

[54] **PACKAGING SYSTEM INCLUDING
REMOVABLE MOISTURE-IMPERVIOUS
SEALING SHEET**

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[51] Int. Cl. **B65d 5/54**
[58] Field of Search **206/498; 220/29, 30, 31, 220/60, 252-259; 229/43, 44**

[56] **References Cited**
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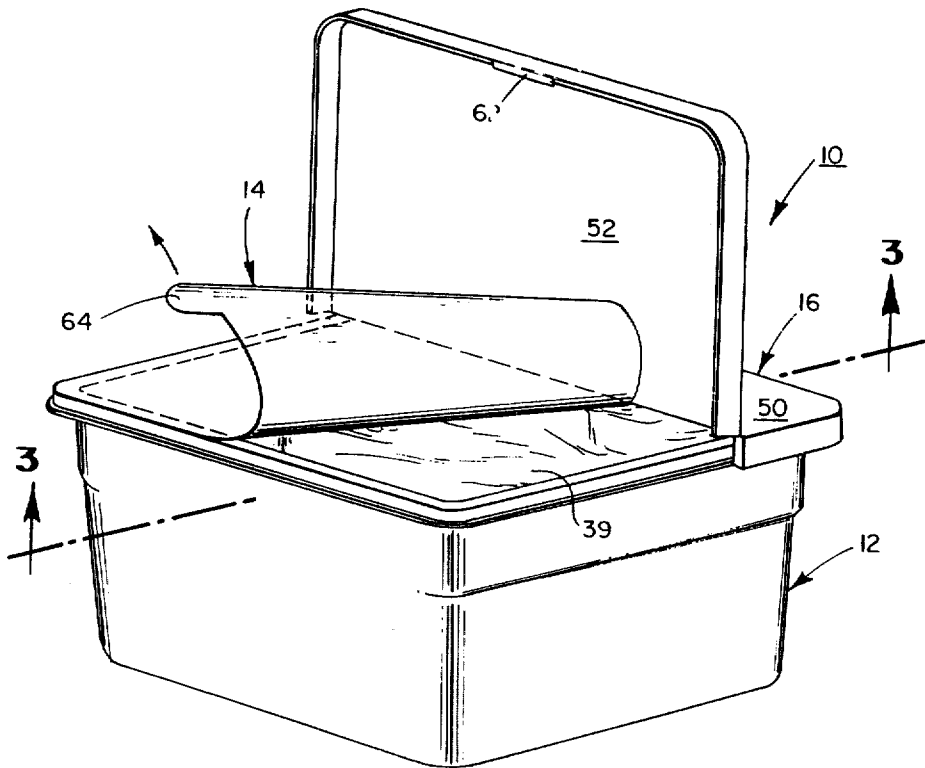
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Primary Examiner—William I. Price
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[57] **ABSTRACT**

A moisture-impervious packaging system includes a container body having an upper margin defining an opening into an inner compartment thereof; a moisture-impervious sheet or film having a weakened region intermediate the forward and rearward ends thereof; and a closure having a transverse hinge intermediate the forward and rearward ends thereof which divides the closure into a movable door portion for permitting access into the inner compartment, and a stationary cover portion which is fixed against movement to the container body. The moisture-impervious sheet is disposed between the closure and the container body and is secured to the container body. The weakened region of the sheet is adjacent to a border of the cover portion adjacent the hinge, and this border provides a tearing edge. To prepare the packaging system for use the door portion of the closure is opened and the portion of the sheet underlying the door portion is peeled back toward the tearing edge to separate the sheet from the container body. When the sheet is peeled back to the weakened region it follows the tearing edge of the cover, and is thereby neatly and cleanly torn away to provide access to the contents within the container body without ever having to remove the closure from the body.

3 Claims, 3 Drawing Figures



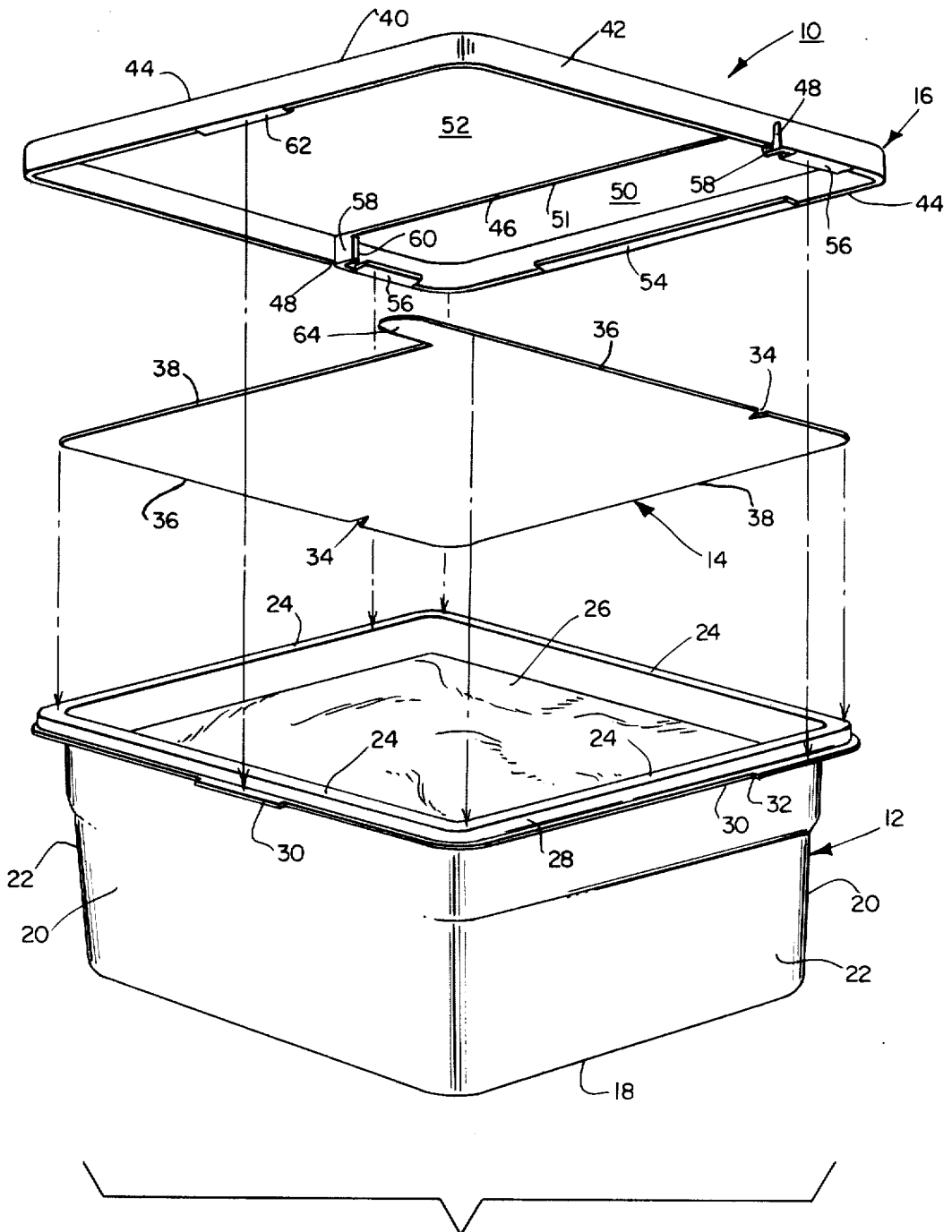


Fig. 1

Fig. 2

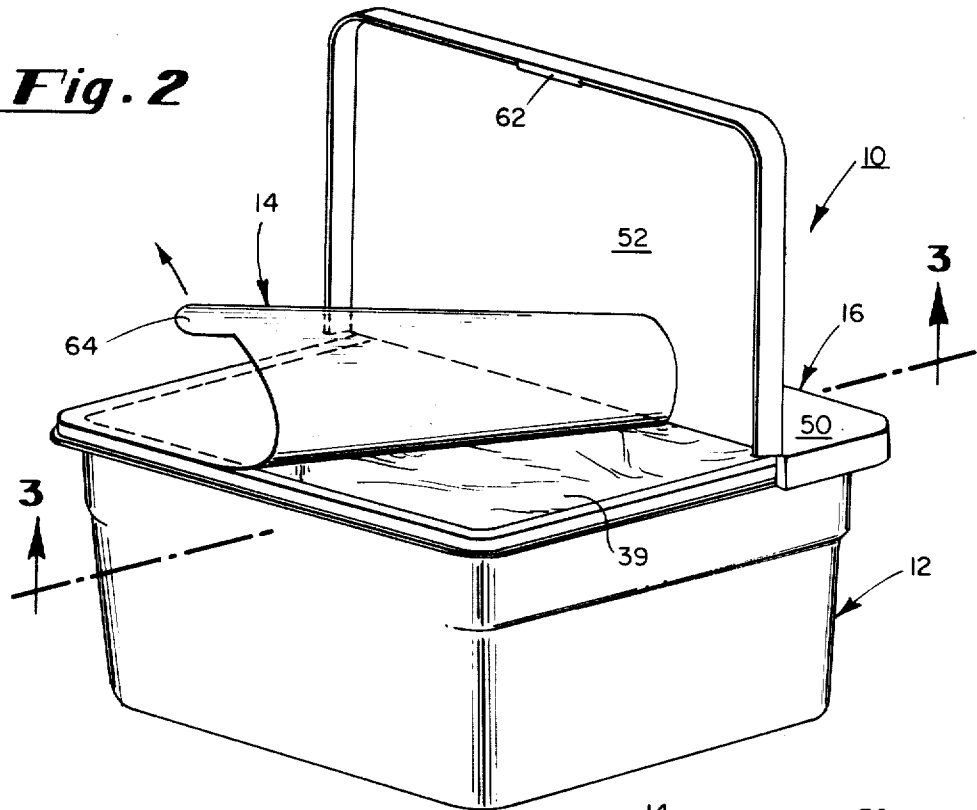
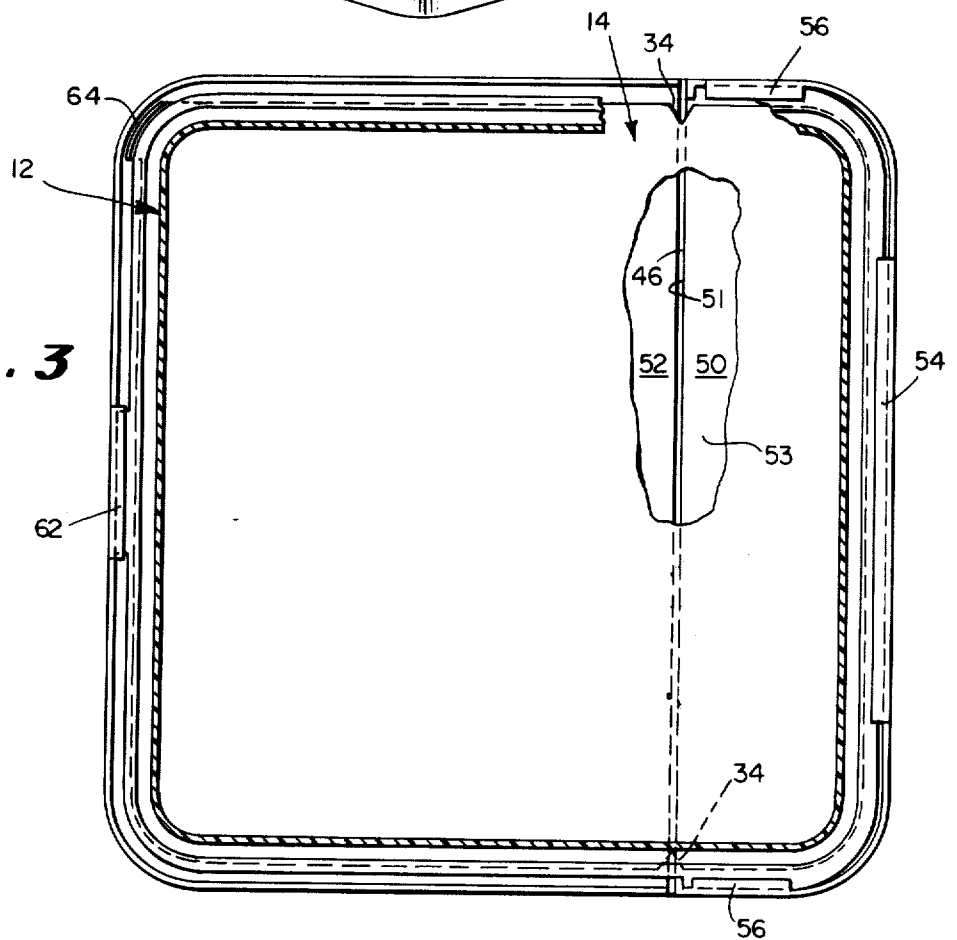


Fig. 3



PACKAGING SYSTEM INCLUDING REMOVABLE MOISTURE-IMPERVIOUS SEALING SHEET

BACKGROUND OF THE INVENTION

1. Field of the Invention

This invention relates to a moisture-impervious packaging system of the type having a moisture-impervious sheet sealing an open end of a container body, and a closure that includes a transverse hinge intermediate its forward and rearward ends which divides the closure into a movable door portion for permitting access into the container body, and a stationary cover portion which is fixed against movement to the container body.

2. Description of the Prior Art

Packaging systems including a container body, and a closure divided into a movable door portion and a stationary cover portion by a transverse hinge are known in the prior art. Such packaging systems are shown in the following patents: U.S. Pat. No. 3,412,890, issued to Rich; U.S. Pat. No. 3,421,654, issued to Hexel; and French Pat. No. 1,319,370, issued to Livarek. The stationary cover portion in all of the above patents is secured to the body by the interlocking engagement of inner and outer peripheral skirts on the cover with surfaces of the container body. The surface contact resulting from this interlocking engagement also aids in forming a moisture-impervious seal.

It is highly desirable in some applications to adhere a taut moisture-impervious sheet or film over the body opening to substantially reduce moisture seepage into or out of the body compartment. For example, in a packaging system including premoistened wet wipers it is extremely important that the packaging system be moisture-impervious to prevent the escape of moisture from the wet wipers during the relatively long shelf-life (i.e., six months to two years) required for such products. For this, and other similar applications, the use of a moisture-impervious film or sheet, as described above, is highly desirable. However, in the packaging systems described in the patents referred to in the preceding paragraph such a moisture-impervious sealing sheet cannot be used because the inner skirt projecting into the body opening would tear or perforate the sheet.

A packaging system of the above-identified type, but including a closure which does not have an inner skirt, was invented by Harry Spruyt and Louis S. Hoffman and is the subject matter of U.S. Pat. Application Ser. No. 401,235, filed Sept. 27, 1973, entitled "Packaging System," and assigned to Scott Paper Company. In this latter packaging system a sealing sheet can be placed over the body opening for there is no inner skirt on the closure. However, to establish access to the contents of the packaging system, the entire closure is removed from the body before the sheet or film is removed. Once the sheet has been removed, the closure is replaced and access to the container contents is had by opening the door portion of the closure. This means of establishing access to the contents within the packaging system is more cumbersome than is desired.

SUMMARY OF THE INVENTION

The packaging system of this invention employs a unique structural and cooperative relationship between a container body, a moisture-impervious sealing sheet and a container closure to permit access to the con-

tainer contents to be established without removal of the closure.

The packaging system comprises a container body having an upper margin defining an opening into an inner compartment of said body; a moisture-impervious sheet adhered to the container body and including a weakened region intermediate its forward and rearward ends; and a container closure including a transverse hinge intermediate its forward and rearward ends which divides the closure into a movable door portion for permitting access into the inner compartment, and a stationary cover portion which is fixed against movement to the body. The cover portion includes a border adjacent to the hinge; said border constituting a tearing edge which overlies the sheet and is adjacent the weakened region of said sheet. This construction permits the portion of the sheet underlying the door portion of the closure to be peeled back to the weakened region, at which it initially separates from the remaining portion of the sheet; i.e. that portion of the sheet underlying the cover portion. After initial separation, the continued peeling action causes the sheet to follow the tearing edge, whereby the portion of the sheet underlying the door portion is neatly severed from the remaining portion of the sheet.

The advantage of this invention is that it is a moisture-impervious packaging system that embodies a moisture-impervious sealing sheet, and a closure which does not have to be removed in order to establish access to the container contents.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is an exploded isometric view of a packaging system according to this invention;

FIG. 2 is an isometric view of the packaging system of FIG. 1 with its components assembled, and the door portion of the closure in an opened position with the moisture-impervious sheet partially removed; and

FIG. 3 is a sectional view along line 3-3 of FIG. 2 with portions cut away to show details of construction.

DESCRIPTION OF THE PREFERRED EMBODIMENT OF THE INVENTION

Referring to FIG. 1, the packaging system 10 of this invention includes a container body 12, a moisture-impervious sheet 14, and a hinged closure 16. The container body 12 and the closure 14 are preferably made of a plastic material such as polyethylene or polypropylene; however, other suitable materials can be used. Although the packaging system shown has a rectangular shape, other shapes, such as circular and oval can be used.

The container body 12 includes a bottom wall 18, front and rear peripheral end walls 20 and peripheral side walls 22. The peripheral end and side walls have upper margins 24 which define an opening into an inner compartment 26. A peripheral skirt 28 extends downwardly from the upper margins 24 and terminates in a downwardly facing shoulder 30. The peripheral skirt 28 has a stepped configuration overlying each side wall 22 to form forwardly facing, transversely aligned shoulders 32 (only one of which is shown in FIG. 1) on opposite sides of the container body 12 intermediate the end walls 20 thereof.

Referring to FIGS. 1 and 3, the moisture-impervious sheet 14 has weakened regions 34 intermediate the forward and rearward ends thereof. The weakened regions

34 are shown aligned, V-shaped notches projecting inwardly from side margins 36 of said sheet intermediate front and rear margins 38. However, other means, such as aligned notches of different shapes (including discrete, straight-line cuts), a single notch or cut projecting inwardly from only one side margin of the sheet 14, or a section of reduced thickness may be employed to weaken the moisture-impervious sheet. The moisture-impervious sheet 14 can be formed from any suitable moisture-impervious material, such as aluminum foil, plastic, coated papers, laminates of aluminum foil and plastic, or laminates of paper and plastic. This moisture-impervious sheet 14 is secured to the container body 12 after articles, such as pre-moistened wipers 39 (FIG. 2), are placed therein.

Referring to FIGS. 1-3, the hinged closure 16, in the most preferred embodiment of the invention, is a unitary closure having a top wall 40, and a peripheral skirt 42 extending around the outer periphery of said top wall. The top wall 40 is provided with a thinned transverse zone intermediate front and rear ends 44 of the closure 16 to provide an integral flexible hinge 46 extending for the full transverse extent thereof. The skirt 36 is interrupted by cut-out regions 48 for interrupting the continuity of said skirt to permit pivotal movement of the closure at the hinge; however, other means, such as thinned regions can be provided in the skirt to prevent the skirt from impeding pivotal movement. The integral hinge 46 divides the closure 16 into a cover portion 50 which is adapted to remain stationary with respect to the container body 12 when the closure is attached to the container body, and a movable door portion 52 which is movable about the hinge 46 to permit access to articles contained within the inner compartment 26, and to permit subsequent reclosure of the packaging system 10. Referring to FIG. 3, the cover portion 50 includes a tearing edge 51 adjacent hinge 46. The tearing edge 51 is provided by the intersection of the bottom surface 53 of the cover portion 50 with a surface of the groove which forms the thinned hinge 46.

The closure need not be of a unitary construction but must have a hinge intermediate front and rear ends thereof. For example, the cover portion 50 and door portion 52 can be separate members connected through a conventional hinge, such as a piano hinge.

Referring to FIG. 1, the cover portion 50 is attached to the container body 12 by the cooperation of elements which will now be described. The cover portion 50 includes an inwardly directed end projection 54 and inwardly directed side projections 56 which are snapped into closely positioned, underlying relationship with the downwardly facing shoulder 30 of the container body 12. The cover portion 50 further includes inturned tabs 58 providing transversely spaced, rearwardly facing shoulders 60 which are disposed in closely positioned overlying relationship with the transversely spaced forwardly facing shoulders 32 of the container body 12 when the cover portion 50 is snapped onto the container body 12. The cooperative relationship of the inwardly directed projections 54 and 56 of the closure 16 with the downwardly facing shoulder 30 of the container body 12 prevents the closure 16 from being inadvertently lifted off of the container body 12 in a direction normal to the opening into the inner compartment 26 thereof. The cooperative relationship between the forwardly facing shoulders 32 of

the container body 12 and the rearwardly facing shoulders 60 of the closure 16 prevents the closure from sliding off the rear of the container body 12 when the door portion 52 is in an open position.

The door portion 52 includes an inwardly directed projection 62 which is integrally formed with the peripheral skirt 42 for cooperating with the downwardly facing peripheral shoulder 30 of the container body 12 to provide cooperable latch means which maintains said door portion 52 in a closed position. The inwardly directed projection 62 of the door portion 52 extends transversely for only a short distance to permit release of the latch means in an easy fashion without separation of the cover portion 50 from the container body 12.

The above-described relationship between the container body 12 and the closure 16 is set forth in greater detail in the earlier-referred-to U.S. Pat. application Ser. No. 401,235, which covers the invention of Harry Spruyt and Louis S. Hoffman, and is hereby incorporated by reference.

Referring to FIGS. 2 and 3, the moisture-impervious sheet 14 overlies the opening into the inner compartment 26 and is secured to upper margins 24 of the body by any suitable means, such as an adhesive. If desired, one or both forward corners of the sheet 16 can be provided with a tab extension 64 (only one being shown in FIG. 2) which extends beyond the upper margins 24 of the container body 12 to provide a sheet section which can be easily gripped for peeling said sheet 16 back toward the tearing edge 51 in a manner which will be described in greater detail later in the application. The weakened regions of the sheet preferably are positioned to underlie the tearing edge 51 of the closure 16. The weakened regions 34 need not underlie the tearing edge 51, but must be reasonably close to said tearing edge to permit neat severance of the sheet 14 along said tearing edge. Reference in the claims to the weakened regions of the sheet being "adjacent" the tearing edge is intended to cover the arrangement in which the weakened regions underlie the tearing edge, as well as the arrangement in which the weakened regions are reasonably close to said tearing edge to permit neat severance of the sheet 14 along said tearing edge.

Referring to FIG. 2, the packaging system is made ready for use by opening the door portion 52, gripping the sheet 14 by its tab extension 64, and peeling the sheet back toward a weakened region 34 to thereby separate the sheet from the upper margin 24 of the container body 12. When a weakened region of the sheet is reached, further rearward removal of the sheet from the upper margin 24 of the container body ceases, and the sheet follows the tearing edge 51 of the closure 16. In this manner, the portion of the sheet which underlies the door portion 52 is neatly severed from the remainder of the sheet to permit access to the contents within the packaging system 10 without necessitating removal of the closure 16 from the body 12. To regain access to the contents of the packaging system 10 the user need only open the door portion 52.

Having described my invention, I claim:

1. A packaging system comprising:

a. a container body including a bottom wall, peripheral walls extending upwardly from said bottom wall and having upper margins which define an opening into an inner compartment of said body;

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- b. a unitary closure attached to said body, said closure including a top wall overlying the open end of the compartment, said top wall including a thinned transverse section intermediate forward and rearward ends thereof for forming a transversely extending hinge and tearing edge, said hinge dividing said closure into a forward movable door portion and rearward stationary cover portion; and
- c. a moisture-impervious sheet secured to said container body and being disposed between the container body and unitary closure, said sheet overlying the open end of the inner compartment and including a weakened region intermediate forward and rearward ends thereof for dividing said sheet into a forward section underlying the movable door portion of the closure and a rearward section underlying the stationary cover portion of said closure, said weakened region of the sheet being adjacent

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cent the tearing edge of the closure whereby the forward section of the sheet is separated from the rearward section of the sheet by peeling the forward section off of the container body toward the weakened region, whereat the forward section follows the tearing edge of the closure and is thereby separated from the rearward section.

2. The packaging system according to claim 1, wherein the weakened region includes a notch in at least one side margin of said sheet.

3. The packaging system according to claim 1, wherein the moisture-impervious sheet extends beyond the upper margin of the container body at a corner thereof which underlies the door portion of the closure to thereby form a tab extension which can be gripped to facilitate peeling the sheet from the container body.

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