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METAL STACKING CONTAINER

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2 Claims. (Cl. 220—97)

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The invention relates to new and useful improvements in a metal container which is especially adapted for the packaging of oil and like products.

An object of the invention is to provide a container which is so constructed that the container bodies before the ends are attached may be nested for shipment to the place for filling and which are also adapted to be nested for return for salvaging or for reconstruction.

A further object of the invention is to provide a container of the above type which is so constructed that a closure end may be secured thereto by double seaming.

A still further object of the invention is to provide a container of the above type which is made of aluminum or a similar material which may be drawn to form a body having a bottom end integral therewith.

A still further object of the invention is to provide a container wherein the body wall is tapered from the bottom end upwardly and is provided at spaced intervals with inwardly projecting flutes which are so constructed that one can body can be nested in another and the inner body supported solely by line contact with the flutes.

In the drawing

Figure 1 is a view partly in side elevation and partly in section showing two container bodies embodying the improvements with one container nested within the other.

Figure 2 is a side view of one of the improved container bodies.

Figure 3 is a sectional view on the line 3—3 of Figure 1.

Figure 4 is a detail showing a portion of a container body having an end secured thereto by double seaming.

The improved container is preferably made from aluminum or a similar material which can be drawn to form a container body which is of some considerable height. The container includes a body portion 1 having a bottom end 2 formed integral therewith. This body portion and bottom end are formed from a single blank by die drawing. The body wall tapers from the bottom end upwardly to the upper end of the container. The upper end of the body portion is grooved outwardly into a projecting flange 3. After the container has been filled, it is sealed by a closure end 4 which is secured to the flanged end of the body by double seam indicated at 5 in Figure 4 of the drawing. The body portion of the container is provided at spaced intervals with flutes. As shown, there are three flutes indicated

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at 6, 7 and 8. The flutes are similar in shape and are formed by curving inwardly the side wall of the container from the bottom end all the way up to a point adjacent the flange at the top end of the container body. This flute is also formed in the bottom wall and may be formed during the drawing operation. The flutes are unequally spaced. In Figure 3 of the drawing, two containers are shown nested one within the other. The distance between the center of the flute 6 and the center of the flute 8 is indicated at A°. The distance between the flutes 6 and 7 is slightly less than the distance between the flutes 6 and 8 and this has been indicated at A°—. The distance between the center of the flutes 7 and 8 is slightly greater than the distance between the flutes 6 and 8 and this has been indicated at A°+.

In Figure 3 an inner container indicated at 1a is shown nested in an outer container indicated at 1b. It will be noted that the wall of the inner container between the flutes makes line contact with the inner surface of the flutes in the outer container. It is noted that these flutes taper inwardly from the bottom end thereof upwardly and the dimensioning of the taper of the flutes relative to the taper of the body wall between the flutes of the nested container is such that the line contact is restricted to a region at the lower portion of the inserted nested container. This prevents there being a too firm grip between the containers which would make it difficult to separate the same. When the two containers are nested and held in nested condition by this line contact between the walls thereof, they can be readily separated one from the other. The purpose of the unequal spacing of the flutes is to insure that when one container is nested within another, the chances are greatly in favor of this line contact between the body wall of the inner container and the flutes of the outer container rather than one flute engaging within another.

One of the purposes of the present invention is to provide container bodies which may be nested for shipment by the manufacturer to the place where the containers are to be filled. When the containers are drawn from a metal blank, they can be made rapidly and shaped as described above. When the containers are shaped in the manner stated, they can be readily nested one within the other and thus a number of containers stacked for shipment in a very small space. At the place of use, the containers are separated, filled with the product that it is desired to package therein and then a closure end is seamed

to the flanged can body as shown in Figure 4. This seals the container.

When these containers are used for oil, the container end is usually punctured and a pouring spout attached thereto. After the container is emptied, it may be subjected to a simple machine for severing the body wall along the line $x-x$ of Figure 4. This removes the closure end and the double seam which can be thrown away. After the ends have been removed from the containers in the manner described, then one container body can be nested within another and thus a number of containers stacked together and crated for return to the manufacturer for salvaging the metal or for subjecting the container body to another drawing operation so as to restore the body to its original capacity with a flange thereon for re-use in the same way as the original container.

It is noted that the container may be filled in the standard filling machine and the end can be attached thereto by a standard double seaming machine. In other words, the container is capable of use in the same manner as the ordinary commercial containers and has the great advantage of being nested one within the other so as to save shipping space in the sending out of containers to the user and in the return of the containers for salvaging.

It is obvious that minor changes in the details of construction may be made without departing from the spirit of the invention as set forth in the appended claims.

I claim:

1. A container comprising a body drawn from

a metal blank and having an integral bottom end, the upper end of said body being flanged and adapted to be closed by seaming an end closure thereto, said body having the side wall thereof uniformly tapered from the bottom end upwardly and provided at unequally spaced intervals with inwardly extending flutes shaped so that a nested body will be supported by line contact between the outer face of the wall of an inner body and the inner face of the flutes of an outer body when the flutes of the nested containers are out of register, said flutes extending all the way from the bottom end of the container body to a point adjacent the flange at the upper end thereof and gradually tapered inwardly toward said upper end and curved in cross section so as to provide said line contact between the flutes and the body wall of a nested container.

2. A container comprising a body having the side wall thereof uniformly tapered from the bottom end upwardly and provided at unequally spaced intervals with inwardly extending flutes, said flutes being tapered inwardly from the bottom of the body to a point adjacent the upper end thereof with each flute curved in horizontal cross section so that when the containers are nested with the flutes out of register, the nested body will be supported by a line contact between the outer face of the wall of the inner body and the inner face of the flutes of the outer body.

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