This invention relates to an improved type of collapsible container for substances such as ice cream and the like. Normally such containers are filled with ice cream which is in a somewhat viscous fluid state.

Difficulties have been encountered in filling and handling containers of this type due to the relatively flexible type of body employed. These bodies are usually formed of paperboard or other fibrous sheet made from plain flat sheets glued together at the ends and shipped flat so that they can be opened into a cylindrical body for use. A specially formed and preferred fiberboard body for this purpose is shown, for example, in my prior Patents Nos. 2,671,592 and 2,671,593.

In the interest of economy the body is usually formed of relatively thin fiberboard material. This is customarily treated with a suitable surface to prevent penetration of the substance into the container. Often times this treating material will increase the flexibility of the container.

Containers of the type herein disclosed, which are shipped in a collapsed condition and assembled by the packer, usually have a metal top rim which is applied after the container has been filled. Such rims have a tendency to separate from the container body after the contents have been lowered or when the container is roughly handled.

It is a primary object of the present invention to provide a container, preferably formed of relatively thin paperboard material, the wall being inherently collapsible, but which will be maintained in substantially its normal cylindrical shape during filling and will retain this shape during handling immediately after being filled or in subsequent handling as the ice cream or other substance is being dispensed from the container.

The above and other objects will appear more fully from the following description when considered in connection with the drawings wherein:

FIG. 1 is a perspective view of the container, parts being broken away; and

FIG. 2 is an enlarged sectional view taken on the line 2—2 of FIG. 1.

The main body of the container 1 is formed of a single thickness of flexible fibrous material such as paperboard suitably treated, as is customary. The container body has plain cylindrical ends 2 and 3 at the upper and lower ends thereof, preferably formed of a single thickness of body material, this being an important feature both for economy in manufacture and shipment of the container bodies. The container body is thus inherently collapsible, in the absence of suitable supports, as herein provided.

Referring now particularly to the upper or filling end of the container, there is illustrated in FIG. 2 the projecting end 4 of the wall of the container body, the wall being provided with a circular peripheral groove 5 near the end thereof, constituting a locking surface for the reinforcing rim to be described.

The reinforcing circular rim 6 includes a main body portion 7 closely encircling the end 4 of the container body, the rim being formed with a locking terminal flange 8 which engages in groove 5 in the body wall when the container is assembled and ready for filling. The upper or outer end of the rim is bent inwardly preferably by means of a gradual curve, resulting in a curved and rounded outer terminal bead 9, preferably of generally circular cross section, as shown. The bead thus includes an inwardly projecting portion 10, a downwardly projecting portion 11 and an outwardly projecting terminal portion 12. The terminal portion 12 of the bead is directed outwardly but is spaced a sufficient distance from the main body 7 of the rim to form a pocket 13 opening downwardly in the direction of the main body wall of the container 1. The end 4 of the wall of the container is thus passed upwardly through the rim, past the edge of terminal portion 12 of the bead and into the pocket 13 as the rim is assembled on the container wall, the wall 4 preferably extending to or near the top of the pocket as shown.

The innermost portion of the bead 9, where the bead is directed vertically downward, constitutes the most reduced diameter of the bead and limits the extent of the opening through which the substance is placed in the container. After being filled the container may be closed by means of the closure disk 14 which, as shown, has a diameter greater than the internal diameter of the bead and approximately the same as the internal diameter of the container or slightly less. The disk 15 is forcibly pressed past the bead 9 and into the interior of the container where it rests upon the contents in the filled container.

The lower end of the container may be closed and sealed by any suitable construction. The construction shown is entirely suitable, being substantially the same as that employed for the top of the container thus avoiding the necessity for a different type of rim for the two ends of the container. The difference in the construction of the lower sealed end of the container is that the lower closure disk 15 is preferably formed of heavier stock and is slightly larger than the normal interior diameter of the container. Thus when it is pressed into position it will form a tight seal with the wall, the wall being distorted slightly where contacted by the edge of the lower closure disk. The disk 15 preferably contacts the side wall at a position only slightly beneath the retaining flange of the lower rim 6a so that there will be firm contact by the edge of the disk against the inner surface of the side wall of the container, the lower disk resting on the bead of the bottom rim 6c, as shown.

By means of the construction disclosed it will be seen that a relatively flexible and collapsible container which has been shipped flat can be converted to a firm round (cylindrical) form by having the lower end thereof encircled by the lower rim 6c. Introduction of the lower closure disk 15 rigidifies the entire bottom portion of the container and seals it against leakage. The upper rim 6 is then applied to the upper end of the container, the rim being forced downwardly over the upper edge of the container wall to a position such that the end of the container extends well into the pocket 13, the side wall 4 being spaced slightly from the outwardly directed terminal portion 12 of the bead 9. The flange 8 being positioned in the circular groove 5 on the exterior of the container body prevents longitudinal movement of the rim with respect to the container body wall. Under these conditions the container can be readily filled, there being no projecting portions on the bead adjacent the filling opening to interfere with the filling of the container or to injure the hands of the operator in closing the container, by forcing the disk 14 past the rim 9 and into the container proper.

The position of the upper end of the container wall between the main body of the rim 6 and the inwardly projecting edge 12 of the bead will prevent inward col-
3 lapse of the body due to rough handling or as the container is moved from place to place. Thus the filled container may be lifted readily, by the operator pressing inwardly against the side walls of the container, this action having little or no tendency to distort or crease the container body with the consequent loosening or removal of the rim from the container.

After the filled container has been delivered to the customer the upper closure disk is readily removed by means of any suitable hand tool, as shown, e.g., in my aforesaid patents. The advantages stated above are present later as contents of the container are being dispensed. The opening is surrounded by smooth rounded surfaces which will not interfere with removal of the contents from the container nor injure the hands of the person removing the contents. The partially emptied container can be grasped and moved without danger of collapsing the container or forcing the rim from the container.

The particular construction here shown, while presently believed to be the best form of device now known for the intended purpose, is set forth for purposes of illustration only, and not with any intention of limiting the invention, whose scope is set forth in the claims appended hereto.

What is claimed is:

1. A container closed at one end and open at the other end comprising an inherently collapsible, generally cylindrical fiberboard body, having projecting ends terminating vertically in freely extending edges and formed of one thickness of the material of said body, a completely preformed rim fitted about the open end of said body, said rim being formed with a rounded inwardly projecting bead constituting a pocket opening toward the main body of said container into which the projecting end of said body freely extends, said bead being gradually curved to an extent such that the free edge thereof projects outwardly toward the inner surface of said body and spaced from said inner surface, means for preventing relative longitudinal movement of said body and a circular flexible closure member for said body adapted to pass telescopically through said rim and into said container body.

2. A container closed at one end and open at the other end comprising an inherently collapsible, generally cylindrical body, a completely preformed rim having a body portion surrounding the open end of said container body, said rim being formed with a terminal bead turned inwardly downwardly from the body portion of said rim to form a pocket opening toward said container body, said bead being spaced from the inner surface of said body, the open end portion of said container body extending upwardly and terminating vertically in freely extending edges in said pocket being held against substantial outward or inward movement by the body portion of said rim and by said bead, respectively, means for securing said rim against longitudinal movement with respect to said container body and a flexible circular closure member for said body adapted to pass telescopically through said rim and into said container body.

3. A container for substances comprising a generally cylindrical body, completely preformed rims having body portions surrounding the open ends of said container body, each of said rims being formed with a terminal bead curved inwardly, and outwardly to a terminal edge positioned adjacent but spaced from the interior surface of said body and means for preventing longitudinal movement of said rim and body, the open ends of said body being positioned between the body portion of said rim and the terminal portion of said bead with at least one end of said body terminating vertically in a freely extending edge, and circular flexible closure members for said body adapted to pass telescopically through said rims and into said container body.

4. A container closed at one end and open at the other end comprising a generally cylindrical body having upstanding cylindrical ends terminating vertically in freely extending edges and formed of the stock and dimensions of said body, an exterior locking groove in said body adjacent the upper end thereof, a circular completely preformed rim formed with a body portion closely surrounding the upstanding open upper end of said container body, an inturned flange at the base of said rim extending into said groove, and an inwardly extending curled bead at the upper end of said rim, said bead being of generally circular cross section with the terminal portion thereof directed outwardly but spaced from the interior surface of the upstanding open upper end of said container body, said bead forming a downwardly opening pocket into which the upstanding cylindrical end of said container body is inturned and directed, and a closure for said body comprising a circular flexible and distortable disk of a diameter greater than the diameter of the circle defined by said bead, said disk being adapted to pass telescopically through said rim and into said container body.

5. A container closed at one end and open at the other end comprising a generally cylindrical body having upstanding cylindrical ends terminating vertically in freely extending edges and formed of the stock and dimensions of said container body, a circular completely preformed rim formed with a body portion closely surrounding the upstanding open upper end of said container body, means locking said rim on the upper end of said container body, an inwardly extending curled bead at the upper end of said rim, said bead being of generally circular cross section with the terminal portion thereof directed outwardly toward said container body and in close proximity thereof and spaced therefrom immediately below the upper end thereof, said bead forming a downwardly opening pocket into which the upstanding cylindrical upper end of said container body is inturned and directed, and a closure for said body comprising a circular flexible and distortable disk of a diameter greater than the interior diameter of the circle defined by said bead, said disk being adapted to pass telescopically through said open rim and into said container body.

6. A container closed at one end and open at the other end comprising a generally cylindrical body having upstanding cylindrical ends terminating vertically in freely extending edges and formed of the stock and dimensions of said body, a circular completely preformed rim formed with a body portion closely surrounding the upstanding open upper end of said cylindrical body, means locking said rim on the upper end of said container body, an inturned, rounded bead at the upper end of said rim, said bead being of generally circular cross section with the terminal portion thereof directed outwardly toward said container body and in close proximity thereof and spaced therefrom immediately below the upper end thereof, said bead forming a downwardly opening pocket into which the upstanding cylindrical upper end of said cylindrical body is inturned and directed, and a closure for said body comprising a circular flexible and distortable disk of a diameter greater than the interior diameter of the circle defined by said bead, said disk being adapted to pass telescopically through said open rim and into said container body.

7. A container closed at one end and open at the other end comprising an inherently collapsible tubular body, having an upwardly extending open end terminating vertically in a freely extending edge, a circular groove in the outer surface of said body adjacent the upper end thereof, a circular completely preformed rim member having a main body enveloping the open end of said tubular body, an inwardly extending edge member adjacent the lower end thereof and an inturned, rounded bead section, at the upper end thereof, extending inwardly, downwardly and outwardly progressively
from the main body thereof and having a terminal portion extending toward but terminating short of said main body to form a downwardly opening pocket, said inwardly projecting flange engaging in said circular groove for preventing relative longitudinal movement between said container body and rim member, the open end portion of said container body extending upwardly beyond the terminal portion of said bead, and a closure for said body and rim comprising a circular flexible and distortable disk of a diameter greater than the interior diameter of the circle defined by said bead and approximately the same as the interior diameter of said container body, said disk being adapted to be passed telescopically through said open rim and into said container body.

8. A container closed at one end and open at the other end comprising a generally cylindrical fiberboard body, having a projecting open upper end terminating vertically in a freely extending edge and formed of one thickness of the material of said body, a completely preformed rim member fitted about the projecting open end of said container body and formed with a rounded inwardly projecting bead constituting a pocket opening toward the main body of said container into which the projecting open end of said container freely extends, said bead being gradually curved to an extent such that the free edge thereof projects outwardly toward the inner surface of said container body and spaced therefrom, means at the open end of said container body for preventing relative movement of said rim member and container body, and a round closure disk for the aforesaid open end of said container, said disk having a diameter greater than the inner diameter of said bead and being adapted to pass telescopically through said rim and into said body.

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