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[54] **SLIDE TOP DISPENSING CARTON**

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[52] **U.S. Cl.**..... **222/529,** 222/561, 229/17 SC, 229/37 R

[51] **Int. Cl.**..... **B67d 3/00**

[58] **Field of Search** ..... 222/527, 529, 530, 561, 222/531, 532; 229/17 R, 51 D, 51 TC, 51 TS, 37 D, 17 SC, 7 SC

[56] **References Cited**

UNITED STATES PATENTS

1,286,038	11/1918	Lowy	229/17 R
1,951,274	3/1934	Denman	222/561
2,330,926	10/1943	Roys	229/17 SC
2,822,963	2/1958	Alden	222/530
2,901,097	8/1959	Tamarin	229/17 SC

FOREIGN PATENTS OR APPLICATIONS

957,512	5/1964	Great Britain	229/17 SC

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Assistant Examiner—H. Grant Skaggs, Jr.

[57] **ABSTRACT**

The carton of the present invention is in the form of a dispensing carton having an integral slidable panel at the top thereof to permit the dispensing of the contents of the carton. The dispensing top of the carton is constructed from a novel combination of top closure flaps which, when manipulated in a preferred order, form the top closure of the carton, a dispensing opening for the carton, a captured slide panel for covering and uncovering the dispensing opening of the carton, a completely siftproof closure for both the top of the carton and the hinged end of the slide top panel, a tamperproof initial closure for the carton, and a convenient means for gripping the slide top panel to permit dispensing of the carton.

4 Claims, 6 Drawing Figures

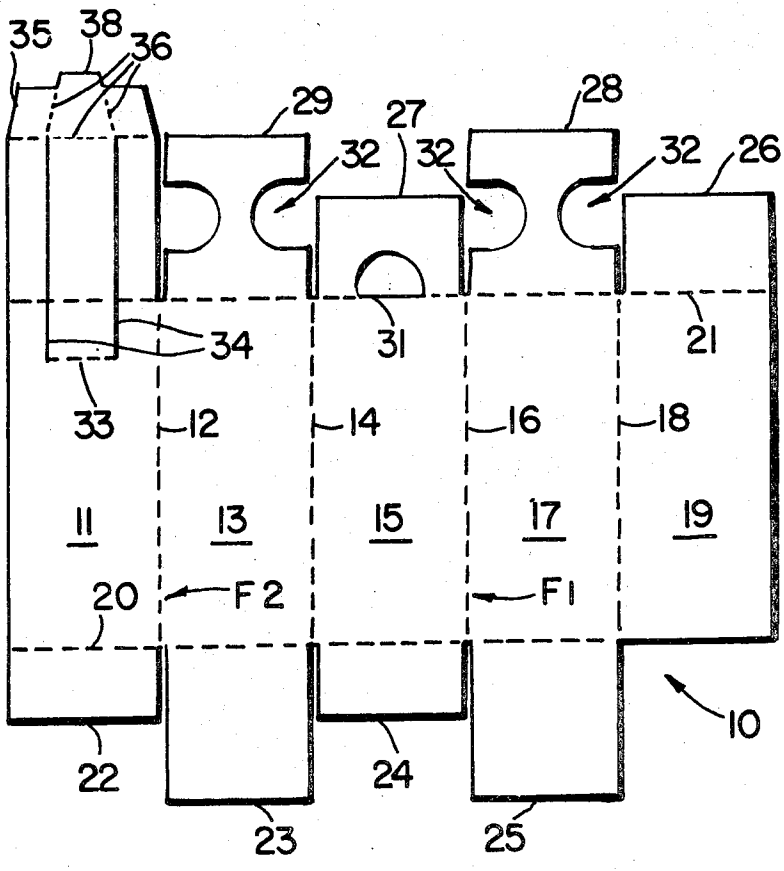


Fig 1.

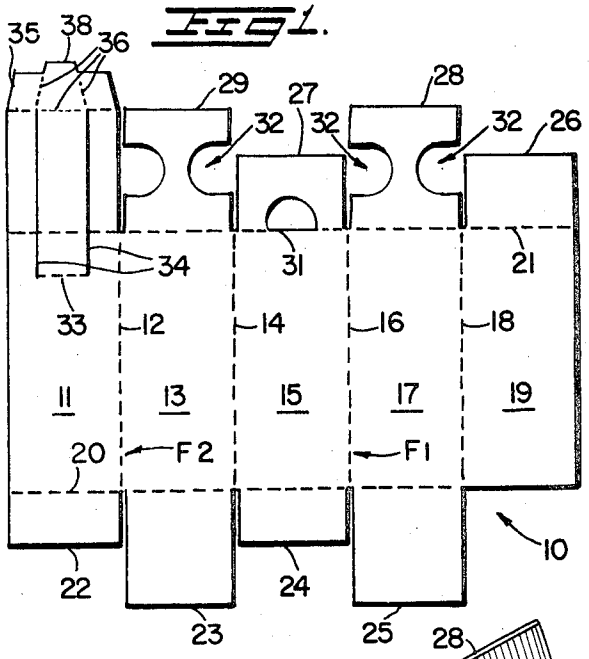


Fig 3.

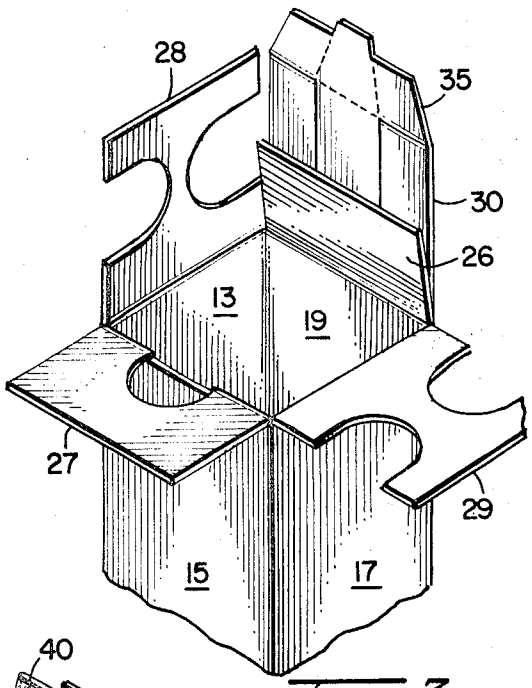


Fig 2.

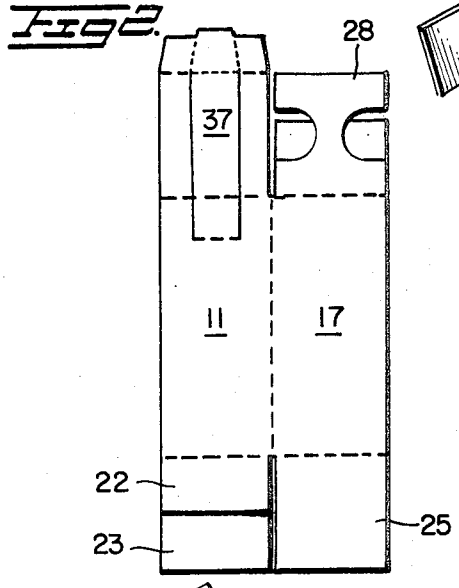


Fig 4.

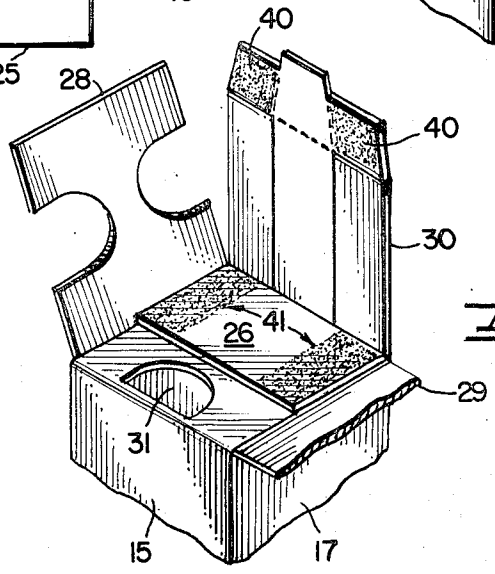


Fig 5.

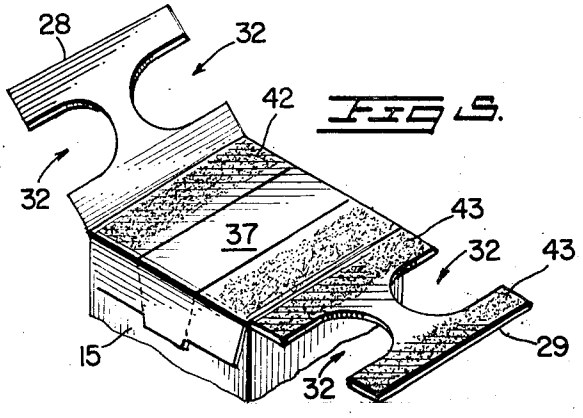
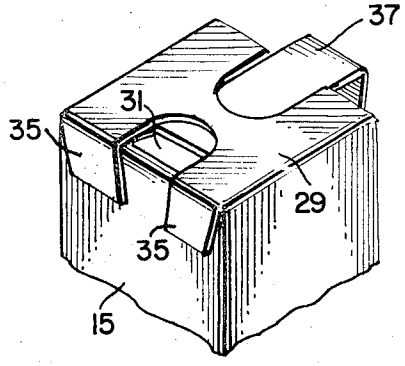


Fig 6.



SLIDE TOP DISPENSING CARTON

SUMMARY OF INVENTION

The present invention relates generally to a carton of the dispensing type. More particularly, the invention relates to a novel carton blank and a carton constructed from the blank wherein the carton includes an integral slidable panel at the top thereof to permit dispensing of the contents. The slide top dispensing carton of the present invention is suitable for packaging any granular or powdered material of a free flowing nature and includes a tamperproof seal for the slide top dispensing panel.

A primary object of the invention lies in the provision of a substantially rigid carton formed from a one piece blank of paperboard or the like and having an improved slide top dispensing end closure. The carton of the present invention is adapted to be preglued and shipped to the user in flat condition where the user then need only fill and seal the two ends of the carton. In this respect the carton bottom may be sealed first, the contents filled from the top and then the top sealed, or, the top may be sealed first with filling from the bottom and finally sealing of the bottom.

In furtherance of the above noted objects, the present invention provides a carton having a dispensing opening in the top end thereof through which the contents of the carton are readily dispensed. The carton of the present invention also includes a novel slidable top dispensing panel whereby the dispensing opening is easily covered and uncovered with the carton being constructed to provide a tamperproof seal in the closed condition and insure a method of assembly which assures unfettered operation during the dispensing function. More particularly, the invention provides a carton having a dispensing opening formed in one top closure flap with registered cut outs in other top closure flaps attached to the side walls of the carton, which other flaps serve as both the upper slide guide for the slide top dispensing panel and as the top end closure of the carton. The slide top dispensing panel is cut from another top closure flap which is attached to a rear sidewall of the carton and it is adapted to be reciprocated from an open, dispensing position to a closed position by finger pressure applied to the slide top through the registered cut outs in the other folded over top closure flaps.

It has heretofore been proposed to provide cartons with slidable panels at the top thereof for permitting dispensing of the contents, but most of these prior art cartons had major disadvantages. One of the major disadvantages some prior art cartons had was the occurrence of an open corner at either the free or hinged end of the slidable panel so that sift proofness and complete closure of the carton after filling was not possible. In other cartons, the slidable panel provided tended to rest directly on the contents of the carton thereby rendering the second stage or final gluing of the carton ends impossible. In yet other cartons, the friction area of the slidable panel for engagement by the thumb or fingers for actuation was not adequate, and, the limitation on final assembly as being only by hand without the conveninece and efficiency of being glued on high speed machinery was a decided drawback.

Accordingly, the carton of the present invention was designed and engineered to provide a controlled, slidable, slide top dispensing panel in a carton having, if desired, all closed corners, an improved slide panel, an improved slide guide for the slide panel, an improved friction grip for operating the slide panel, a sidewall articulation point for the slide top dispensing pane thus giving an improved mounting leg for the slide panel itself, a more convenient and stronger top closure for the final gluing stage, and a tamperproof initial seal for the slide panel thereby permitting readily visual inspection of the carton to determine its freshness and integrity.

In general, the objects of the present invention are accomplished by providing a novel blank from which the carton is constructed, said carton in the preferred embodiment having a generally rectangular body portion with a dispensing opening in one end and a captive slide closure for the dispensing opening. The slide top panel is formed as a part of one of the top closure panels and an adjacent sidewall, and is hingedly connected to the carton body along a fold line in the adjacent carton sidewall. The top closure flap containing the slide top panel extends completely across the top of the dispensing end of the carton and is adhesively secured to the opposite carton sidewall thus yielding a tamperproof closure. The blank from which the carton is constructed includes four conventional sidewall panels and a full sized fifth panel connected to one of the conventional sidewall panels which serves as a glue flap and as a siftproof element for the hinge connection of the slide top panel to the carton sidewall. The bottom of the carton is secured by four conventional lower end closure flaps which can be glued on high speed machinery or by hand. The top of the carton is constructed from a novel combination of top closure flaps which, when manipulated in a preferred order, form the top closure for the carton, a dispensing opening for the carton, a captured slide support for the slide top dispensing panel and a sift proof panel for the hinged end of the slide top panel.

DESCRIPTION OF DRAWING

FIG. **1** shows in plan view the preferred blank structure for forming the carton of the present invention;

FIG. **2** shows the blank of FIG. **1** after two folding steps are made to yield the fabricated carton in knocked down, flattened condition;

FIG. **3** shows a partial perspective view of the squared carton of FIG. **2** with the top closure flaps in position for closure;

FIG. **4** is a view similar to FIG. **3** showing the first folding sequence for closing the top dispensing end of the carton;

FIG. **5** is a view similar to FIG. **4** showing the second folding sequence for closing the top dispensing end of the carton; and,

FIG. **6** shows the carton completely close with the slide dispenser panel adjusted to uncover the dispensing opening.

DETAILED DESCRIPTION

The dispensing carton is preferably constructed from paperboard or the like material and may include suitable impervious coatings or liner elements for the inside walls thereof as desired. Of course, since only a preferred construction is shown, it should be appreciated that the carton could readily be made in various sizes and shapes to meet the requirements of the trade

in marketing the particular kind of products desired. In the form shown in FIG. **1**, the carton blank **10** includes a plurality of sidewall panels **11, 13, 15** and **17** which for the sake of description will be referred to as rear panel **11**, side panels **13, 15** and front panel **17**, separated from one another by parallel fold lines **12, 14** and **16**. Attached to the sidewall panel **17** along a fold line **18**, there is located another full sized panel **19** which serves as the glue flap for the carton and as a sift proof member in the final form. The blank also includes the conventional bottom closure flaps **22–25** attached to the sidewalls along fold line **20** and the novel top closure flaps **26–30** attached to the sidewalls along the fold line **21**. Thus it is believed that the novelty of the slide top dispensing carton disclosed herein lies, (**1**) in the manner in which the carton blank is cut to produce the novel top closure flaps, and (**2**) in the folding scheme employed **1**n closing the top of the carton.

In this respect, note that the two top closure flaps **26** and **27**, attached to the sidewalls **19** and **15**, respectively, are of approximately the same size with the flap **27** including a dispensing opening **31**. It should be recognized that the dispensing opening could be formed in any desired shape and also located as desired in the dispensing flap **27** without deviating from the invention as anticipated herein. For instance, the dispensing opening **31** could readily be moved to a different location with respect to the fold line **21** and formed by several discreet small openings if desired, as opposed to a single large opening, to thereby prevent any leakage from the carton along the fold line **21**. The two top end closure flaps **28, 29** attached to sidewall panels **13, 15** are each substantially identically applied with cuts to form matching notches or cut outs **32** at the sides thereof, and, in the folded and secured position, the closure flaps **28, 29** form the upper slide guide for the slide top dispensing panel while the notches **32** form, a front access space for the dispensing opening, and a rear finger grip friction area for manipulating the sliding panel. Finally, the top closure flap **30** attached to rear wall panel **11** includes the novel slide top dispensing panel **37** for the carton with an additional flap extension portion **35** added thereto for securing the top closure flap **30** completely across the top of the carton in its closed condition. Note that the slide top dispensing panel **37** is formed as an integral part of the top closure flap **30**, and, as a part of the rear wall **11** by a pair of parallel cut lines **34**. The cut lines **34** are suitably spaced from one another by a distance that is chosen to match the size and shape of the dispensing opening **31** in top closure flap **27**. In some embodiments the cut lines **34** could be tapered to define a slide closure panel which would expose a varying sized dispensing opening. The top closure flap **30** and the extension member **35**, which is folded over and secured to an opposed side wall of the carton in the final gluing stage, serve to provide a temperproof closure for the carton. However, obviously some means must be provided for separating the slide closure panel **37** from the top closure flap extension member **35**, and for this purpose perforated lines **36** are arranged in the extension portion **35** which permit that portion of the extension portion **35** enclosed by the perforated lines to be removed by grasping the integral tab **38**. Of course, removal of the tear away part of extension portion **35** then permits the slide panel **37** to be reciprocated back and forth about the fold line **33**. In addition, because of the presence of the extension member **35** on top closure flap **30**, the flap **30** is readily adhered across the top of the carton without becoming depressed inside the carton. In this respect, the carton of the present invention has more integrity and strength than prior art cartons of a similar type which often required that the slidable portion of the dispensing element rest directly on the packaged product, or that an inner mandrel be inserted in the carton to support the end closure flaps in the final gluing stage.

Particular reference to the other Figures of drawing shown how the carton blank **10** is folded, glued and sealed after being filled.

Note in FIG. **2**, where the carton is shown in its flattened and knocked down configuration for shipment to the user. To arrive at this configuration, the carton blank **10** is normally straight line glued with the application of adhesive along preferably two separated lines to the backside of the glue panel **19** and the top closure flap **26**. The two lines of adhesive must be separated from one another along the side edges of glue panel **19** so that the glue panel **19** will become adhered only to the rear wall panel **11** and not to the slide top panel **37**. Thus to assemble the carton into its final form, after adhesive is applied, the carton blank is first folded along fold line **16** and F_1 and secondly along fold line **12** at F_2. These two folds serve to adhere the rear wall panel **11** and glue panel **19** together, and, with the adhesive applied to the top closure flap **26**, the folds F_1, F_2 also adhere the top flap **26** to the inside of the top flap **30** along the areas outside of the cut lines **34**. It is important, of course, not to adhere the slidable panel **37** to the top closure flap **26** or the glue panel **19** since as provided herein the slidable panel obviously could not function as desired if it were so glued. Alternatively, if spot gluing is used for assembling the carton, the top flap **26** would not be applied with adhesive and the potential problem would be eliminated. As will be explained later on, it is not necessary to adhere top closure flap **26** to the top closure flap **30**, however if the glue application scheme chosen for assembling the carton also adheres flap **26** to flap **30**, no problems will occur as long as slide panel **37** is not restricted in any way by the application of the adhesive. It should be noted however, that the presence of top closure flap **26** in the preferred embodiment is desirable since it performs two important functions. In the first instance, top flap **26** provides a siftproof seal at the top of the carton near the rear wall panel **11**. Secondly, top closure flap **26** also serves as the lower slide guide for the slidable panel **37**. In order to accomplish this latter function, the top closure flap **26** is preferably of a length equal to slightly more than one-half the width dimension of the top of the carton, or slightly longer than the dispensing flap **27**, and, in the final gluing stage of the carton, flap **26** is folded so as to overlap the dispensing flap **27**. In this regard, FIG. **3** shows the completed carton that is squared and ready for filling, with the top closure flaps **26, 27, 28, 29** and **30** in the open condition. Thus as shown in FIG. **3**, the dispensing opening **31** is located in the dispensing flap/top flap **27**, and it extends from the front wall panel **15**. At each side of the dispensing flap **27** and attached to the adjacent sidewall panels **13, 17** are the notched top closure flaps **28, 29** which together serve as the upper slide guide for the slidable dispensing panel **37** with the notches providing access to the slidable element **37** both for manipulation

of the element 37 and for dispensing purposes. Finally, the dispensing flap 27 is opposed by the top closure flap 26 attached to the glue panel 19 and the top closure flap 30 attached to the rear wall panel 11.

After the carton is filled, presuming a top filling operation with the bottom already closed, the top is finally closed and sealed as shown in FIGS. 4 and 5. FIG. 4 shows the preferred embodiment wherein the dispensing flap 27 is folded downwardly initially and then overlapped by the opposed top closure flap 26. Adhesive is applied to either the top of the flap 26 as shown, and the front sidewall panel 15, or alternatively to the bottom of top closure flap 30 and the extension 35, and the top closure flap 30 is then folded down to be adhered to both the flap 26 and the front sidewall 15. Of course, as pointed out hereinbefore, in some instances i.e., where straight line gluing is used, the flaps 26 and 30 may be previously adhered to one another and then it is y necessary to apply adhesive either to the front sidewall 15 or the flap extension 35 to effect a proper seal. In addition, in yet another possible scheme, the top flaps 26, 30 would not be adhered to one another at all, with adhesive being applied only to the front sidewall 15 or the flap extension 35. Nevertheless, in each of the above described alternatives, it may be seen that the top flap 30 is folded over and sealed without the aid of any interior support from either the packaged product or an inner mandrel. And this feature is deemed to be a novel expedient not anticipated by the prior art cartons of a similar nature.

Finally, the top of the carton is completely sealed by lapping the notched top closure flaps 28, 29 and adhering them to one another. For this purpose, one of the flaps 28 or 29 may be applied with adhesive and adhered directly to the top closure flap 30 in the region outside of the cut lines 34, with the remaining flap then being adhered to the first, or, the two flaps 28, 29 may simply be adhered to one another after being folded over without any physical connection to flap 30. The particular gluing, folding and sealing scheme employed would depend on the type of machinery being used. It should be noted however, that as a practical matter, the notches or cut outs 32 in the flaps 28, 29 are deliberately made of different size, i.e., the cut out openings 32 are made slightly larger in top flap 29 than in top flap 28, or vice versa. And in the assembly of the carton, the top flap having the larger notches or cut outs 32 is preferably folded downwardly before the other top flap so as to further preclude any possibility of adhering the first folded flap 28 or 29 to the slidable element 37 and also to give a better appearance to the top of the carton. It was discovered from practical experience that no matter how carefully the carton blank was scored and cut, notched openings 32 of the same size in flaps 28, 29 always yielded a carton having some ragged edges at the top. Of course, it should also be pointed out that by folding flaps 28, 29 in the final stage to overlap one another, an effective siftproof seal is provided at the two sidewalls of the carton. Thus, the carton of the present invention is effectively provided with a siftproof seal at each of the four sides of the top by the dispensing flap 27, and the top closure flaps 26, 28 and 29.

FIG. 6 shows the completed carton with the area defined by the perforated lines 36 removed and the slide panel 37 shifted rearwarely to permit dispensing of the carton. The natural resilience of the carton material tends to keep the slide element in a closed condition and because of the presence of the glued extension 35 to front sidewall 15, the carton top is not readily collapsed inside the carton. Thus the user of the carton described in the present invention need only remove the part of the extension portion 35 defined by the perforated lines 36, and then by placing his thumb or forefinger on the slide element 37 in the area provided by the rear notches 32, simply reciprocate the slide element between its dispensing position and its closed condition, to uncover and cover the dispensing opening 31.

Accordingly, as will be appreciated by a complete review of the disclosure herein, the invention has been shown and described merely by way of a preferred example, and obviously many changes and variations in the carton could be made without departing from the scope of the invention as defined in the appended claims.

I claim:

1. A slide top dispensing carton formed from a single blank of sheet material and having a first pair of side wall panels spaced opposite and parallel to one another, a second pair of sidewall panels spaced opposite and parallel to one another and perpendicualr to and joining the first sidewall panels, and a full-sized glue panel connected to one of said first sidewall panels and adhered to one of said second sidewall panels, said sidewall panels having flaps at the lower ends thereof which are folded and secured to each other to close the bottom of said carton, the improveent comprising a plurality of opposed top closure flaps foldably attached to said sidewall panels, two of said opposed top closure flaps including a carton dispensing flap and a slide panel top closure flap, a dispensing opening in said carton dispensing flap and a captive dispensing slide panel as an integral part of the slide panel top closure flap, an additional top closure flap foldably attached to said glue panel to form a sift proof seal at one top edge of said carton in the region of the connection of said slide panel top closure flap to the carton sidewall, said additional top closure flap being dimensioned to partially overlap the free end of the opposed dispensing flap, said slide panel top closure flap extending completely across the top of said carton to cover both the additional top closure flap and the dispensing flap whereby the additional top closure flap and the dispensing flap each further serve as a lower slide panel guide for the captive dispensing slide panel, the remaining two opposed top closure flaps including a pair of folded flaps which are adhered to one another and overlie the slide panel closure flap to serve as an upper slide panel guide for the captive dispensing slide panel, said remaining two top closure flaps having cut out notches at each side thereof which form an access space for the dispensing opening and a finger grip area for manipulating the slide panel, said slide panel top closure flap further including an extension at the free end thereof which is secured to the opposed side wall of the carton.

2. The slide top dispensing carton of claim 1 wherein the captive dispensing slide panel in the slide panel top closure flap is formed by a pair of parallel cut lines that are spaced apart a distance equal to the size of the dispensing opening in the carton dispensing flap and which extend throughout the entire length of the slide panel top closure flap and into the sidewall to which the slide panel top closure flap is foldably attached.

3. The slide top dispensing carton of claim 2 wherein the parallel cut liens are bound at one end by a fold line in the sidewall to which the slide panel top closure flap is foldably attached and at the other end by a series of perforated lines in the slide panel top closure flap extension.

4. The slide top dispensing carton of claim 3 wherein the series of perforated lines in the slide panel top closure flap extension define a tear away part thereof which permits the slide panel to be reciprocated to uncover the dispensing opening.

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