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2,465,172

COMPOSITE PACKAGE

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Fig. 1

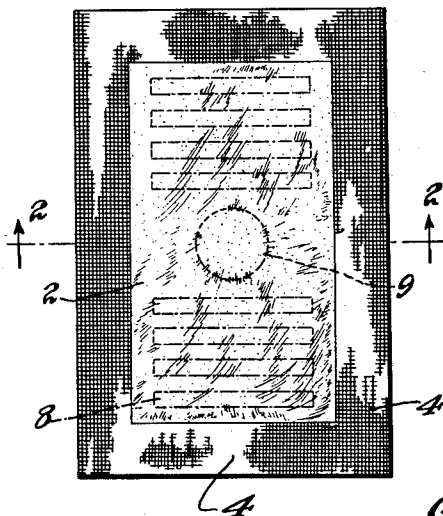


Fig. 3

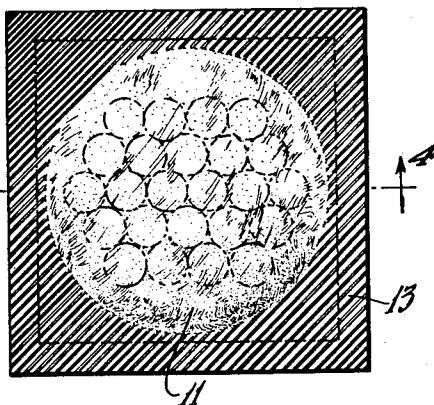


Fig. 2

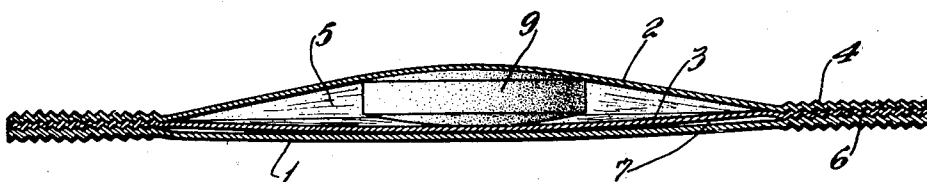
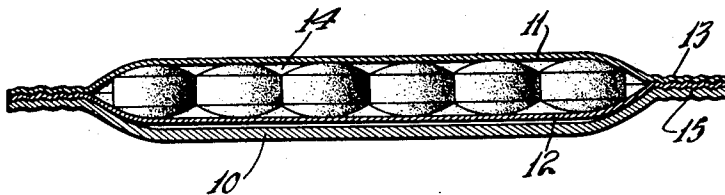


Fig. 4



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COMPOSITE PACKAGE

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1

This invention relates in general to commodity packages of the type comprising a plurality of layers of packaging material, at least two of which are sealed together in zones forming and bounding a commodity-receiving compartment between said layers, and more particularly the invention pertains to such packages wherein the layers are formed of dissimilar material and the dimensions thereof vary in different degrees under the same conditions. For example, the invention contemplates a package that comprises a sheet of paper or other material such as "Pliofilm" or "cellophane" sealed together to form an article-containing compartment between the layers.

Known packages of this character are sometimes objectionable in that one layer of packaging material, for example the paper layer, may expand or contract under changing atmospheric conditions in such a manner as to cause the package to become bent or warped. This bending or warping of the package not only detracts from the appearance thereof but also puts abnormal and unequal strains on the layers of packaging material such as to cause tearing thereof.

A prime object of the present invention is to provide a package of the general character described which shall embody a novel and improved combination and arrangement of the layers of packaging materials whereby the dimensional stability of the package shall not be materially affected by unequal expansion or contraction of the different layers.

Another object is to provide such a package which shall comprise a backing layer of suitable material such as paper, and two other layers of, for example, "cellophane" or "Pliofilm" sealed together in zones forming and bounding a commodity-receiving compartment between them and both sealed to the paper layer in a novel and improved manner whereby expansion and contraction of the paper layer shall be compensated in such a way as to avoid curling, or buckling of the package or the imposition of unequal or abnormal strains on the layers of "cellophane" or "Pliofilm."

Other objects, advantages and results of the invention will be brought out by the following description in conjunction with the accompanying drawing in which:

Figure 1 is a top plan view of a package constructed in accordance with my invention.

Figure 2 is a transverse vertical sectional view

2

on an enlarged scale taken on the plane of the line 2—2 of Figure 1.

Figure 3 is a view similar to Figure 1 showing a modified form of package, and

Figure 4 is a transverse vertical sectional view on an enlarged scale taken on the plane of the line 4—4 of Figure 3.

Specifically describing the embodiment of the invention illustrated in Figures 1 and 2, the package comprises a backing sheet or layer 1 of suitable material such as fibrous or cellulosic materials, for example paper or thin cardboard. Superimposed upon one side of the sheet 1 are two other layers 2 and 3 of suitable material, for example "Pliofilm" or "cellophane," which are sealed together in zones 4 to form and bound a commodity-receiving compartment 5 between said layers. The layers may be secured together in any suitable manner, for example thermoplastically or adhesively. Both of said layers are secured to the juxtaposed side of the sheet 1 only along their marginal portions in encircling relation to the margins of said compartment, for example in zones 6 of substantially the same area and character as the zones 4. The portions of the layers 2 and 3 inside the perimeter of the compartment, or bounded by the zones 6 are entirely free from the sheet 1 as indicated at 7. Also the intermediate layer 3 is preferably slightly normally spaced from the sheet 1 as further shown in Figure 2 of the drawing.

With this construction, any expansion or contraction of the sheet 1 will be taken up or compensated in the central portion of the package that is bounded or encircled by the zones 6, and consequently there will be a minimum tendency to curling, buckling or wrinkling of the package, and the possibility of abnormal or excessive strains being imposed upon the thin layers 2 and 3 is reduced to a minimum.

The shape of the backing sheet may be as desired and where the layers 2 and 3 comprise transparent material the surface of the sheet overlaid by said layers 2 and 3 may have printed matter or ornamental designs 8 applied thereto.

Any desired commodity may be enclosed within the compartment 5, either a powder, paste or a tablet or pill, and for purposes of illustration a large tablet 9 has been shown.

A modification of the invention is shown in Figures 3 and 4 where the backing sheet 10 and the layers 11 and 12 may be formed of the same materials as the sheet 1 and the layers 2 and 3, respectively, but the sheets are square instead

3

of rectangular and the sealed zones 13 which connect the packaging layers 11 and 12 form a circular commodity-receiving compartment 14 instead of a rectangular compartment as shown in Figure 1; and the sealed zones 15 by which the layers 11 and 12 are connected to the backing sheet 10 may be of the same or different shape and area than the zones 13. For example and as shown, the zones 15 are of uniform width around the margins of the sheets so as to bound a square area beneath the layers 11 and 12, while the zones 13 form a circular area at the centers of the layers.

It will also be understood by those skilled in the art that the layers in the sealed zones may be corrugated or interdigitated in different ways, for example by cross-crimping as shown in Figure 1, or by diagonal corrugations as shown in Figure 3.

It will also be understood that the materials of which the layers 1, 2, 3, 10, 11 and 12 are formed may be widely varied to suit different conditions. For example, in some instances it may be desirable to make the backing sheets 1 or 10 of metallic foil and form the sheets 2, 3, 11 and 12 of some material which has less dimensional stability or will expand or contract in greater degree than the metallic foil. In such cases the central portion of the backing sheet will yield under the strains of expansion and construction of the other sheets so as to prevent undue warping or buckling of the package. Preferably, but not necessarily, the backing sheets are relatively stiff as compared with the other sheets.

Other modifications in materials and structure of the package will occur to those skilled in the art as being within the spirit and scope of the invention.

What I claim is:

1. A package comprising at least three layers of material at least one of which is relatively thicker than the others and susceptible to greater expansion and contraction than the others under the same variations in moisture content of the atmosphere, at least two of said layers being susceptible to the same amount of expansion and contraction under said variations in moisture content of the atmosphere and having a commodity compartment between them and their marginal portions sealed in encircling relation

4

to and outwardly of the margins of said compartment to the first-mentioned layer, the central portions of said two layers being free from said first-mentioned layer.

2. A package comprising at least three layers of material, at least two thereof being substantially identical, flexible and transparent and having the same dimensional stability under fluctuations in moisture content of the atmosphere, and a commodity compartment between them, the third layer being of an opaque material relatively stiffer than said two layers and having a dimensional stability different from said two layers under said variations in moisture content of the atmosphere, said third layer being fastened through only its marginal portions to one side of one of the first two layers by a continuous sealing zone encircling said compartment beyond its margins.

3. A package comprising an envelope formed of opposed layers of thin flexible material having a commodity compartment between them and a relatively thick and stiff backing sheet which is susceptible to substantially greater dimensional variations than said layers under fluctuations in moisture content in the atmosphere, said package being characterized in that said envelope is fastened to said backing sheet only at its marginal portions throughout the perimeter outwardly of the margins of said compartment, whereby said layers are protected against warping of said backing sheet and against strains incident to unequal expansion and contraction of said layers and said backing sheet.

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