Jan. 4, 1944. H. H. BEASLEY 2,338,397

CONTAINER FOR LIQUIDS AND GRANULAR SUBSTANCES

Filed May 21, 1942 2 Sheets-Sheet 1

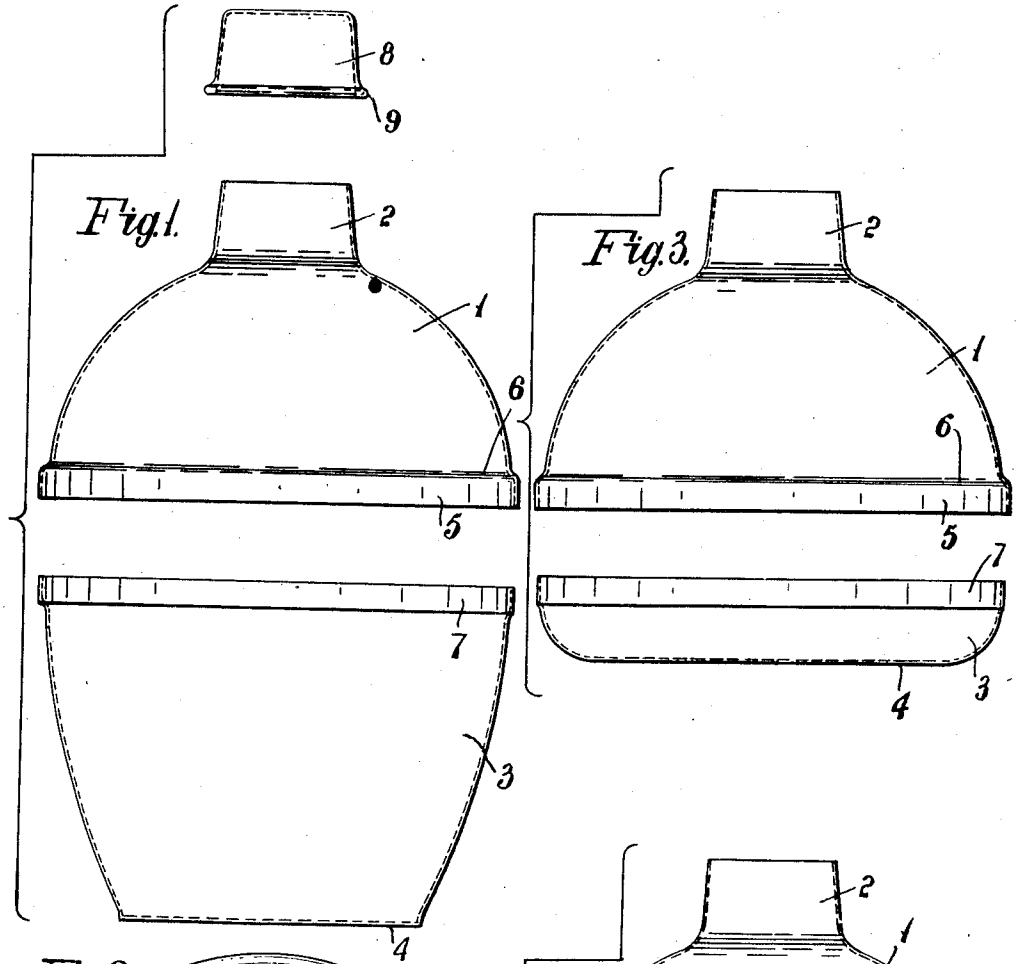


Fig. 1.

Fig. 3.

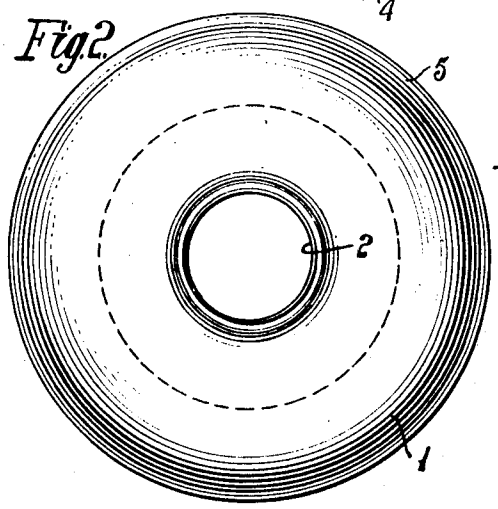


Fig. 2.

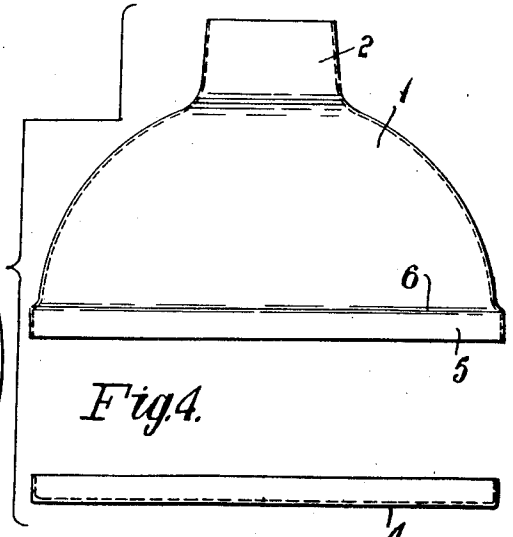


Fig. 4.

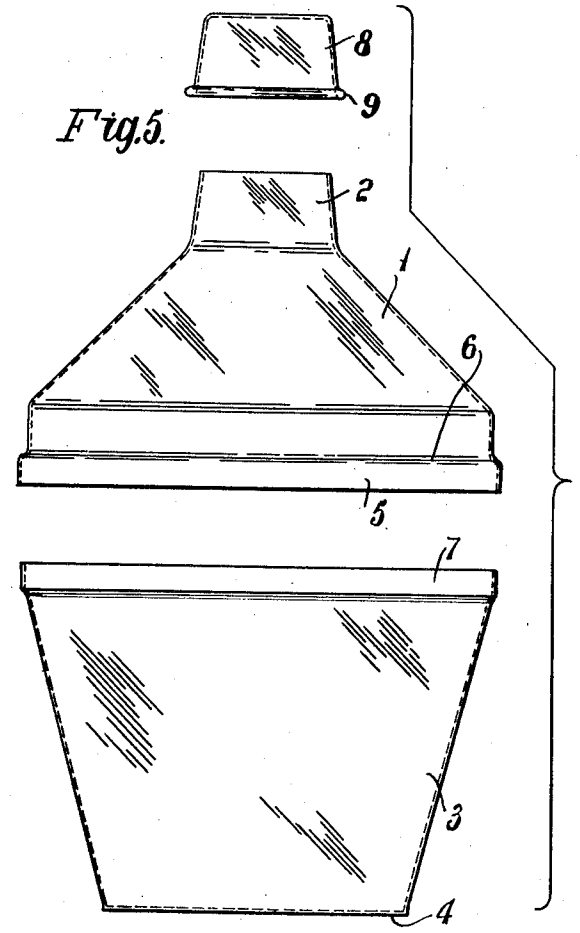
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Fig.5.



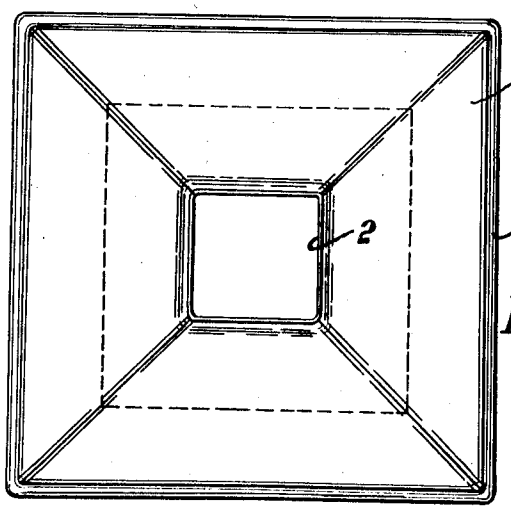


Fig.6.

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CONTAINER FOR LIQUIDS AND GRANULAR SUBSTANCES

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Application May 21, 1942, Serial No. 443,888
In Great Britain August 1, 1941

4 Claims. (Cl. 229—4.5)

This invention relates to containers for retailing liquids, granulated foods and for analogous purposes where it is required to use a very cheap non-returnable container. For example, where goods are retailed by measure such as with milk, and the retailing is by predetermined standard measures such as quart, pint, half pint and so on the present invention is particularly advantageous, as the chief object of the present invention is to provide a carton assembly which affords a ready means of variation in the size of carton whilst facilitating the storage and transport of large quantities of container elements. Cartons composed of paper pulp moulded upon formers have already been proposed but hitherto these have been moulded so as not to be variable in capacity, i. e., they are produced in lots of pint sizes, or other sizes so that e. g. in the retailing of milk, quart, pint, half pint and other necessary sizes have to be ready to hand in excess of the total quantity required. Also it is known to use wax impregnated cartons made from sheet material folded to square or circular cross-section form, with wedge shaped tops, when closed. However when these are opened their mouths are not easily reclosed particularly when they contain liquid, and also they do not pour cleanly, the tendency being for the liquid to flow out too quickly. A cylindrical tubular container of paper, cardboard, papier-mâché or the like having open screw threaded conical ends and corresponding screw threaded caps fitted on both ends, has also been proposed. Another object of this invention is to provide a carton so shaped and constructed that it has a clean pouring neck or spout-like outlet and yet can be closed in an airtight manner following the filling operation and following use of some of its contents. A still further object of this invention is to provide a combination of moulded carton elements which will enable cartons of various predetermined capacities to be readily assembled to the desired capacity. The invention also enables a container or series of containers of varying capacity to be produced from a relatively small quantity of pulp or like material.

According to this invention a container for liquids or granular substances and for like purposes comprises two one-piece body parts of moulded paper pulp united together between the top and base thereof by a circumferential or perimetrical joint, the top of the upper body part incorporating a moulded integral pouring spout, and the other body part having a base moulded integral therewith.

In the preferred form of the present invention a container comprises a moulded one-piece top section with a pouring spout and a moulded one-piece lower section with an integral base, opposed rim parts of the two sections being adapted to fit tightly one within the other and to be united by adhesion, and a moulded dished cap shaped to fit over the pouring spout. For the purpose of retailing milk or other liquids in variable quantities such as, quart, pint and half pint or even smaller or intermediate sizes a standardised top section can be adopted for all cartons but base sections of different capacities can be adopted all having a standardised rim to fit into the top section. Alternatively a standardised base section may be used with any of a number of different capacity upper sections. The paper pulp preferably has incorporated in it a suitable moisture-proofing agent which will obviate porosity, or of course if desired the moulded sections may be coated with paraffin or other suitable wax. The rims of the two parts which fit one within the other are preferably slightly flanged or swaged to form a very narrow annular ledge in one part acting as an abutment for the rim edge of the other part so that by firmly pressing one part into the other by a suitable press a proper closure with accurate predetermined capacity of carton is obtained. The carton top is preferably hemi-spherical and the lower part part-ellipsoidal with a flat base so as to ensure smooth crevice-free surfaces as far as reasonably possible, although if desired the carton can be of square or polygonal cross-section with bowed or flat walls. The pouring spout preferably merges in curvilinear continuity into the top part so as to form the peak of the top part, and such spout is preferably slightly tapered to enable a correspondingly tapered truncated conical cap to be fitted thereon as a tight fit.

In order that this invention may be clearly understood and readily carried into effect drawings are appended hereto illustrating embodiments thereof, and wherein

Fig. 1 is a side elevation view showing a maximum capacity carton before its assembly.

Fig. 2 is a plan view of the carton without the cap.

Fig. 3 is a side elevation view of an intermediate capacity carton with the two body sections separated.

Fig. 4 is a view similar to Fig. 3 of a minimum capacity carton, and

Figs. 5 and 6 are side elevation and plan view

showing a square section carton merely by way of an example.

Referring to the drawings the cartons illustrated are particularly suitable for retailing milk, and other liquids, as being composed of moulded pulp they are of rigid, sturdy form and can be handled in the same manner as bottles. Instead of moulding the body in one piece and plugging into it a base disc or a cap disc the body is divided at its perimeter, i. e., circumferentially to provide an upper body part 1 with an integral pouring spout 2 at its peak, and a lower body part 3 with an integral base 4, the continuity of the body being effected by firmly wedging the rim of the base part 3 into the open opposed end of the top part 1.

To ensure a uniformly accurate measure in assembling quantities of cartons the open lower end of the top body part 1 is formed with a swage or flange 5 to provide a narrow annular ledge 6 against which abuts the rim of the lower body part 3 which is also preferably likewise swaged or flanged as at 7 to fit closely against the full depth of the flange 5, a suitable adhesive or a sealing strip preferably being introduced at the joint.

For retailing liquids such as milk it is preferred to adopt curvilinear surfaces as much as possible. In order to keep down the quantity of material required for a given capacity or series of capacities a spherical upper body part 1 is adopted with different shaped base parts as shown in Figs. 1, 3 and 4. Figs. 5 and 6 show by way of example how the carton can be of square cross-section, and likewise it may be of polygonal cross-section with flat or bowed walls.

A feature of the invention is the use of a set of different lower sections and a standardised upper section so that by using lower sections of different depths and yet maintaining a uniform rim with such lower sections, cartons of varying capacities can be readily assembled. This will be evident by comparing Figs. 1, 3 and 4 from which it will be seen that three cartons of distinctive capacities can be produced with a uniform top. It will be evident that a wider range of sizes can be obtained, this being advantageous in the rationed issue of milk and other commodities where normal forms of distribution and measurements have to be extended to include more subdivisions of the measurements of the commodity.

The pouring spout 2 preferably merges smoothly into the upper body part 1 as shown and is preferably tapered to enable a correspondingly tapered closure cap to be fitted thereon to form a close plug fit, the cap 8 preferably being a moulded pulp member with a beaded or thickened rim 9, although if desired a tin-foil or other suitable cap can be used, in which event the rim of the pouring spout 2 could be beaded or thickened to afford anchorage for such a form of cap.

In the intermediate sized carton shown in Fig. 3 the lower body part 3 has a quite shallow configuration and it is preferred to merge the periphery of this lower part by an arcuate surface into the face as shown so that there is no perceptible line of demarcation between periphery and base, whilst in the smallest capacity form shown in Fig. 4 the lower part 3 need only comprise in effect the base 4 with a shallow cylindrical flange, constituting the base.

I claim:

1. A container comprising a molded one-piece walled upper body part of substantial depth and having a standard capacity and comprising an integral pouring spout and a molded peripheral flange at the lower edge of its walls, a plurality of molded one-piece walled lower body parts each comprising an integral base and a molded peripheral flange at the upper edge of its walls, the flanged edges of the upper and lower body parts adapted to fit closely within each other to form a circumferential seam, said lower body parts varying substantially in capacity so that the capacity of the container may be substantially varied by replacing one of said lower body parts by another.

2. A container as recited in claim 1 in which the inner surfaces of the container are curvilinear.

3. A container as recited in claim 1 in which the flange on the upper body part is adapted to fit outside the flanges of each of the lower body parts.

4. A container as recited in claim 1 in which the body parts are molded of wood pulp.

HAROLD HOLMYARD BEASLEY.