# United States Patent [19]

**Mueller**

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[54] **DISPENSING CARTON**


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[73] Assignee: **American Can Company,** Greenwich, Conn.



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[21] Appl. No.: **548,915**

**Related U.S. Patent Documents**

Reissue of:

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Appl. No.: **285,915**
Filed: **Sept. 1, 1972**

[52] **U.S. Cl.** ..... **229/44 CB;** 206/273
[51] **Int. Cl.**[2] ..... **B65D 5/66**
[58] **Field of Search** ..... 229/44 CB, 19, 20; 206/264, 271, 273



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*Attorney, Agent, or Firm*—Robert P. Auber; Ira S. Dorman; George P. Ziehmer



[57] **ABSTRACT**

A two-piece paperboard carton for retaining and dispensing cigarettes and the like, comprising a shell and a slide receptacle inserted into the shell. A simple motion of pulling down on the shell is sufficient to open the slide receptacle while an opposite action is effective to close the receptacle.


**13 Claims, 6 Drawing Figures**

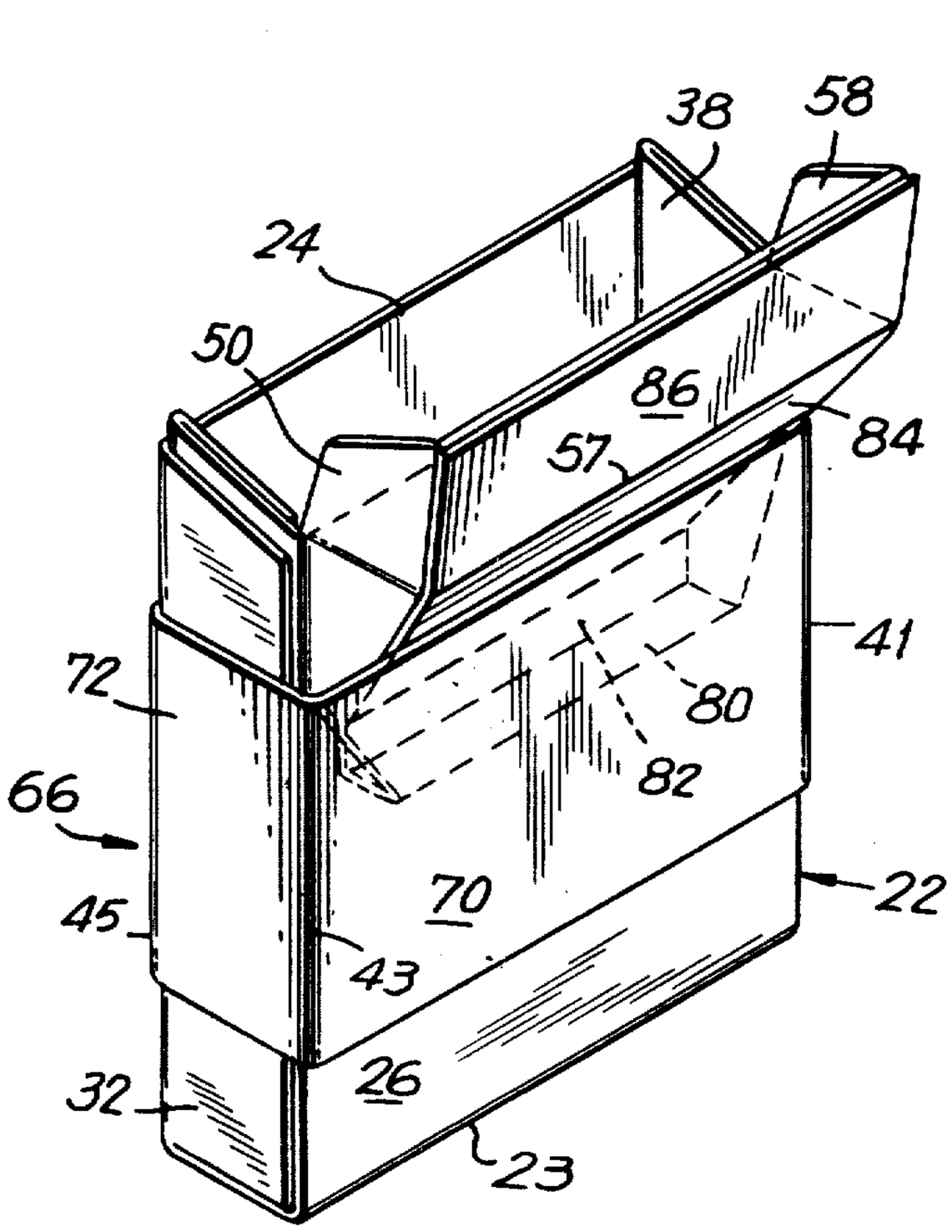

FIG. 1

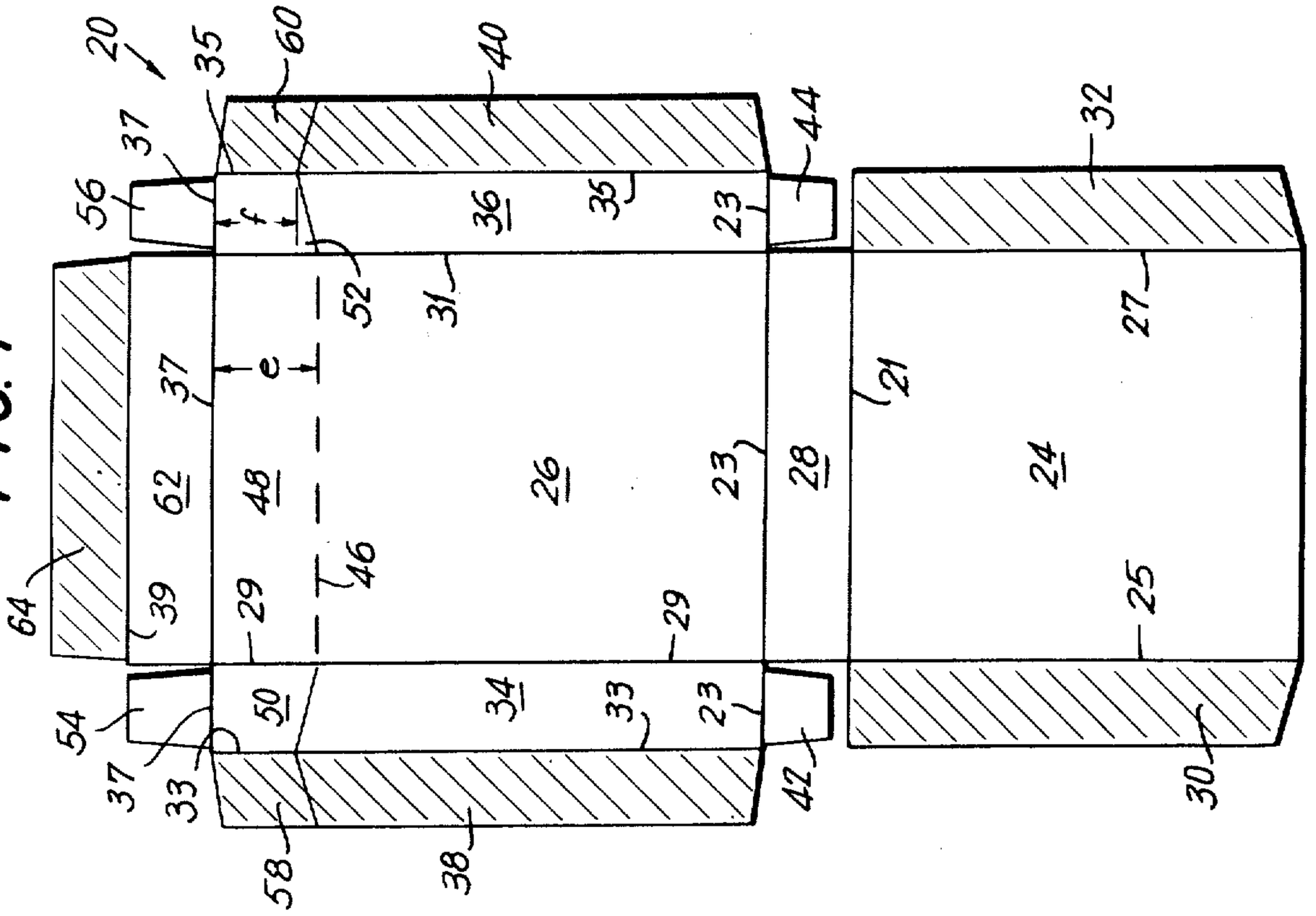
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FIG. 2

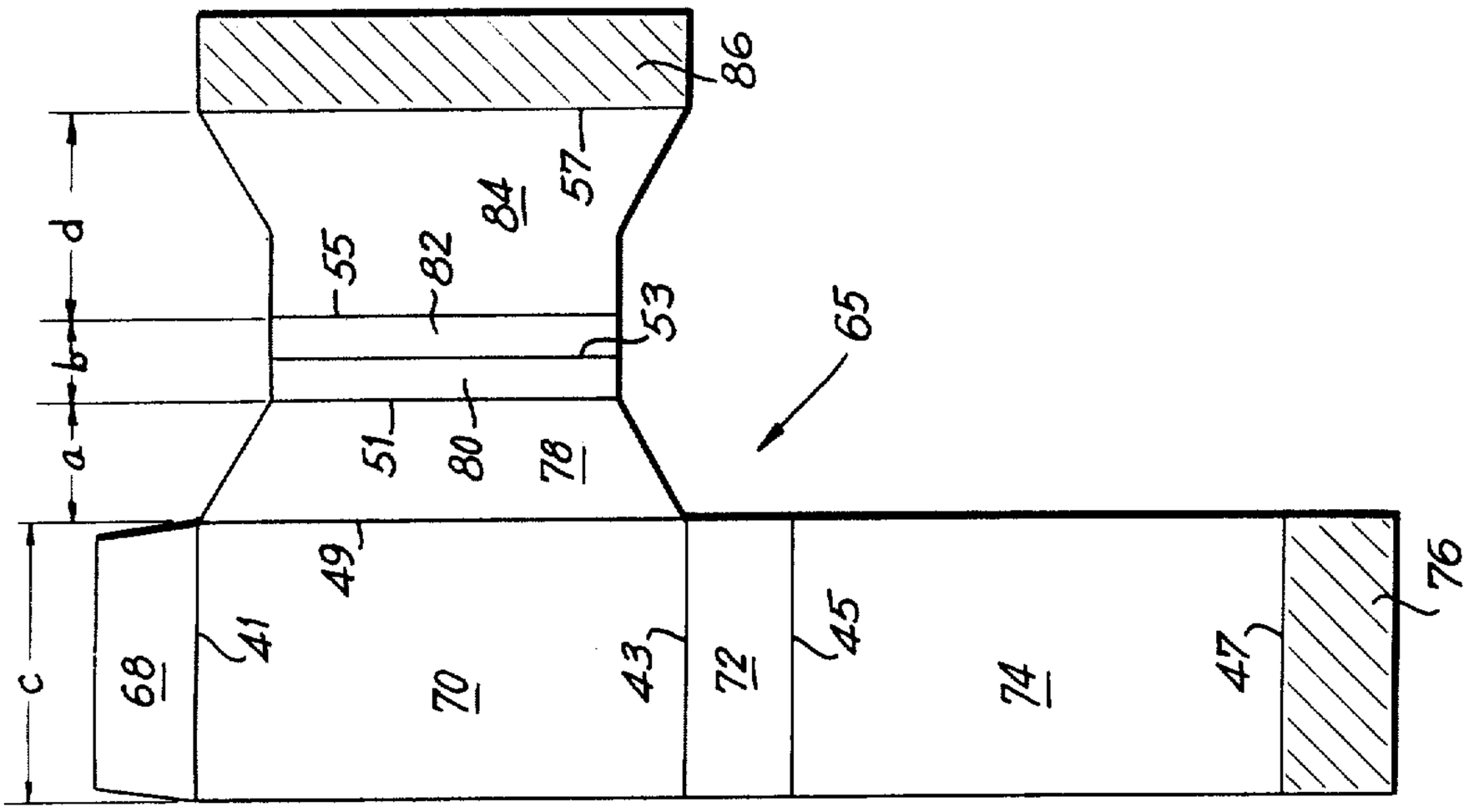
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FIG. 3

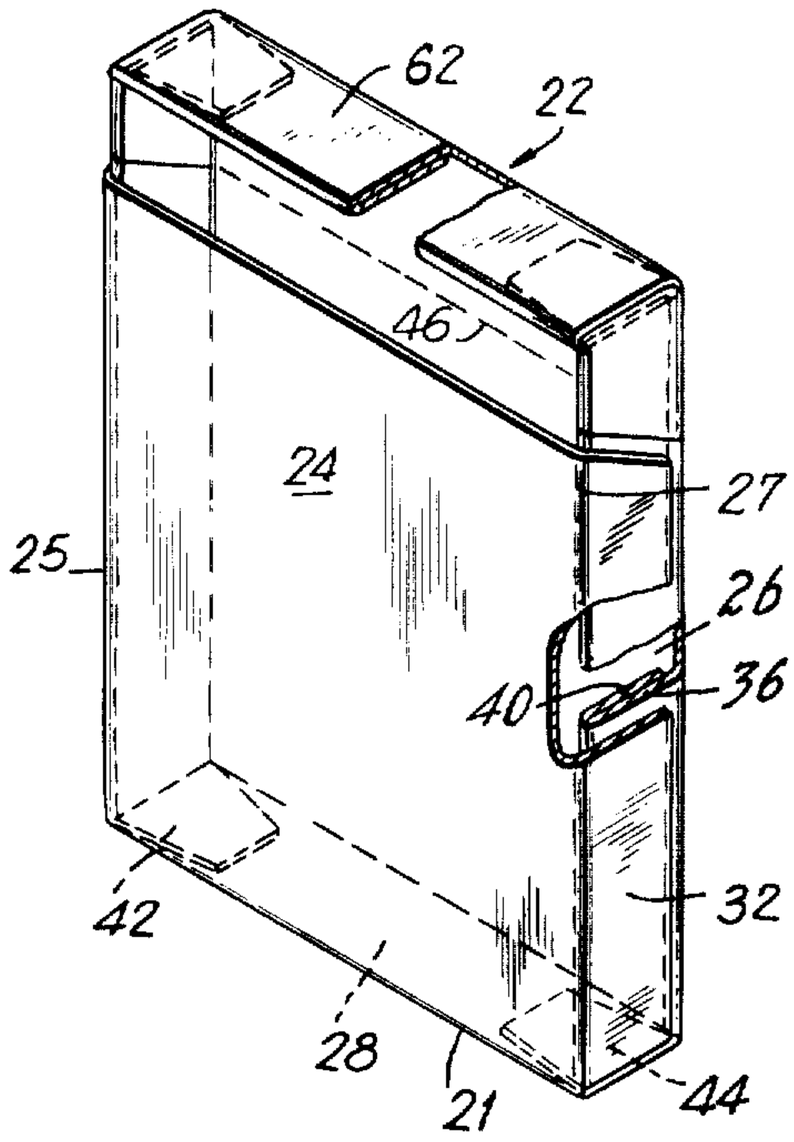



FIG. 5

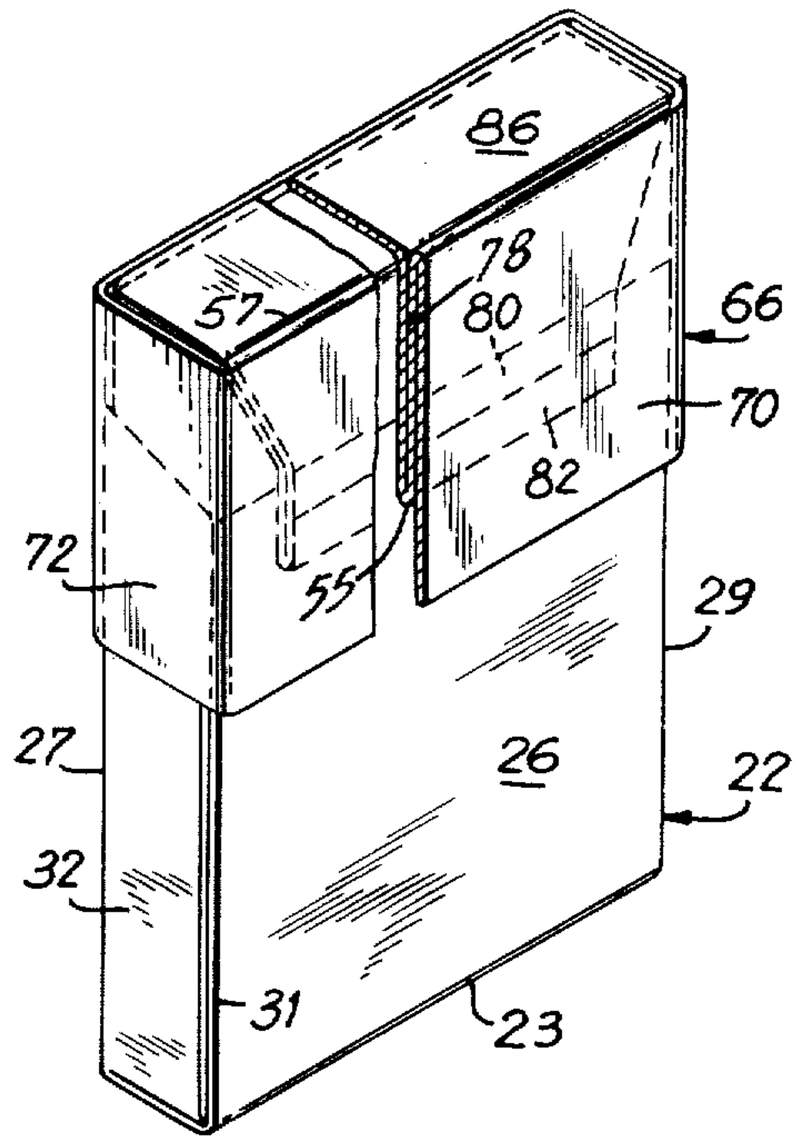
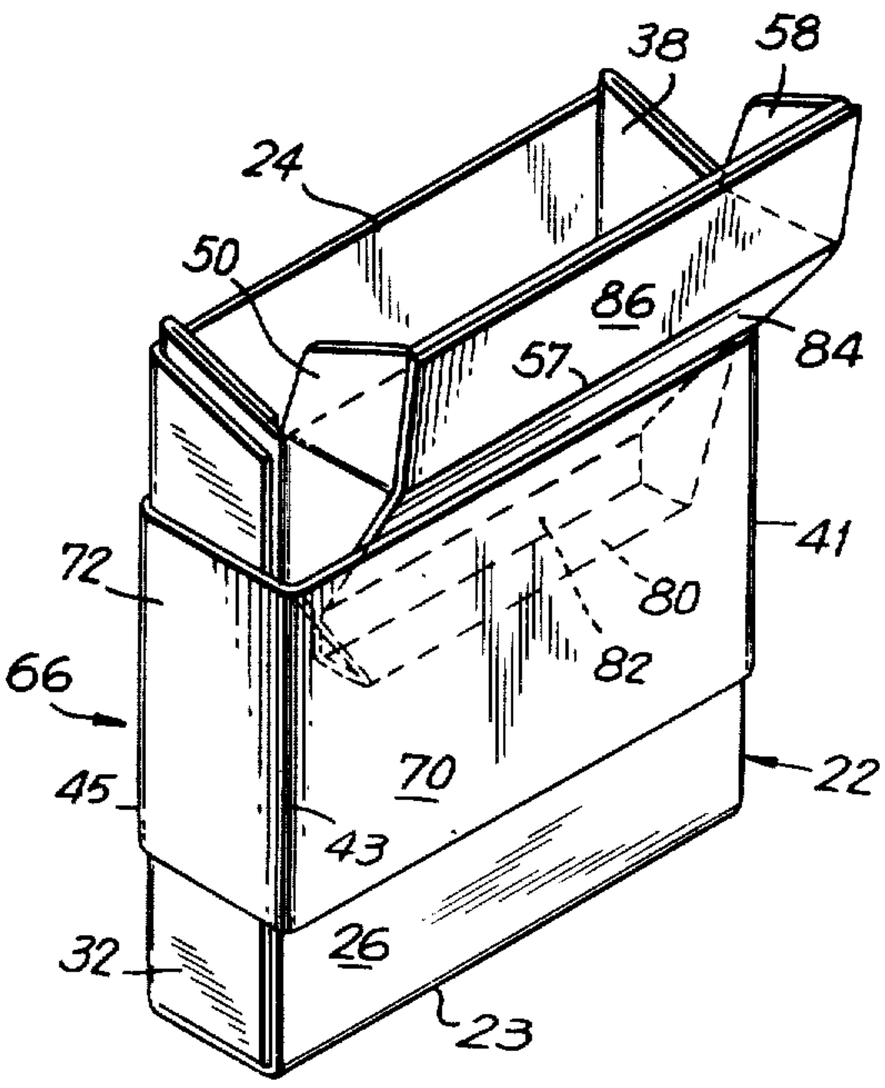



FIG. 4




FIG. 6



# DISPENSING CARTON

**Matter enclosed in heavy brackets [ ] appears in the original patent but forms no part of this reissue specification; matter printed in italics indicates the additions made by reissue.**

## BACKGROUND OF THE INVENTION

This invention relates to a dispensing carton construction for the retention and dispensing of cigarettes, small cigars or the like, and more particularly to a two-piece, paperboard carton construction that is especially compact and is able to be opened and closed by a simple, sliding, reciprocable motion.

Prior art cartons having sliding sleeves for providing dispensing openings have been, of necessity, either too complex, leading to rapid deterioration of the carton, or too difficult to open, often times the closing procedure having no relation to the opening procedure.

The instant invention solves the problems of the prior art cartons by presenting a construction that is compact enough to be able to withstand rough handling by the user over a period of time, and which is opened and closed by a simple, reciprocable action.

## SUMMARY OF THE INVENTION

The present invention provides a two-piece, suitably cut and scored paperboard blank capable of being erected into a dispensing carton, comprising a slide receptacle portion and a shell portion, said slide receptacle portion comprising:

a front wall panel;

a pair of opposed side wall panels hingedly connected to the sides of the front wall panel;

a bottom wall panel hingedly connected to the bottom of the front wall panel;

a rear wall panel hingedly connected to the bottom wall panel on the opposite edge from the front wall panel;

a pair of opposed fold-in panels hingedly connected to the sides of the rear wall panel;

a pair of opposed bottom wall glue flaps hingedly connected to the bottom of the fold-in panels;

a rear wall connecting panel depending from the top of the rear wall panel across an alternate cut and crease line;

a pair of opposed fold-in flaps hingedly connected to the sides of the connecting panel; and

a top wall panel hingedly connected to the top of the connecting panel; and

said shell portion comprising:

a rear wall panel;

a pair of opposed side wall panels hingedly connected to the sides of the rear wall panel;

a front wall panel hingedly connected to one of the side wall panels and extending laterally therefrom;

a side wall panel glue flap hingedly connected to the front wall panel and extending laterally therefrom,

a foldover panel hingedly connected to the top edge of the rear wall panel;

at least one folding panel hingedly connected to and extending from the edge of the foldover panel parallel to the rear wall panel top edge;

a hinge panel extending longitudinally from and hingedly connected to the adjacent folding panel; and



a glue panel extending longitudinally from and hingedly connected to the hinge panel.

*The invention also provides a dispensing carton comprising a slide receptacle having a body portion with an open end and a cover portion hingedly connected to the body portion for pivotal movement between a closed position covering the open end and an open position displaced therefrom, and a shell having a slide portion and actuating means joined thereto. The slide portion is slidably mounted on the body portion of the receptacle for sliding movement toward and away from the open end thereof. The actuating means includes a first panel portion hingedly connected to the cover portion at a location spaced from the hinge connection of the body and cover portions, a second panel portion hingedly connected to the slide portion, and a folding panel portion hingedly connected along opposite margins between the first and second panel portions. All of the hinge connections are substantially parallel to one another, and the actuating means extends between the receptacle and the slide portion, with the first and second panels thereof extending away from the open end, from their hinge connections with the cover portion and slide portion, respectively.*

*Preferably, the folding panel portion consists of at least two panels hingedly connected to one another, with the hinge connections therebetween being substantially parallel to the other hinge connections present in the carton. The length of the first panel portion is desirably substantially equal to the combined lengths of the second panel portion and the folding panel portion, with the cover portion and body portion having rear walls which lie in a common plane, and with the hinge connections of the first and second panel portions to the cover portion and the slide portions to the cover portion and the slide portion being adjacent the outer margins of, respectively, the cover portion rear wall and the slide portion. In such a construction, the slide portion will be in part disposed over the cover portion in the closed position, and will be displaced therefrom by sliding of the slide portion away from the open end. Usually, the receptacle of the carton will be of generally rectangular cross section, and the slide portion will comprise a band extending in close conformity thereabout.*

## BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a plan view of the blank to be formed into the slide receptacle. The blank is illustrated as having its inside surface exposed upwardly.

FIG. 2 is a plan view of the blank to be used in forming the shell, also shown with its inside surface exposed upwardly.

FIG. 3 is a perspective view of the slide receptacle blank shown in FIG. 1 after it has been erected.

FIG. 4 is a perspective view of the shell partially erected.

FIG. 5 is a perspective view, from the rear, of the slide receptacle after it has been inserted into and attached to the shell. The slide receptacle is shown in a closed position.

FIG. 6 is a perspective view, from the rear, of the carton of FIG. 5 after it has been opened, to reveal the product contained therein.

## DESCRIPTION OF THE PREFERRED EMBODIMENT

As shown in the drawings illustrative of the preembodiment of the paperboard carton of the subject invention:

A slide receptacle blank **20** (FIG. **1**) is provided to form a rectangular slide receptacle **22** (FIG. **3**) capable of receiving the product to be dispensed. The receptacle blank **20** is suitably cut and scored to provide a receptacle front wall panel **24,** and a receptacle rear wall panel **26** hingedly connected by a receptacle bottom wall panel **28** therebetween along parallel score lines **21** and **23** respectively.

A pair of opposed receptacle side wall panels **30** and **32** are hingedly connected to the sides of the front wall panel **24** along parallel score lines **25** and **27** respectively. Similarly, hingedly connected to the sides of the rear panel **26** along parallel score lines **29** and **31** respectively are a pair of opposed receptacle side wall fold-in panels **34** and **36.** Sidewall glue panels **38** and **40** extend laterally from and are hingedly connected respectively to fold-in panels **34** and **36** along parallel score lines **33** and **35** respectively. Hingedly connected along score line **23** to each of the side wall fold-in panels **34** and **36** and adjacent the bottom wall panel **28** are receptacle bottom wall glue flaps **42** and **44** respectively.

Hingedly connected across the top of the rear panel **26** by an alternate cut and crease line **46** is a rear wall connecting panel **48** having a pair of opposed, side wall fold-in flaps **50** and **52** hingedly connected along parallel score lines **29** and **31** respectively. A pair of opposed side wall glue flaps **54** and **56** are hingedly connected respectively to the top of fold-in flaps **50** and **52** along score line **37.** A pair of opposed side wall glue flaps **58** and **60** are hingedly connected along parallel score lines **33** and **35** respectively to the exterior side of each of the fold-in flaps **50** and **52** adjacent the side wall glue panels **38** and **40** respectively.

A top wall panel **62** is hingedly connected along score line **37** to the top of the connecting panel **48;** similarly, a top wall glue panel **64** is hingedly connected longitudinally to the top wall panel **62** along score line **39.**

As the drawings illustrate, some of the panels of the slide receptacle blank **20** are shown as not being rectangular. This is a matter of design, and the shapes of these panels may be varied. It should also be noted that glue panels **38** and **40** and glue flaps **58** and **60** are utilized for achieving an extra thick side wall and may not be necessary. Furthermore, the glue panel **64** may not be required for all purposes and could be eliminated. These modifications could easily be made, with corresponding small changes in areas where glue is to be applied and ultimate assembly procedures.

A shell blank **65** (FIG. **2**) is provided to form a shell **66** (FIG. **4**) to slidingly receive the slide receptacle **22.** As will be explained below, the shell **66** is to be attached to the slide receptacle **22.** The shell blank **65** is suitably cut and scored to provide a pair of opposed shell side wall panels **68** and **72,** a shell rear wall panel **70,** a shell front wall panel **74** and a shell side wall panel glue flap **76,** all hingedly connected, as shown, by parallel score lines **41, 43, 45** and **47.** It is apparent that the height of the above-named panels, indicated as c, may be varied, but a height about one-half that of the slide receptacle **22** has been found to be most satisfactory. Such a relationship enables the carton to be easily opened and closed by a sample, two-handed action.

A trapezoidal foldover panel **78** having a height a is hingedly connected to the top edge of the shell rear wall panel **70** along score line **49.** A pair of folding panels **80** and **82** are hingedly connected to foldover



panel **78** along score line **51** and to each other along score line **53.** The folding panel **80** extends from the edge of the foldover panel **78** which is parallel to the rear wall panel **70** top edge defined at score line **49;** i.e., folding panel **80** extends from score line **51.** It should be noted that one folding panel is necessary and that more than one may be employed. In order to assure that the folding action of panels **80** and **82** is hidden and occurs completely within the shell, the height a of panel **78** should exceed the height b of panels **80** and **82** combined. Such a relatonship insures the hiding of panels **80** and **82** when the carton is opened. Similarly, the height of a plus b should be less than height c to insure that panels **80** and **82** are concealed from view when the carton is closed. The height of a individual folding panel, in this case **1/2b,** should be small enough to permit the folding panels **80** and **82** to undergo the necessary rotation and translation without unduly disturbing the configuration of the erected carton during opening and closing of the carton. These relationships are all merely preferred, and may be varied if the particular results achieved by them are not necessary or critical.

A hinge panel **84** extends longitudinally from and is hingedly connected to the folding panel **82** along score line **55** and hingedly connects to a shell glue panel **86** extending longitudinally therefrom along score line **57.** The shapes of the foldover panel **78,** shown as trapezoidal, and of the hinge panel **84** may both be varied. For a compact and proper appearing package, and ease of opening, the height d of the hinge panel **84** should equal the combination of heights a plus b, and the height a should equal the height e of the slide receptacle rear wall connecting panel **48.** Also, height b of the folding panels **80** and **82** should approximate the smaller height f of the fold-in flaps **50** and **52** for ease of opening and closing the carton. The necking in of panels **78** and **84** also is a desirable feature, but not necessary for the successful operation of the carton.

In forming the two blanks **20** and **65** into a dispensing carton, an adhesive is first applied to the inner surface of the slide receptacle blank **20** on side wall panels **30** and **32,** the side wall glue panels **38** and **40,** the top wall glue panel **64,** and the side wall glue flap **58** and **60,** as shown by the stippling on these areas in FIG. **1,** after which glue panel **38** and glue flap **58** are folded inwardly (see FIG. **3**) about score line **33** to adhere respectively to fold-in panel **34** and fold-in flap **50.** A similar action is also effected about score line **35** for the opposed side wall panels and flaps.

The folded double panels effected above are now folded again to lie in a plane perpendicular to the remainder of the receptacle blank **20.** Specifically, fold-in panel **34** and fold-in flap **50** are folded inwardly about score line **29** to lie in a plane perpendicular to rear wall panel **26.** The folding of panel **34** results in glue flap **42** similarly lying in the perpendicular plane, as does the folding of flap **50** result in flap **54** assuming a perpendicular position. A similar folding action is also effected about score line **31** whereby the opposed side wall panels and flaps assume a perpendicular position.

In the next step of the carton formation process, the bottom wall glue flaps **42** and **44** are folded inwardly about score line **23** to lie in a plane perpendicular to either of the planes formed by the opposed side wall panels and flaps. Following this, the bottom wall panel **28** is folded inwardly about score line **23** to lie super-

posed on the glue flaps **42** and **44** and perpendicular to the rear wall panel **26.**

The front wall panel **24** is then folded inwardly about score line **21** to lie parallel to the rear wall panel **26.** Finally, the side wall panels **30** and **32** are folded inwardly about score lines **25** and **27** respectively to be perpendicular to the front wall panel **24** and adhere to the outside surfaces of the opposed fold-in panels **34** and **36** respectively.

At this point, it is suggested that the product to be dispensed by the carton be loaded into the partially erected receptacle blank **20.** Following such loading, the side wall glue flaps **54** and **56** are folded inwardly about score line **37** to lie perpendicular to each of the two side walls.

The top wall panel **62** is folded inwardly about score line **37** to lie perpendicular to the connecting panel **48** and superpose glue flaps **54** and **56.** The final step in erecting the rectangular slide receptacle **22** shown in FIG. **3** consists of folding inwardly the top wall glue panel **64** about score line **39** to adhere to the glue flaps **54** and **56** and the top panel **62.**

The shell blank **65** is attached to the slide receptacle **22** as explained below. Adhesive is applied to the inner surface of the shell side panel glue flap **76** and the shell glue panel **86.** The inner surface of the glue panel **86** is then adhered to the exposed, outer surface of the slide receptacle top wall panel **62,** score line **57** of the shell blank **[ 64 ]** *65*, being superposed above score line **37** of the slide receptacle blank **20.** Rear wall panel **70** is then folded inwardly about score line **49** to superpose on the foldover panel **78.** The foldover panel **78,** rear wall panel **70,** and folding panels **80** and **82,** then, as a double panel unit, are folded outwardly about score line **55** to superpose on the hinge panel **84,** thereby creating a triple thickness panel. The hinge panel **84,** together with the two remaining panels forming the triple panel, are now folded inwardly about score line **57** to superpose the receptacle rear wall panel **26.**

The shell side wall panel **72** is then folded inwardly about score line **43** to superpose on the outside surfaces of the receptacle fold-in flap **52** and side wall panel **32.** The front wall panel **74** is then folded inwardly about score line **45** to superpose on the outside surface of the slide receptacle front wall panel **24.** The side wall panel **68** is then folded inwardly about score line **41** to superpose on the outside surface of side wall panel **30** and fold-in flap **50.** Finally, the side panel glue flap **76** is folded inwardly about score line **47** to adhere to the outside surface of the side wall panel **68.** The carton is now effectively closed.

The above described method of assembling the carton is merely illustrative of several possible different sequences that may be employed, and forms no part of the invention.

Opening the closed carton (FIG. **6**) is preferably effected by grasping with the thumb of one hand the lower portion of the side wall panel **32** of the slide receptacle **22** and with some of the remaining fingers of that hand grasping the lower portion of the other side wall panel **30.** Simultaneously, the other thumb grasps the shell side wall panel **72** while some of the remaining fingers grasp the shell side panel glue flap **76** and pull down on the panel **72** and glue flap **76** to expose the product contained within the slide receptacle **22.** An opposite action is effective to close the carton.

As can be seen by an analysis of FIGS. **5** and **6,** the initial lowering of the shell **66** results in the folding



panels **80** and **82** being lowered in an accordian-like manner so that their inner surfaces, which rested against the inner surface of the **[** foldover **]** *rear wall* panel **[ 78 ]** *70* when the carton was closed, become superposed on the **[** other **]** *outer* surface of the slide receptacle rear wall panel **26.** In effect, folding panel **82** experiences rotation, while folding panel **80** undergoes rotation and translation in the space between the shell rear wall panel **70** and the receptacle rear wall panel **26.** The initial lowering and accordian action of the shell **66** permits the top of the shell panels **68, 70, 72, 74** and **76** to be lowered below the top of the receptacle front wall panel **24** and to approach the alternate cut and crease line **46.** Further lowering of the shell **66** effects a pulling back of receptacle top wall panel **62** and glue panel **64,** and the connecting panel **48,** thereby opening the contents of the receptacle **22** to a view from above. In effect, the connecting panel **48** is rotated about the alternate cut and crease line **46.** The initial lowering of the shell **66** permits a view from the front of the carton only.

It is understood that the foregoing general and detailed descriptions are exemplary of the present invention and are not to be interpreted as restrictive of the scope of the following claims.

What is claimed is:

**1.** A two-piece, suitably cut and scored paperboard blank capable of being erected into a dispensing carton, comprising a slide receptacle portion and a shell portion, said slide receptacle portion comprising:

a front wall panel;

a pair of opposed side wall panels hingedly connected to the sides of the front wall panel;

a bottom wall panel hingedly connected to the bottom of the front wall panel;

a rear wall panel hingedly connected to the bottom wall panel on the opposite edge from the front wall panel;

a pair of opposed fold-in panels hingedly connected to the sides of the rear wall panel;

a pair of opposed bottom wall glue flaps hingedly connected to the bottom of the fold-in panels;

a rear wall connecting panel depending from the top of the rear wall panel across an alternate cut and crease line;

a pair of opposed fold-in flaps hingedly connected to the sides of the connecting panel; and

a top wall panel hingedly connected to the top of the connecting panel; and

said shell portion comprising:

a rear wall panel;

a pair of opposed side wall panels hingedly connected to the sides of the rear wall panel;

a front wall panel hingedly connected to one of the side wall panels and extending laterally therefrom;

a side wall panel glue flap hingedly connected to the front wall panel and extending laterally therefrom;

a foldover panel hingedly connected to the top edge of the rear wall panel;

at least one folding panel hingedly connected to and extending from the edge of the foldover panel parallel to rear wall panel top edge;

a hinge *panel* extending longitudinally from and hingedly connected to the adjacent folding panel; and

a glue panel extending longitudinally from and hingedly connected to the hinge panel.

2. The blank of claim 1 additionally comprising in the lide receptacle portion a pair of opposed side wall glue laps hingedly connected to the exterior side of each of he fold-in flaps and a pair of opposed side wall glue panels laterally extending from and hingedly connected o each of the side wall fold-in panels.

3. The blank of claim 2 wherein the slide receptacle portion additionally comprises a top wall glue panel iingedly connected longitudinally to the top wall panel.

4. The blank of claim 3 wherein the shell portion comprises two folding panels.

5. The blank of claim 4 wherein the height of the hell side wall panels, shell rear wall panel and shell ront wall panel is about one-half that of the slide receptacle blank when erected.

6. A carton erected from the blank of claim 1 wherein the inner surface of the shell glue panel is dhered to the exposed, outer surface of the slide receptacle top wall panel.

7. The carton of claim 6 wherein the heights of the olding panels and all other shell panels are such that he rotation and translation of the folding panels are oncealed from view when the carton is either opened r closed.

8. The carton of claim 7 wherein the height of the olding panels is small enough so that the rotation and ranslation of said folding panels caused by the opening nd closing of the carton does not unduly disturb the onfiguration of the erected carton.

9. The carton of claim 8 wherein the height of the hell hinge panel equals the combined heights of the hell foldover panel and the shell folding panels.

*10. A dispensing carton comprising :a slide receptacle aving a body portion with an open end and a cover ortion hingedly connected to said body portion for pivtal movement between a closed position covering said pen end and an open position displaced therefrom; and shell having a slide portion and actuating means joined thereto, said slide portion being slidably mounted on said body portion of said receptacle for sliding movement toward and away from said open end, and said actuating means including a first panel portion hingedly connected to said cover portion at a location spaced from the hinge connection of said body and cover portions, a second panel portion hingedly connected to said slide portion, and a folding panel portion hingedly connected along opposite margins between said first and second panel portion, all of said hinge connections being substantially parallel to one another, and said actuating means extending between said receptacle and said slide portion with said first and second panels thereof extending away from said open end from their hinge connections with said cover portion and slide portion, respectively.*

*11. The carton of claim 10 wherein said folding panel portion consists of at least two panels hingedly connected to one another, the hinge connection therebetween being substantially parallel to the other hinge connections of said carton.*

*12. The carton of claim 10 wherein the length of said first panel portion is substantially equal to the combined lengths of said second panel portion and said folding panel portion, wherein said cover portion and body portion have rear walls lying in a common plane, and wherein said hinge connections of said first and second panel portions to said cover portion and said slide portion are adjacent the outer margins of, respectively, said cover portion rear wall and said slide portion, so that said slide portion is at least in part disposed over said cover portion in said closed position, and is displaced therefrom by sliding of said slide portion away from said open end.*

*13. The carton of claim 10 wherein said receptacle is of generally rectangular cross section, and wherein said slide portion comprises a band extending in close conformity thereabout.*

* * * * *