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G. A. MOORE

2,712,880

DUO-PART CONTAINER

Filed April 19, 1952

FIG. 3

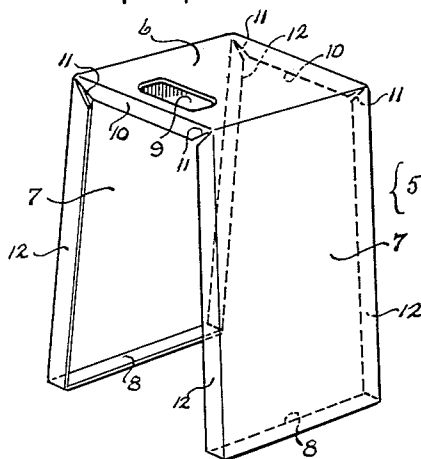


FIG. 4

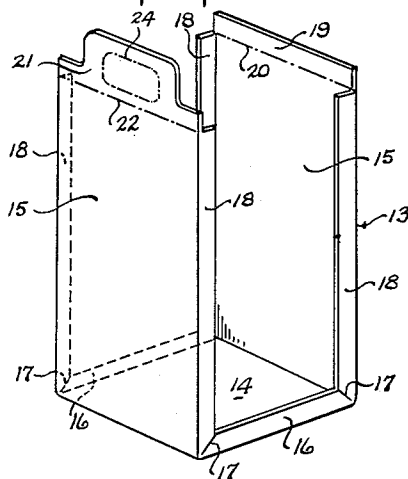


FIG. 5

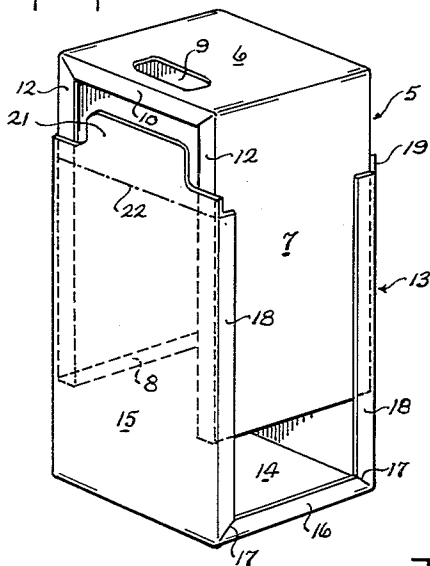


FIG. 1

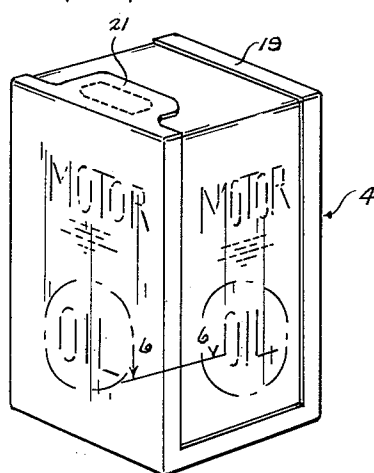


FIG. 2

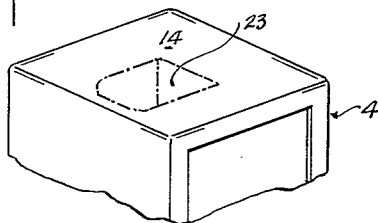
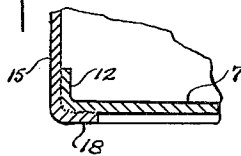


FIG. 6



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DUO-PART CONTAINER

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6 Claims. (Cl. 220—4)

This invention relates to containers made of any suitable material but, primarily of metallic sheet materials such as, aluminum or black plate formed into pre-fabricated parts that are assembled together and secured with marginally engaged flat surface seams to provide a hermetic container suitable for the distribution of liquid products.

The container of the present invention is a continuation in part of my application Serial No. 278,528, filed March 26, 1952.

The invention is more particularly concerned with containers made of relatively light gauge sheet materials having capacities ranging in sizes up to one gallon and particularly a quart container adapted with structural features to serve the distribution of motor lubricating oil for service station dispensing, handling the containers if desired, in the same manner as the conventional round shaped cans in current use.

An object of the invention is to provide containers that make provisions for structural reinforcements of the seams in such manner that relatively lighter gauge sheet or combinations of gauges may be used in constructing the container the said seams being adapted for soldering, brazing or otherwise secured by other methods, the shape of the container being adapted to conserve shipping and storage space compared with conventional round cans.

Another object of the invention is the provision of rectangular shaped containers that may be filled and sealed in a simple but efficient manner in one end of the container and opened in the opposite end by piercing it with a liquid draining dispensing tool conventionally used in service stations to open round cans.

A further object of this invention is to provide space saving containers having structural features that may be adapted to make provisions for a filling and dispensing sub-closure in a wide variety of adaptations in a basic end closure of the container.

These and other objects of the invention will be apparent from a consideration of the form of the container which is shown by way of illustration in the accompanying drawings, wherein;

Fig. 1 is a perspective of the completed container;

Fig. 2 is a fragmentary view in perspective of the opposite end of the container in Fig. 1;

Fig. 3 is a perspective view of a pre-shaped part (male) comprising a portion of the container;

Fig. 4 is a perspective view of a companion pre-shaped part (female) comprising a portion of the container;

Fig. 5 is a perspective of the pre-shaped parts in a state of partial assembly in forming the container structure, and

Fig. 6 is a fragmentary cross-section of the seam structure taken on line 6—6 in Fig. 1.

Referring to the container 4 (Fig. 1) there is illustrated a substantially rectangular shaped container constructed of two pre-shaped parts (Figs. 3 and 4) bent and flanged from strip sheet material, the one part (male) having two opposing side walls and an end wall provided

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with an aperture, each of the walls having a pair of side flanges bent inwardly from the wall exterior surfaces and mitred at adjacent corners of the end wall. The other part (female) having two opposing side walls and an end wall, each of the walls having a pair of side flanges bent inwardly from the exterior wall surfaces and mitred at adjacent corners of the end wall, the opposing side walls having extended portions constituting flanges one of which is adapted to enclose the aperture in the end wall of the male part when assembled therewith.

The assembly of the parts comprises the steps of inserting the latter mentioned part into the female part, the respective flanges on each part engaging marginal portions of the respective walls of each part, one of the extended portions of one pair of opposing walls (female) being bent to overlap a marginal portion of the end wall of the inserted part, all of the engaging flanges being secured to marginal portions of each wall in seam forming relationship. The container is then filled with its intended product and the other extended flange portion is bent to close the aperture and engage a marginal surface portion of the male end wall the said portion being secured thereto in sealed relationship.

The container as herein described may be fabricated of black plate lithographed for brand decoration and adapted for seam securing operation by employing conventional methods of soldering or brazing. When the container is to be fabricated of aluminum the seams may be secured by the same conventional methods or other suitable means such as the employment of thermoplastics.

Referring more particularly to Figs. 3 and 4 of the drawings, the pre-shaped part 5 (Fig. 3) consists of a strip of sheet material formed substantially U-shape having an end wall 6 merging in two opposing walls 7 disposed at near right angles from the end wall and each wall terminating with flanged ends 8. The end wall is provided with an aperture 9 and a pair of right angularly disposed flanges 10 the ends 11 of which are bevelled to abut the bevelled edges of the pairs of flanges 12 formed on the sides of the opposing walls 7, the opposing walls being initially formed to resist inward movement. A companion part 13 (Fig. 4) is pre-shaped from a strip of sheet material and formed substantially U-shaped having an end wall 14 and two opposed side walls 15 bent at right angles to the end wall. The end wall has a pair of side flanges 16 bent upwardly at right angles and terminating in ends 17 that are mitred and abutted with end edges of pairs of side flanges 18 bent inwardly at right angles from each side wall the flanges terminating short of the end edges of the side walls. One side wall terminates in an extended wall portion 19 adapted for bending on a folding line 20, the other wall terminating in an extended wall portion 21 adapted to fold on the line 22, the portion being shaped to provide means to enclose an aperture at 9 in one end of the container when assembled.

Marginal portions constituting the seam surface areas of the pre-shaped parts may be doped with suitable treatment for use in seam securing operations prior to the assembly of the parts.

The pre-shaped parts are assembled together (Fig. 5) to construct the container in a simple manner by inserting the male part 5 into the female part 13 the flanges of each part engaging marginal portions of each other part in face to face engagement, the flanges of the male part being disposed within the interior of the container structure, the flanges of the female part being disposed exteriorly of the container. The flanges 8 at the bottom ends of the male member contact the interior surface of the end wall 14 of the female member positioning the opposite end wall 6 about flush with the bending lines 20 and 22, the flange 19 being bent to overlap a marginal

portion of the end wall 6 of the assembly. The opposite flange 21 remains upright while the engaging flanges of the container structure are secured to their related surfaces in seam forming relationship as by being soldered or otherwise fastened to constitute firmly bonded seams.

The container may be filled through the aperture 9 provided in the end wall after which the upright flange 21 is bent on the folding line 22 to overlap and engage marginal portions of the end wall, closing the aperture and secured by being soldered or otherwise fastened in a sealed closure relationship. To remove the contents of the container the sealed closure may be pried open or the opposite end of the container (Fig. 2) may be pierced with a draining tool which forms an opening 23 through which the container contents may be dispensed, the opposite end wall being structurally reinforced to withstand the forces imposed by the piercing tool.

The filling aperture may be provided with any area or shape desired and the enclosing flange may be provided with a recessed portion 24 (Fig. 4) that may be tightly fitted into the aperture in friction tight engagement.

The container seam construction (Fig. 6) provides exceptional strength for load carrying capacity of the container as well as strength to withstand inertia shock imposed upon the container during shipping. The container is provided with flat surfaces adapted for efficient stacking and may be packed and transported in shipping cases in such manner that in the same space area a substantial increase of containers may be moved compared with round cans. The flat surfaced walls will engage such complete areas of wall contact that shock may be absorbed by the containers without damage or weakening effects whereas, round containers are bisecting each other at rim edges so that only minute areas of the containers are in contact with each other and hence can not absorb shocks in the same manner resulting many times in damage to the containers. The containers of the present invention are constructed with seam reinforcements that provide a sturdy structure that will efficiently carry lubricating oil and withstand considerable inertia shock without damage, the seams being formed and secured in angular shape about the corners of the structure, the walls and end closures of the container being integrally related.

The containers when constructed of aluminum may employ a method of securing the seams thereof which provides facilities for dip brazing the assembled parts together. Methods may also be employed to finish the surfaces of the aluminum containers with anodic oxide coating processes well known in the industry.

Within the scope of the principle of constructing containers herein described, containers may be formed for impervious protection of delicate instruments or parts, medical supplies and many types of articles that require moisture proof barriers to the atmosphere. Such containers if desired may be fabricated of thin aluminum sheet 0.006 inch thickness and the seams secured by dip brazing. The thin walls of the container structure may be supported for seam securing operations with suction holding plates in contact with the surfaces of the walls.

I claim:

1. A rectangular metallic container comprising an assembly of two pre-formed U-shaped parts, each of the said parts consisting of an end wall forming the base of the U and integrally related to two opposing side walls comprising the upright legs of the U, said parts being telescoped reversely so that the end walls of the parts oppose to provide the two ends of the container and the side walls of the parts oppose and cooperate to provide the four sides of the container, the said end and side walls of each said part having marginally disposed flanges turned inwardly at right angular relation to its end and side walls, the outer faces of the said flanges

of the inner part engaging inner surface portions of the side walls of the outer part, the inner surfaces of the flanges of the outer part engaging outer surface portions of the side walls of the inner part, and each side wall of the outer part having a flange bent over onto and bonded to the external face of the end wall of the inner part, said last named end wall having a pouring opening therein and one of said last named bonded flanges being extended over and bonded to the margins defining said opening.

2. A rectangular metallic container comprising an assembly of two pre-formed U-shaped parts, each of the said parts consisting of an end wall forming the base of the U and integrally related to two opposing side walls comprising the upright legs of the U, said parts being telescoped reversely so that the end walls of the parts oppose to provide the two ends of the container and the side walls of the parts oppose and cooperate to provide the four sides of the container, the said end and side walls of each said part having marginally disposed flanges turned inwardly at right angular relation to its end and side walls, the outer faces of the said flanges of the inner part engaging inner surface portions of the side walls of the outer part, the inner surfaces of the flanges of the outer part engaging outer surface portions of the side walls of the inner part, and each side wall of the outer part having a flange bent over onto and bonded to the external face of the end wall of the inner part, said last named end wall having a pouring opening therein and one of said last named bonded flanges being extended over and bonded to the margins defining said opening and having a portion thereof within its edge limits and conforming in shape to said opening snugly recessed into said opening.

3. A rectangular metallic liquid dispensing container which comprises an assembly of two pre-formed U-shaped parts, each of the said parts having successive marginal flanges bent inwardly at substantially right angles from each of the sides of two opposed side walls and opposed sides of an end wall, the flanges having mitered junctions adjacent the corners of said end wall, the opposed side walls of one said part having end sides with inwardly bent flanges disposed in parallel with the said end wall, the other said part having laterally disposed flanges at the ends of the said opposed side walls, the said U-shaped parts being telescoped reversely so that the end walls of the parts oppose to provide end closures of the container and the side walls of the parts oppose and co-operate to provide four side walls of the container, the said marginally disposed bent flanges of the inner part engaging inner surface margins of the opposing side walls and end wall of the outer part, the bent flanges of the outer part engaging outer surface margins of the opposing side walls of the inner part, one of the said laterally disposed flanges of the outer part being bent inwardly at right angles to overlap a marginal portion of the end wall of the inner part to lock the said telescoped parts together, the said successive flange and wall engagements including the said last mentioned flange and end wall portion being bonded together in seam forming relationship to constitute a liquid dispensing container.

4. A rectangular metallic container according to claim 3 in which the end wall of the said inner part is provided with an aperture adapted for container filling and dispensing purposes, the said laterally disposed flange opposed to the said last mentioned bent flange having an extra wall portion, the said flange being bent at right angles to overlap another marginal portion of the said end wall to cover the said aperture in seam forming relationship.

5. A rectangular metallic container comprising an assembly of two pre-formed U-shaped parts, each of the said parts consisting of an end wall forming the base of the U and integrally related to two opposing side walls comprising longitudinal side walls of the U, said parts

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being telescoped in reverse so that the end walls of the parts oppose to provide end closures of the container and the side walls of the parts oppose and co-operate to provide the four adjacent side walls of the container, the said end and side walls of each said part having marginally disposed flanges bent inwardly at substantially right angular relation to its end and side walls, the outer faces of the said flanges of the inner part engaging inner surface portions of the side walls and end wall of the outer part, the inner surfaces of the flanges of the outer part engaging outer surface portions of the side walls of the inner part, the said end wall of the inner part having an orifice adapted for container filling and dispensing purposes, the said outer part side walls having end flange portions bent over marginal portions of the said end wall, one of the said bent flanges having a wall portion covering the said orifice, the said flange and wall engagements of the said assembly being united together in seam forming relationship.

6. A rectangular metallic liquid dispensing container including an assembly of two pre-formed and reversely telescoped U-shape parts, each having an end wall and two opposed side walls, the inner part having continuous

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marginal flanges bent inwardly at substantially right angles to its side and end walls, the said flanges being disposed in bonded engagements with inner wall portions of the outer part, the said outer part having continuous marginal flanges bent inwardly at substantially right angles to its side and end walls, the said flanges being disposed in bonded engagement with outer wall portions of the said inner part, the said bonded flange and wall junctional engagements being structurally constituted to re-enforce the container in co-operation with an end wall adapted to be opened by piercing the said wall for container dispensing purposes.

References Cited in the file of this patent

UNITED STATES PATENTS

1,075,369	Millice	Oct. 14, 1913
2,488,710	Cooper	Nov. 22, 1949
2,620,941	Smulski	Dec. 9, 1952

FOREIGN PATENTS

9,560	Great Britain	1905
452,143	Great Britain	Aug. 12, 1936