

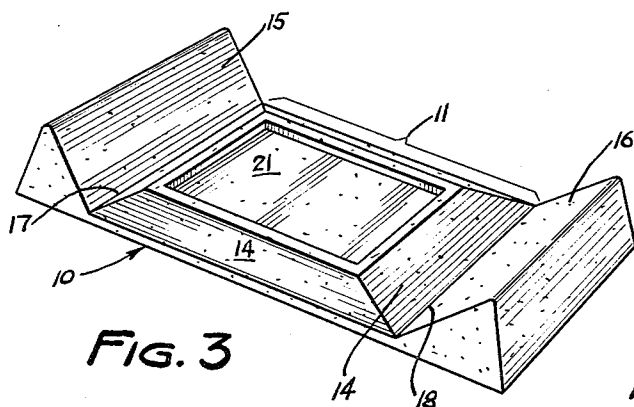
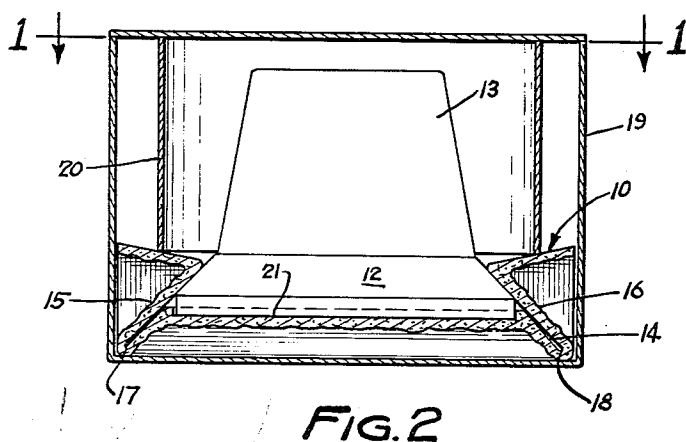
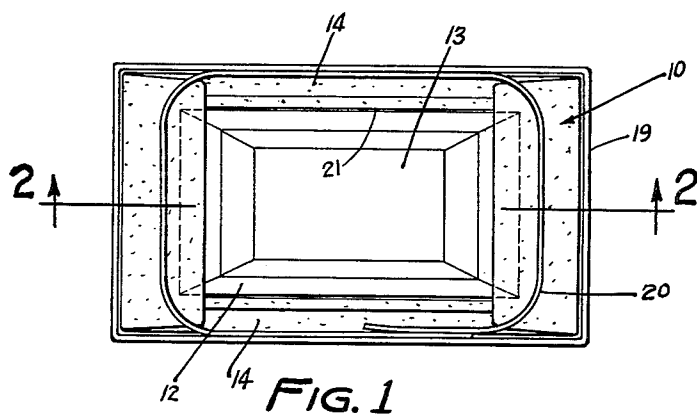
July 31, 1962

H. V. KINDSETH
PACKAGE CONSTRUCTION

3,047,137

Filed Nov. 2, 1959

2 Sheets-Sheet 1



INVENTOR.
HAROLD V. KINDSETH
BY *Moore, White & Durd*
ATTORNEYS

July 31, 1962

H. V. KINDSETH
PACKAGE CONSTRUCTION

3,047,137

Filed Nov. 2, 1959

2 Sheets-Sheet 2

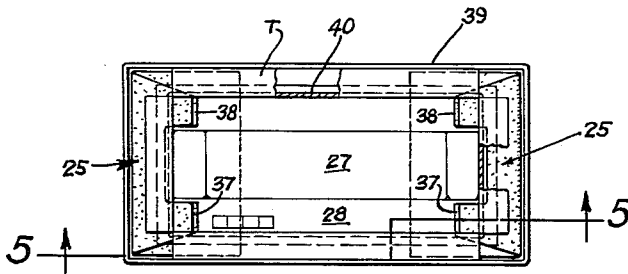


FIG. 4

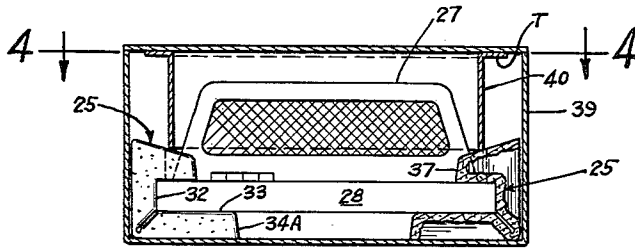


FIG. 5

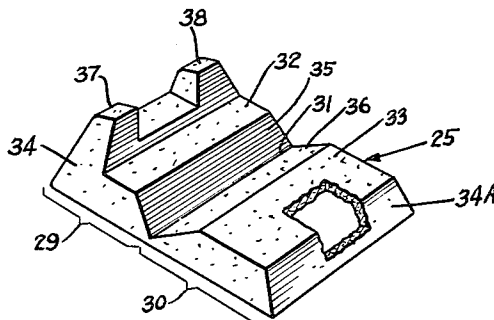


FIG. 6

INVENTOR.
HAROLD V. KINDSETH
BY
Moore, White & Burt
ATTORNEYS

1

3,047,137

PACKAGE CONSTRUCTION

Harold V. Kindseth, Minneapolis, Minn., assignor to Bemis Bro. Bag Company, Minneapolis, Minn., a corporation of Missouri

Filed Nov. 2, 1959, Ser. No. 850,276

5 Claims. (Cl. 206-46)

This invention relates to novel packaging means and more particularly to means for packaging delicate irregularly shaped objects including an enlarged projecting base or prominence on at least one side thereof.

The invention further relates to a composite package including floating type inner supporting fibrous bodies adapted to securely retain the article to be packaged in spaced relationship to an outer container such as a fiberboard carton thereby protecting said article against shock and vibration.

Briefly stated, a package made according to this invention includes at least one shaped fibrous element adapted to fold over and grip projecting portions of the article to be packaged, an outer container and means to retain such shaped fibrous elements against one wall of said outer container.

Prior to the instant invention, it has been the general practice to protect delicate articles, such as electron tubes, electric motors, radios, scientific apparatus, movie projectors and the like, in one of several ways, for example, by completely surrounding such articles in a relatively expensive spongy cushioning material, such as plastic foam or rubber or by placing a shaped fibrous cap over either end of such article to suspend it away from the side walls of the carton. Delicate articles have also been packaged in spaced relationship to the walls of the outer container by the employment of a plurality of specially shaped die-cut and scored fiberboard or corrugated inserts designed for insertion in sequence and glued together. These inserts, however, are expensive to make, require considerable skill and time for insertion and thus result in excessive assembly costs. Furthermore, because these fiberboard sheets are relatively rigid, shock protection is not always satisfactory.

The present invention includes the provision of at least one premolded shaped fibrous support having an article embracing portion formed to snugly seat and to substantially conform to the contour of one side of either the base or an enlarged extension of the article to be packaged, and a complementary portion hinged to the first said portion and adapted to be folded over the other side of said base or extension thereby supporting said base or extension on two sides thereof, and means within the package to hold such molded fibrous supports securely against one wall of said package, each section being of substantially uniform thickness throughout and formed with integral flanges projecting therefrom for disposing the packaged article in spaced relation to the side walls of the package.

As distinguished from the prior art and in accordance with the present invention, the following results ensue. There is a great economy of material effected in that no separate molded fibrous body is required to support the top half of the article to be packaged. A saving in weight which is extremely important in shipping is also made possible. The package is made very simple and adapted to rapid assembly so that packing costs are reduced and finally mold costs are reduced since only one mold is required as against two which are required when a separate molded piece is used to hold the top and another to hold the bottom of the article.

It is an object of this invention to provide a simple and effective protective molded interior supporting structure for delicate articles which secures said article in position

2

by gripping the base portion or projections on one end thereof.

It is another object of this invention to provide a package of the class described wherein only a single mold is required to produce all the molded pieces for a given article.

It is a still further object of this invention to eliminate the need for additional interior packing material molded to conform to the top of the article to be shipped.

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

FIGURE 1 is a top plan view of a package embodying the principles of one form of invention, shown partly in section taken along line 1-1 of FIGURE 2 and in the direction of the arrows;

FIGURE 2 is a sectional view of one form of the invention taken along line 2-2 of FIGURE 1 and in the direction of the arrows;

FIGURE 3 is a perspective view of the molded fibrous protective body illustrated in FIGURES 1 and 2;

FIGURE 4 is a plan view of another form of the invention showing a package for a radio, partly in section taken along the line 4-4 of FIGURE 5 and in the direction of the arrows;

FIGURE 5 is a sectional view of the package shown in FIGURE 4 taken along line 5-5 of FIGURE 4 and in the direction of the arrows; and

FIGURE 6 is a perspective view of the molded fibrous protective body illustrated in FIGURES 4 and 5.

Reference will now be made to the form of invention illustrated in FIGURES 1 through 3 inclusive. There is illustrated a package utilizing the molded fibrous protective body according to this invention in which the protective body 10 is formed of molded fibrous material, such as molded paper pulp, which may be manufactured conventionally. Protective body 10 is provided with center section 11 of rectangular configuration having a cavity adapted to receive the base portion 12 of the article 13 to be packaged. The outer side walls 14 of the rectangular center section 11 extend downwardly therefrom and may be inclined outwardly at approximately a 45° angle thereto. Two of such inclined side walls at opposite ends of center section 11 intersect locking segments 15 and 16 along lines 17 and 18 respectively. When the package is assembled, the article 13 to be packaged is placed on center section 11, segments 15 and 16 are folded upwardly along lines 17 and 18 to contact the upper surface of the base 12 and the entire assembly is placed inside the container 19. The outer container 19 may be comprised of conventional paperboard material, such as fiberboard or corrugated board or the like, or even wood. A rolled or coiled length of corrugated board 20 or the like may be placed between segments 15 and 16 and the top of container 19 securely to hold the molded body against the bottom wall of the container 19.

As will be noted from an inspection of the figures, a recess or cavity 21 is provided in the center of the molded form 10 having the configuration of the base 12 to prevent either lateral or transverse movement of the article 13. To package article 13 securely within the outer container 19, the dimensions of locking segments 15 and 16 are adjusted so that each segment when folded will rest on the top of base portion 12 and the free edge of each such segment will fit frictionally against the side walls of container 19 so that the base 12 is clamped securely into the recess 21 and prevented from movements either upwardly, downwardly, or towards the side.

Referring now to FIGURES 4 through 6 which illustrate another form of this invention, the reference numeral 25 designates two molded fibrous packaging forms

which are identical. The forms 25 are used in this embodiment to package a small table model radio 27 having an enlarged rectangular base 28, one such packaging form being placed at either end of the base 28. Each form comprises two generally rectangular integral halves 29 and 30 joined along fold line 31. Each half of the form includes generally rectangular article engaging surfaces 32 and 33 having integral outwardly inclined side walls 34 along each edge thereof and end walls 34A at opposite ends of the packaging form. The inclined side walls 35 and 36 adjacent fold line 31 each preferably intersect the surfaces 32 and 33 of form halves 29 and 30 at angles whose sum is about 90°. It may be seen that when the angles of intersection between inclined side walls 35 and 36 and surfaces 32 and 33 total 90°, the side walls 35 and 36 will contact each other when the package is assembled. Projecting outwardly from the surface of section 29 and formed integrally therewith are two spaced apart projections or extensions 37 and 38 defining a space made to conform generally to the sides and end of the radio 27. Projections 37 and 38 prevent the radio 27 from moving either upwardly or toward the side.

To assemble the package, each end of the radio base 28 is placed on top of article supporting sections 33 and the other half 29 of each molded form is folded upwardly along fold line 31, the projections 37 and 38 engaging the top of the radio base 28, so that each form clamps securely over the end of base 28 and prevents the radio 27 from moving either upwardly or toward the side. Next, the assembly of the radio and molded protective forms are introduced into a rectangular container 39. A sheet of corrugated board 40 or the like is then placed around the radio 27 in an upright position between the forms and the top of the package for the purpose of securing the segments 29 of the forms in position and to prevent the entire assembly of radio and molded forms from being displaced away from the bottom of the container 39. Folded tabs designated T may be provided at one edge of sheet 40 to give added support.

While the sheets of corrugated board 20 and 40 are preferred for the purpose of holding the molded fiber forms securely against the bottom wall of the outer container, any suitable means may be employed. For example, the forms may be pasted to the bottom wall of the container or, if preferred, a heavy strip of fiberboard may be stapled around the inside of the container in contact with the upper edge of the molded piece for the purpose of securing the same against the bottom wall of the container.

From the above disclosure it can be seen that the invention provides a simple and effective protective shipping package for delicate articles which is inexpensive to manufacture, lightweight and simple to apply. The invention makes possible the elimination of additional packing material to cover the top of the article packaged. Furthermore, only one mold is required for the manufacture of all the protective forms for a given package and the mold used to make the form requires only a single molding surface. It will be appreciated that the forms made according to this invention could not be molded in a single rigid piece, that is, without the inclusion of the fold lines generally as designated because the forms would then be impossible to remove from the molding surface. Stated in another way, it is essential that the forms fold over to encase the article packaged because the cavity required to enclose the base of the article to be packaged will also encase the molding surface making it impossible or at least extremely difficult and impractical to remove the same from the molding surface.

It may also be seen that when the molded form is folded and placed in position, a double thickness of molded material results in the corner of the package where the walls adjacent the fold line contact each other. This provides double strength in the corners where the package is most subject to damage.

While I have, in the above description, disclosed what

I believe to be practical embodiments of the invention, it will be understood by those skilled in the art that the specific details of construction and arrangements of parts, as shown and described, are by way of example only and not to be construed as limiting the scope of the invention.

I claim:

1. A protective package for delicate irregularly shaped articles having a projection on at least one side, said package comprising in combination (1) an outer container, (2) at least one molded fibrous protective form adapted to be fitted in said outer container against at least two adjacent walls thereof, said protective form comprising (a) a generally rectangular article supporting section, the upper surface of which section is contoured to the shape of the article to be packaged to seat the article therein, downwardly inclined side walls integral with the edges of said article supporting section, (d) at least one article retaining section integral with said supporting section and foldable with respect thereto along the base of one of said downwardly inclined side walls, said article retaining section including at least one projecting retaining member having a surface conforming to the shape of the article to be packaged and adapted to bear against the projection on said article to engage the article when the retaining section of the fibrous form is folded relative to the article supporting section to clamp said article in place in the article supporting section, the retaining surface having downwardly inclined side walls integral with the edges thereof, and (3) rigid fiberboard sleeve means extending around the body of the article, one end edge of said sleeve bearing against one wall of the outer container and the opposite end edge of said sleeve bearing against the top of the projecting retaining member of said molded protective form for securing said form and said packaged article immovably against the opposite wall of said container, whereby said packaged article is held clamped against movement and locked against the opposite wall of said container.

2. A composite protective package for delicate irregularly shaped articles having laterally extending projections, said package comprising in combination (1) a rectangular outer container having a top and a bottom and four side walls, (2) an inner molded fibrous cushion adapted to securely retain said article immovably in spaced relationship with respect to said outer container, said cushion comprising (a) a generally rectangular article supporting base section adapted to fit in the bottom of the outer container, the upper surface of the base being adapted to engage a surface of the article to be packaged, downwardly inclined side walls integral with the edges of said base section to hold the article supporting surface spaced from the bottom wall of the outer container, and (b) a pair of article retaining sections integral with said article supporting section disposed at opposite ends thereof and each foldable with respect thereto along the base of one of said downwardly inclined side walls, said article retaining sections each being provided with at least one projecting retaining member, said projecting article retaining members being adapted to fold over the top of said lateral projections extending from said article to firmly engage the same and clamp the article in place against the article supporting section of the fibrous cushion, and (3) a relatively rigid sheet of fiberboard extending as a sleeve around the outer periphery of the body of the packaged delicate article, one end edge of said fiberboard sleeve bearing against top wall of said outer container and the opposite end edge of said sleeve bearing against the top of said article retaining members of said fibrous cushion to maintain said article retaining members folded in clamping relation against the packaged article and to maintain said article immovably in spaced relation against the bottom wall of said container, whereby said packaged article is held clamped against movement and locked against the bottom wall of said container.

3. A protective package for delicate irregularly shaped

5

articles having a lateral projection extending from at least one side, said package comprising in combination (1) an outer container, (2) at least one molded fibrous protective form adapted to be fitted in said container against at least two adjacent walls thereof, said form comprising (a) a supporting section, the upper surface of which section is contoured to the shape of the article to be packaged to engage the article, said supporting section being adapted to rest on the bottom of the outer container, downwardly inclined side walls integral with the edges of said article supporting section to hold the article supporting surface spaced from the bottom of the outer container, (b) at least one article retaining section integral with said supporting section and foldable with respect thereto along the base of one of said downwardly inclined side walls, said article retaining section including at least one projecting retaining member having a surface conforming to the shape of the article to be packaged and adapted to bear against the lateral projection on said article to engage the article in clamping relation when the retaining section of the fibrous form is folded relative to the supporting section of the form to clamp the article against the supporting section of the form, the retaining member having at least one downwardly inclined side wall integral with the edge thereof and extending to a common foldline with one of the downwardly inclined side walls of said article supporting section, and (3) means for securing said molded protective form for engaging

6

ing said packaged article against at least one wall of said container including at least one relatively rigid sheet of fiberboard extending as a sleeve around the outer periphery of the body of the packaged delicate article, said sleeve extending vertically from the top wall of said outer container to the projecting member of said article retaining section to bear against said molded fibrous form to maintain said form and said article immovable against the bottom wall of said container, whereby said packaged article is held clamped against movement and locked immovably against the bottom wall of said container.

4. A package for delicate articles according to claim 3 further characterized in that said outer container and the supporting section of said fibrous protective form are both generally rectangular.

5. A package for delicate articles according to claim 3 further characterized in that the contour of the upper surface of the supporting section of the fibrous protective form contoured to the shape of the article is depressed below the plane of said surface to form a cavity to seat the article therein.

References Cited in the file of this patent

UNITED STATES PATENTS

2,144,071	Loth	Jan. 17, 1939
2,570,946	Hennessey	Oct. 9, 1951
2,863,595	Emery	Dec. 9, 1958