

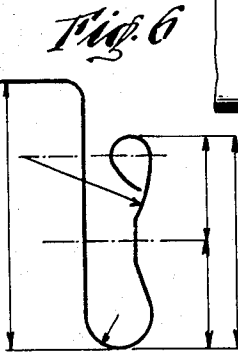
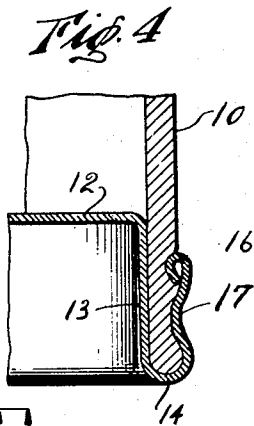
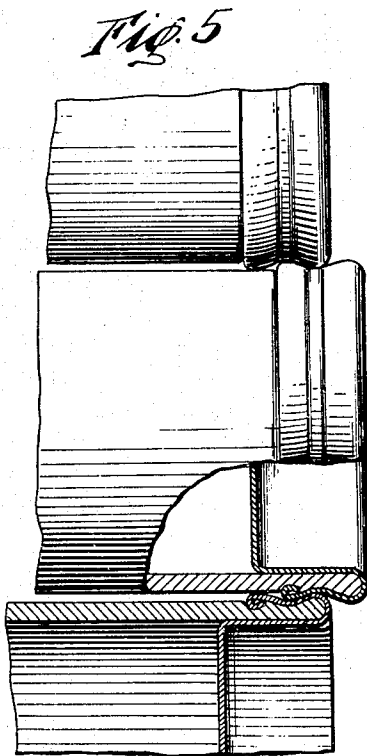
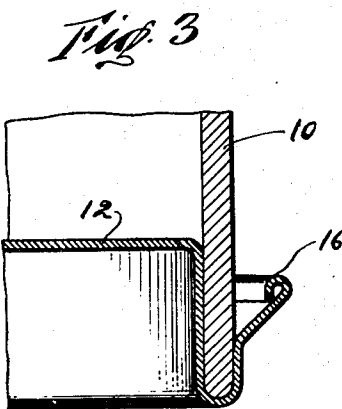
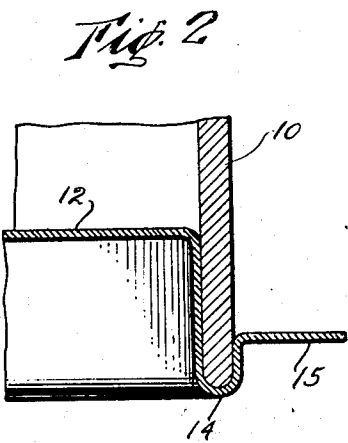
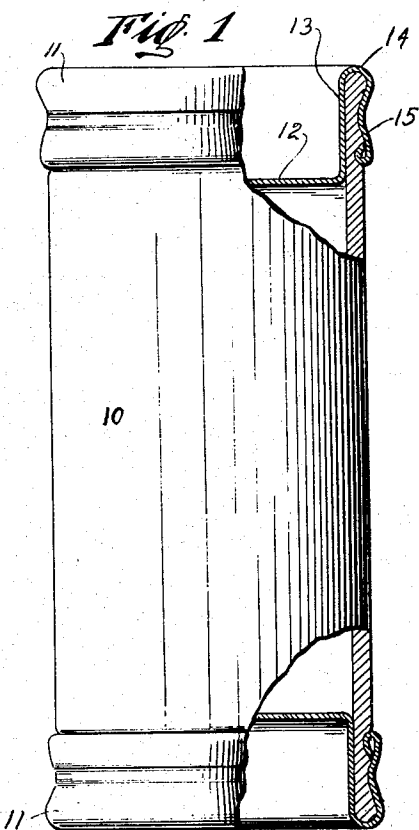
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H. C. AUMENT

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CONTAINER CONSTRUCTION

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INVENTOR
H. Chester Aument
BY *Fuller & Kane*
ATTORNEYS

UNITED STATES PATENT OFFICE

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CONTAINER CONSTRUCTION

H. Chester Aument, Long Island City, N. Y.

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2 Claims. (Cl. 229-5.5)

This invention relates to a container having structurally and functionally improved characteristics.

It is an object of the invention to furnish a container which will provide an end seal structure such that it may be subjected to considerable abuse without its becoming damaged.

A further object of the invention is that of providing a container in which a seal will be embodied such that under all conditions of service an escape of the contents thereof is virtually precluded.

A still further object is that of furnishing a container which will tend to automatically assume a proper position or relationship with respect to adjacent containers and during shipment such that any danger of an individual container being injured will be reduced to a minimum.

Another object is that of furnishing a container embodying the foregoing advantages and which container may be manufactured largely by automatic machinery and simple methods so that the unit may be placed upon the market at a nominal figure.

With these and other objects in mind, reference is had to the attached sheet of drawing, in which:

Fig. 1 is a side elevation of a container with certain portions of the same broken away and showing underlying portions in section;

Fig. 2 is a fragmentary enlarged sectional view showing the container with an end seal applied thereto;

Fig. 3 is a view similar to Fig. 2, but showing the end seal or closure subjected to a second stage of development;

Fig. 4 is an additional view of this nature, but showing the closure in its final or applied condition;

Fig. 5 is a partly sectional and fragmentary side elevation showing a number of the closures in the relative positions which they may assume; and

Fig. 6 is a diagrammatic view illustrating in exaggerated form an ideal relationship of the parts.

Referring primarily to Fig. 1, there has been shown a container, the body of which may be in the form of a cylinder 10, formed of any suitable material, and the ends of which are sealed by heads or caps generally indicated at 11. Each of these caps preferably embraces a disk 12, which may lie within the bore of the cylinder or container body and transverse to the longitudinal axis thereof. The caps may be formed of suit-

able metal or other proper material, but in any event the side edges of the disk are continued in the form of an upwardly extending flange portion 13, the outer face of which lies in intimate contact with the inner face of the adjacent container portion. The flange is continued in the form of an outwardly extending portion 14 which is to intimately engage the end or lip of the container body. Beyond this point the cap is continued in the form of a portion generally indicated at 15 and which portion is to intimately engage the outer face of the container body.

In applying the cap or end seal to the container, it will be understood that this seal is initially supplied in the form of a member as shown in Figs. 2 or 3. In other words, the disk portion 12, flange 13, and enclosing portion 14 are already in existence, but the portion 15 simply extends outwardly and terminates in a straight edge portion which may be subsequently bent as at 16 in Fig. 3, or which may be formed prior to the association of the container with the end seal. Regardless, however, of whether the bead is preformed or not, it is obvious, by simply forcing the edge portion of the container into what might be termed the gasket portion of the end seal, the parts will assume the positions shown in Figs. 2 and 3. Afterwards the portion 15 may be bent so that it extends into intimate contact with the outer face of the container as has been shown in Fig. 4.

Of course, when the end seal is initially applied to the container, this is usually done with sufficient force to cause the edge portion of the container to "mushroom" to some extent. This expansion of the container body adjacent its edges may be to only a microscopic amount, but in any event will be sufficient to insure a great intimacy of contact between the container surfaces and the adjacent and contacting surfaces of the seal. As the portion 15 is bent into intimate contact with the outer face of the container, it is obvious that the body of the container (especially when formed of fibrous or similar materials) will be compressed to some extent adjacent such points of contact, and it is preferred that the zone which initially defined the base of the outwardly extending part 15 be manipulated during this operation in such manner that a relatively flattened or extended area such as 17 will be furnished. It is, of course, additionally obvious that the bead portion 16 will, in effect, "bite" into the surface of the container. In this manner, and as indicated especially in Fig. 4, it will be obvious that a seal is furnished which will have at least

five zones or points of sealing, any one of which would be normally adequate to prevent the escape of fluid or other material from the container. One of these zones defined by the face of the flange 13 exists, of course, between the inner face of the container and the flange. The second zone exists within the area of the bent portion 14, especially when one considers that in manufacture the edge of the container is rammed home within the grooved structure furnished by the end seal and expands somewhat so as to provide an effective zone of sealing. The third zone of sealing, of course, exists between the inner face of the portion 15 between the inwardly extending or flattened area 17 and the portion 14. The fourth zone of sealing exists between the face of the container and the inner face of the more or less flattened or crimped portion 17; and the fifth sealing zone occurs at the point where the bead 16 has compressed the body of the container or is otherwise in intimate contact therewith. It is obvious that as a consequence of this structure an escape of material from within the container is almost precluded regardless of the abuse to which the container is subjected. This is especially true by virtue of the fact that the bead 16 lies in a plane short of that of the disk 12, and thus a counter-bracing structure is furnished which draws the outer face of the flange 13 into intimate contact with the adjacent container surfaces.

Moreover, by this construction an especially rigid structure is furnished, such that the containers may even be dropped without there being any danger of collapse of the end seals of the adjacent container portions.

It will additionally be noted that the groove or recesses furnished by the flattened or inwardly extending portion 17 is of sufficient area to accommodate either that portion of the flange 15 which is below the same, or the bead portion 16 of an adjacent container.

It has been found that in placing a number of containers within a carton that in shipment relative shifting occurs between these containers, and that either the bead or the lower edge portion of a seal tends to ride into the groove or recess defined by the inwardly extending portion 17 of an adjacent container. In other words, the containers tend to interlock, so that, in effect, a unitary structure is provided, embracing a large

number of containers in which movements of individual containers with respect to the others virtually becomes an impossibility. This, of course, serves to protect the entire shipment and prevents one container damaging an adjacent container, as all of them are subjected to vibration incident to cartage or otherwise.

With a view to avoiding unnecessary illustration, the end walls have, in the present instance, been shown as including disks 12, which must be cut away or otherwise rendered inoperative to gain access to the containers. While this is in certain respects a preferred construction, it is obvious that in lieu of these disks which require destruction, removal, or mutilation, any other form of readily accessible structure might be utilized. Also, numerous other changes in construction might be resorted to without departing from the spirit of the invention as defined by the claims.

Having described the invention, what is claimed is:

1. An end seal for a container presenting in section an end wall and a generally U-shaped channel portion projecting from the edges of said wall and perpendicular with respect to the same, said portion in section including an inner plane arm to lie in flat face-to-face contact with the wall of a container with the edge of said wall lying within the crotch of such portion, the outer arm of said portion being of a height less than the inner arm and presenting a plurality of inwardly and outwardly curved surfaces to lie in intimate contact with the outer face of said container body.

2. An end seal for a container presenting in section an end wall and a generally U-shaped channel portion projecting from the edges of said wall and perpendicular with respect to the same, said portion in section including an inner plane arm to lie in flat face-to-face contact with the wall of a container with the edge of said wall lying within the crotch of such portion, the outer arm of said portion being of a height less than the inner arm and presenting an inwardly crimped edge portion and an inwardly indented portion intermediate such crotch and such edge portion, the outer surface of the container body being intimately engaged by the inner surface of said arm throughout the entire area of the latter.

H. CHESTER AUMENT.