

Sept. 16, 1952

J. S. IRVINE
INSULATED CONTAINER

2,610,757

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2 SHEETS—SHEET 1

Fig. 3.

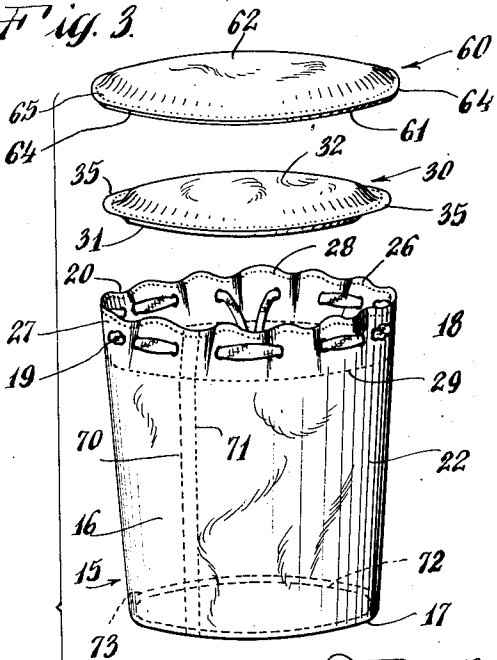


Fig. 1.

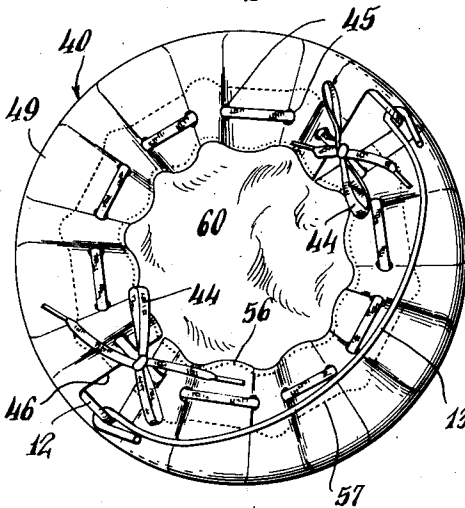
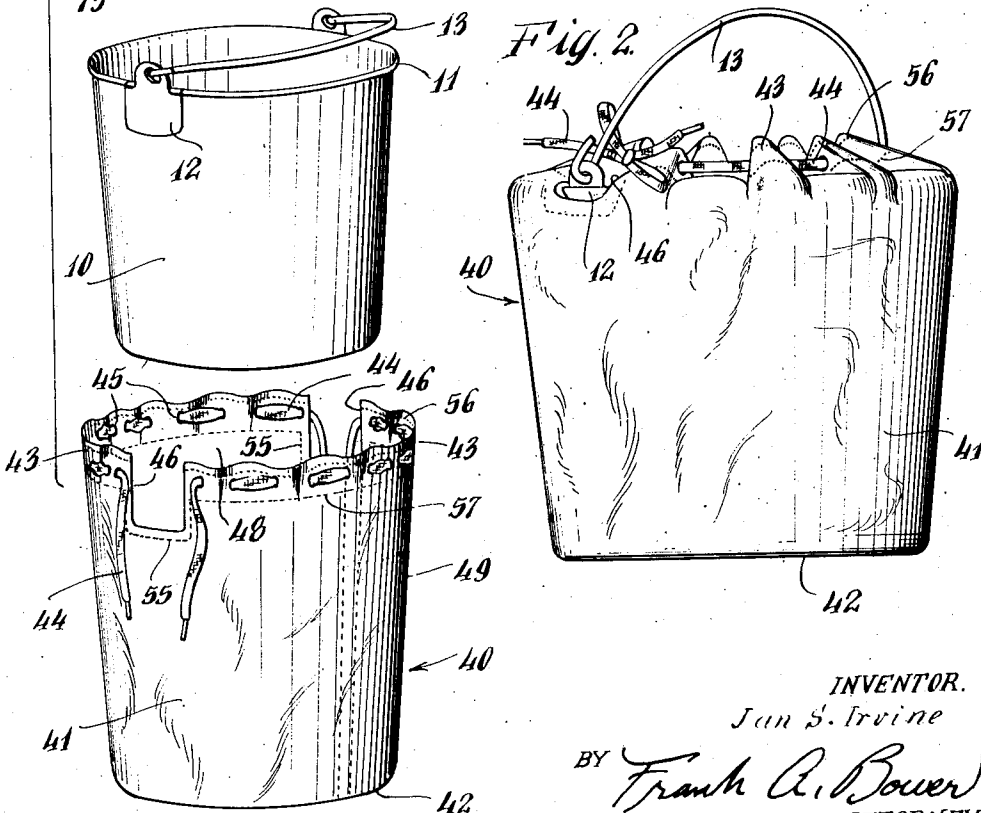


Fig. 2.



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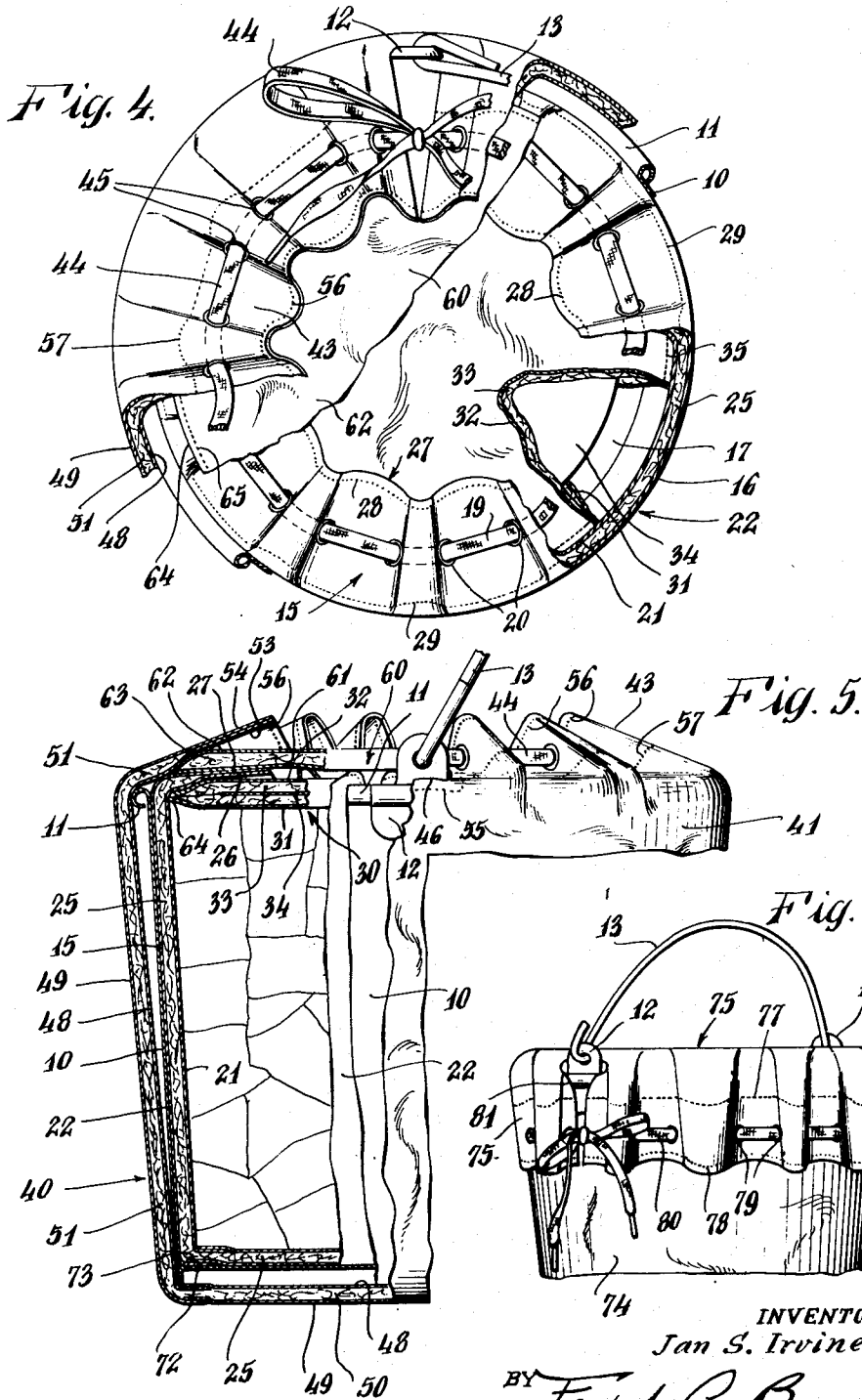
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2 SHEETS—SHEET 2



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INSULATED CONTAINER

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14 Claims. (Cl. 220—9)

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This invention relates to containers and particularly to the packaging of foodstuffs and the like.

The object of the invention is to provide a container, for instance, in the form of the usual pail or bucket and comprising a heat insulating lining and covering forming a unit package which is neat and attractive in appearance and light in weight and thoroughly efficient in maintaining the contents of the package within a desired range of temperature over a long period of time.

Further objects of the invention particularly in the composition and structures of the lining and covering and the combination of these with a pail, bucket or the like will appear from the following description taken in connection with the accompanying drawings in which

Fig. 1 is a top view of the package embodying the invention;

Fig. 2 is a side elevation of the package shown in Fig. 1;

Fig. 3 is an elevational view of the elements of the package in position in order for assembly;

Fig. 4 is a top plan view similar to Fig. 1 in enlarged scale and with parts broken away to illustrate the construction underneath;

Fig. 5 is a side elevation of the package shown in Fig. 4 with parts broken away to show the interior construction of the parts; and

Fig. 6 is a view similar to Fig. 2 but illustrating a modification.

In the embodiment of the invention illustrated in the drawings a pail or bucket 10 of usual form has a beaded edge 11, handle brackets 12 and handle 13. A liner 15 is adapted to fit within a pail 10 and comprises a body 16 with bottom 17 and edging 18 provided with the gathering string or tape 19 running through holes 20.

The liner 15 is formed of inner and outer flexible sheetings 21, 22 (Fig. 5) cut and formed to shape and the space between these inner and outer linings is filled with fiber glass insulation 25 or the like preferably in mat formation. The circular edges 26, 27 of the liner are seamed together for instance along welded lines 28, 29 to form the rim portion 18 projecting above the pail rim and adapted to be folded inward and drawn snug by the tape 19.

Fitting within this overhanging edging 18 and over the contents of the liner 15 lying within the pail 10 is the inner cover 30 provided by two circular disks 31, 32 of flexible material containing fiber glass filling 33 preferably with stiffening pad 34, the edges 35 of the disks 31, 32 being tightly seamed together for instance by welding along

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the line 35. This cover 30 and the liner 15 form a complete inner insulating lining containing the foodstuff or other material and either forming a container itself or fitting within the pail 10.

An outer covering insulation 40 comprises a body 41 and bottom 42 and extended edging 43 with draw string or tape 44 running through holes 45. The liner 40 is either used by itself or is fitted around the liner 15 or the pail 10 and has cut-outs 46 clearing the pair of ears 12 of handle 13. It is built up of inner flexible layer 48 and outer flexible layer 49 with fiber glass 51 or other insulation between them and the edges 53, 54 are seamed together to provide the upper overhanging rim 43, this seaming being carried, for instance, as lines 56, 57 and around the cut-outs 46 as indicated at 55 (Fig. 3).

The pail 10 or liner 15 or both are set within this outer insulator 40, the upper edging 43 of which overhangs inward and retains beneath it the top cover pad 60 formed of circular layers 61, 62 of flexible material with fiber glass 63 between them and their outer peripheral edges 64 formed with the seam 65.

In this way the liners 15, 40 and pail 10 may be nested together giving successive insulation between the contents and the surrounding air. The inner layer 21 is followed by the insulation 25, layer 22, the pail with inner and outer air layers, sheet 48, insulation 50 and outer sheet 49. At the top the number of insulating layers includes the covers 30, 60 and the overlapping rim strips around the outer areas (Figs. 1 and 5).

The goods carried in the inner insulator are thus completely enclosed in protective insulation in a self sustaining package conveniently handled and having an attractive appearance.

Instead of folding the outer covering edging 43 over the top cover pad 60 this edging may be omitted and the covering 74 (Fig. 6) formed without it. The top cover pad 75 (Fig. 6) is then provided with an edging 76 having, for instance, welded seams 77, 78 and adapted to fold down around the upper portion of the covering 74 as shown. Eyelets 79 accommodate the draw cord 80 and the edging 78 is slit as at 81 to clear the handle lugs 12.

The sheeting forming the liner and covering insulations is preferably a plastic, for instance, a vinyl plastic. This is water-proof and encloses and protects both the foodstuff and the insulation. The seams will generally be formed by induction welding of contacting strips of the plastic sheets giving strong and tight joinder

and preserving the neat appearance of the edging.

In use with the pail 10 the liner 15 open at the top is placed in the pail and the foodstuff or other material is packed in the liner. Cover 30 is then inserted over the contained articles and will be fitted down to the level of the liner contents, the edging 18 is drawn over the cover though this inner liner may, if desired, be formed without this extra edging at the top.

This encloses the material being packaged and completely surrounds it with very effective heat insulation which also acts as a seal. The preferred fiber glass insulating material is light and of high insulating value and permanently maintains its efficiency.

Added to this inner insulation is the outer covering forming cooperating enclosing layers completely surrounding the inner package with similar outer insulation. The pail is entirely housed and protected being only connected to the outside through the pail handle 13.

The division of the heat insulation between the inner and outer combinations is advantageous in increasing the number of insulating layers, in protecting the foodstuff from contact with the pail, in minimizing the amount of inner insulation so as to maintain a large storage space, and in improving the appearance of the package by the surrounding plastic covering. This covering may be colored and decorated as desired and hides the pail entirely by a new type of packaging.

In forming the parts of the liner and covering each body portion is cut to shape from flat sheeting and curled to bring the longitudinal edges together (for instance 70, 71 in Fig. 3). These edges are welded with the body portion 16 (Fig. 3) forming the frustum of a cone which is then stretched over a similarly shaped block on the top of which the circular bottom piece (for instance 21 of Figs. 3 and 5) is placed so that the inwardly extending edges 72 of the body overhang the periphery of the circular bottom piece and are welded thereto along the line 73 (Figs. 3 and 5). It will be understood that the outer layers of the liner and covering are similarly fabricated. They are then assembled as inner and outer layers of each unit with the mat of the fiber glass between them after which the upper edges are brought together and welded to form a moisture-proof air-tight enclosure for the fiber glass. This plastic sheeting may be transparent or translucent so that the fiber glass packing is visible and either before or after assembly the fiber glass packing is permeated with a vapor spray of a thermosetting resin of the Bakelite type which is then heated to desired polymerization to give body to the packing and form it into a mass which cooperates with the plastic sheetings to be yieldable and yet permanently self-sustaining.

While the invention has been described in connection with an illustrated specific embodiment it is not intended to be limited thereto. Various materials may be used combinable as described and the outer covering and inner lining may be separately used, if desired, depending on the required insulating effect. The sizes and proportions are typical but may be varied, for instance, by relatively increasing either the inner or outer insulation and the same advantages of efficiency and pleasing appearance will be preserved.

I claim:

1. A container comprising a pail or bucket having a supporting handle structure at the upper

edge, an inner lining member fitted therein including spaced layers of flexible material with insulating packing between them, an outer covering member fitted around said pail and formed at the edge to clear said handle structure and having spaced layers of flexible material with insulating packing between them, and cover means at the top of the pail comprising insulating material directly overlying the contents of the inner lining within the pail.

2. A container as set forth in claim 1 in which the outer covering has an extending edge adapted to be drawn over the top of the pail and over the cover means.

3. A container as set forth in claim 1 in which the flexible material of the lining and covering is a plastic.

4. A container as set forth in claim 1 in which the flexible material of the lining and covering is a plastic and the insulating packing is fiber glass.

5. A container consisting of a composite assembly of several units including a pail or bucket or the like as a base unit, having a supporting handle structure at the upper edge, a second unit comprising an inner lining fitted in said pail including spaced layers of a flexible material with insulating material between them and provided with a flexible rim portion adapted to fold inward over the contents of the container, an outer covering member fitted around said pail and having spaced layers of flexible material with insulating packing between them, and cover means at the top of said pail for both the inner and outer units comprising insulating material between spaced layers of a flexible material and directly overlying the contents of the inner lining within the pail.

6. A container as set forth in claim 5 in which the outer covering has an extending edge adapted to be drawn over the top edge and around the periphery of the pail inward toward the center and over the cover means.

7. A container as set forth in claim 5 in which the top covering has an extending edge formed to clear the handle structure and draping over the periphery of the outer covering member and adapted to be drawn tight around the package or container.

8. A container as set forth in claim 5 in which the flexible material of the lining and covering is a plastic sheet.

9. A container as set forth in claim 5 in which the flexible materials of the linings and coverings with insulating materials between the spaced layers are high frequency, sealed to prevent leakage into said insulation of water or gaseous materials which might condense therein and reduce the insulating efficiency.

10. A container as set forth in claim 5 in which the flexible materials of the linings and coverings are fastened together by stitching to effect a closure around the insulation within.

11. A container as set forth in claim 5 in which the flexible material of the linings and coverings is a plastic and the insulating packing is fibrous glass.

12. In combination an inner pail-shaped rigid receptacle, an insulating cover member at the top of the said receptacle and an outer self-sustaining insulating structure consisting of a fibrous filler unit shaped to conform generally to the periphery of said receptacle and composed of a mass of fiber glass permeated with a polymerized resin so as to be yieldable and self-sustaining, and

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a hollow shell unit fitted to contain said filler unit and comprising inner and outer sheets of water-proof gas-impervious flexible plastic sheets joined at their mating edges to enclose said filler unit within a protective cell and having an upper edge portion provided with fastening means for holding the unit and cover member in place on said receptacle, said hollow flexible shell and said filler units cooperatively supporting each other to provide a self-sustaining unitary structure placeable on and removable from said pail-shaped receptacle and providing a removable insulating covering therefor.

13. An insulated pail combination as set forth in claim 12 in which the sealed mating edges at the top of the hollow unit are folded over to engage the top of the receptacle and extend inwardly over the cover member to securely hold said insulating member on said receptacle.

14. In combination an inner pail-shaped rigid receptacle, an insulating cover member at the top of said receptacle and an outer self-sustaining insulating structure consisting of outer and inner pail-shaped shells of water-proof, gas-impervious flexible plastic sheets hermetically sealed at their mating upper edges to provide a single pail-shaped closed cell between them around the sides and bottom of said receptacle and a fibrous filler composed of interlocking fibers matted together and formed as a self-sustaining unit in pail shape fitting in said cell between said outer and inner plastic sheets and conforming generally to the sides and bottom of said receptacle, said inner and outer plastic sheets and fibrous filler unit cooperating to form a light, yieldable, self-sustaining, unitary, insulating member enclosing

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the sides and bottom of said receptacle and replaceable thereon and removable therefrom, and means at the upper edge portion of said insulating structure securing it and said insulating cover member in place on said receptacle.

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