

June 9, 1964

J. W. HALL

3,136,413

CONTAINER

Filed Feb. 13, 1961

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Fig. 1.

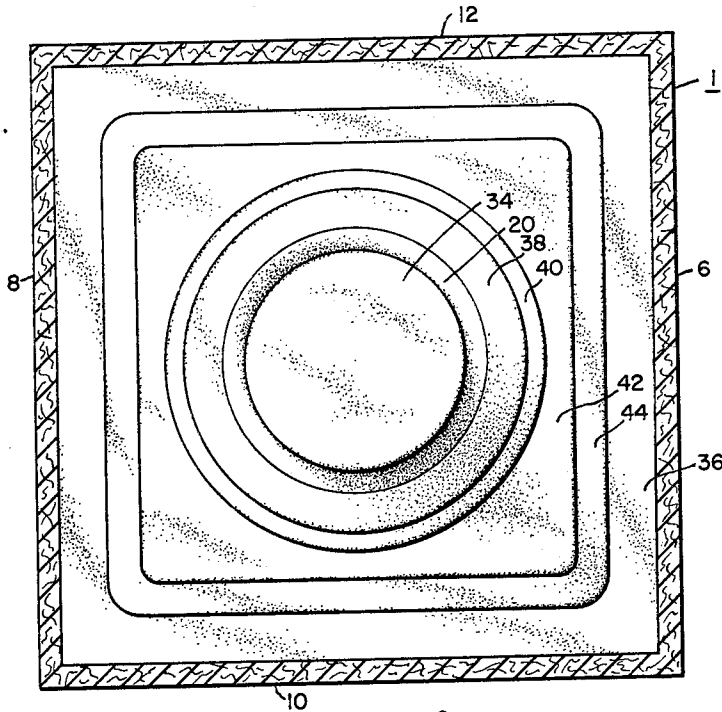
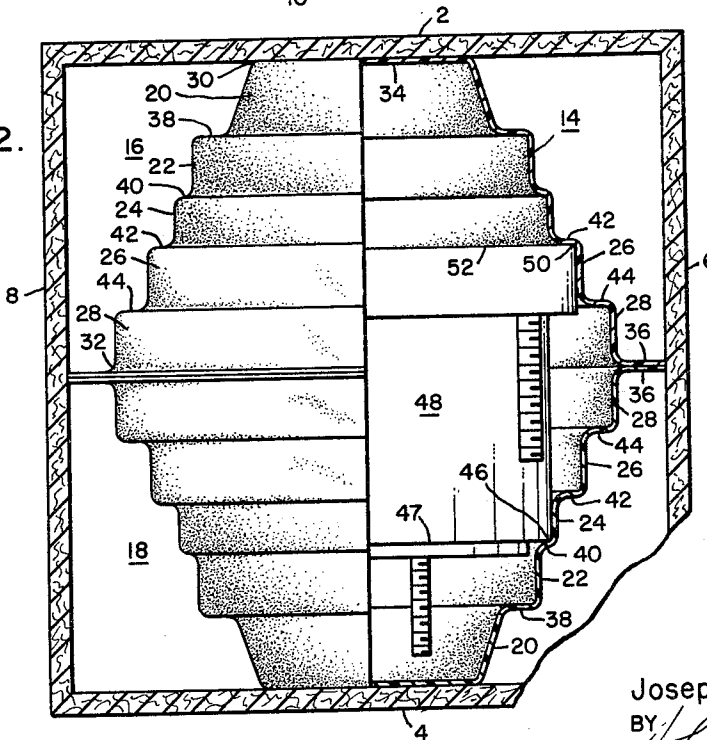


Fig. 2.



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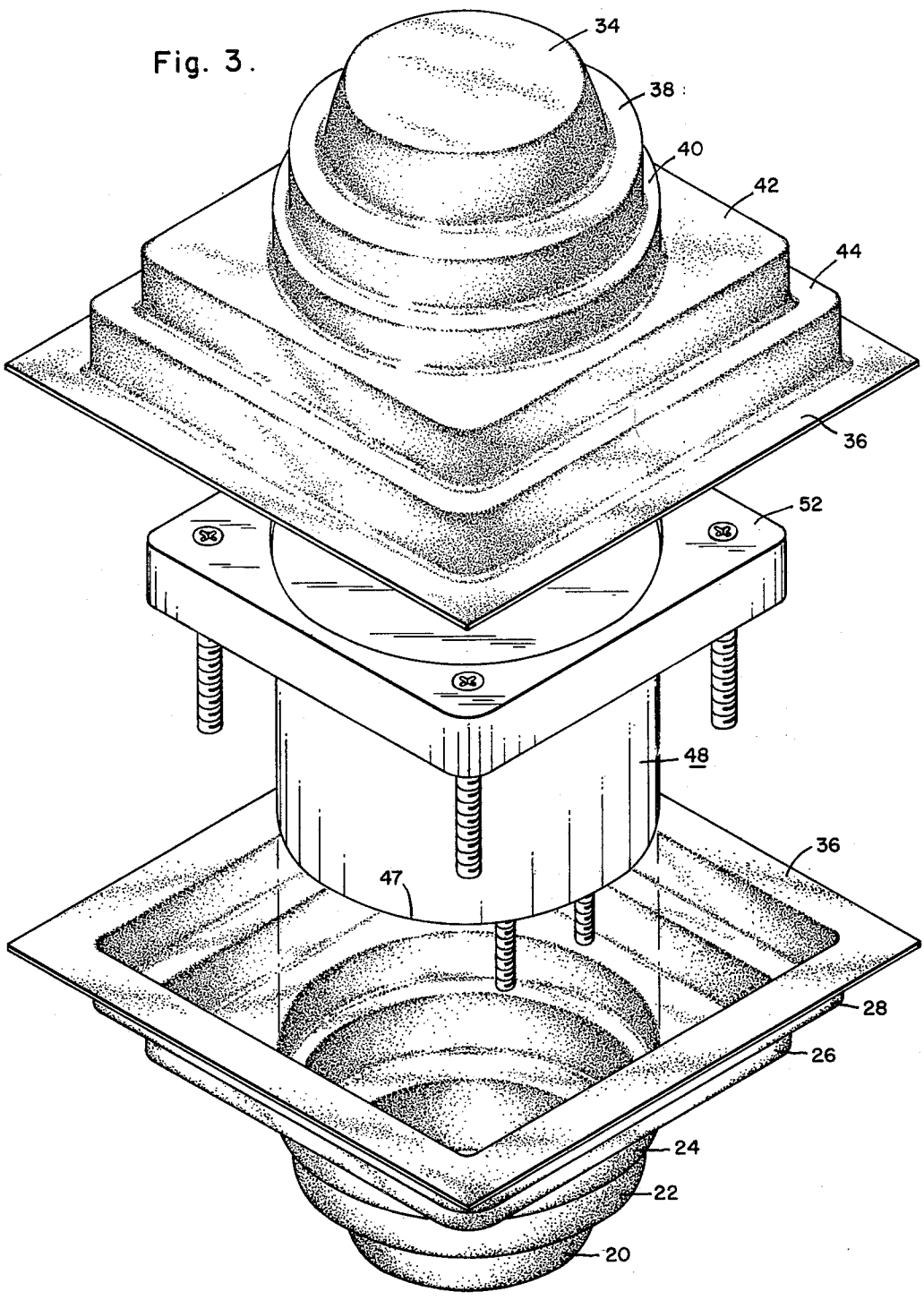
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Fig. 3.



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Fig. 4.

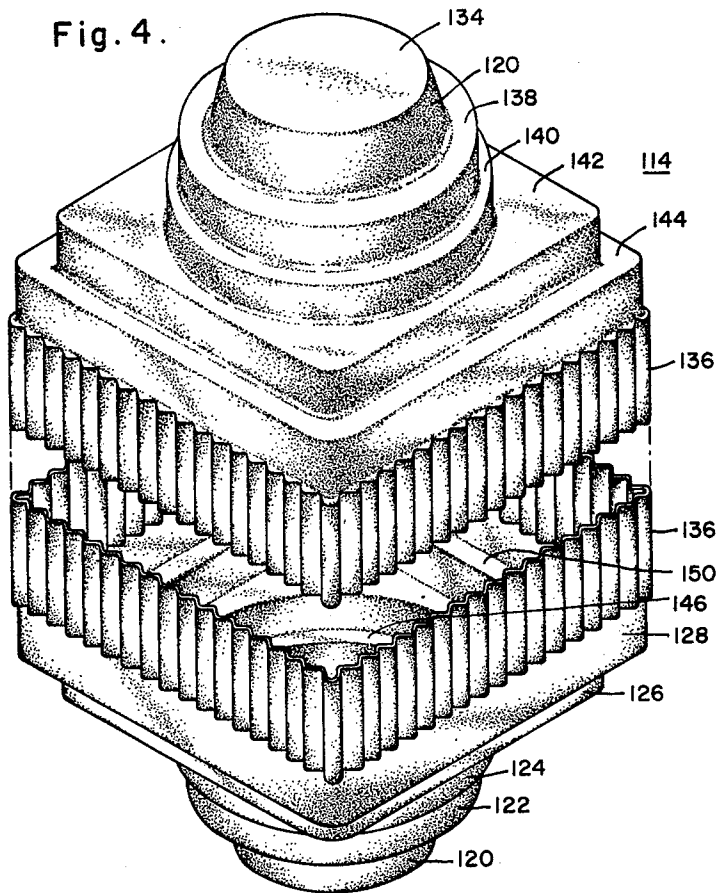
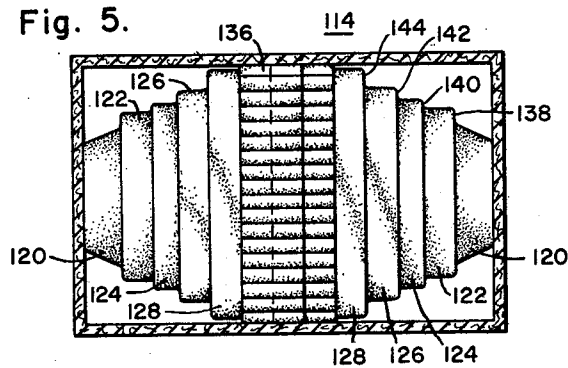


Fig. 5.



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3,136,413 CONTAINER

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6 Claims. (Cl. 206—46)

This invention relates generally to containers and more particularly to a container which may be used to protect delicate merchandise as for example, delicate ammeters and voltmeters for shipment or for storage.

An object is to provide such a container which is inexpensive.

Another object is to provide such a container which is clean to use and is non-flaking and non-dusting.

Another object is to provide such a container which is light in weight and smaller in size than existing containers.

Another object is to provide such a container which will meet military specifications for preservation packaging.

Another object of this invention is to provide such a container which is made from two identical halves so that any two thereof may be paired together to encase the merchandise to be contained therein.

A further object of this invention is to provide such a container which will protect the enclosed merchandise from extreme shocks during shipment.

A still further object is to provide such a container which is fire resistant.

A still further object of this invention is to provide such a container which may be nested together and stored in a minimum of space.

Objects of the invention will be apparent from the specification, the appended claims and the drawings, in which drawings:

FIGURE 1 is an end view of a container with the shipping carton being shown in section;

FIG. 2 is a side view of the container partly in elevation and partly in section with the shipping carton shown in section;

FIG. 3 is an exploded view of the container showing the merchandise contained therein;

FIG. 4 is a view similar to FIG. 3 showing a modified form of the invention; and

FIG. 5 is a view similar to FIG. 2 showing the modified form of container illustrated in FIG. 4.

Referring to the drawings by characters of reference, the numeral 1 indicates generally a carton or other box-like member which may be of any material suitable for shipping purposes and which may for example be corrugated cardboard. The container as illustrated is in the shape of a rectangular parallelepiped having top and bottom surfaces 2 and 4 and side surfaces 6, 8, 10 and 12. The box-like member 1 is merely diagrammatically shown for purposes of describing the invention and may be constructed in any usual manner in which there is a peripheral side wall providing the surfaces 6, 8, 10 and 12 and flat top and bottom surfaces or walls 2 and 4 to permit insertion and removal of the container 14 from the box-like carton 1.

The container 14 comprises two stepped cup-like portions or parts 16 and 18 which preferably are identical to each other. Each of these parts 16 and 18 comprise sections 20, 22, 24, 26 and 28 which are of different cross sectional area and in some instances of different cross sectional shape and which are arranged in a sequence of progressively increasing cross sectional area from one end portion 30 thereof to the other end portion 32 thereof. The end portion 30 is preferably closed by means of

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an end wall 34 and in the form of the invention shown in FIGURE 2 the end 32 is provided with a laterally extending peripheral flange 36.

The peripheral flanges 36 of the two cup-like parts 16 and 18 are located in face to face engagement and are preferably secured together as by any suitable means which will vary, depending upon the material of which the cup-like members 16 and 18 are composed. If a sealed container is not necessary, the flange 36 may be omitted and in such instance the fit between the members 16 and 18 and the contained article will hold the structure together. A preferable material is a high density epoxy polyethylene as for example that specified in ASTM designation D-1248 Type III. If this material is used, the flanges 36 may be secured together by heating the flanges whereby they heat seal together. If it is of other material which is not readily sealed together by heat, these flanges may be sealed together by any suitable adhesive.

Each of the sections 20, 22, 24 and 26 are joined to their adjacent sections 22, 24, 26 and 28 by laterally extending walls 38, 40, 42 and 44, respectively. The engagement of the wall 40 with the section 24 provides a peripheral internal shoulder 46 against which one end portion of the merchandise, which in this case is illustrated as being an electrical instrument 48, is located within the container. The engagement of a wall 42 with the section 28 provides an internal peripheral shoulder 50 against which the opposite end portion 52 of the instrument 48 seats as best illustrated in FIG. 2.

The illustrated electrical instrument 48 is provided with a cylindrical body portion which terminates in a circular end 47 requires the portion 24 to be circular in cross section while the rectangular forward end portion of the instrument 48 requires a substantial rectangular section 28. The cross sectional forms of the sections 20, 22, 24, 26 and 28 may vary widely depending upon the shape of the material which is to be housed within the container 14. The space between the shoulders 46 and 50 should be such that when these shoulders 46 and 50 engage the end walls 47 and 52 respectively of the instrument 48, the lateral flanges 36 should be in face to face engagement so that they may be suitably sealed together and snugly hold the apparatus 48. When the apparatus is to be stored, the shipping carton 1 may be removed and the apparatus stored in the container 14 which, as illustrated, hermetically seals the apparatus 48 from external dust, moisture, etc.

In FIGURES 4 and 5, there is shown a modified form of casing 114 in which equivalent parts to the parts shown in FIGURES 1 and 2 are shown designated by reference characters 100 numbers higher. The main difference between the casing 14 as shown in FIGURES 1 and 2 and casing 114 shown in FIGURES 4 and 5 is in the shape of the flange 136. The flange 136 is a longitudinally extending flange and is corrugated so that it may expand and contract somewhat to telescope with the other of the flanges 136. With the apparatus as shown in FIGURES 4 and 5, the distance between the shoulders 150 and 142 may be adjusted throughout a relatively wide range of dimensions permitting the casing 114 to be used with a variety of apparatus which may have differing dimensions. Subsequent to telescoping of the flanges 136, they may be sealed by heat or by a suitable adhesive to provide a hermetically sealed casing 114 for storage of the merchandise contained therein.

While only two forms of the invention have been illustrated it is to be distinctly understood that many modifications may be made and it is desired to cover all modifications falling within the spirit and scope of the invention.

What is claimed and is desired to be secured by United States Letters Patent is as follows:

1. An article of commerce comprising a structure having a first section at one end portion and a second section at a second end portion thereof, a container containing said structure, said container comprising two cup-shaped parts of substantial identical construction, each said container part being of stepped construction to provide a plurality of portions of different cross sectional area, said different area portions being arranged in a sequence of progressively increasing cross sectional areas commencing a first end portion with the smallest of said area portions and terminating at a second end portion with the largest of said area portions, an intermediate one of said area portions of a first of said cup-shaped parts being of the same size and shape as said first sections of said structure, an intermediate one of said area portions of a second of said cup-shaped parts being of the same size and shape as said second section of said structure, said cup-shaped parts being telescoped over said structure with said first structure section seating in said intermediate area portion of said first container part and with said second structure section seating in said intermediate area portions of said second container part and with said container part second end portions adjacent each other, each said container part being provided with a longitudinally extending corrugated peripheral flange at its second end portion, said flanges being telescoped and secured together in a substantial fluid tight relation.

2. An article of commerce comprising a structure having a first section at one end portion and a second section at a second end portion thereof, a container containing said structure, said container comprising two cup-shaped parts of substantial identical construction, each said container part being of stepped construction to provide a plurality of portions of different cross sectional area, said different area portions being arranged in a sequence of progressively increasing cross sectional areas commencing a first end portion with the smallest of said area portions and terminating at a second end portion with the largest of said area portions, an intermediate one of said area portions of a first of said cup-shaped parts being of the same size and shape as said first sections of said structure, an intermediate one of said area portions of a second of said cup-shaped parts being of the same size and shape as said second section of said structure, said cup-shaped parts being telescoped over said structure with said first structure section seating in said intermediate area portion of said first container part and with said second structure section seating in said intermediate area portions of said second container part and with said container part second end portions adjacent each other, each said container part being provided with a longitudinally extending corrugated peripheral flange at its second end portion, said flanges being telescoped and secured together in a substantial fluid tight relation, and a box-like member surrounding said container and provided with at least six wall portions, the inner dimensions of said box-like member being such that said container engages each of said six wall portions.

3. A supporting container for use in protecting delicate apparatus from impacts comprising; a pair of cup-shaped sheet material shell-like elements; each said element having a first surface forming an end portion and a peripheral side wall extending outwardly from said first surface and terminating in a second surface spaced from said first surface, said wall being provided with a seating surface facing away from said first surface, said wall being provided with peripherally extending portions of different cross-sectional area joined together with a connecting portion to provide a pair of spaced peripherally extending shoulders, said portions being located on said wall intermediate said seating surface and said first surface whereby flexing of said shoulders permits movement of said first surface relative to said seating surface to insulate said

seating surface from impacts applied to said first surface; an article having a first portion seated against said seating surface of one of said elements and having a second portion seated against said seating surface of the other of said elements; means relatively positioning said first elements with said second surfaces intermediate said first surfaces whereby said seating surfaces are held in spaced position to support said article therebetween.

4. A protecting container for shipping delicate apparatus comprising; a box-like carton having a tubular portion defined by a peripheral wall and having spaced end walls secured to said peripheral wall; a pair of cup-shaped sheet material shell-like elements; each said element having a first surface forming an end portion and a peripheral side wall extending outwardly from said first surface, said side wall terminating in a second surface spaced from said first surface, said wall being provided with a seating surface facing away from said first surface, said wall being provided with peripherally extending portions of different cross-sectional area joined together with a connecting portion to provide a pair of spaced peripherally extending shoulders, said portion being located on said wall intermediate said seating surface and said first surface whereby flexing of said shoulders permits movement of said first surface relative to said seating surface to insulate said seating surface from impacts applied to said first surface, said wall being provided with a peripheral outwardly extending flange adjacent said second surface, said flange having its outer peripheral dimensions substantially equal to the inner peripheral dimensions of said connecting wall of said carton; one of said elements being located within said carton with its said first surface abutting one of said spaced end walls and its said flange abutting said tubular portion; the other of said elements being located within said carton with its first surface abutting the other of said spaced end walls and its said flange abutting said tubular portion; and an article supported by and extending between said seating surfaces.

5. In a shipping container for delicate apparatus; an outer enclosure comprising a peripheral wall section and two substantially parallel spaced end walls closing the end portions of said section; first and second cup-shaped sheet material shell-like elements; each said element having a first portion, a seat portion, a second end portion, a first wall section supporting said seat portion on said first portion, and a second wall section supporting said second portion on said seat portion, each of said wall sections comprising a pair of spaced flexing shoulder-like structures whereby said seat portion is movable relative to said first and second portions; said elements being located at opposite end portions of said apparatus with said apparatus portions seating in said seat portions, said elements and said apparatus being located within said peripheral wall section with said first portions abutting said end walls and said second end portions abutting said peripheral wall section, said elements forming the sole connection between said outer enclosure and said apparatus.

6. A container for delicate apparatus; first and second cup-shaped sheet material shell-like elements; each said element having an end portion comprising a first imperforate end portion for supporting said element; an imperforate continuous peripheral side wall extending outwardly from said first portion and terminating in an outwardly extending peripheral flange lying in a plane substantially parallel to the plane of said first portion, said peripheral side wall comprising at least four wall sections of progressively increasing cross-sectional area in a direction from said first portion toward said flange, each said wall section being joined to its adjacent section by an annular wall section to provide at least three peripheral shoulders; one of said shoulders of one of said elements serving as a seat for the reception of one portion of said apparatus; one of said shoul-

ders of the other of said elements serving as a seat for the reception of another portion of said apparatus; said apparatus portions being located adjacent opposite ends of said apparatus and seating against said one shoulders; the one of said wall sections immediately adjacent said one wall of said one element which receives said one portion of said apparatus being of substantially the same cross-sectional area and shape and as said one portion of said apparatus; the one of said wall sections immediately adjacent said one wall of said other element which receives said other portion of said apparatus being of substantially the same cross-sectional area and shape of said other portion of said apparatus; said peripheral side walls of said elements and said peripheral wall section being dimensioned relative to each other and to the

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spacing of said apparatus portions such that said flanges of said element are in abutting relation; and means securing said flanges together in fluid tight relation.

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