March 20, 1962 M. J. COOK 3,026,005

FLEXIBLE DISPENSING CONTAINER

Filed Dec. 5, 1958 2 Sheets-Sheet 1

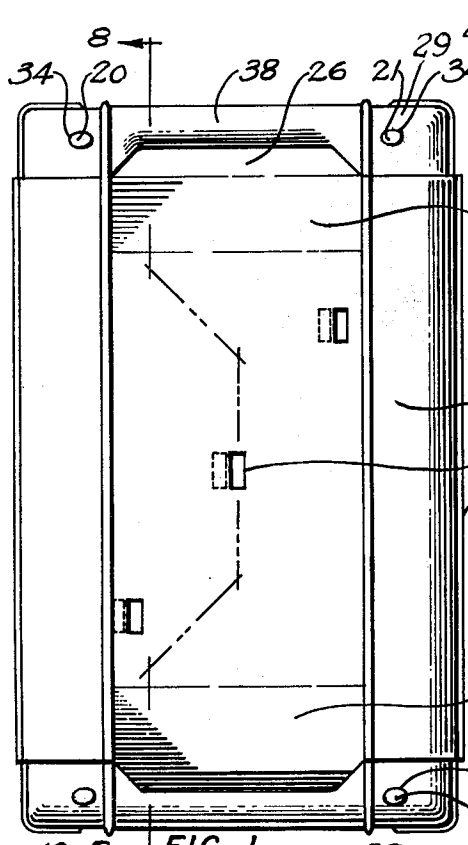

FIG. 1

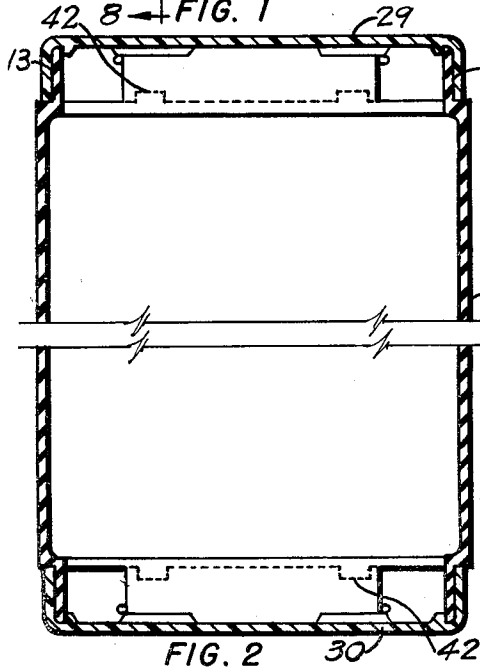

FIG. 2

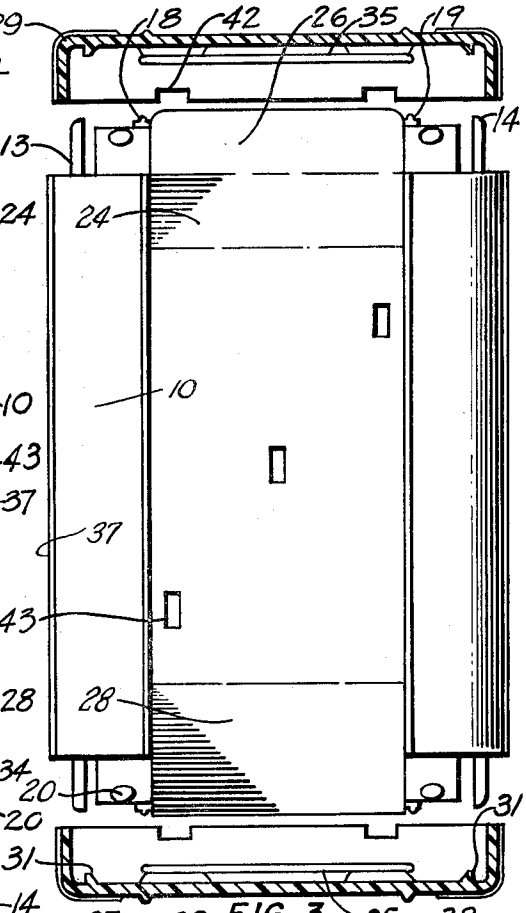

FIG. 3

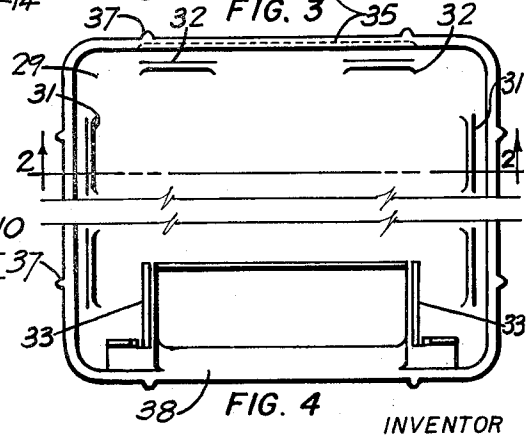

FIG. 4

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FLEXIBLE DISPENSING CONTAINER

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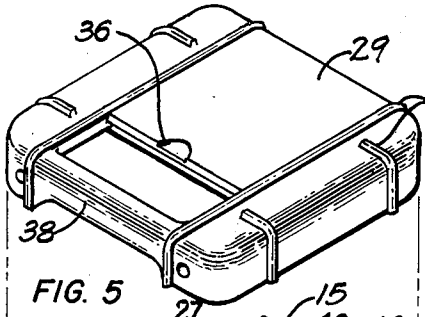

FIG. 5

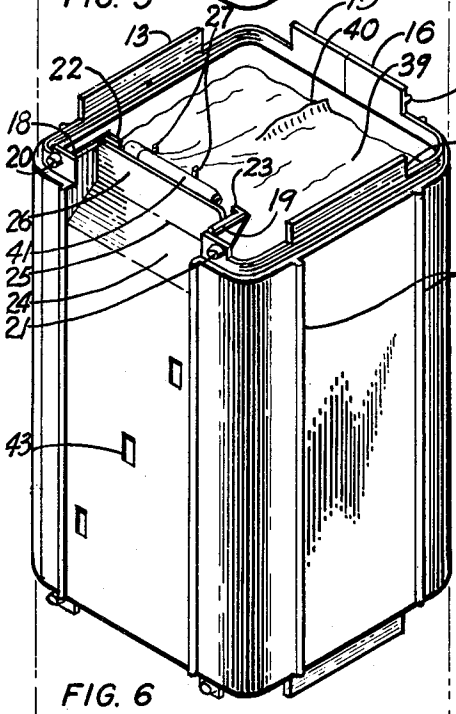

FIG. 6

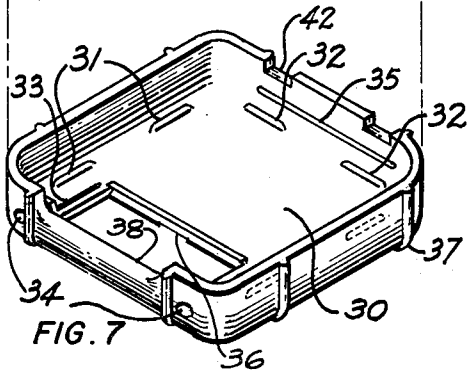

FIG. 7

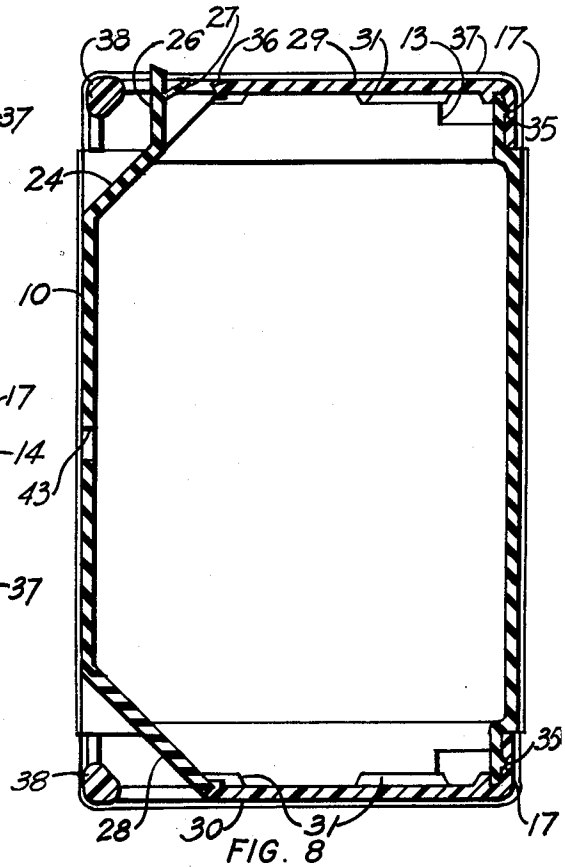

FIG. 8

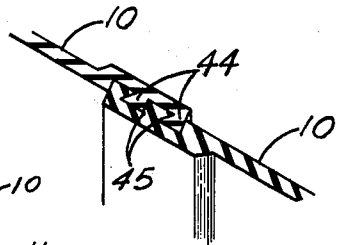

FIG. 10

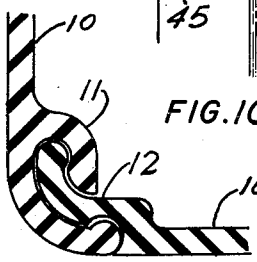

FIG. 9

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3,026,005

FLEXIBLE DISPENSING CONTAINER

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Filed Dec. 5, 1958, Ser. No. 778,395
6 Claims. (Cl. 222—105)

This invention relates to containers, and more particularly to a new and improved flexible container for fluid and semi-solid materials.

Devices currently employed in this field, such as milk cans for example, are not too satisfactory in that they are expensive to manufacture, particularly when fabricated of stainless steel as is now required; comparatively heavy to handle and ship; wasteful of storage and transportation space because of their circular contour; and involve numerous sanitation problems.

The instant invention embodies a container for the transportation and storage of fluids, semi-solids, and even solid materials, in desired quantities as from three to fifty-five gallons for example, which employ a polyethelene bag as an interliner, and which use such liner bags without or with a discharge spout as the exigencies of a given situation may dictate. Such application is particularly good in the handling of foods requiring a high degree of sanitation, and in the handling of other materials where contamination is a problem.

An object of the invention is to provide a container that will require a minimum of storage or transportation space;

Another object is to provide such a device constructed of pliable material that will be virtually indestructible;

Another object is to provide economy of manufacture;

Another object is to provide a container that is comparatively light in weight;

A still further object is to provide maximum volume content for a given area in a container;

Another object is to provide special carrying handles in such a device, thereby implementing ease of handling;

Another object is to provide a unique pouring and liquid dispensing arrangement in such a device;

Another object is to provide special locking devices for such.

Another object is to provide a package that may be broken down to reduce the freight cost on its return, as well as to minimize the space required for storage during certain seasons when not in use.

These and other objects are accomplished by means of the instant invention, a full and complete understanding of which is facilitated by reference to the drawings herein, in which:

FIG. 1 is a view in front elevation of such in assembled form;

FIG. 2 is a vertical sectional view taken along the line 2—2 of FIG. 4, looking in the direction of the arrows;

FIG. 3 is an exploded front view showing the top and bottom members in vertical cross-section however;

FIG. 4 is a top view of the structure of FIG. 7;

FIG. 5 is a view in perspective of the top of the container;

FIG. 6 is a similar view of the wrap-around body portion of the device, and showing a Pliofilm bag therein;

FIG. 7 is a view in perspective of the bottom member;

FIG. 8 is a view in vertical cross-section of the assembled container, taken along the line 8—8 of FIG. 1, looking in the direction of the arrows;

FIG. 9 is an enlarged view in perspective of the preferred form of locking element for the body of the container; and

FIG. 10 is an enlarged view in perspective of a modified lock.

Referring now to the drawings, 10 represents the body of the container, which is a nearly flat section molded from a tough pliable material such as a rubber composition, which when bent to the desired angular contour is locked by a plurality of lugs 11 formed in one end of body 10, being brought into engagement with complementary lugs 12 formed in the opposite end of 10; which locking operation may be best accomplished by first meshing 11 and 12 with the side walls of 10 at about a thirty degree angle, and then forcing said walls outwardly to form a forty-five degree angle, as suggested by FIG. 9.

At appropriate points in 10 and formed integral therewith are a plurality of side positioning lugs 13 and 14, and similar back elements 15 and 16, the top and the bottom of 10 being identical in this regard. Back elements 15 and 16 may have formed in their rear surfaces, extensions or protrusions 17, for a purpose made clear hereafter.

That portion of body element 10 which will form the front of the assembled container is provided with a pair of locking lugs 18 and 19, the front faces of which include studs 20 and 21, and the rear elements of which form stop surfaces 22 and 23.

Between locking lugs 18 and 19 is preferably provided a step-up surface 24, and mounted thereby as along line of bendure 25 is a dispensing gate 26, in the rear of which may be formed a pair of tube-supporting brackets or lugs 27. The lower or bottom portion of 10 at this point is similar except that there is no gate 26, but rather, a solid plane surface 28, which is in effect a continuation of 24.

The top 29 and bottom 30 of subject container are formed of a suitable nearly rigid material such as a plastic for example, and may be identical in every way, presenting substantial savings in this regard when produced by the same tool. Each has a plurality of side backer lugs 31, and similar end members 32 to the rear, as well as front lugs 33, adjacent to which are formed apertures 34 for engaging studs 20 and 21 as will be explained in detail during the further progress of this specification. A recess groove 35 is formed in the side-rear of both the top and the bottom to accommodate protrusions 17; or other indentations may be formed at this point to mate the contour of such extensions.

A suitable engaging indentation 36 may be formed in the upper surface of the top member.

Guard or skid ribs 37 may be provided for the body, top and bottom members, these extending beyond adjacent surfaces to absorb shock, prevent discoloration, and adding strength and rigidity to the entire container. If desired, these ribs may serve to house metallic inserts for the purpose of adding still additional strength to the larger container. Said ribs are so positioned as to permit the stacking of said containers either on their sides or on their tops. Various rearrangements and modifications of rib placement will suggest themselves in the light of various uses of the devices themselves.

Attention is now directed to the handles 38 formed integral with the top and bottom members of the instant invention they being in effect two transversely extending bars with apertures between 38—24, 26; and 38—28, at the top and bottom respectively (see FIG. 2), and which provide handle grips on the two extremities of the container and on the same side thereof. This permits the package to be handled from the side, thereby presenting a more workable device than in the case of existing containers which have their handles both on the same end. The handle grip area is large enough to accommodate a larger than average hand, or may be grasped by two hands, one on either side of the can. In the case of one hand being used the container may be carried over the

back; all without the danger or even the possibility of cutting or pinching.

Methods of Use

In assembling the instant device, body portion **10** is first bent in the approximate form of a square and locked by meshing elements **11** in **12** as described heretofore. The top **29** and bottom **30** are then placed in position, the latter first as by working from the front and centering studs **20** and **21** in apertures **34** and in line with lugs **18** and **19** and front lugs **33**; the bottom member then being slowly adjusted to the rear, during which operation said lugs **13** and **14** engage complementary backer lugs **31**, and end body elements **15** and **16** at the rear contact and come into engagement with members **32**, protrusions **17** being snapped into recess grooves **35** as by a blow of the hand to complete the assembly.

A pliofilm or other suitable bag is then placed in the container, such being designated by the numeral **39**, filled with a desired fluid or substance such as milk, sealed by heat or otherwise along line **40**, and tube **41** placed or cradled in lugs **27**, and gate **26** pressed downwardly and rearwardly into potentially closed position with reference to top **29**, upon which top **29** is positioned in the same manner described heretofore for bottom **30**. If desired the gate may be sealed in position by means of disposable tape, or otherwise.

When dispensing through tube **41** is contemplated, the tape is removed, the container inverted, and gate **26** opened, indentation **36** facilitating the operator in so doing; upon which spout **41** falls downwardly through the gate opening and pouring may proceed as desired.

If the contents of the container are to be emptied all at once, the end piece **29** is removed, this being done by inserting a prying tool or device into slots **42** provided for such purpose, upon which the end of the bag **39** may be cut off at **40**, and the contents poured out in a manner similar to that employed with any bulk container. Clean, new bags are provided with each filling operation.

When complete disassembly is desired, as for routine cleaning, storage between seasons as in the case of milk cans used primarily for school purposes, or for other reasons, bottom **30** is removed in the same manner as is top **29**, and body **10** laid out in flat or semi-flat position, upon which the elements may be stored or shipped in a minimum amount of space, in contrast to heavy rigid devices now in use.

In some instances, particularly when milk is being dispensed, it is desirable to know how much fluid remains in the can at a given time, and to this end, viewing slots **43** may be formed in the front side of body **10**, thereby providing a visual indication of the quantity available in the transparent bag. Said slots are preferably run obliquely to minimize the possibility of bag puncture.

A modified form of locking device is shown in FIG. 10, in which one or more teeth **44** are formed in one end of body blank **10**, and pressed or otherwise snapped into engagement with complementary teeth **45** formed in the opposite end, both ends being thickened or otherwise reinforced at this point for structural reasons.

From the foregoing it is apparent that there has been disclosed and described in some detail herein a new and unique container that is economical of manufacture, easy to assemble, light in weight, facile of handling, saving in space, essentially sanitary, and thoroughly adapted for its intended purposes.

While one form of said invention has been rather fully detailed, it is apparent that no limitation is intended thereby, but on the contrary, various modifications, rearrangements, alterations, changes, additions and the like may be resorted to without departing from the appended claims, which are to be accorded a construction and scope fairly in keeping with the contribution to the art.

I claim:

1. In a device of the character described, a pliable wrap-around body member forming a hollow angular column, means for locking said member in position when thus formed, a plurality of side positioning lugs and back elements formed integral with the body member, locking lugs formed integral with the front of the body member, studs formed in the front faces of said locking lugs, a pouring gate in the upper-front section of the body member, a supporting bracket secured to the rear of said gate, viewing slots formed in the body member; semi-rigid top and bottom members connected with said body, said top and bottom members having a plurality of side-backer lugs, end members, and front lugs; apertures for receiving the studs of the locking lugs formed adjacent said front lugs, and guard ribs formed integral with the body element and the top and bottom members.

2. In a device of the character described, a pliable wrap-around main body member forming a hollow angular column, means for locking said body member in position when thus formed, a plurality of side positioning lugs and back elements formed integral with the body member, locking lugs formed in the front thereof, studs formed in the faces of said lugs, a pouring gate in the upper-front section of the body member, supporting means secured to the rear of the gate; semi-rigid top and bottom members associated with the body member, said top and bottom members having a plurality of side-backer lugs, rear members, and front lugs; apertures for receiving the studs of the locking lugs formed adjacent said front lugs, and oppositely disposed, longitudinally extending handles formed integral with said top and bottom members.

3. In a device of the character described, a wrap-around body member forming a hollow cube, lugs formed in opposite ends of said body member for locking such in position when thus formed, a plurality of side positioning lugs and back elements formed integral with the body member, locking lugs formed in the front thereof, studs formed in the faces of said lugs, a pouring gate hingedly mounted with the body member, rigid top and bottom members associated with the body member, said top and bottom members having a plurality of side-backer lugs, rear backer lugs, apertures for receiving the studs of the locking lugs, and a longitudinally extending handle formed integral with the top member opposite the pouring gate.

4. In a device of the character described, a wrap-around pliable body member forming a long hollow cube, teeth formed in opposite ends of said member for locking such in position when thus formed, a plurality of side positioning lugs and rear elements formed integral with the body member, protrusions extending from said rear elements, locking lugs formed in the front of the body member, studs formed in said lugs, a pouring aperture in said member, rigid top and bottom members associated with the body member, said top and bottom members having a plurality of side-backer lugs, rear backer lugs, receiving grooves, and apertures for receiving the studs of the said locking lugs; and carrying means connected with said top and bottom members.

5. In a device of the character described, a pliable wrap-around body member forming a hollow angular column, means for locking said member in position when thus formed, a plurality of side positioning lugs, and back elements formed integral with the body member, locking lugs formed integral with the front section of the body member, studs formed in the faces of said locking lugs, a pouring gate in the upper-front section of the body member, supporting means secured to the rear of said gate, viewing slots formed in the body member, semi-rigid top and bottom members connecting with said body, said top and bottom members having a plurality of side-backer lugs, similar end members, and front lugs; apertures for receiving the studs of the locking lugs, formed adjacent said front lugs, and removal slots formed in the rear walls of the top and bottom members; and an indentation formed in the top member adjacent the upper

edge of the pouring gate when such is in a closed position.

6. In a device of the character described, a wrap-around main body member, interlocking tongue means for joining said wrap-around member in such a position as to form a hollow angular column, a plurality of side lugs and similar rear elements formed integral with the body member, locking lugs formed in the front thereof, studs connecting with said locking lugs; a semi-rigid top member and a semi-rigid bottom member associated with the body member, said top and body members having a plurality of side-backer lugs, similar rear members, and front lugs; means for receiving the studs of the locking lugs, and oppositely disposed, longitudinally extending handle

elements, formed integral with said top and bottom members.

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