March 10, 1959 H. L. BENNETT 2,877,403

CUP DISPENSER

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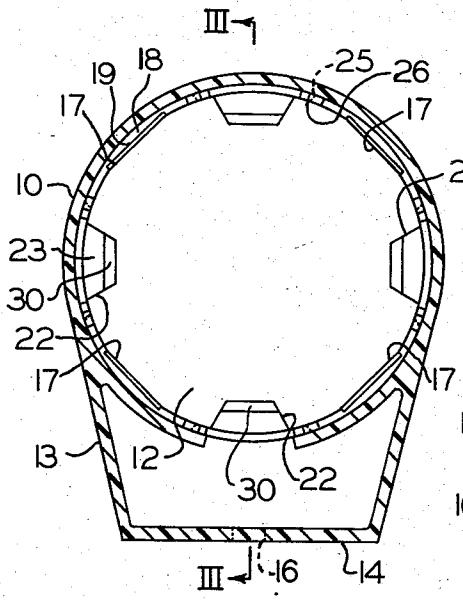

FIG. 2.

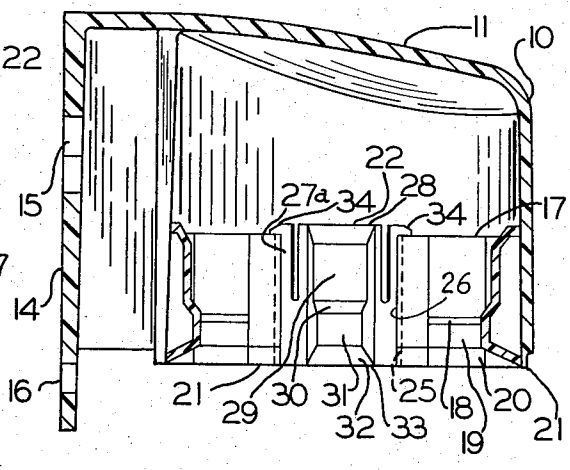

FIG. 3.

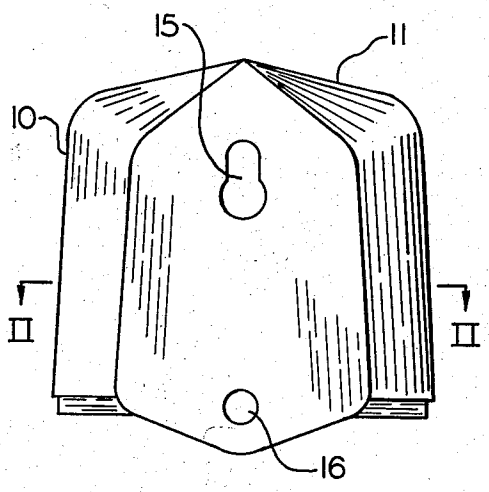

FIG. 1.

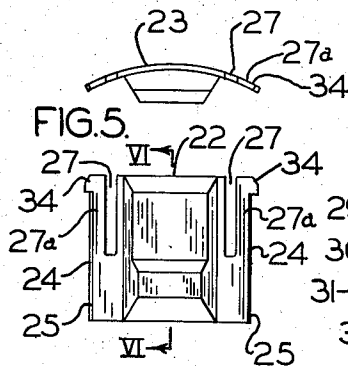

FIG. 5.

FIG. 4.

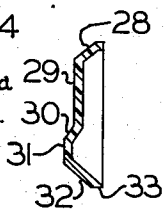

FIG. 6.

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CUP DISPENSER

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5 Claims. (Cl. 221—44)

This invention relates to dispensers and particularly to dispensers for supporting stack of nested articles such as paper cups and from which the articles are removed individually and successively by the user grasping the terminal article and pulling it from the dispenser.

Dispensers of this type usually comprise a shell or casing having a circular interior opening through which the articles are dispensed. A means is provided on the interior wall of the opening for decreasing slightly the diameter of the opening and for supporting the stack of nested articles. This means, which may comprise a plurality of equally spaced projections or lugs, serves to prevent free movement of the stack through the opening and also as a support for the stack.

It is common practice to form these projections integrally with the inside wall of the casing so that the casing will support a stack of cups of only one diameter. However, in some cases it is desirable that the same casing support cups of less diameter than those to be supported by the fixed or permanently attached projections.

Heretofore it has been proposed to reduce further the inside diameter of such a casing at the dispensing end thereof by providing a continuous ring adapter which itself has inwardly projecting supports. This adapter has a projection provided on its exterior surface which rests on the permanent projections formed on the interior surface of such casing while its interior surface is provided with projections which reduce its diameter slightly. When this adapter is in operating position in the casing it serves to reduce further the diameter of the opening with the result that cups of less diameter than those supported by the permanent projections on the casing may be used.

The structure just described comprises in effect two separate casings, each with interior projections adapted to support cups of different diameters. In use, the smaller shell or adapter is placed inside the larger casing and supported by the projections on that casing when it is desired to use the dispenser for cups of less diameter.

I have found, however, that the same result can be obtained with a considerable saving in tool and material costs, by providing separate insertable and replaceable adapters designed to be supported by and between the permanent projections formed on the casing.

An object of the invention, therefore, is to provide a dispenser comprising a casing having permanent projections associated therewith for supporting cups of a predetermined diameter and being so constructed as to receive separate movable adapters between the permanent projections, which adapters reduce the diameter of the opening in the casing to a greater extent than do the permanent projections so as to support cups of less diameter than those supported by the permanent projections on the casing.

A further object is to provide an adapter arrangement of the character described which is made with a minimum of tool and material cost.

Another object is to provide an adapter construction which may be readily inserted in the casing from the discharge end thereof.

Other objects and advantages of the invention will be readily apparent from the following description and accompanying drawings wherein:

Fig. 1 is a vertical rear elevation of one form of dispenser in which the invention is embodied.

Fig. 2 is a section taken on line II—II of Fig. 1 looking in the direction of the arrows.

Fig. 3 is a section taken on line III—III of Fig. 2 looking in the direction of the arrows.

Fig. 4 is a vertical front elevation of an adapter forming part of the invention.

Fig. 5 is a top view of the adapter shown in Fig. 4.

Fig. 6 is a vertical section taken on line VI—VI of Fig. 4 looking in the direction of the arrows.

Referring to the drawings, a shell or casing **10**, which may have any suitable external configuration, serves as a support for the cups to be dispensed. The casing is here shown as provided with a top wall **11** formed integrally with the casing, and with an opening **12** at its bottom. The casing shown is generally cylindrical and the opening **12** is circular. A portion **13** projects from the casing and is provided with a flat surface **14**. This surface is adapted to engage and be placed against another flat surface such as a wall. The casing may be secured to the wall by screws (not shown) which pass through the openings **15** and **16** provided in the flat surface **14**, or by any other suitable means.

A plurality of inwardly projecting flat-faced supports **17** are spaced equally around the interior wall of the casing. Each of these projections comprises an outwardly and downwardly inclined surface or shoulder **18** which serves to support the brim of the lowermost cup in the stack. The lowermost edge of surface **18** coincides with the upper edge of a vertical surface **19** which extends nearly to the bottom of the casing. As here shown, the lower edge of surface **19** coincides with the upper edge of an inwardly inclined surface **20** which extends to the bottom edge **21** of the casing **10**. In practice it is preferred to use four such projections equally spaced from each other. With this structure the projections **17** support a stack of cups of predetermined diameter.

However in some cases it is desired that the same casing or dispenser be used to support cups of less diameter and to this end the following construction and arrangement is provided.

An adapter **22** has a height substantially equal to that of the supports or projections **17**. The adapter is shown in detail in Figs. 4, 5, and 6. It has a curved rear wall **23** designed to conform to the curvature of the inner wall of casing **10** and its width is sufficient to extend between two adjacent projections **17**. The opposite side edges of the adapter are beveled as indicated at **25**. These edges interfit with beveled edges **26** formed at the vertical sides of projections **17**.

In practice the adapter is slid upwardly from the bottom of the casing with the beveled edges **25** of the adapter engaging with and interfitting beveled edges **26** on the sides of projections **17**. In order to provide flexibility and resiliency for the side walls of the adapter, slots **27** extend from the top edge thereof downwardly toward, but terminating short of the bottom edge thereof. These slots are formed in the wall of the adapter between the edges **24** and the cup-supporting portion thereof and thereby provide a flexible portion **27***a*. The cup supporting portion comprises (Figs. 4, 5 and 6) an upper inclined portion **28**, a downwardly extending vertical portion **29**, an outwardly extending inclined portion or shoulder **30**, a short dependent vertical flat-faced portion

31 and an inclined portion 32 extending inwardly from the lower edge of the vertical portion 31 to the bottom edge 33 of the adapter.

It will be noted (Fig. 6) that in profile the slanted portion 30 of the adapter extends out a considerable distance from the curved back wall 23 so that when the adapter is in place as shown in Fig. 2, the portion 30 which supports cups, extends nearer the center of the opening 12 than does the portion 18 of the permanent projection 17. Thus when all the adapters are in place, cups of less diameter than those supported by the permanent projections 17 are supported by the casing 10 in a position to be readily dispensed.

As has been previously stated, the slots 27 allow flexibility of the side edges of the adapter so that when the adapter is in place it has a close fit with the beveled edge portions 26 of the permanent projections 17. To retain the adapters in position against downward displacement in use, laterally projecting ears 34 are provided at the upper outside corner of each of the resilient flexible portions 27*a*. These ears overlie the upper edges of the adjacent permanent projections 17. Should it be desired to remove the adapters it is necessary only to press the two resilient portions 27*a* of an adapter toward each other until the ears 34 are released from the upper edges of the permanent projections 17 and then to push the adapter downwardly until it is free. A construction which permits adapters to be applied and released from a dispenser through the bottom opening is particularly advantageous in cases where the protective cover for the cups is permanently attached to the supporting casings although the invention is not limited to use with such a cover structure.

While only one embodiment of the invention has been shown and described it will be readily apparent that the invention is not so limited but may be any construction defined by the following claims.

I claim:

1. In a dispenser for a stack of nested flexible containers, a casing having an open bottom, a plurality of spaced fixed projections in said casing near the bottom thereof, a container engaging shoulder on each of said projections, a plurality of adapters each for insertion through the bottom of the casing between a pair of said fixed projections, a container engaging shoulder on each of said adapters which shoulders extend inwardly farther than the shoulders on the fixed projections, and complemental interfitting edge formations on said adapters and said fixed projections, said adapters having an elongated slot spaced inwardly from each side edge to provide resilient side edge portions to enhance the frictional engagement between the adapters and edges of the fixed projections.

2. In a dispenser for a stack of nested flexible containers, a casing having an open bottom, a plurality of spaced fixed projections in said casing near the bottom thereof, a container engaging shoulder on each of said projections, a plurality of adapters each for insertion through the bottom of the casing between a pair of said

fixed projections, a container engaging shoulder on each of said adapters which shoulders extend inwardly farther than the shoulders on the fixed projections, and complemental interfitting edge formations on said adapters and said fixed projections, and a laterally extending ear at the top of each side of each said adapter to engage over the top of an adjacent fixed projection.

3. An adapter for positioning in a dispenser for a stack of nested flexible containers to enable the dispensing of containers of smaller diameter from the same dispenser, comprising a curvate unitary member having a flat inner face with a container supporting shoulder thereon, side edges sloping outwardly toward the rear face of the member, and a pair of ears at the top of the member extending sidewise beyond said side edges.

4. In a dispenser for a stack of nested flexible containers, a casing having an open bottom, a plurality of spaced fixed projections in said casing near the bottom thereof, a container-engaging shoulder on each of said projections, opposing respective lateral edge formations on said fixed projections, a plurality of adapters with generally complemental edge formations interfitting with said edge formations of the adapters for thereby maintaining the adapters in respective lateral positions between the fixed projections, and laterally projecting portions on the adapter edges overlying portions of the fixed projections to retain the adapters against downward displacement, said adapters having container-engaging respective shoulders extending inwardly beyond the shoulders on the fixed projections so that the adapter shoulders are capable of supporting smaller diameter flexible containers than the shoulders of the fixed projections.

5. In a dispenser for a stack of nested flexible containers, a casing having a dispensing opening at the bottom of the casing, fixed container supports spaced around the inner walls of said casing near said opening, said fixed supports having respective shoulders adapted to support containers of predetermined diameter, and adapters engageable between and having sides opposing the fixed supports and having inwardly projecting shoulders adapted to support containers of a smaller diameter than the fixed support shoulders, and means for retaining the adapters against downward displacement from between said fixed supports.

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