the drawings:

Figure 1 is a plan view of a container embodying this invention;

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Figure 2 is a sectional elevation on line 2-2 of Figure 1;

Figure 3 is a sectional plan view on line 3-3 of Figure 2;

Figure 4 is a sectional elevation indicating the position of the parts and ingredients when the container is being collapsed sufficiently to allow the cap to contact the implement and press it against the diaphragm;

Figure 5 is a similar view to that of Figure 4 as the diaphragm is being broken to start the mixing of the contents; and

Figure 6 is a similar view to that of Figures 4 and 5 with the ingredients in contact with each other ready for mixing by shaking them together.

Similar reference characters refer to the same parts throughout the drawings.

The particular construction of the container shown in the drawings, has a cylindrical walled section 10 surmounted by a cap 11 cemented in and placed at its bottom edge. Another cylindrical wall section 12 is slipped over the cylinder 10 and can be moved up and down its outer peripheral surface in a telescopic manner. This section 12 is also surmounted by a cap 13 to close up the end, spaced away from the wall of the section 10.

A diaphragm or membrane 14 of cellophane or similar material is secured across the upper open end of the section 10 and overlapped over the edges 15 and held between the outer peripheral surface of the section 10 and that of the inner peripheral surface of the section 12, as shown in Figure 2. This makes the membrane 14 taut. In the telescopic placement of the cylinders 10 and 12 together, a space or compartment 25 is left between the upper surface of the membrane 14 and the cap 13. In this space 25 a material preferably mercury 16, and a solid ball or implement 17 are inserted and allowed sufficient room to move freely around above the membrane. In the space or compartment 19 of the lower section 10 a mixture of ingredient material 18 preferably in powdered form is placed and is of a nature that will combine with the mercury or other material from the space 25. The ingredient 18 also has ample room in the space or compartment 19 in which to move around. The space 19 exists between the membrane 14 and the bottom cap 11. The cylinders 12 and 10 may be forced together or telescoped on each other, by pressing on the caps 11 and 13 with the fingers until the ball or implement 17 is pressed against the membrane 14 by the cap 13, as shown in Figure 4. Further pressure on the cap, forces the

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ball 17 through the membrane with an audible snap and allows the mercury to be dumped on the ingredients 18 and mix therewith, in compartment 19. The ingredients 18 are of such a nature as to preferably become pasty when mixed with the mercury or whatever ingredient is used in the upper space 25. The cylinders are shaken so the mixture will be complete and compounded. The ball 17 facilitates this action. The ball 17, may be of a material neutral to the ingredients such as plastic, steel or whatever may be desirable. After the mixture is considered complete, the compounded material is removed by opening the container. This is done preferably by removing one of the caps. The material compounded can then be removed.

In a device of this nature, the ingredients may be introduced accurately on a production basis at little cost, comparatively, and then when packed in the container, are ready for instant use. The mixing is performed without requiring contact with the hands, tools and surfaces, in the open, which is necessary under the common method of making such compounds. Even after the compound has been mixed it may be taken from the container with the least amount of handling. The compound can be taken from the open container, after one of the caps has been removed and placed on a tool or in a cavity or other location without contact with the hands. This makes the arrangement sanitary and free from collecting foreign materials. The container may then be discarded, and since its cost is small, there is practically no waste incurred. The cylinders are so termed as a matter of convenience, but it is to be understood that the shape of the container and these parts is not intended to be limited to the round cylindrical contour, since a rectangular, polygonal or other form could be used also in the same effective manner. The form of the implement, while also shown round or spherical could also be of other forms suitable for the purpose and adapted for breaking the membrane seal between the compartments, 25 and 19.

While but one general form of the invention is shown in the drawings and described in the specification, it is not desired to limit this application for patent to this particular form or in any other way otherwise than limited by the scope thereof, as it is appreciated that other forms of construction could be made that would use the same principles and come within the scope of the appended claims.

Having thus described the invention, what is claimed is:

1. A container of the class described comprising a plurality of cylinders mounted on one another so as to slide longitudinally thereon, a membrane mounted over one end of one cylinder and forming a closure between said cylinders to provide compartments above and below the membrane, one of said compartments being arranged to contain an ingredient, an implement freely disposed therein, and the other compartment on the other side of the membrane containing another ingredient compoundable with the first

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mentioned, said implement being so arranged with regard to the cylinders and membrane that said pressure placed upon the cylinders to slide them over one another to reduce the length of the container will force said implement through the membrane and allow the ingredients to mix in one of said compartments where they can be shaken together by the manipulation of the container.

2. A container of the class described comprising a plurality of cylinders mounted on one another so as to slide longitudinally thereon, a membrane mounted over one end of one cylinder and forming a closure between said cylinders to provide compartments above and below the membrane, one of said compartments being arranged to contain an ingredient and an implement movably disposed therein, and the other compartment on the other side of the membrane containing another ingredient compoundable with the first mentioned, said implement being so arranged with regard to said cylinders and membrane that the pressure placed upon the cylinders to telescopically slide them over one another to reduce the length of the container will force the implement through to break open the membrane and allow the ingredients to mix in one of said compartments where they can be shaken together by the manipulation of the container, and means for closing the untelescoped ends of said cylinder.

3. A container of the class described comprising in combination, a pair of cylinders telescopically and slidably mounted on each other, a membrane mounted over one end of one cylinder and brought taut over the edges thereon to be held in between the cylinders so as to close that end of said cylinder, said cylinders having caps closing in their end portions spaced away from the membrane whereby compartments are formed between the membrane and the caps, one of said compartments having a fluid ingredient therein, and the other compartment having another ingredient of a nature to combine with the first ingredient on its mixture therewith, means provided in one of the compartments for breaking the membrane when the cylinders are telescoped together, until the cap engages with said means and forces it through the membrane, said means being unrestrained, on breaking through said seal and free to facilitate the mixing of the ingredients in one of said compartments.

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