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N. MACNEALE
MULTIPLE PACKAGES
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2,913,861

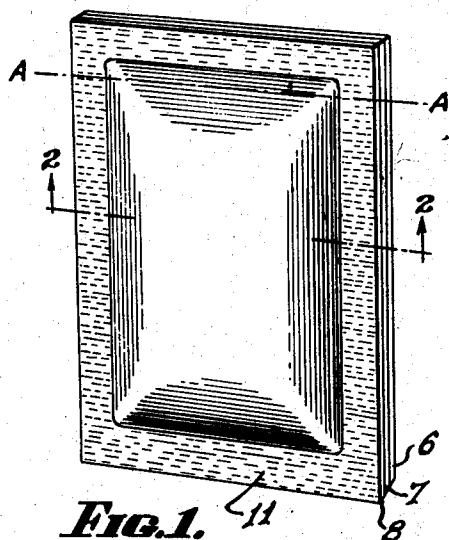


FIG. 1.



FIG. 2.

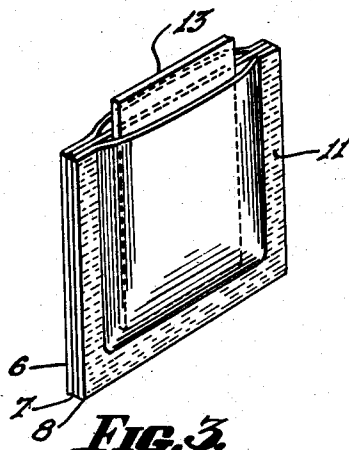


FIG. 3.

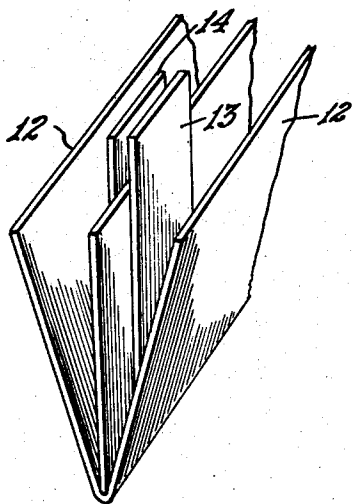


FIG. 4.

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4 Claims. (Cl. 53—28)

This invention relates to containers and packages of the type comprising superposed sheets of packaging material that form between them a plurality of compartments, the perimetrical edges of which are collectively sealed to form a unitary flange.

More particularly, the invention contemplates a package having a plurality of superposed compartments, the adjacent compartments having common side walls that completely separate the commodities contained in the compartments, the peripheral edges of the compartments being simultaneously openable by tearing off a portion of the flange.

The invention is particularly concerned with unitary packages containing superposed compartments which simultaneously release commodities contained in the envelopes when the package is torn and tilted for pouring.

Packages of this type are highly desirable for the packing of pharmaceutical preparations wherein two or more commodities are to be used in conjunction with one another and may not be stored in admixture. The fact that the compartments are all sealed into one unitary package not only prevents the separation or loss of one of the compartments and its ingredients, before usage, but also gives the manufacturer the assurance that his complicated recipe or formula, calling for a plurality of commodities, will be used by the customer in the desired proportions with a minimum requirement of physical and mental effort on the part of the customer.

It is an object to provide a type of package having a plurality of compartments for storage of different commodities such that one or more of the compartments may not be separated from the others.

It is an object to provide a package of said type in which a plurality of commodities may be stored together but in separate compartments so that deterioration and/or interaction of the commodities may be prevented during storage.

It is a further object to provide a package such that all compartments can be conveniently opened simultaneously and from which the commodities stored therein may be poured simultaneously.

Other objects and advantages of the invention will be brought out by the following description in conjunction with the drawings listed below, in which for ease of illustration the thickness of the packaging material is exaggerated:

Figure 1 is a perspective view of one form of package embodying my invention.

Figure 2 is a cross section of the package of Figure 1 at line 2—2.

Figure 3 shows a partially sealed container with a forming tongue still in one compartment.

Figure 4 shows a preferred method of starting the forming of the package.

Specifically describing the illustrated embodiment of the invention, the package as illustrated in Figures 1 and

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2 is shown as comprising three superposed sheets 6, 7 and 8 of packaging material, said sheets forming between them commodity-containing compartments 9 and 10, the peripheral edges of the sheets being fused together to form the unitary flange 11 around the compartments 9 and 10. The sealed flange may be interdigitated or corrugated according to well known practice.

The package need not be made from three individual sheets. A preferred practice as illustrated in Figure 4 consists of using a double width sheet 12 folded upon itself which would replace illustrated sheets 6 and 8 in the other figures. Similarly if three or more superposed compartments are desired two or more folded sheets can be employed.

A convenient manner of forming the package is to insert forming tongues 13 and 14 in Figure 4 between the sheets and seal the edges of the sheets into a unitary flange around three sides of the tongues, as in Figure 3, where for clarity of illustration forming tongue 14 is not shown in the rear compartment, after which the compartments are filled with the desired commodities and the fourth side of the package is sealed after the forming tongues are removed.

A variety of packaging materials may be employed for making this type of package such as single layered thermoplastic sheet materials some of which are commonly referred to as Saran, polyethylene, diaphane, vinyl, Pliofilm and cellophane coated with heat sealable materials. Multi-laminated sheet materials, for example, metal or paper foil having at least one surface coated with heat sealing thermoplastic materials, are particularly suited for making my packages. However, the choice of material is often controlled by the type of commodity that is to be packaged. Thus if corrosive commodities, e.g. powders that exhibit metal corroding tendencies, are to be packed in a metal foil package, it is preferable to use a metal foil that is coated with a suitable corrosion resistant material, for example a thermoplastic material. Such laminated metal foil materials also have the advantage that they produce a moisture-proof package which will either keep out moisture or prevent the escape of moisture from hydrated commodities in the package compartments.

One of the special features of this type of package is that all the envelopes or compartments are simultaneously openable by tearing or shearing off a section of the flange, e.g. along line A—A, enabling one to pour the commodities from all of the envelopes simultaneously by simply tilting the package. In the fabrication of the envelopes I prefer to use paper or metal foils because these materials tear or shear readily. This is in direct contrast to some of the plastic packaging materials such as polyethylene and the rubber hydrochloride material known as "Pliofilm." However, such stretchable materials may be used as coatings or laminates on metal foils without appreciably losing the desirable tearing property of the metal foils. Not only do these thermoplastic coatings provide the medium through which the foils may be heat sealed together to form the common unitary flange but they also provide a coating that will protect the foils from corrosion by commodities that may be stored in the various compartments in the package. A preferred package of this type is one fabricated from laminated aluminum foils wherein the lamina or coatings on those surfaces of the foils which are sealed together are of polyethylene, polyvinyl, rubber hydrochloride, or polyvinylidene resins and the outside surface coatings of the outer foils of the package are of cellulose acetate.

Having now fully described my invention what I claim as new and desire to secure by Letters Patent is:

1. A process of making multiple compartment con-

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ainers, including the steps of medially folding a web of flexible material so as to give superposed webs which form opposite outside walls of the container, said walls having heat sealable inner surfaces, interposing between said walls at least one inner web of flexible material having heat sealable surfaces, and heat sealing the perimetrical edges of the container together in the form of a unitary flange on all except one of the edges of said container, including the folded edge of said first mentioned web, thereby forming a container having a plurality of commodity receiving compartments with filling openings only at the unsealed edge.

2. The process claimed in claim 1 including the steps of introducing a filling charge into said compartments, and heat sealing the unsealed edge, thereby closing all compartments simultaneously and forming a continuous unitary flange around the container.

3. The process claimed in claim 1 including the steps

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of inserting forming tongues between all webs of said container, and effecting said heat sealing about three sides of the said tongues.

4. The process claimed in claim 1 including the steps of inserting forming tongues between all webs of the said container, effecting said heat sealing about three sides of the said tongues, afterward filling a charge into the said compartments, removing the said tongues, and sealing the fourth side of said container whereby to close all compartments.

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