

Feb. 25, 1969

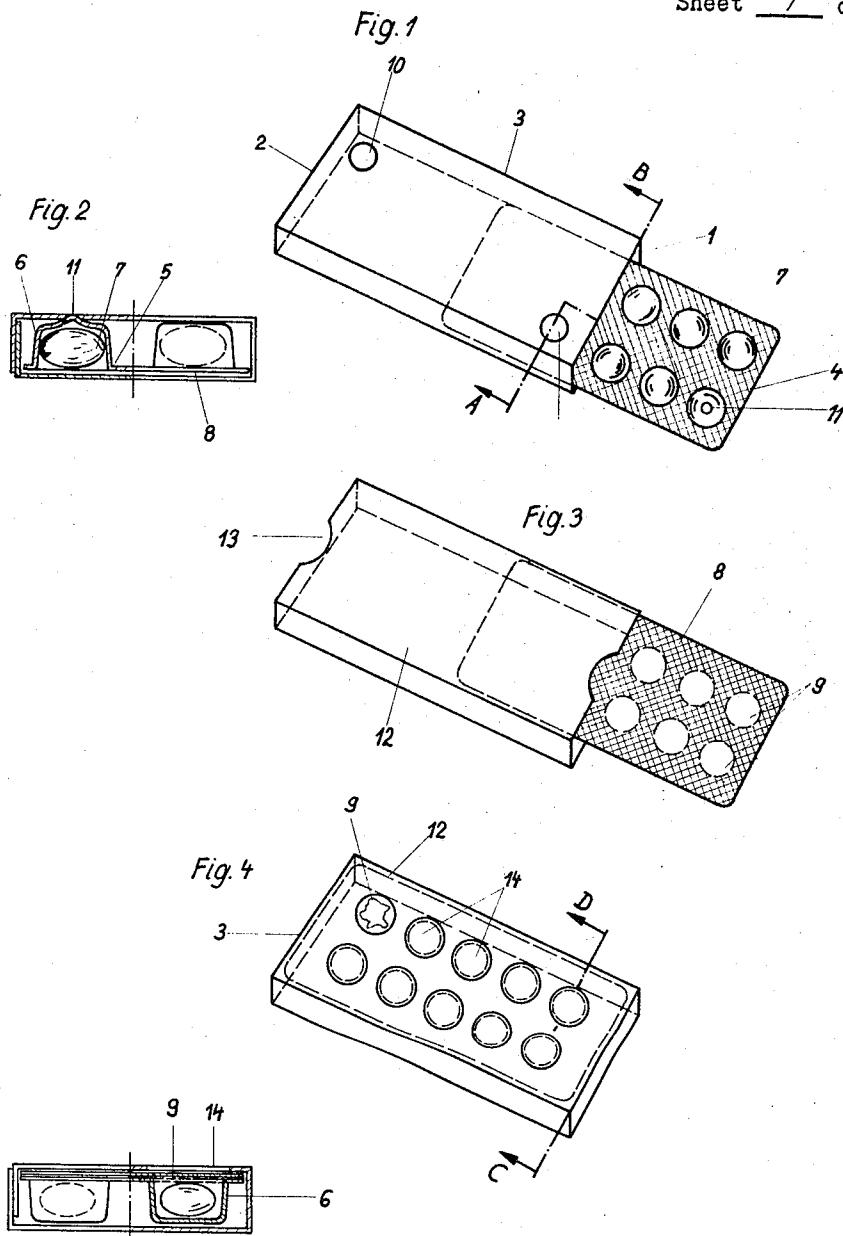
O. WOLF ET AL

3,429,426

PACKAGE

Filed June 26, 1967

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Fig. 12

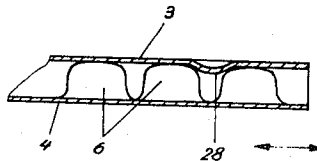


Fig. 6

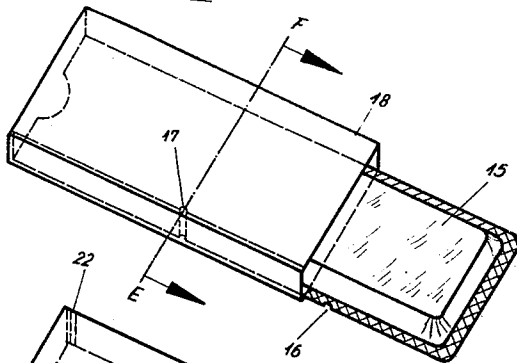


Fig. 8

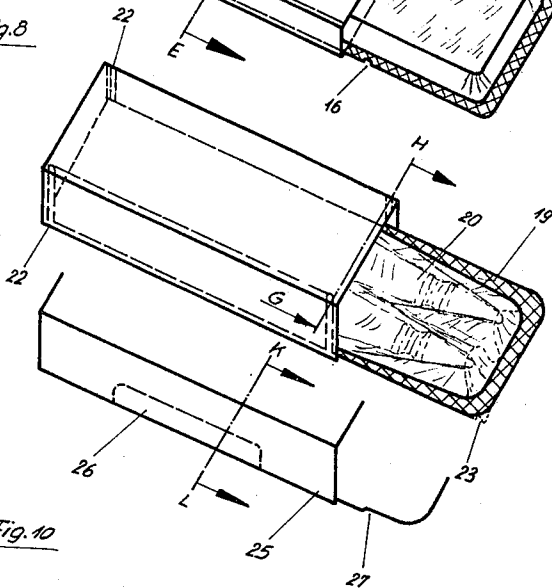


Fig. 10

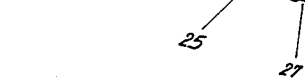


Fig. 7

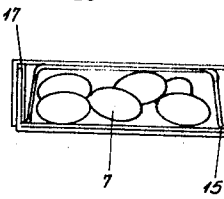


Fig. 9

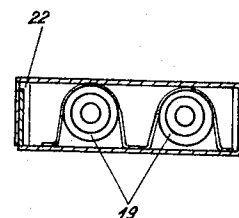


Fig. 11

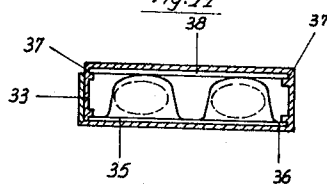
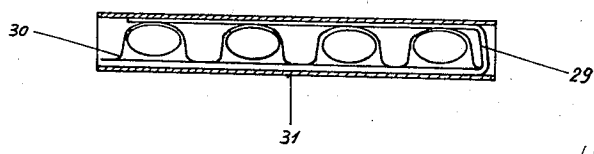


Fig. 14

Fig. 13



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Int. Cl. B65d 83/04

14 Claims

ABSTRACT OF THE DISCLOSURE

A package for discrete articles. An outer sleeve of substantially rectangular cross-section has at least one open end. An inner receptacle is slidably received in the outer sleeve and comprises a first member which has a side provided with at least one open recess, and a second recess which overlies this side and is sealingly connected to the first member so as to define with this open recess a sealed chamber within which an article to be packaged is to be accommodated.

Background of the invention

The present invention relates to packages in general, and more particularly to packages for discrete articles.

It is known from prior art to provide packages wherein a receptacle accommodating one or more discrete articles is enclosed in an outer protective wrapping. Such wrapping is usually of cardboard on which the receptacle is positioned whereupon the cardboard, which is pre-cut or stamped, is folded so that portions of the cardboard extend upwardly on all sides of the receptacle whereas another portion overlies the upper side of the receptacle and is connected to the portions which extend upwardly and constitute the side walls. Thus, the receptacle is enclosed on all sides.

While such wrappings certainly serve to protect their contents in the manner desired, they are disadvantageous in a number of respects. Firstly, the amount of material required is relatively great and the pre-cut cardboard must have a length which is substantially 3.5 times greater than the width of the receptacle which it is to surround. Furthermore, and as has already been indicated, the cardboard must be pre-cut which requires expensive machines and which results in a relatively large amount of waste because of the rather involved shape which the cardboard must be given. It is then necessary to adhesively secure the cardboard in its final position around the receptacle after it has been folded to this position, and this again requires expensive machinery. Finally, when it is desired to gain access to the contents of the receptacle which is wrapped within the outer cardboard, the cardboard wrapping must be opened and, usually, is destroyed. This is objectionable in cases where more than one article is contained in the inner receptacle so that, if only one or two articles are being used and the remainder is to be stored for a subsequent requirement, the protection afforded by the cardboard is lost as soon as the first removal of such articles takes place.

Thus, it is clear that for packages of this type a new approach, and improvements overcoming these disadvantages are highly desirable.

Summary of the invention

The present invention provides these sought-after advantages.

More particularly, the present invention provides a package for discrete articles which is subject to the disadvantages outlined above.

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The package in accordance with the present invention is extremely simple to manufacture and requires no complicated machinery.

Wastage of material is virtually eliminated in the package according to the present invention.

Moreover, our novel package permits removal of any and all articles contained in the inner receptacle, and it further permits all articles which remain after such removal to be stored in the inner receptacle and, furthermore, within the protection of the outer covering which surrounds the inner receptacle.

In accordance with one feature of our invention we provide a package for discrete articles, such as tablets, pills, tubes, and like goods. This novel package comprises an outer sleeve which has two spaced opposite ends at least one of which is open. An inner receptacle is slidably received within the outer sleeve and comprises a first member and a second member. The first member has one side which is provided with at least one open recess and the second member overlies this one side and is sealingly connected with the first member so as to define with the open recess provided in the one side thereof a sealed chamber adapted to accommodate an article to be packaged. Of course, a plurality of such recesses can be provided and they can be of identical or of non-identical configuration and can contain identical or non-identical articles or, if desired, identical or non-identical quantities of such articles.

To facilitate removal of the articles from the inner receptacle the second member may be a foil which is rupturable in response to pressure exerted on a side of the first member which is opposite the one side, whereby the articles are pressed against the inwardly directed side of the second member, rupturing the latter, and can then be removed from the one side of the first member. For this to be accomplished it is necessary, however, to withdraw the inner receptacle from the outer sleeve to the extent necessary to expose the outlines of the chamber accommodating such articles as are to be removed. Under certain circumstances this may not be desirable, however, and for such circumstances our invention contemplates providing the sleeve with openings corresponding to the outline of the chamber or chambers in the inner receptacle, such openings being in registry with the outline of the chamber or chambers when the inner receptacle is received within the outer sleeve so that, when pressure is exerted as discussed before, and when accordingly the second member is ruptured, the article or articles can be removed from the thus-exposed chamber or chambers without necessitating sliding of the inner receptacle out of the sleeve.

In accordance with another feature of our invention we also provide guide means guiding the inner receptacle for sliding movement within the outer sleeve, and cooperating resting means on the inner receptacle and the outer sleeve so that the inner receptacle can be arrested with respect to the outer sleeve in predetermined positions, or in a single predetermined position, to prevent undesired sliding movement of the inner receptacle with respect to the outer sleeve.

The novel features which are considered as characteristic for the invention are set forth in particular in the appended claims. The invention itself, however, both as to its construction and its method of operation, together with additional objects and advantages thereof, will be best understood from the following description of specific embodiments when read in connection with the accompanying drawings.

Brief description of the drawing

All figures are somewhat schematic.

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FIG. 1 is a perspective view of one embodiment of the invention, showing the inner receptacle partly withdrawn from the outer sleeve;

FIG. 2 is a section taken on the line A-B of FIG. 1, but showing the inner receptacle received within the outer sleeve;

FIG. 3 is a view similar to FIG. 1, but showing the package from below, that is, from a side opposite that which is shown in FIG. 1;

FIG. 4 is a perspective view of another embodiment of the invention;

FIG. 5 is a section taken on the line C-D of FIG. 4;

FIG. 6 is a perspective view of a further embodiment of the invention with the inner receptacle partly withdrawn from the outer sleeve;

FIG. 7 is a section taken on the line E-F of FIG. 6;

FIG. 8 is a perspective view of yet a further embodiment of the invention;

FIG. 9 is a sectional view taken on line G-H of FIG. 8;

FIG. 10 is a schematic detail view illustrating retaining means provided on the outer sleeve and to the inner receptacle;

FIG. 11 is a sectional view taken on the line K-L of FIG. 10, illustrating an outer sleeve incorporating the retaining means illustrated in FIG. 10;

FIG. 12 is a fragmentary longitudinal sectional view of a further embodiment of the present invention;

FIG. 13 is a longitudinal section through a package according to the present invention illustrating an auxiliary element received in the package, such as a perspectus; and

FIG. 14 is an end view of yet a further embodiment of the present invention.

Description of the preferred embodiments

Discussing now the drawing in detail, and firstly FIGS. 1-3 thereof, it will be seen that these figures illustrate a package comprising an outer sleeve 3 which may consist of cardboard, synthetic plastic material, or a similar shape-retaining material. In the embodiment of FIGS. 1-3 this sleeve 3 has two spaced open ends 1 and 2. An inner receptacle 4 is received within the sleeve 3 and is longitudinally slidable in the direction from one to the other of the ends 1, 2, as indicated by the double-headed arrow shown in FIG. 1. In known manner the inner receptacle may be manufactured by deep-drawing from a suitable foil of synthetic plastic material and in this embodiment the inner receptacle consists of a first member 5 which is provided, for example by the aforementioned deep-drawing process, with a plurality of recesses 6 which are open at one side of the member 5. These recesses 6 each accommodate a tablet 7. A second member 8, for instance a foil of aluminum or the like, overlies the one side of the first member 5 and is sealingly secured thereto by crimping, by an adhesive, or in any other suitable manner. The essential fact is that the member 8 thus defines with the recesses 6 sealed chambers each of which contains one of the tablets 7.

The foil member 8 is provided (see FIG. 3) with weakened zones 9 each of which corresponds to the open side of one of the recesses 6.

To prevent uncontrolled sliding of the inner receptacle within the outer sleeve, the latter is provided with one or more openings 10 (see FIG. 1) whereas one or more of the projections in the member 5, which projections are hollow on the other side and each constitute a depression, is provided with a tip 11 which, when the inner receptacle is placed into proper registry within the outer sleeve, will engage in a corresponding opening 10 and will thus prevent sliding movement of the inner receptacle 4 within the outer sleeve 3 until enough pressure is inserted from one of the ends 1, 2 towards the other end to dislodge the tip 11 from the opening 10. It is advantageous to provide cutouts 13 at the axial ends of the outer sleeve 3, as illustrated in FIG. 3, to facilitate grasping of the inner receptacle and its withdrawal

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from the sleeve 3. Depending upon the number of tablets 7 which are to be removed at a given time, the inner receptacle 4 is withdrawn from the outer sleeve to the extent necessary to expose a requisite number of the chambers 6, whereupon pressure exerted on the thus-exposed projections forces the tablets 7 in the respective chambers against the weakened zones 9 which are ruptured by this pressure, so that the tablets can then be removed from that side on which the member 8 is provided. Thereupon, the inner receptacle is simply returned into the outer sleeve and the remaining tablets continue to be reliably protected until they are needed.

The embodiment illustrated in FIGS. 4 and 5 differs from that of FIGS. 1-3 in that it makes provision for circumstances where it may be desired to be able to remove the contents of the chambers without having to withdraw the inner receptacle from the outer sleeve. The outer sleeve is again identified with reference numeral 3 and it will be seen that it is provided in the wall portion 12 thereof which overlies the member 8 of the inner receptacle with a plurality of openings 14 which, when the inner receptacle is received within the sleeve 3, are each in registry with one of the weakened portions 9 in the member 8. Thus, pressure need merely be applied to the outer sleeve on the side opposite the side 12, and rupture of the weakened portions 9 of the member 8 will again occur, the tablets 7 then being removable through the openings 14 in the side 12 of sleeve 3. The direction of pressure is clearly indicated in FIG. 5 by the arrow.

Coming now to FIGS. 6 and 7 it will be seen that these illustrate a one-chamber embodiment, namely a package where the inner receptacle defines a single chamber which can accommodate one large article or a plurality of smaller ones. This embodiment illustrates the provision of retaining means other than that shown in FIGS. 1-3. Specifically, a marginal zone of the inner receptacle, which here is identified with reference numeral 15, is provided with one or more recesses or cutouts 16 (one illustrated) whereas the interior of the sleeve, here designated with reference numeral 18, is provided with one or more inwardly projecting ridges 17 (see also FIG. 7) which, upon sliding movement of the inner receptacle 15 within the sleeve 18, can engage in the recess or recesses 16, the location of the projecting ridges 17 can be varied at will. Thus, if the receptacle is to be arrested when it is partly withdrawn from the sleeve, then the recesses 16 and the projections 17 will be positioned accordingly. Again, if the receptacle is to be arrested when it is completely received within the sleeve 18, recess 16 and projection 17 are suitably positioned in a manner which is self-evident.

FIGS. 8 and 9 illustrate an embodiment of the invention wherein the inner receptacle is identified with reference numeral 19 and defines two discrete chambers each of which accommodates an ampul, tube or similar member 20. Other than in this respect the embodiment of FIGS. 8 and 9 differs from that in FIGS. 6 and 7 in the retaining means which is provided. FIGS. 8 and 9 clearly illustrate that the inner receptacle 19 is arrested against sliding movement within the outer sleeve 21 by the inwardly projecting ridges 22 which are provided at both opposite ends of the sleeve 21, and, in the illustrated embodiment, at opposing sides of each end. The inner receptacle 19 is of an overall length substantially corresponding to the distance between the ridges 22 at the opposite ends of the sleeve 21 so that, when it is fully introduced into this sleeve, it will be located inwardly of these ridges and will thus be confined against movement unless a pressure is exerted from one towards the other end of the sleeve 21 which is sufficient to cause slight deformation of the material, for instance of the inner receptacle 19, thereby permitting the latter to move beyond the ridges 22 provided at that end which is opposite the one from which the pressure is exerted. FIG. 8 illustrates another possibility, namely the provision of a cutout 23 in the margin of the inner re-

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ceptacle 19, such cutout 23 being so located as to be adapted to accommodate one of the ridges 22 when the inner receptacle 19 is in the position relative to the outer sleeve 21 in which it is intended to be arrested. Of course, it is entirely possible to provide such cutouts 23 at one end of the inner receptacle 19 and not at the other end, if this is desired.

FIGS. 10 and 11 illustrate a variation of the retaining means. As illustrated in FIG. 10 in dashed lines and clearly shown also in FIG. 11, one or both inner side walls (only the side wall 24 shown) of the sleeve 25 is provided with a cutout. It is evident that the side wall 24 is of double thickness because of the overlapping necessary to permit adhesive or other securing of the overlapped portions. The innermost portion of the side wall 24 is that which is provided with the cutout 26 and the inner receptacle is provided with a projection 27 which, as the receptacle slides within the sleeve 25, engages in the cutout 26 and thus provides the desired arresting effect.

FIG. 12 shows yet a further embodiment of the retaining means. The embodiment shown in FIG. 12 corresponds substantially to that shown in FIGS. 1-3 with the deep-drawn projections each of which defines one recess 6. One wall of the outer sleeve is provided with one or more inwardly projecting bulges 28 and it is clear that, as the inner receptacle 4 slides in the direction of the double-headed arrow, the bulge or bulges 28 will successively engage between longitudinally adjacent projections within which the recesses 6 are defined, and will thus serve to arrest the inner receptacle 4 in a plurality of positions relative to the outer sleeve 3.

In the embodiment shown in FIG. 13, which otherwise corresponds substantially to that shown in FIGS. 1-3, a perspectus 29 is introduced into the outer sleeve 31 together with the inner receptacle 30 and it is clear how this perspectus will slide in the sleeve 31 together with the inner receptacle 30 and can thus be withdrawn from and reintroduced into the sleeve 31 whenever this is desired.

FIG. 14, finally, shows another embodiment in which the two side walls 32, 33 of an outer sleeve are provided with longitudinally extending ribs 34 which serve to guide the inner receptacle 35 whose lateral margins 36 slide between the respective ribs 34 and the bottom wall of the outer sleeve. If the space between the ribs 34 and the bottom wall of the outer sleeve is slightly smaller than the thickness of the margins 36 of the inner receptacle 35, the friction thus achieved will provide sufficient resistance to sliding to prevent undesired sliding in the absence of a pressure adequate to overcome this resistance.

Similar longitudinally extending ribs 37, also provided on the inner faces of the side walls 32, 33 of the outer sleeve, are spaced from the top wall of the sleeve so as to permit insertion and longitudinal sliding of an auxiliary member, for instance a prescription card 38, an information carrying table, or the like. Such a card can, for instance, bear the name of the user and the address and telephone number of his physician in case accident or illness should occur to the user under circumstances where he might not be able to identify himself or contact his physician.

If desired, the margin of the inner receptacle can be provided with a longitudinal extension which, when the inner receptacle is properly received within the outer sleeve, can be folded upwardly and tucked into the outer sleeve, thus closing the open end thereof. Conversely, such an extension can also be provided on the outer sleeve for the same purpose.

It is evident that the present invention provides significant advantages over the type of packaging outlined earlier. Clearly, the outer sleeve can be made from a single strip of material of very simple outline, rather than of the complexly-configuration pre-cut members required previously. Equally clearly, this strip-shaped outline eliminates the waste of material which heretofore was unavoidable.

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Folding and securing, for instance adhesive securing, of the overlapping portions of the strip constituting the outer sleeve are the only functions necessary, and equipment for these purposes is very much simpler and therefore less expensive than the equipment necessary for the type of packaging known from the prior art. Any desired number of articles can be removed from a package in accordance with the present invention and all remaining articles will be properly stored and protected within the outer sleeve which, unlike the prior-art constructions, is not destroyed and discarded when the package is opened for the first time to remove the first article therefrom.

For purposes of illustration some of the constituent components of our novel package have been shown as being transparent and others as being non-transparent. However, it will be evident that this is a matter of choice and does not affect the concept according to the present invention.

It will be understood that each of the elements described above, or two or more together, may also find a useful application in other types of packages differing from the types described above.

Without further analysis, the foregoing will so fully reveal the gist of the present invention that others can by applying current knowledge readily adapt it for various applications without omitting features that, from the standpoint of prior art, fairly constitute essential characteristics of the generic or specific aspects of this invention and, therefore, such adaptations should and are intended to be comprehended within the meaning and range of equivalence of the following claims.

What is claimed as new and desired to be protected by Letters Patent is set forth in the appended claims:

1. A package for discrete articles, comprising, in combination, an inner receptacle comprising a first member having one side provided with at least one open recess, and a second member overlying said one side connected with said first member so as to define with said open recess thereof a chamber adapted to accommodate an article to be packaged, said second member being rupturable in response to application of pressure to another side opposite said one side; and an outer sleeve surrounding said inner receptacle, said outer sleeve comprising a peripheral wall including one wall portion overlying said second member and an opposite wall portion overlying said other side of said first member and said one wall portion being provided with a cut-out corresponding substantially to the outline of said chamber so that the packaged article may be removed through said cut-out from said chamber in response to rupture of said second member resulting from application of pressure on said opposite wall portion and thereby on said other side of said first member.

2. A package as defined in claim 1, wherein said outer sleeve consists of shape-retaining material.

3. A package as defined in claim 2, wherein said outer sleeve has two opposite open ends.

4. A package as defined in claim 3; and further comprising retaining means for retaining said inner receptacle within said outer sleeve against undesired sliding movement with reference thereto.

5. A package as defined in claim 4, said retaining means comprising cooperating male and female coupling portions provided on said outer sleeve and said inner receptacle.

6. A package as defined in claim 2, wherein said outer sleeve comprises at least one cut-out for facilitating grasping of said inner receptacle when the same is received within said outer sleeve, and for sliding withdrawal of said inner receptacle.

7. A package as defined in claim 2, wherein said second member is a foil rupturable in response to application of finger-pressure on another side of said inner receptacle which is opposite said one side whereby, in response to such rupture, the packaged article may be removed from said chamber at said one side.

8. A package as defined in claim 2, wherein said outer sleeve consists of synthetic plastic material.

9. A package as defined in claim 8, wherein said synthetic plastic material is polyvinylchloride.

10. A package as defined in claim 8, wherein said synthetic plastic material is hard polyvinylchloride.

11. A package as defined in claim 2; and further comprising cooperating guide portions provided at the exterior of said inner receptacle and in the interior of said outer sleeve and guiding said inner receptacle for sliding movement between said open end and another opposite end of said sleeve.

12. A package as defined in claim 3; and further comprising guide means provided in the interior of said outer sleeve and arranged to guide said inner receptacle for sliding movement between said open ends of said sleeve.

13. A package for discrete articles, comprising, in combination, an inner receptacle comprising a first member having one side provided with at least one open recess, and a second member overlying said one side, sealingly connected with said first member so as to define with said open recess thereof a sealed chamber adapted to accommodate an article to be packaged, said second member being a foil rupturable in response to application of finger-pressure to another side opposite said one side; and an outer sleeve of shape-retaining but yieldable material having at least one open end and surrounding said inner receptacle with the latter having freedom of sliding movement therein, said outer sleeve comprising a peripheral wall including one wall portion overlying said second member and an opposite wall portion overlying said other side of said first member, and said one wall

portion being provided with a cut-out corresponding substantially to the outline of said chamber so that the packaged article may be removed through said cut-out from said chamber in response to rupture of said foil resulting from application of finger-pressure on said opposite wall portion and thereby on said other side of said first member.

14. A package for discrete articles, comprising, in combination, an inner receptacle comprising a first member having one side provided with at least one open recess, and a second member overlying said one side, sealingly connected with said first member so as to define with said open recess thereof a sealed chamber adapted to accommodate an article to be packaged; and an outer sleeve of shape-retaining material having at least one open end and surrounding said inner receptacle with the latter having freedom of sliding movement therein; and elongated supporting ribs extending within said outer sleeve between said open end and another opposite end thereof and arranged to support a flat auxiliary member for sliding movement independently of the sliding movements of said inner receptacle.

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