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S. J. MILLIAN
COLLAPSIBLE CONTAINER
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3,301,457

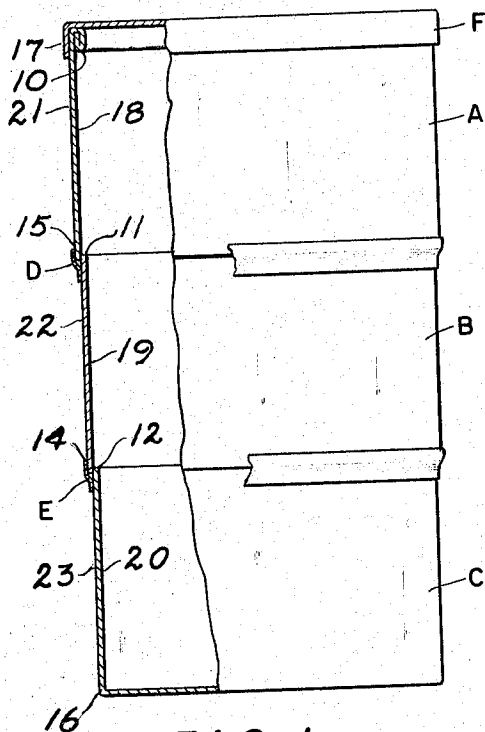


FIG. 1

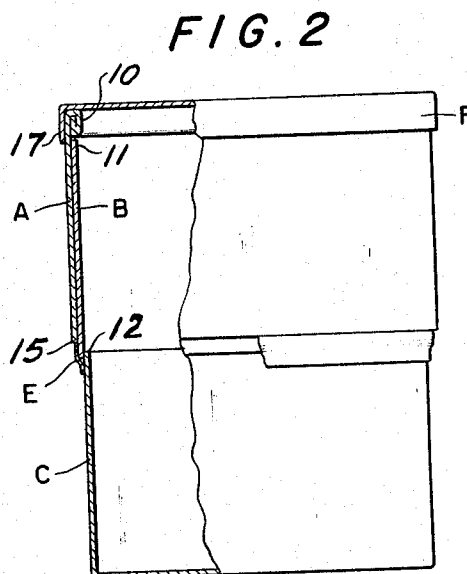


FIG. 2

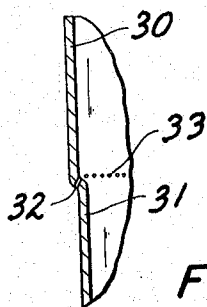


FIG. 4

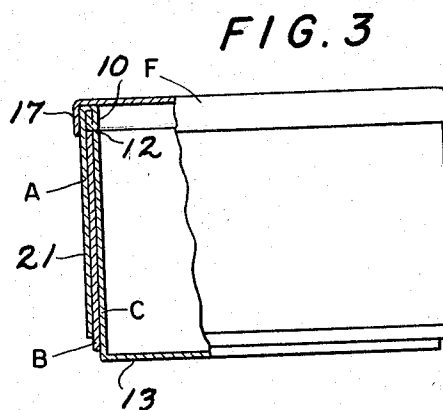


FIG. 3

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COLLAPSIBLE CONTAINER
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The present invention relates to a collapsible container for foodstuffs and other materials and it particularly relates to a collapsible container, the volume of which may be decreased as the material therein is consumed.

It is among the objects of the present invention to provide a collapsible container of the character described in which the volume of the container may be decreased as the food product or other material is consumed.

Another object is to provide a convenient collapsible container for granular or flaked foodstuffs, soap granules or powders, and other granular, pulverulent or flaked material which may be gradually collapsed as the contents thereof are consumed and as the interior is emptied.

Still further objects and advantages will appear in the more detailed description set forth below, it being understood, however, that this more detailed description is given by way of illustration and explanation only and not by way of limitation, since various changes therein may be made by those skilled in the art without departing from the scope and spirit of the present invention.

In accomplishing the above objects, it has been found most satisfactory in one embodiment of the present invention to provide a container, preferably of cylindrical shape but which may also be of prismatic contour, with circular, oval or polygonal cross-section. The preferred cross-sections are circular, square, rectangular, and hexagonal.

Desirably, the container consists of two, three, four or more sections, with the upper sections being of slightly greater diameter or width, so that they may telescope down upon the lower sections successively as the container is collapsed. The junction between the different cross-sections is normally maintained by means of a tape or rip-cord, or the sections may be more or less integrally joined together with readily tearable score lines at the junctions.

Although the containers are desirably made of paper or cardboard, they may also be made of plastic, light sheet metal or other convenient light-weight materials.

With the foregoing and other objects in view, the invention consists of the novel construction, combination and arrangement of parts as hereinafter more specifically described, and illustrated in the accompanying drawings, wherein is shown an embodiment of the invention, but it is to be understood that changes, variations and modifications can be restored to which fall within the scope of the claims hereunto appended.

In the drawings wherein like reference characters denote corresponding parts throughout the several views:

FIG. 1 is a side elevational view partly in section of one form of the invention, showing the container in extended, fully filled condition.

FIG. 2 is a side elevational view similar to FIG. 1, showing the first collapsed or condensation stage of the container.

FIG. 3 is a side elevational view similar to FIGS. 1 and 2, showing the container fully collapsed.

FIG. 4 is a transverse fragmentary sectional view, showing an alternative form of the invention.

Referring to FIGS. 1 to 3, there are shown three sections, A, B and C, each of decreasing diameter downwardly. As shown, there are two junction tapes or rip-cords, D and E respectively, joining the sections A and B and B and C and keeping them in extended position. The cover F may serve during collapse of the container,

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and, as indicated in FIG. 1, is effective when the container is fully filled, when it is partly collapsed as in FIG. 2, or fully collapsed as in FIG. 3.

Desirably the sections A, B and C should closely and frictionally telescope within each other, as indicated at A and B in FIG. 2, and A, B and C in FIG. 3, without a clearance of more than one, or several, thousandths of an inch. The top section A is desirably provided with an inturned bead 10 to act as a stop and which will normally serve to contact the upper edge 11 of the second section B when the container is partially collapsed, as in FIG. 2. It may also extend sufficiently inwardly to contact the upper edge 12 of the lowermost container C.

Desirably, the containers are each slightly shorter, starting from the bead 10, so that they will not project beyond one another, as indicated at FIG. 3, and none of the outside telescoping containers will extend beyond the bottom wall 13 of the lowermost container C.

Furthermore, the tape or rip-cord D and E, when left in position, will also act as a stop. For example, the rip-cord or tape E will have an upper edge 14, which will act as a stop against the lower edge 15 of the outermost section A. A suitable tape may be put around the lower corner 16 of the lowermost section C to act as a stop in the fully collapsed position of FIG. 3.

The cover F, having the depending flange 17, will closely fit the outside of the bead in each position. In the embodiment of FIG. 4 an upper telescoping section 30 is connected to a lower telescoping section 31 by the shoulder 32 having the line of perforations 33. This line of perforations 33 may be broken by a knife or by a string which may be extended through the small openings of the line of perforations 33 and which, when pulled, will rip the same.

The present invention is particularly suitable in connection with household cereal packages and with containers of circular, square rectangular or hexagonal cross-section, and it is designed to be gradually reduced in size as the contents are utilized, while continuing to function as a container, giving a ready indication to the housewife of the consumption of the product therein. It will also automatically occupy less shelf space as the material is consumed.

Desirably, the container may vary from six inches to 18 inches in height and from three inches to six inches in diameter, with the varying sections ranging from one to three inches in height. Desirably, each uppermost section is shorter than each next lower section by a distance of $\frac{1}{8}$ to $\frac{1}{4}$ inch, and the different sections should desirably closely and frictionally fit upon one another so that they will be held together without untelescoping when the housewife lifts the package in the collapsed position of FIGS. 2 and 3 from the shelf.

For this purpose, interior faces 18, 19 and 20 have roughened or frictional faces, as may also the outside faces 21, 22 and 23, which will assure a better achievement of this effect.

Other types of covers may be used including tear lid covers.

Having now particularly described and ascertained the nature of the invention, and in what manner the same is to be performed, what is claimed is:

1. A collapsible vertical container for foodstuffs, soap and other particles, flakes and granules having a plurality of sections of decreasing diameter downwardly, connections between said sections, said connections being readily broken to permit the upper sections to be telescoped down over the lower sections, said connections consisting of inwardly directed shoulders extending obliquely inwardly from the lower edge of the next higher section to the upper edge of the next lower section and being perforated between said two sections midway of the sections.

2. A collapsible vertical container for foodstuffs, soap and other particles, flakes and granules having a plurality of sections of decreasing diameter downwardly, connections between said sections, said connections being readily broken to permit the upper sections to be telescoped down over the lower sections, said connections consisting of inwardly directed shoulders extending obliquely inwardly from the lower edge of the next higher section to the upper edge of the next lower section and being perforated between said two sections midway of the sections, said sections being of circular cross-section and closely telescoping around each other and having frictional contact when telescoped.

3. A collapsible vertical cylindrical container for foodstuffs for use in the kitchen having a horizontal flat top cap and a flat bottom and cylindrical side walls of decreasing diameter downwardly arranged in spaced sections each connected by an oblique inwardly directed shoulder extending inwardly and obliquely downwardly from the lower edge of one section to the upper edge of the next lower section and a circle of perforations in said shoulder midway of the lower edge of one section and the upper edge of the next lower section.

4. The container of claim 3, said container being of cardboard and the entire container except for the cap being substantially integral with the shoulder, which may be broken along the circle of perforations by a knife or by a string, providing the different sections when telescoped together on each other with means acting to frictionally retain the telescoped sections together.

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