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PACKAGE COMPRISING SPACE STUFFER MEANS COMPRISING FREE FLOWING BODIES IN FLEXIBLE BAG MEANS

Filed Feb. 5, 1968

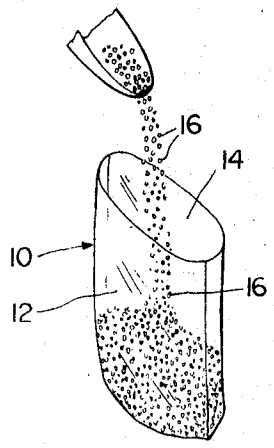


FIG. 1

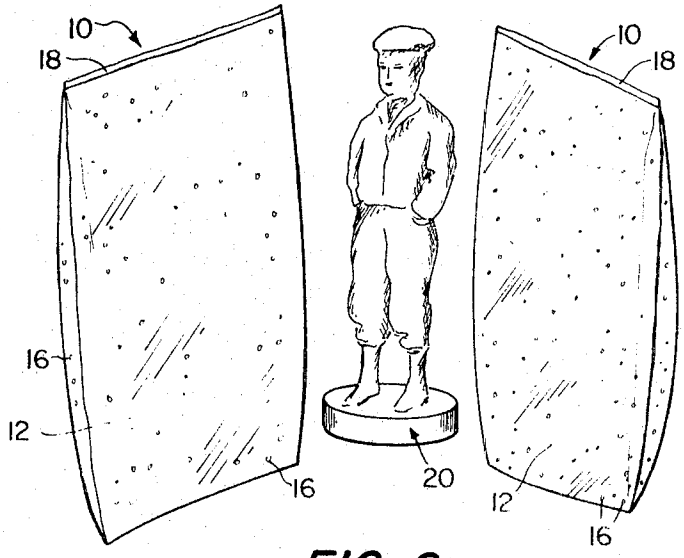


FIG. 2

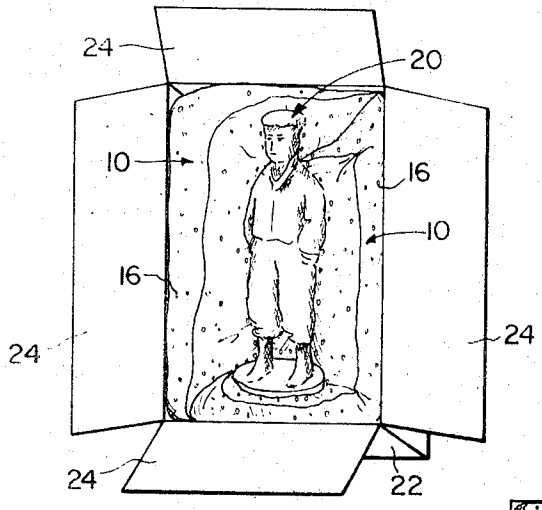


FIG. 3

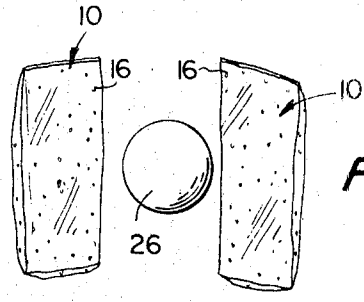


FIG. 4

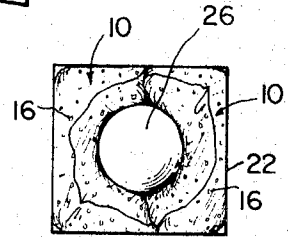


FIG. 5

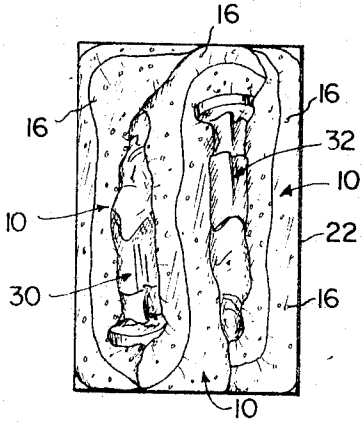


FIG. 7

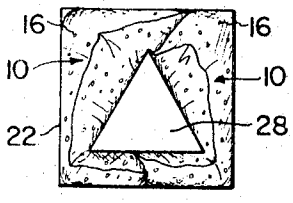


FIG. 6

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PACKAGE COMPRISING SPACE STUFFER MEANS COMPRISING FREE FLOWING BODIES IN FLEXIBLE BAG MEANS

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Int. Cl. B65d 81/12
U.S. Cl. 206—46 4 Claims

ABSTRACT OF THE DISCLOSURE

The invention relates to space stuffing means comprising free flowing bodies such as polystyrene beads, or other materials, enclosed within flexible bags made of plastic, or other materials, in which the stuffer means such as the described bags are stuffed between article means to be packaged and the package casing, with the surface of the stuffing bag conforming substantially to the surface area of the article means to be packaged, with the article means spaced within the package by means of the stuffing bag, or bags being placed between the article means and the casing of the package. If more than one article is packaged, stuffer means may also be placed between the articles. The space stuffer means of the invention may also be used in combination with floating objects such as ships, as a flotation system.

A principal object of the invention is to provide simple, lightweight and economical crush resistant article packaging means in the form of space stuffer means adapted to be used universally in packages and packaging.

It is another object of the invention to provide such space stuffer means in a bag or envelope made of flexible sheet material enclosing a plurality of free flowing bodies made of lightweight material with the properties of providing crush resistance and with the further property in the enclosed free flowing bodies of having flexibility and deformation so that the space stuffing means formed thereby can be used in an infinite variety of space conformations as a packaging means.

A further object of the invention is to provide space stuffing means having the properties of buoyancy which may be used to stuff spaces of floating objects, for example spaces of varying sizes on a vessel, or the like, to provide a flotation system.

Further objects and advantages will appear in the specification hereinbelow. The invention is illustrated in in the accompanying drawings in which:

FIG. 1 is a perspective view of a space stuffer element of the invention showing the free flowing body filling being poured in;

FIG. 2 is a perspective view of an article means and a pair of space stuffer means of the invention;

FIG. 3 is a perspective view of the components of FIG. 2 placed in a box or carton;

FIG. 4 is a perspective view of a rounded object article means and a pair of space stuffer means of the invention;

FIG. 5 shows a plan view of the components shown in FIG. 4 packaged in a box or carton;

FIG. 6 is a view similar to FIG. 5 showing a triangular shaped article means in a package of the invention; and

FIG. 7 is a view similar to FIGS. 5 and 6 showing a pair of article means in a package of the invention.

Similar numberals refer to similar parts throughout the several views.

Heretofore, it has been the usual practice in packaging articles for storage or shipping to place them in containers

formed of rigid material such as cardboard, paperboard, plastic, wood, metal or the like, and in order to space and protect the contents such as the article means to be packed in such containers, various types of spacing elements have been provided such as cardboard inserts formed to fit the article means to be packaged, foamed materials made of plastic or rubber, excelsior, straw or other package stuffing materials. Such packaging materials are sometimes relatively expensive to manufacture; for example, inserts which are specially made to fit the article means to be packaged (especially when custom jigs, dies and forms are needed), or are difficult to handle (with attendant messiness) such as excelsior or straw.

The present invention is, therefore, directed to the provision of space stuffer means relatively easy to manufacture, lightweight where necessary, and which can be made in standardized sizes for virtually universal application without special pre-fitting to the article means to be packaged. The invention is particularly useful in packaging and in making packages for fragile objects such as pieces of statuary, dishes, crystals, electronic equipment and any other fragile object which may have a unique shape needing support in the package at various parts of the shape surface area.

Referring to the drawings, there is shown for purposes of illustration in FIG. 1 an envelope or bag **10** made of a flexible sheet material having at least one wall **12** and at least one opening **14** being filled with free flowing bodies **16** having the properties of crush resistance. The bag **10** is filled with a sufficient quantity of free flowing bodies **16** and then the opening **14** is sealed. If the material of the bag **10** is a plastic material having the properties of heat sealability, then the seal would be made by heat seal as designated at reference numeral **18** in FIG. 2. However, any type of seal, or fastening, or closure, which will serve to enclose the bag around the free flowing bodies **16** may be used.

A sufficient number of free flowing bodies **16** would be that quantity of free flowing bodies **16** within the enclosed bag or envelope **10** which would give body to the space stuffer means so comprised, so as to fill the required space, and yet permit a large degree of flexibility in positioning the space stuffer means comprised in the bag **10** in the variously sized required spaces in various configurations. Thus, a single space stuffer means of the invention can be stuffed into a space, or between structures defining a space, of infinite shapes and configurations.

In FIG. 2 of the drawings, we shown an article means **20** in the form of a statuette and a pair of space stuffing means of the invention such as the bags **10**.

In FIG. 3 we show a carton **22** which defines a space **23** into which the components shown in FIG. 2 may be packed. The packing is simply done by selecting a carton **22** with a space **23** somewhat larger than the space occupied by the article means **20**, and then packing the article means **20** in a method which includes the steps of stuffing the space stuffer bags **10** around the article and within the walls of the carton **22** so that the space **23** is occupied by the article means **20** and the space stuffer means bags **10**. The article means **20** is positioned centrally of the space **23**, and the surface of the bag **10**, being flexible and being pressed against the article means **20** because of the free flowing qualities of the free flowing bodies **16**, will conform substantially and be in facing relationship to the surface of the article means **20**. Other portions of the bags **10** will rest against the main frame comprised by the carton **22** thereby effectively spacing the article means **20** within the main frame of the carton **22**. The article means **20** is, therefore, protected by the strength of the carton as well as by the crush resistant material of the stuffer means components. Cover flaps

24 are also provided as a part of the main frame of the carton in this figure so that a completely enclosed main frame may be provided for this type of package.

It is to be understood that the main frame of a carton need not be a completely solid frame, but may be comprised of elements having perforations or being made up of any structural arrangement having sufficient frame or body to maintain the bags **10** in position.

Referring now to FIGS. 4 and 5 of the drawings, we show rounded article means such as a globe or sphere **26** packaged in a square carton **22** and held in position by means of a pair of bags **10**.

In FIG. 6 we show a similar carton **22** and a pair of bags **10**. Only this time, the article means is a triangular shaped object **28**.

In FIG. 7 we show another carton **22** having a pair of article means **30** and **32**, in this case being a pair of statuettes packaged in the carton **22** together with three space stuffer means in the form of the bags **10**, at least one of which is between the article means **30** and **32**.

All of the bags **10** illustrated throughout the FIGS. 1 through 7 inclusive are of identical size and contain identical free flowing bodies **16**. Yet, as illustrated, they may be used to package a variety of objects having a variety of surface configurations. In each case, the surface of a bag **10** will conform to surface portions of the article means packaged to hold it or them firmly in place, because the material of the bag **10** is flexible and the free flowing bodies **16** will conform to the size of the space and flex the material of the bag to fit properly.

The invention may also be used in a flotation system for floating objects. This is especially useful in vessels or boats or the like. This is accomplished by providing one or more space stuffer means such as the bags **10** and stuffing these into any space on a vessel, boat, or floating object; for example, the space in the bilges or in unused lockers or in inaccessible spaces which are not available for any other useful purpose, or in fact, any space in which bags **10** can be stuffed and maintained, by closure means, or otherwise. Expanded plastic beads such as polystyrene beads will have the quality of buoyancy, and it is also a fact that any air remaining in a sealed bag **10** will also have the quality of buoyancy.

The feature of the use of the space stuffers of the invention in a flotation system is that every cubic inch of space within the space area can be utilized for buoyancy purposes without the necessity of having to make made-to-measure buoyancy devices to fit into such space.

We have not described in particular the manner and means of preparing the materials for the flexible bag **10** or the free flowing bodies **16** as many materials suitable for the purpose can be utilized in accordance with the invention, and the manner of preparing and manufacturing such materials are well known in the art.

While we have described our invention in its preferred forms, there are other forms which it may take without departing from the spirit and scope of the invention, and we, therefore, desire to be protected for all forms coming within the claims hereinbelow.

Wherefore we claim:

1. A package comprising a main frame comprising space in which to pack article means, such space being larger than the article means to be packed therein, including at least one space stuffer means comprising a plurality of rounded, free flowing plastic beads enclosed within flexible bag means made of flat sheet plastic film materials; in which the space stuffer means is in substantial surface contact with the article means and also in substantial surface contact with at least a portion of the frame means of the package whereby the space stuffer means conforms to substantially that space within the frame which is not occupied by the article means.

2. The package as defined in claim **1**, in which the free flowing plastic beads are expanded polystyrene beads.

3. The package as defined in claim **1**, in which the flexible bag means is made of polyethylene.

4. The package as defined in claim **1**, in which the free flowing plastic beads are made of expanded polystyrene and the flexible bag means is made of polyethylene.

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DONALD F. NORTON, Primary Examiner

PO-1050
(5/69)

UNITED STATES PATENT OFFICE
CERTIFICATE OF CORRECTION

Patent No. 3,515,267 Dated June 2, 1970

Inventor(s) Clement LaRocca and Bernard Schwartz

It is certified that error appears in the above-identified patent and that said Letters Patent are hereby corrected as shown below:

This patent has not been assigned. Therefore, in Column 1, lines 6 and 7, delete ", assignors to Parke Davis & Company, Detroit, Mich., a corporation of Michigan".

SIGNED AN[illegible]
[illegible]
OCT 27 1970

(SEAL)
Attest:

Edward M. Fletcher, Jr.
Attesting Officer

WILLIAM E. SCHUYLER, JR.
Commissioner of Patents