Feb. 25, 1936. C. H. ROLLASON 2,031,855

SANITARY SHIPPING CONTAINER

Filed Nov. 6, 1931 2 Sheets-Sheet 1

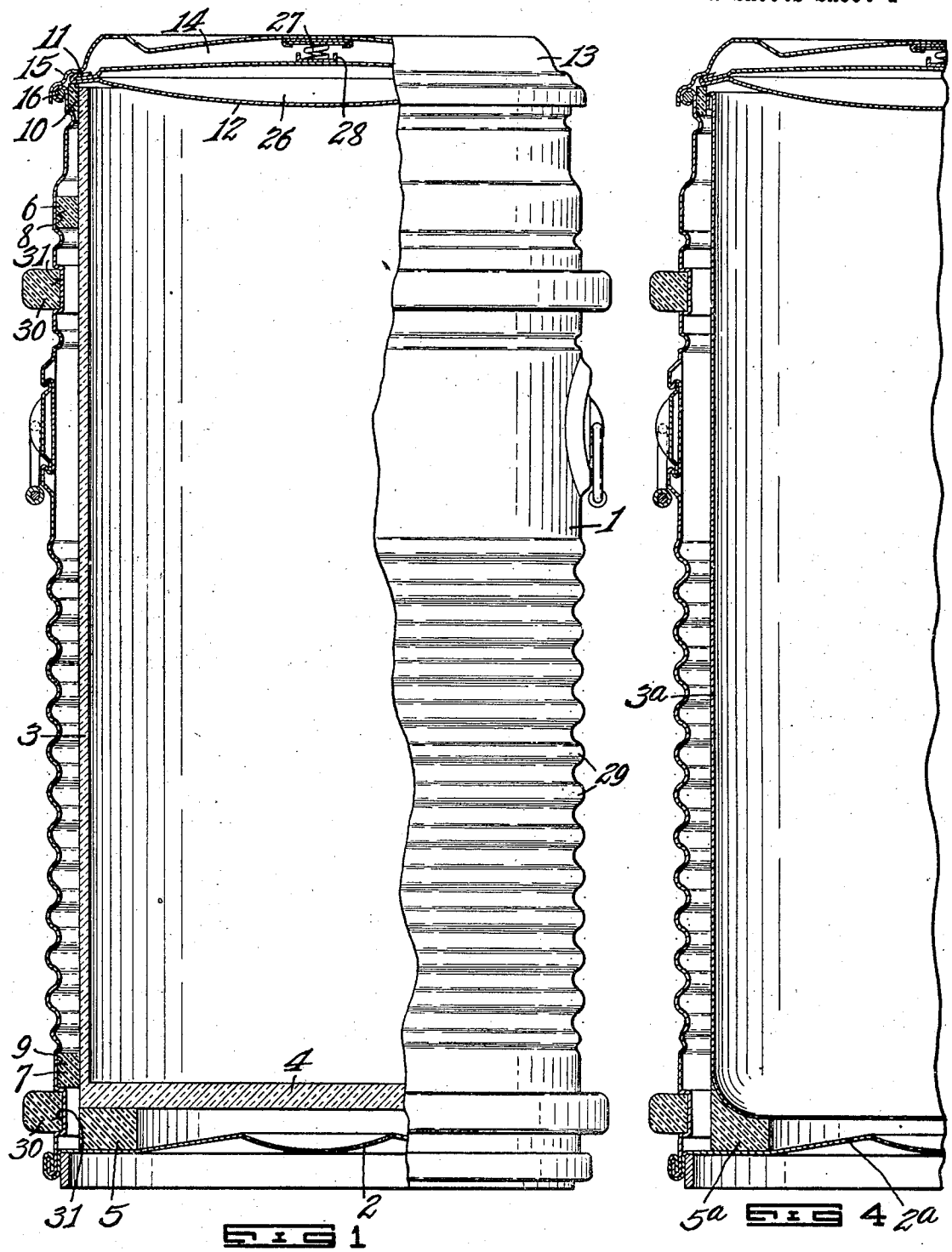


FIG 1 FIG 2

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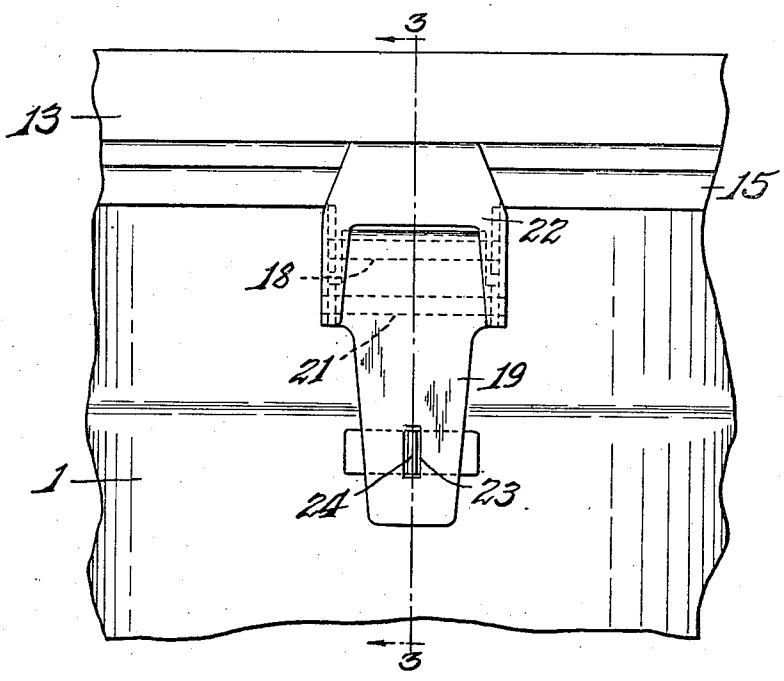


FIG 2

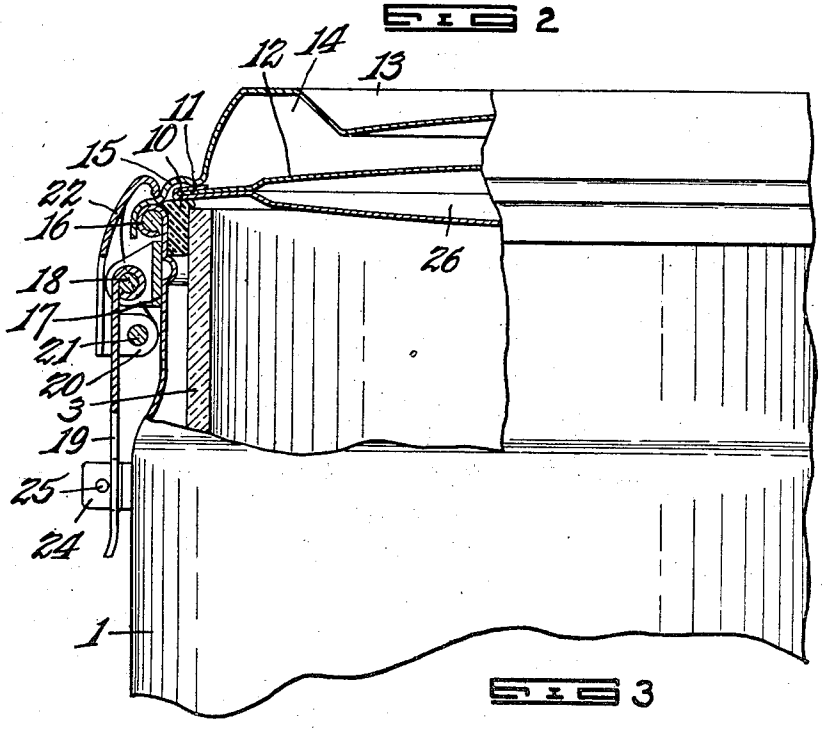


FIG 3

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2,031,855

SANITARY SHIPPING CONTAINER

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Application November 6, 1931, Serial No. 573,327

9 Claims. (Cl. 220—10)

This invention relates broadly to sanitary containers, and it has for its primary object to provide a can or drum especially adapted for use in the shipment and preservation of milk and other products which, desirably, are to be maintained at substantially uniform temperatures over considerable periods of time, said can or drum having a double-walled construction affording insulation whereby its contents are shielded against rapid transfer either thereto or therefrom of heat or cold.

A further object is to provide a double-walled structure of the character mentioned embodying an inner container of non-corrosive material, as glass, porcelain, or enamel coated sheet metal, which may readily be cleansed and sterilized, or maintained in a sanitary condition, and an outer sheet-metal shell or jacket which is so related to said inner container that the latter is thereby effectually shielded or protected against transfer of shocks incident to rough handling which otherwise would or might result in fracture or breakage of said container.

A still further object is to provide a device of the character referred to wherein a tight, or liquid proof, joint is provided between the upper ends of the container and the jacket for precluding the possibility of water or other foreign element entering any part of the insulation, or dead air, space between said parts.

Another object is to provide a simple, comparatively inexpensive and practical form of removable head or cover for the body structure, which shall not only serve as a shock absorbing element, but also as a medium of temperature insulation.

A still further object is to provide a structure of the character mentioned which is admirably adapted for use, not only as a shipping container for milk and other products which are to be maintained at a substantially even temperature, but also as a storage container for foods, as pickles preserved in brine, from which small quantities are removed from time to time, as in a retail grocery, said structure embodying one or more cover-holding clamps which may be engaged and disengaged with respect to said cover as occasion requires.

With these and other objects in view, the invention resides in the features of construction, arrangement of parts and combinations of elements which will hereinafter be fully described, reference being herein had to the accompanying drawings, in which—

Figure 1 is a view partly in side elevation and partly in section, illustrating my invention;

Figure 2 is an enlarged fragmentary side elevation of the same, showing in front elevation the clamp employed for securing the cover in place;

Figure 3 is a section on line 3—3, Fig. 2; and—

Figure 4 is a partial longitudinal section of the invention, showing a modified form thereof.

Referring to said drawings, 1 designates a sheet metal shell or casing which, generally considered, possesses cylindrical form and has fixed therein, or seamed thereto, a sheet metal bottom 2. Fitted concentrically within the interior of said casing, hereinafter termed the jacket, is an inner container 3, preferably of glass, as shown in Fig. 1, but which may be made of other non-corrosive material, as porcelain or enameled sheet metal, the latter being illustrated at 3a in Fig. 4.

Referring particularly to Fig. 1, the glass container 3 comprises a cylindrical body having a bottom 4 which is spaced from the bottom 2 of the jacket by means of a relatively thick and heavy ring 5 of soft rubber, or other appropriately elastic cushioning material, interposed between the bottoms 2 and 4. While, because of the relatively slight cost, it is at present contemplated that the body of the glass container shall consist of a suitable length of a glass tube or cylinder formed by the usual bait drawing method employed in the manufacture of window glass, and that the bottom 4 shall be welded, or fused, to said body, it will be understood that said body and its bottom may be produced in a single or unitary piece by any preferred available blowing or pressing method.

Interposed between the container body and the jacket in appropriate locations, as adjacent to the opposite ends of said body, is a plurality of rings 6 and 7 of soft rubber or other appropriate cushioning material which serve not only to space said body relative to said jacket, thereby to form an intermediate dead air insulating space, but also effectively to protect said body against transmission thereto of shocks incident to rough handling which might otherwise produce breakage of said body. As shown, said cushioning rings 6 and 7 occupy internal annular seats 8 and 9, respectively, provided therefor in the jacket.

The jacket is suitably contracted at and adjacent to its upper end, as shown in Fig. 1, and closely seated between said end and the corresponding end of the container body and projecting suitably above the level of the latter is a seal-

ing ring 10 of rubber or other suitable compressible material. Said ring is designed not only for the purpose of forming a close joint by which is prevented access of foreign matter, including liquids, to the space between said container body and said jacket, but also as a gasket whereon may seat in sealing relation to said container the annular rim 11 of a removable head 12.

Disposed in overlying relation to said head 12 is a cover 13 which constitutes a removable closure for the end of the can or drum and which is adapted not only to retain said head in place, but also to depress said head into joint sealing relation to the ring or gasket 10. Said cover is preferably of outwardly dished form, as shown, for positioning its body outwardly with respect to the body portion of said head 12 whereby is provided an intermediate dead air space 14. Said closure 13 has a peripheral rim flange 15 which provides both a seating portion for resting directly upon the top surface of the rim 11 of said head 12 and a terminal edge portion for overlying and more or less closely embracing the terminal bead or roll 16 of the jacket 1. Suitable means, as one or more clamp-like fasteners, are employed for exerting upon said closure downwardly directed clamping force for effecting depression of said head to the extent that the underlying gasket 10 is compressed into complete joint-sealing position.

While other forms of fasteners may be employed, it is at present preferred that the same have substantially the form shown in Figs. 2 and 3, in which an anchor member 17 rigidly mounted on the jacket beneath the roll 16 thereof has pivoted thereto, as upon a pivot pin 18, the upper end of a lever 19 which, in turn, has inwardly directed lugs 20 carrying a pivot pin 21. Occupying straddling relation to said end of said lever is the bifurcated lower end of a plate 22 which has its parallel members mounted on the opposite ends of said pivot pin 21 and which has its upper end shaped to form a hook. Said plate, which is normally free to swing outwardly and downwardly relative to said lever 19, is adapted to be elevated to a position wherein its hook end seats in overlying relation to the terminal edge portion of the rim flange 15 of the closure. Force applied to said lever for swinging it downwardly and inwardly into the substantially vertical position shown in Figs. 2 and 3 acts to draw said plate 22 vertically downward for exerting through its hook end the force for depressing the closure to the extent required and for maintaining the later against chance displacement.

To guard against unauthorized opening of the drum, the lever 19 may be provided with an aperture or slot 23 through which, in the closed position of the lever, a lug 24 fixed on the jacket 1 extends, said lug having therein a hole 25 adapted for the reception of the supporting wire of any ordinary form of seal.

The head 12, as herein shown, is of hollow drum-like form, being composed of two circular sheet metal plates which have their peripheral edges seamed together to form the rim 11 and one or both of which has its body portion concavely dished away from the other, thereby to form an intermediate dead air space 26 adapted effectively to insulate the container 3 against the passage through said head of differences in temperature.

For relieving the container and its head of the shocks to which the body of the closure may be subjected, a cushion consisting of a helical spring 27 may be interposed between said closure and said head, as shown in Fig. 1, said spring being attached at one end to said closure and being adapted to have its lower end removably seat within a cup-like socket piece 28 provided therefor on said head.

The jacket 1 is provided throughout a portion of its length with annular corrugations 29 which, while tending to resist indentation to the extent that the container would become fractured, readily absorb end shocks incident to rough handling.

A plurality of cushioning rings 30 of rubber or like resilient material are mounted exteriorly of the jacket 1, being seated in annular channels 31 provided therefor in said jacket, as shown. Said rings serve not only to absorb shocks incident to overturning of the drum, but also as floor engaging rolls upon which the drum may be rolled when turned upon its side.

In the modification disclosed in Fig. 4, the container 3^a, which has a concavo-convex curvature intermediate its side wall and its bottom for facilitating internal cleansing, rests upon a cushioning ring 5^a which has its top face shaped to engage conformably about the convex surface so as to partially embrace the bottom end of the container. Thus is obviated the necessity for employing a separate cushioning element, such as the ring 7 shown in Fig. 1, between said container and the jacket. Said ring 5^a rests upon the bottom of the jacket in encircling relation to an upwardly and inwardly inclined annular portion 2^a of said bottom, which portion serves effectively to prevent shifting of said ring.

It will be understood that the invention described is admirably adapted for use in large sizes, as of five and ten gallon capacities, for long-distance shipment of products, as milk, which are to be maintained at approximately even temperatures, and also that its structure is such that it may conveniently be kept in a sanitary condition not possible of approximation in ordinary or common forms of shipping containers.

What is claimed is—

1. A shipping drum comprising inner and outer cylindrical members positioned relatively to provide intermediate temperature insulating spaces, resilient shock absorbing means maintaining the spaced relation between said members, a gasket interposed between the open end portions of said members, a head having one side removably mounted on said gasket for closing the inner of said members, a closure for embracing said head having a rim for seating upon the latter on the opposite side thereof and substantially in line with said gasket and for overlying the adjacent end of the outer member, and closure fastening means whereby closing force applied to the closure effects depression of said head to gasket compressing position.

2. A shipping drum comprising a container, a sheet metal jacket enclosing said container and positioned relative to the latter to provide intermediate temperature insulating spaces, resilient shock-absorbing means maintaining the spaced relation between said container and said jacket, a gasket about the open end of said container, a head having a rim for seating upon said gasket, a closure separate from said head enclosing said head and having a rim portion of substantially the diameter of the head for seating upon said head rim and whereby the adjacent end of said jacket is enclosed, and means for fastening said closure, said fastening means exerting a force

for depressing said head into gasket-compressing sealing relation to said container.

3. A shipping drum comprising a container, a sheet metal jacket enclosing said container and positioned relative to the latter to provide intermediate temperature insulating spaces, resilient shock-absorbing means maintaining the spaced relation between said container and said jacket, a gasket about the open end of said container and forming a closure for the space between said container end and the corresponding end of the jacket, a head for said container having a rim for resting upon said gasket, a closure removable from said head enclosing said head, said closure having a rim portion of substantially the diameter of said head for resting upon said head rim and by means of which the adjacent end of the jacket is embraced, and fastening means for said closure adapted to depress the latter and the underlying head to gasket-compressing container-sealing position.

4. A shipping drum comprising a cylindrical container, a sheet metal jacket enclosing said container and having the walls and bottom thereof spaced from said container to form intermediate dead air insulating spaces, rings of shock absorbing material forming the spacing means, a gasket interposed between the open end portions of said container and said jacket, a head having a rim for seating upon said gasket, and means for depressing and securing said head in closed sealing relation to said container, said means including an end closure for the jacket and having its body portion spaced outwardly from said head and provided with a rim portion for seating upon the head rim and spring means for engaging the central portion of said head, and means for clamping said closure in place, said clamping means being adapted forcibly to depress said closure and the underlying head for compressing said gasket relative to the end of the container.

5. A shipping drum comprising a cylindrical container, a sheet metal jacket enclosing said container and having the walls and bottom thereof spaced from said container to form intermediate dead air insulating spaces, rings of shock absorbing material forming the spacing means, a gasket interposed between the open end portions of said container and said jacket, a head for said container, said head having an annular rim portion for seating upon said gasket, a closure removable from said head having a rim portion embracing the end of the jacket and enclosing said head and having an annular seating portion resting upon said head rim, and fastening means carried by said jacket and engageable with said closure whereby downwardly directed force is exerted upon the latter for depressing the head upon said gasket into joint sealing relation to said container.

6. A shipping drum as defined in claim 5 wherein the head is formed of a pair of circular plates separated to provide an intermediate dead air space and having their peripheral edge portions joined together in abutting relationship and shaped to form the rim of said head.

7. A shipping drum, comprising inner and outer containers, an inner cover for the inner container, and an outer cover for both containers, said outer cover having bearing engagement with said inner cover at both the periphery and central portion thereof, said engagement at said central portion being resilient.

8. A shipping drum, comprising inner and outer containers, an inner cover of sealed hollow construction for the inner container, an outer cover of stiff material for both containers, said outer cover having a bearing engagement with both the peripheral and central portions of the inner cover.

9. A shipping drum, comprising inner and outer containers, an inner cover of hollow construction for the inner container, an outer cover for both containers, said outer cover having a bearing engagement with both the peripheral and central portions of the inner cover, the engagement between the outer cover and inner cover at the central portion of the inner cover comprising spring means carried by the outer cover and removable therewith.

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