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B. J. KOZIOL

2,858,014

PACKAGING MEANS

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FIG. 1.

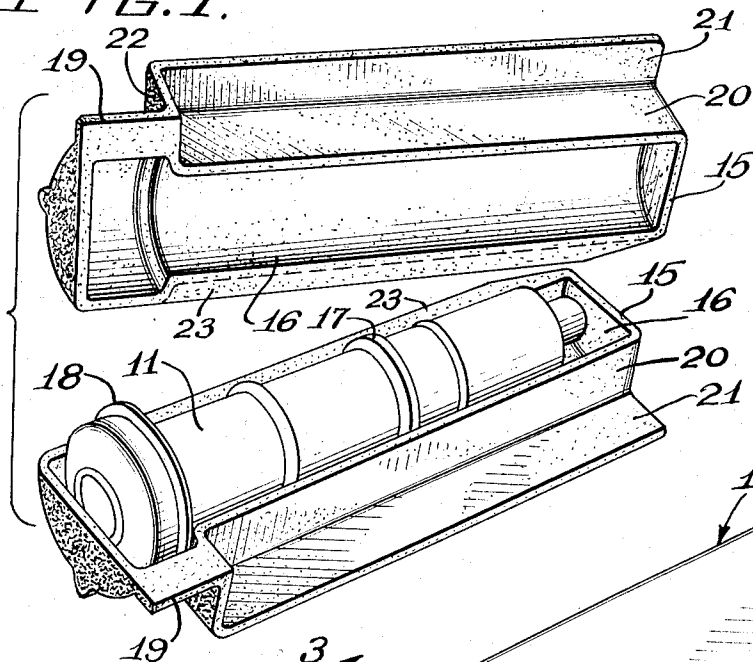


FIG. 2.

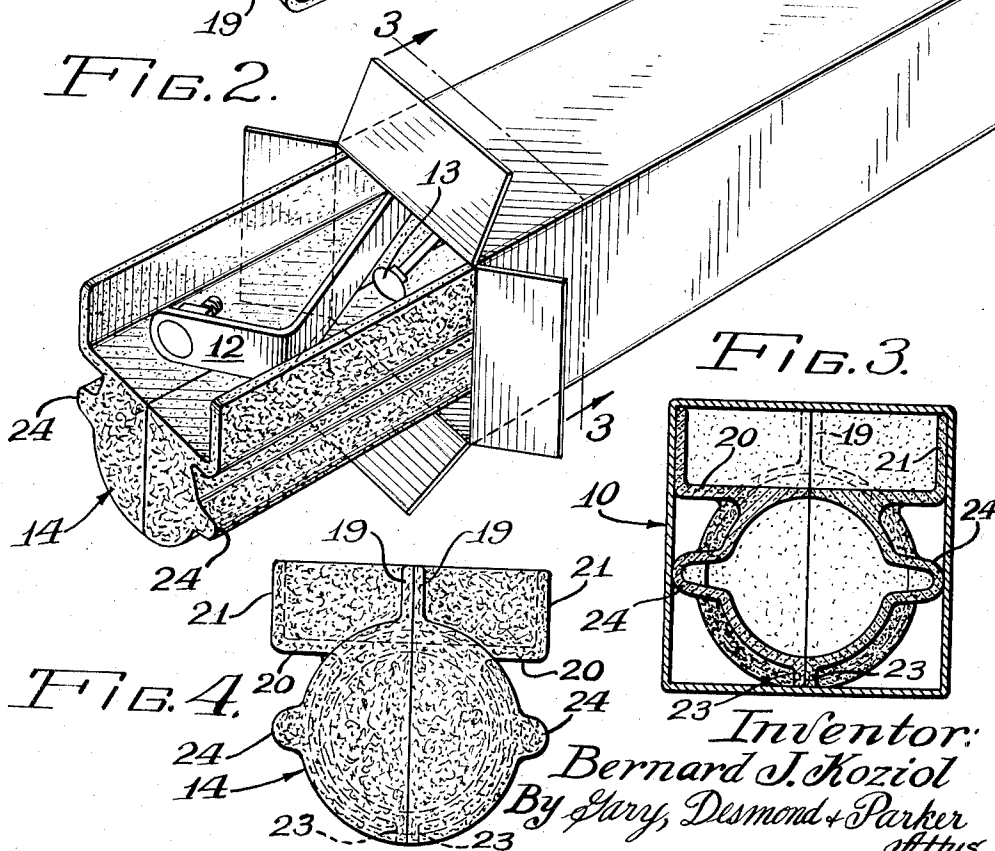


FIG. 3.

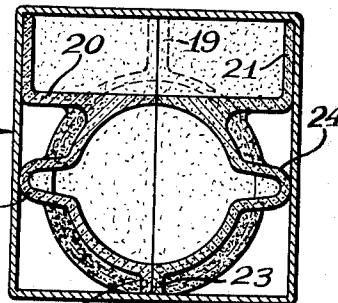
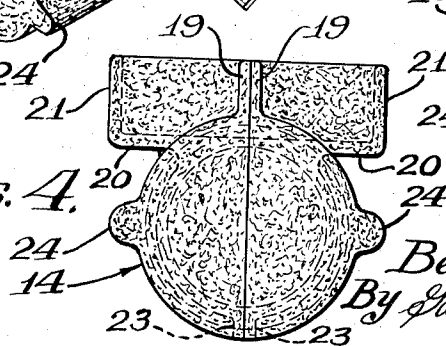


FIG. 4.



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2,858,014

PACKAGING MEANS

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1 Claim. (Cl. 206—47)

This invention relates to novel packaging means, and more particularly to means for packaging irregularly shaped and fragile articles within container bodies of regular shape.

More particularly, the present invention relates to a composite package comprising an outer container body and a molded fiber inner container body maintaining articles to be packaged in snugly seated engagement, the molded body being formed with integral projections or ribs disposing it in a spaced and suspended or floating relationship to the outer container body.

The invention further relates to a composite package comprising a floating type inner body adapted to securely retain the article to be packaged in spaced relationship to an outer container body and in reinforcing relationship with the latter, whereby the latter, i. e., the outer container body, may be of a standard shape, such as of rectangular shape adapted for mass storage and shipment of individually packed articles.

The invention is further directed to the production of a composite package wherein one or more articles to be packaged may be maintained within an inner body of molded fibers composed of two or more complementary sections, enveloping and substantially conforming to the contours of the article to be packaged so as to snugly and securely contain it and to hold it in spaced suspended relationship to the outer container body, and at the same time to provide a secondary pocket or pockets between the molded fiber body and the outer container for receiving and packaging one or more secondary or accessory articles, which secondary pocket may or may not conform, or substantially conform, to the secondary articles to be packaged.

Although it is recognized that fragile, for example, elongated substantially cylindrical objects have been packaged in spaced relationship to the walls of a rectangular container, this generally required the employment of a plurality of specially shaped, die-cut and scored fiberboard or corrugated inserts specially designed for insertion in sequence, requiring considerable skill and thus excessive handling costs.

As distinguished from the foregoing and in accordance with the present invention which comprises the provision of a pair of premolded complementary halves having an article-embracing portion formed to snugly seat and to substantially conform to the contour of an article to be packaged, each section being of a substantially uniform thickness throughout, and formed with integral ribs projecting therefrom for disposing the packaged article in spaced relationship to the side walls of a rectangular container body, great economy of materials is effected; a saving in weight which is a considerable item in shipping is effected; the packaging is made very simple, thus effecting an appreciable saving in handling costs; and at the same time reinforcing relationship of the walls of the outer container body is effected by means of integral projections on the formed inner body.

Further objects and advantages of the present invention, its details of construction and arrangement of parts will be apparent from a consideration of the following specification and accompanying drawings, wherein:

Fig. 1 is an exploded perspective view of two complementary molded fiber halves of an inner container body formed in accordance with the present invention, with an article to be seated in one of the halves.

Fig. 2 is a perspective view of a composite package in accordance with the present invention.

Fig. 3 is a section on the line 3—3 of Fig. 2.

Fig. 4 is an end elevational view of the inner container body component of Fig. 2, viewed from the end opposite to that exposed in Fig. 2.

Referring to the drawings, the reference numeral 10 generally indicates the outer container body of rectangular contour and which may be composed of conventional paperboard materials, such as fiberboard, corrugated board or molded fiber, or even such materials as wood, plastic, etc. In this case the side walls are of elongated rectangular form and adapted for the packaging of an elongated object, which for the purpose of illustration is a high line insulator 11 and its accessories 12, 13.

For the purpose of securely packaging this article 11 within the outer container body 10, in a manner spaced and thus protected from a direct shock which may occur to the outer body, I preform a fiber inner container body generally designated as 14 composed of the two complementary halves 15, 15. It will be noted that the portions 15, 15 form between them the well or seat portions 16, 16 of a general length substantially equal to that which will snugly embrace the two opposed ends of the article 11, and of a diameter at one end substantially equal to that which will snugly embrace the article at the ring portions 17 and at the other end of greater diameter to embrace the head portion 18. In other words, it will be seen that the cavities in the molded sections 15, 15 are adapted to receive the article 11 in a manner whereby to snugly engage at its opposed ends and about its peripheral portions, even though they may be of differing diameter where necessary; that is to say, although the cavities of the portions 15, 15 substantially conform to the major contours of the article 11, they need not conform to its contours in exact detail, only such conformity being requisite as to hold it against relative movement within the assembled halves 15, 15.

As further illustrated, the opposed halves 15, 15 comprise a plurality of oppositely and longitudinally extending projections or ribs, which form a plurality of functions. Primarily, one of these functions is to extend outwardly from the sections 15, 15 to at least the side walls of the container body 10 to maintain the packaged article in spaced, suspended or floating type of relationship to the side walls of the container body 10, and against movement therein, all without the aid of other packaging aids.

A second or additional advantage of these ribs or extensions which float on the conformed inner pack is to impart rigidity to the outer container 10 which simplifies the stacking of the filled cartons. In the illustrated packaging of insulators, by way of example, the weight of each insulator is so heavy that without these extended ribs or flanges, the filled cartons would tend to crush if they were stacked on top of each other.

A third advantage is that these ribs or flanges may form a secondary pocket or receptacle between them and the embraced wall or walls of the outer container, permitting packaging of less sensitive, relatively smaller accessory articles with or without the aid of packaging fillers.

Thus, in the illustrated structure, the halves 15, 15 are each formed with a flange or rib extension 19 projecting in a generally longitudinal direction adjacent the end portions which embrace the head 18 of the article 11, the rib 19 being adapted to extend normal to one of the side walls of the outer body 10. From the shoulder 22 to the opposite end, the components 15, 15 are each formed with a rib portion 20 which extends at a right angle to the plane defining the mouth of the mold halves, adapted to lie in contiguous relationship to an outer container side wall, and thence in a right angle to contiguous relationship with the adjacent side wall by means of the components 21.

It will thus be seen that the complementary rib components 20 and 21 on each of the mold halves form between themselves, the shoulder 22, and the embraced side wall of the outer container body, a secondary pocket adapted for nonconformed reception of accessory articles such as those indicated at 12 and 13 which may be maintained in said resulting secondary pocket by means of conventional stuffings or fillers if this be necessary.

At their other free edges, the molded fiber inner container halves 15 are each provided with an integral longitudinally extending rib 23 of a height equal to the radial excess of the portion 18 over the portion 17 of the packaged article 11, so as to abut against a carton wall. Intermediate the projections 20 and 23 each of said container halves 15 is provided with a longitudinal rib 24 at an angle of 90° to the rib 23, so as to abut against opposed side walls of the outer carton 10 and with the aid of the projections 20 keep the outer carton from being crushed regardless of the side upon which the cartons may be stacked one on the other.

The molded fiber components 15, 15 may be formed, for example, by beating one pound of pulp, such as waste newsprint, with 100 pounds of water, and depositing the slurry by suction onto a foraminous form in accordance with the well known accretion felting method. After a felted part is built up to the desired thickness, i. e., about 3/8 inch, for an article of moderate size and weight such as that illustrated, it is removed from the form and dried to approximately a 5% moisture content. It is then ready for use without densification, providing a felted cellular structure of good compressive strength properties which per se has cushioning characteristics adequate to provide floating support at such minor areas or points of the unit which may not have ribs.

Although I have shown and described for the purpose of illustration a specific form of article to be packaged, it will be understood by those skilled in the art that in a similar manner the molded fiber inner container body may be shaped so as to snugly embrace other articles

desired to be packaged and in a thickness built up as desired to form an article-embracing portion of substantially uniform thickness with integrally formed ribs or projections adapted to dispose the thus packaged article in spaced relationship to the walls of an outer rectangular fiberboard container body, with the said rib projections in reinforcing relationship to the outer container body, and if desired, with the ribs arranged in a disposition adapted to receive accessory articles in a contoured or noncontoured embracing relationship. It will be further understood that in the illustrated case of an elongated article, wherein the outer container bodies will be stacked on their sides, that the molded inner body thickness gives added support and protection to the opposed ends of article 11, with the provision of ribs, if desired; and with articles of other shapes projecting ribs may be integrally formed at the top and bottom edges or other portions of the mold sections.

It will thus be understood that further similar modifications may be made in the details of the above assembly without departing from the spirit of my invention, and therefore I do not wish to be restricted except as set forth in the following claim.

I claim:

A composite package comprising a paperboard elongated rectangular outer container body and a molded fiber inner container body, said inner container body being composed of a pair of complementary halves having an elongated article-embracing portion formed to snugly seat and substantially conform to the contour of and to wholly enclose an article to be packaged of a general shape different from that of said outer container, the wall thickness of said article-embracing portion being of substantially uniform thickness, the outer upper surface of said joined complementary halves presenting a flat substantially rectangular surface, and integrally formed spacing ribs projecting outwardly from the peripheral edge of the surface and forming with said outer container wall a secondary packaging chamber.

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