

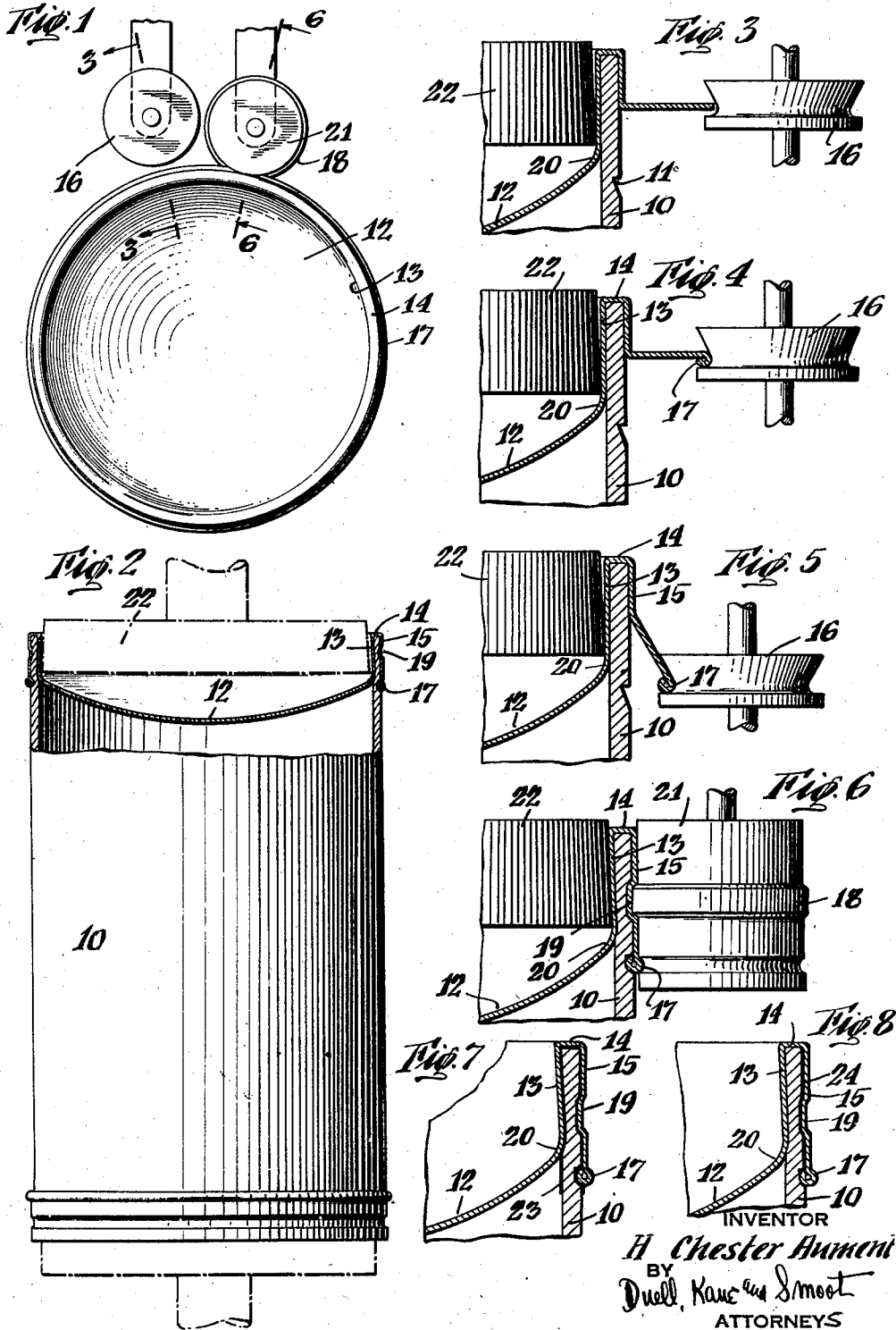
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CONTAINER AND METHOD THEREFOR

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CONTAINER AND METHOD THEREFOR

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4 Claims. (Cl. 229—5.5)

This invention relates to a structurally and functionally improved container as well as a method of producing the same.

It is an object of the invention to furnish a container which preferably is formed of paper or similar material, and the end portions of which will remain in applied position under severe conditions of use of the container so that the contents of the latter will be maintained against spoilage and leakage even should such contents be in the nature of a fluid.

A further object of the invention is that of providing an article of this nature in which, in certain respects, the container in use will have its end portions increasingly sealed even if such container and its contents be subjected to a large amount of handling, vibration, etc.

An additional object is that of teaching a method of furnishing a container possessing the foregoing advantages, and which method may be practiced largely by automatic machinery and unskilled labor for the quantity production of containers at nominal cost.

With these and other objects in mind, reference is had to the attached sheet of drawings illustrating practical embodiments of the invention, and in which:

Fig. 1 is a plan view of the end wall of the container and showing the latter in process of being applied to the container body;

Fig. 2 is a partly sectional side view of the unit as illustrated in Fig. 1;

Fig. 3 is a fragmentary sectional view showing schematically the operation which occurs along zone 3—3 as indicated in Fig. 1;

Fig. 4 is a view similar to Fig. 3, but showing the bead being formed or rolled into the edge of the end seal;

Fig. 5 shows the flanged or edge portion of such seal being brought to a position adjacent the side face of the container;

Fig. 6 is a transverse sectional side view taken along the lines 6—6 and in the direction of the arrows as indicated in Fig. 1 and showing the final application of the end seal of the container;

Fig. 7 is a view similar to Fig. 6, but showing the application of a gasket or sealing material between the end seal and container wall; and

Fig. 8 shows a layer of material simply enclosed between the outer face of the container and the inner face of the end seal.

In these views, the numeral 10 indicates the body of the container which, as shown, is preferably cylindrical and which may be formed of any suitable material such as paper or pulp, but

which preferably embraces a laminated structure (not shown) comprising a plurality of superimposed convolutions of material. Adjacent the end edges of each contained body 10, there may be formed a groove 11 presenting a tapered side wall and an edge extending from the base of the groove in a direction substantially at right angles to the outer face of the container.

An end seal for the container is furnished by utilizing members preferably formed of metal and including an inwardly domed base or central portion 12 having an outwardly extending side wall 13. Such side wall is bent at right angles to provide a base portion 14, the outer edge of which is defined by an outwardly extending portion 15. The channel space between these parts is initially such that there may be received therein the edge of the container body 10. The end seal or member is placed upon the container body in the manner indicated in Fig. 3, and that portion which extends outwardly beyond the portion 15 is manipulated by, for example, a roller 16, to provide a bead 17, as shown in Fig. 4. Thereupon, this outwardly extending portion is forced inwardly, as indicated in Fig. 5, and, finally, a forming roller 21 engages the outer face of that portion of the end seal extending adjacent the outer face of the container body, to preferably form therein, by a ridge 18, an inwardly extending groove 19 and to force the bead 17 into the groove 11.

At this time it will be observed, first, that the groove 19 is formed in the outer wall of the end seal in a plane short of that in which the side edges of the base portion 12 extend. Second, these outer edges merge in the portion 14, preferably not with an acute bend, but gradually, as indicated at 20. Third, the bead 17 falls not alone in line with groove 11, but well beyond the zone 20. In this manner, it will be observed that while, necessarily, the ends of the container 10 are subject to great pressure incident to the groove 19, and to some extent by the bead 17, that no shearing or crushing action such as will weaken the fibers or structure of the body 10 may occur. Accordingly, the container will not become weakened at this point, but, rather, a firm application of the end to the body will result.

Additionally, it will be observed that a supporting chuck 22 is disposed within the end seal or member and that the edge portion of this member is inclined. Accordingly, as roller 21 applies pressure, the inner face or portion 13 of the end seal is caused to assume a slight wedge rela-

tion with respect to the container body. In the drawing this has been somewhat exaggerated for the purpose of emphasis, but I have found that desirable results are achieved if an inclination of not less than three and one-half degrees occurs.

Under such conditions, the contents of the container during shipment or the handling of the latter in striking against the inwardly bulged base 12, cause an expansive effect such that the end seal grips the body of the container to an increasingly greater extent. This is not affected even though the container be stored for long period of time, and thus the end seal remains in position until it is forcibly detached or destroyed.

In Fig. 7 a gasket like layer 23 is provided for by, for example, dipping the end zone of the container in a body of suitable adhesive material prior to the application of the end seal. This is, in certain instances, desirable, particularly where somewhat unusual materials are being shipped.

In the structure illustrated in Fig. 8, a layer 24, of phenolic resin or any other desirable substance, is applied to the face of the container prior to the application of the end seal. This I have also found to be advantageous under certain conditions.

Thus, it will be understood that, among others, the several objects of the invention as specifically aforementioned are achieved. Obviously, numerous changes in construction and rearrangement of the parts might be resorted to, and the steps of the method might likewise be varied, without departing from the spirit of the invention as defined by the claims.

Having described my invention, what I claim as new and desire to secure by Letters Patent is:

1. A method of providing a container which includes forming a continuous side wall to provide the container body, forming a groove in the exterior face of such wall at a point spaced from the end edge thereof, applying to the end of said container a sealing member comprising a base and a channel portion, introducing the edge of said side wall into said channel portion, forming in the outer wall of said channel portion a bead, swinging said beaded edge towards and into contact with the outer face of said wall and introducing said bead into said groove, and inclining the inner wall of said channel portion such that the diameter of said inner wall progressively decreases towards the end edge of said side wall.

2. A method of providing a container which includes forming a continuous side wall to provide the container body, applying to the end of said container a sealing member comprising a base and a channel portion introducing the edge of said side wall into said channel portion, forming in the outer wall of said channel portion a bead, swinging said beaded edge towards and into contact with the outer face of said wall, inclining the inner wall of said channel portion such that the diameter of said inner wall progressively decreases towards the edge of said side wall and simultaneously forming a groove in the outer wall of such portion at a point short of said bead and at a point closer to the edge of said wall than the point at which said base meets the side wall.

3. A container including a body presenting a side wall, an end closure for said body and comprising a base and a channel portion adjacent the edge of the latter, the edge of said wall being disposed within said channel portion, the inner wall of said portion extending at an angle towards the axis of said container body, the diameter of said inner wall progressively decreasing towards the edge of said side wall, the outer wall of said portion extending in contact with the outer face of the container, such outer wall extending angularly with respect to the inner wall of said portion and substantially parallel to the axis of said container body, such outer face presenting a groove, and a bead formed in the edge of such portion and disposed within said groove.

4. A container including a body presenting a side wall, an end closure for said body comprising an inwardly bulged base and a channel portion, the edge of said side wall being disposed within said channel portion, the inner wall of said portion extending at an angle to the axis of said container body such that the diameter of the inner wall progressively decreases towards the end edge of said side wall, the outer wall of said portion extending in contact with a part of the outer face of the container, said outer wall being angularly disposed with reference to said inner wall and lying substantially parallel to the axis of the body, such outer container face presenting a groove, a bead formed in the edge of the channel portion and disposed within said groove, and the outer wall of said portion being grooved at a point closer to the edge of said side wall than the point at which said base meets the side wall.

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