

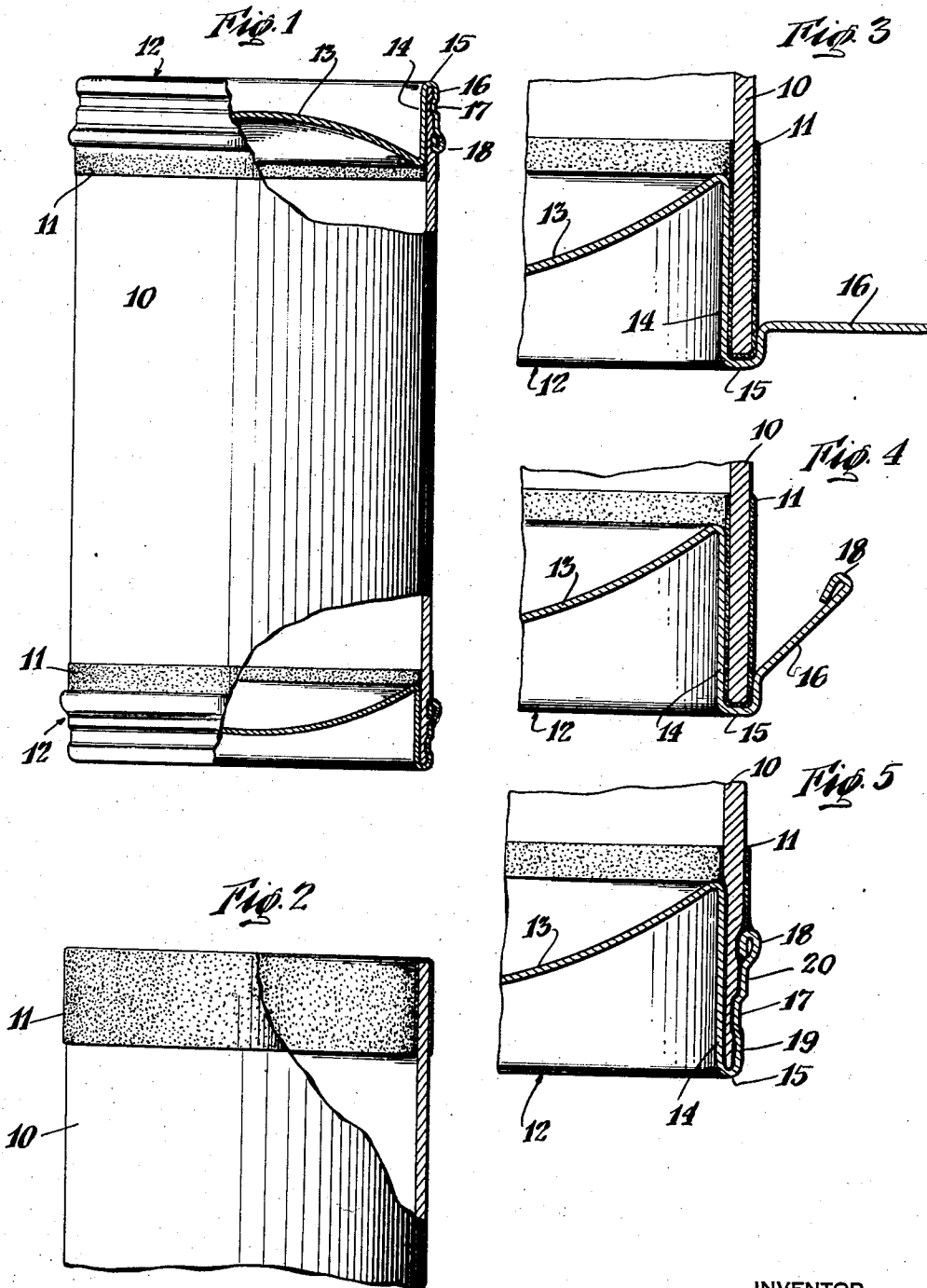
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CONTAINER

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CONTAINER

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2 Claims. (Cl. 229—5.6)

This invention relates to a functionally and structurally improved container, and in its more specific aspects aims to provide an article of this nature which will be of particular value for use in connection with the storage and shipment of liquids such as oil, although it may obviously be employed to advantage in other associations.

It is an object of the invention to furnish a receptacle of this type which may be manufactured from paper or fiber so that the weight and bulk of the receptacle will be minimized. The invention additionally contemplates a construction such that, although paper and similar materials may be employed, this will be done without any effective sacrifice either with respect to the strength of the receptacle or its durability.

A further object is that of constructing a receptacle which may readily be sealed, and which, when so sealed, will prevent any tampering with or withdrawal of its contents without giving obvious indication that such an attempt has been made.

A still further object is that of furnishing a unit of this character which will prevent any leakage on the part of its contents, and which, moreover, will guard such contents against evaporation or deterioration.

An additional object is that of providing a receptacle, the several parts of which may be expeditiously and inexpensively manufactured, largely by means of methods and machinery as at present existing, so that a unit will be produced which will offer at least the foregoing advantages, and which, additionally, may be sold for a nominal amount.

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

Fig. 1 is a side elevation of a receptacle with portions of the same broken away to disclose underlying construction;

Fig. 2 is a fragmentary view of the top portion of the receptacle prior to the application of the cover thereto;

Fig. 3 is an enlarged fragmentary sectional view showing the initial stage of cover or base application to the receptacle body or side walls;

Fig. 4 is a similar view illustrating the second stage of such application; and

Fig. 5 illustrates the final stage of such application.

In these views, the numeral 10 indicates a body formed of paper, pulp or similar material, and which may be impregnated or coated in any desired manner to prevent the escape of moisture

therethrough, and also (if desired) to preserve the material of the body against deterioration. As illustrated, this body is shaped to provide a cylinder. This is in many respects the preferred configuration, but it will be apparent that any desired shape might be employed.

Such a body may have one of its end portions closed at the time of its manufacture. Again, preferably, however, both ends are left open and are sealed by similar closure elements. While these elements may be directly in contact with the faces of body 10, I have found that in order to guard against leakage, even in the case of extreme conditions, it is preferable to coat at least the end portions of the cylinder with a layer of sealing material as hereinafter described. Such coating may conveniently be furnished by simply dipping the ends of the body into a fluid bath of the same, and this coating has been indicated at 11.

Now referring to the end seals for the body, and which have been generally identified by the reference numeral 12, it is observed that these are preferably formed of metal, and include end disks 13 domed outwardly towards the container end and continued adjacent their edge portions in an upstanding flange 14, which has an exterior diameter equal to the inner diameter of body 10. Accordingly, a sealing contact will occur between the outer flange face and the inner receptacle face.

Beyond this flange the seal is continued outwardly, as at 15, for a distance corresponding substantially to the thickness of body 10, and beyond this outward portion 15 the seal extends upwardly and initially in a direction parallel to and in intimate contact with the outer face of the wall of body 10. This condition has been exemplified in Fig. 3, where that portion of the seal beyond the upwardly extended portion has been identified at 16. Portion 16 is now swung inwardly as indicated in Fig. 4, and the outer edge of the same is turned inwardly upon itself, as indicated at 18. This inwardly turned portion or bead may, of course, be formed at any desired time, but in any event the parts are swung inwardly and forced into intimate contact with the outer face of body 10 in the manner shown in Fig. 5.

In this figure it will be observed that the bead 18 has been somewhat flattened, and that following a manipulation of the parts in accordance with the foregoing and by the use of a suitable clamping mechanism, the outer surface of the seal provides a relatively enlarged base portion 19 within which those portions of the wall 10 adjacent its edge may be fully expanded. Immediately beyond the same

is a relatively constricted portion 17 which prevents any accidental withdrawal of the wall 10, in that throughout the zone of this portion the material of the wall is tightly compressed. Beyond this portion 17, the outer part of the seal presents a portion 20 which corresponds in certain respects to portion 19. Throughout the zone of portion 20 the material of the wall is held under compression, but nevertheless tends towards its natural thickness. However, again, throughout the zone of bead 18 the parts are under relatively heavy compression.

Now referring to the coating 11, I have found that a number of substances may be employed. For example, gum benzoin dissolved in alcohol or a latex compound may be utilized. This is especially effective, having in mind that the body 10 preferably comprises a laminated structure, and if no coating were employed air pockets might remain adjacent the edge or penetrate between the individual layers of laminations, and such pockets could result in oxidation of the receptacle's contents, particularly in the case of oil. Also, the seal would be broken at this point and seepage might occur. However, by employing this coating, the end edges of body 10 are sealed, and this seal also includes a sealing of the individual layers of such body.

It is, of course, apparent that while in certain respects the layer 11 is preferably to be applied by immersing the ends of the receptacle, it might likewise be applied by coating or filling the end seals with the material.

In any event, it will be appreciated that as a consequence of the foregoing structure, end members are furnished which, in cooperation with the container body, provide a multiplicity of sealing and keying zones such that accidental displacement or detachment of the seal is prevented. This will be true even if the receptacles are filled with relatively heavy material such as oil. Moreover, incident to these seals, it is found that any danger of the receptacle contents escaping or leaking is precluded, and this is especially true if a coating such as that heretofore described is employed. Moreover, such a coating serves to preclude spoilage or deterioration of the receptacle's contents and, in effect, binds the end seals or members to the container body in such manner that they are, in effect, integral therewith.

It is additionally obvious that with a construction of this nature, the ends of the tube or container body are reinforced to such a degree that any danger of crushing is avoided, even although the containers are subjected to a great amount of abuse.

From the foregoing, it will be appreciated that, among others, the several objects of the invention as specifically aforementioned are achieved. It will additionally be obvious that numerous changes in construction and rearrangement of the parts might be resorted to without departing from the spirit of the invention as defined by the claims, which are:

1. A container including in combination a body presenting an open end portion, an end seal for such portion and comprising a material layer from the edges of which an outwardly extending flange projects and which is continued in the form of an inwardly extending portion spaced from and parallel to said outwardly extending portion, the edge of said container being disposed between said outwardly and inwardly extended portions and with its inner and outer faces immediately adjacent such portions, said inwardly extending portion being of lesser height than said outwardly extending portion and being crimped and grooved inwardly to engage and compress the body of the container throughout a plurality of spaced zones, and a layer of plastic material interposed between the inwardly and outwardly extended portions and the adjacent container faces, said plastic layer contacting the outer and inner faces to a point beyond the outwardly and inwardly extended portions and merging into such portions.

2. A container including in combination a multi-ply body presenting an open end portion, an end seal for such portion and comprising a material layer from the edges of which an outwardly extending flange projects and which is continued in the form of an inwardly extending portion spaced from and parallel to said outwardly extending portion, the edge of said container being disposed between said outwardly and inwardly extended portions and with its inner and outer faces immediately adjacent such portions, said inwardly extending portion being of lesser height than said outwardly extending portion and being crimped and grooved inwardly to engage and compress the body of the container throughout a plurality of spaced zones, and a layer of plastic material interposed between the inwardly and outwardly extended portions and the adjacent container faces, said plastic layer contacting the outer and inner faces to a point beyond the outwardly and inwardly extended portions and merging into such portions and said plastic layer also keying between the layers of the multi-ply body forming the container and adjacent the end edge thereof.

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