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L. L. SALFISBERG

2,121,988

METAL CONTAINER

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FIG. 1

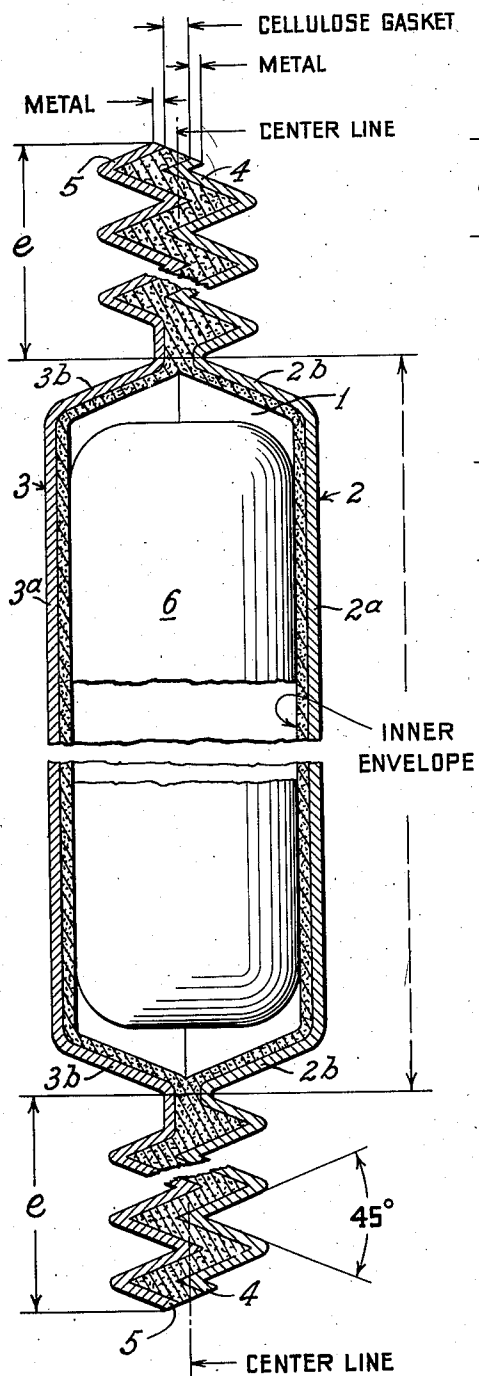


FIG. 2

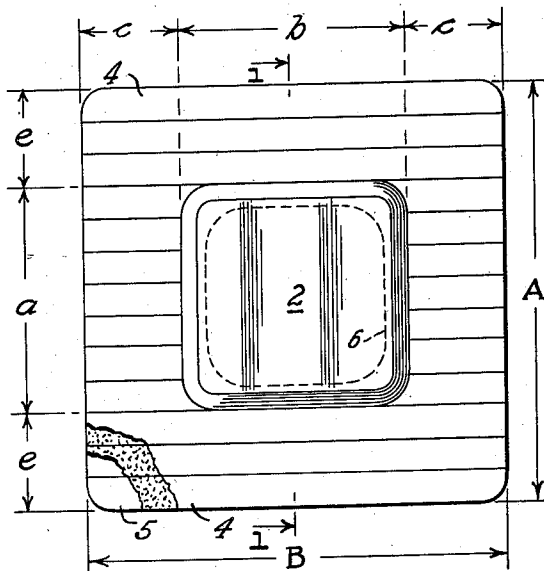
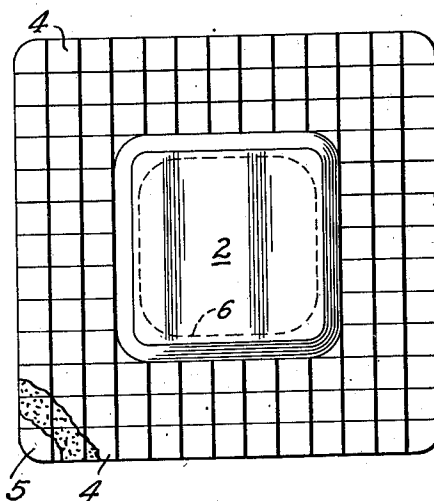


FIG. 3



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METAL CONTAINER

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2 Claims. (Cl. 206-46)

This invention pertains in general to containers, and specifically relates to a form of hermetically sealed container.

The principal object of the invention consists in providing a container composed of metal for maintaining commodities in hermetically sealed condition.

Another object of the invention comprises providing a construction of container employing the fabrication of a plurality of sheets of metal to produce a hermetically sealed organization.

A further object of the invention comprises providing the type of container formed of a plurality of sheets of metal interjoined and sealed together in selected areas in combination with sealing materials to produce a container structure.

A still further object of the invention comprises providing a fabricated metal container having a metal composition employed in conjunction with a cellulose lining and sealing material for producing a chemically inert, hermetically sealed, light impervious container.

These and other objects will be apparent from the following, reference being had to the accompanying drawing, in which:

Fig. 1 is a preferred embodiment of a container constructed in accordance with the invention;

Fig. 2 is a plan view of the container represented in Fig. 1 shown in an intermediate stage of fabrication; and

Fig. 3 is a further view of the container of Fig. 2 after completion of the fabrication process.

This invention contemplates the provision of a container especially adapted for commodities of a volatile or unstable nature which are subject to deterioration or loss of efficacy upon exposure to the atmosphere or light. In speaking of such commodities, reference is particularly made to pharmaceutical products, although it will be recognized that a container constructed in accordance with this invention may be utilized for analogous products. In accordance with the invention, a container is constructed which is hermetically sealed, and the walls of the container formed of a gas-impervious metal. At the same time, the metal construction also prevents the admittance of light to the commodity, thereby preventing deterioration of such commodities when sensitive to light.

Referring to the drawing in detail, and particularly to Fig. 1, a commodity enclosure 1, bounded by a rectangular box-like structure, is formed of two opposed half-portions 2 and 3, these half portions 2 and 3 each having outer

walls 2a and 3a, respectively, and the flat inclined lateral walls 2b and 3b, respectively. Such outer walls and lateral walls comprise extrusions in rectangular flat metal sheets 4 and 5. In accordance with the present invention, these sheets are preferably composed of a normally gas-impervious metal and of a suitable thickness. As shown in Fig. 2, the sheet 4 is of rectangular form of length A and width B. The extruded half-portion formation 2 is disposed centrally of the sheet 4 and has a length a and breadth b. It will be seen that the over-all area of the sheet 4 is considerably greater than the area of the formation 2 and includes marginal areas c and e which, in total area, are substantially equal to twice the area of the formation 2.

Referring again to Fig. 1, the marginal areas of the sheets 4 and 5, disposed adjacent one another, are deformed in a series of cross-corrugations extending horizontally with respect to Fig. 2. Previous to the formation of these corrugations, a plastic cellulose material is provided between the opposing surfaces of the sheets 4 and 5. This material serves as a gasket intermediate the sheets 4 and 5 in the marginal or flange areas surrounding the formations 2 and 3 and the enclosure 1. The plastic cellulose material serves toward sealing the marginal areas of the sheets 4 and 5. The horizontal corrugations form an interdigitated structure, as will be apparent from the upper portion of Fig. 1. This structure, by its interdigitation, effects an interlocking of the sheets 4 and 5 and produces a baffle to accentuate the effect of the gasket material between the outer edge of the sheets 4 and 5 and the inner enclosure 1. It will be noted that these corrugations extend in both directions beyond the center line of the package, thereby producing a maximum baffle gasket effect, as shown in Fig. 1. It has been determined from experiment that these corrugations have an optimum effect for the desired purpose when at an angle of substantially 45 degrees.

As shown in Fig. 2, the horizontal corrugations form a baffle which is effective for the horizontal edges of the opposed formations 2 and 3. However, since the corrugations are horizontal with respect to Fig. 2, and the baffle effect is less effective for the vertical extending edges of the enclosure formations 2 and 3, the structure is further provided with a set of corrugations of similar construction but extending in a direction at right angles, as shown in Fig. 3. These corrugations complete the baffle structure so that the

inner enclosure of the metal container is completely surrounded by an effective baffle.

The cellulose material provided on the inner surfaces of the sheets 4 and 5 produces an inner lining or envelope when the sheets 4 and 5 are interdigitated. This inner envelope lines the inner metal surfaces and forms a complete enclosure for the commodity product 6 disposed within the container. The commodity product 6, which may be of a volatile or chemically active substance, is completely enclosed by the inner envelope to prevent it from coming in contact with the metal surfaces. The cellulose composition of the inner envelope is substantially chemically inert and therefore acts as a shield between the commodity 6 and the metal of the sheets 4 and 5.

In the formation of the container structure and at the time that the horizontal and vertical corrugations are formed, the marginal or flange areas of the sheets 4 and 5 are heated to an extent sufficient to fuse the cellulose material within the marginal areas of the sheets 4 and 5 and without disturbing the inner envelope of the enclosure 1. This fusing causes the cellulose material intermediate the sheets 4 and 5 within the marginal areas to form the most effective seal. The closing and sealing of the container structure may be effected in an attenuated atmosphere or in an atmosphere of inert gases so that the enclosure 1 may be either evacuated or provided with an inert gaseous atmosphere. The provision of this feature depends upon the type and composition of commodity provided within the container. At all events, the marginal areas provide a complete and positive hermetic seal.

Although in the specification cellulose thermoplastic material has been referred to as the material for making up the inner envelope and sealing gasket, it will be understood by persons skilled in the art to which this invention appertains, that other thermoplastic substances now known in the art may be equally well used.

In the use of this container, the commodity is

protected from all deteriorating effects, either through contact with the air or from exposure to light, since the container is gas and light impervious and hermetically sealed. Although a preferred form of construction of this container has been disclosed, it will be recognized that various changes and equivalent forms can be produced without departing from the intended scope of the invention. Therefore, no limitation is intended other than imposed by the scope of the appended claims.

What I claim as new and desire to secure by Letters Patent of the United States is:

1. A hermetically sealed container comprising, a pair of metal plates substantially coextensive with each other, said plates being each centrally deformed in opposite directions from each other to form a commodity enclosure, a completely enclosed commodity envelope of cellulose material disposed within the area formed by said opposed deformed portions of said plates, said envelope preventing contact of an enclosed commodity with the metal walls of the container, and fused cellulose material disposed between the contacting surfaces of said opposed plates to hermetically seal said enclosure, said surfaces being provided with meshed corrugations to provide a baffle effect, the structure as a whole being substantially light and gas-impervious.

2. A hermetically sealed container comprising, a pair of substantially coextensive metal plates forming a structure with a central deformation forming an inner commodity space, said metal plates being joined in adjacent areas having meshed deformations forming a baffle for said inner space, an inert lining in said inner space to prevent contact between the commodity and metal, and a fused thermoplastic material disposed between said plates in said adjacent areas to seal said baffle.

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