United States Patent [19]

Riccio

[11] **3,743,170**

[45] **July 3, 1973**

[54] **CONVERTIBLE PACKAGE**

[75] Inventor: **Katherine Delia Riccio**, Chicago, Ill.

[73] Assignee: **Consolidated International Chemical Co. Inc.**, Chicago, Ill.

[22] Filed: **Dec. 1, 1970**

[21] Appl. No.: **94,079**

Related U.S. Application Data

[63] Continuation-in-part of Ser. No. 830,938, June 6, 1969, Pat. No. 3,581,975.

[52] **U.S. Cl.** ..... **229/33,** 119/1, 229/31 FS, 229/34 R

[51] **Int. Cl.** **B65d 5/22**

[58] **Field of Search** ..... 229/31 R, 33, DIG. 3, 229/31 FS, 34 R; 119/1

[56] **References Cited**

UNITED STATES PATENTS

2,037,839	4/1936	Wagenseller	229/33
1,425,713	8/1922	Stokes	229/31 FS
2,100,644	11/1937	Groves	229/34 R
1,021,874	4/1912	Labombarde	229/33 X
3,377,990	4/1968	Mitchell	119/1
3,154,052	10/1964	Sweeney	229/31 R X
1,793,102	2/1931	Labombarde	229/33
3,170,618	2/1965	Sweeney	229/33

FOREIGN PATENTS OR APPLICATIONS

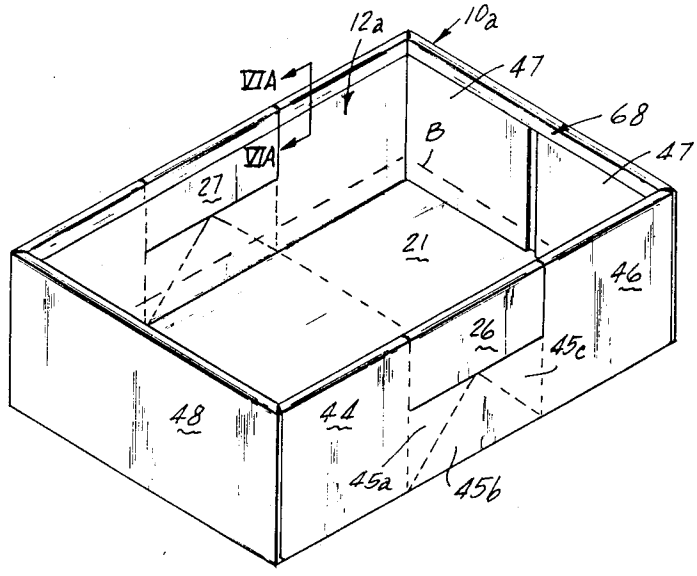
716,436	8/1965	Canada	229/31 R

Primary Examiner—Samuel B. Rothberg
Assistant Examiner—Stephen P. Garbe
Attorney—Hill, Sherman, Meroni, Gross & Simpson

[57] **ABSTRACT**

A box or carton having a compact closed product storage position which is easily unfolded into an enlarged tray or pan position with hinged side wall portions providing struts to maintain the opened pan or tray position and to serve as a gate providing access to the interior of the tray or pan. In the closed position, the box or carton is a small six-sided, sealed package preferably housing a bag of absorbent ground clay. In the open tray or pan position, the box or carton has a flat bottom and relatively high side and end walls so that when the clay is spread over the bottom, it will provide a bed or substantially less thickness than the height of the side and end walls and serving as a commode for small house pets, such as cats and the like.

10 Claims, 8 Drawing Figures



Patented July 3, 1973 3,743,170

2 Sheets-Sheet 1

Fig. 1

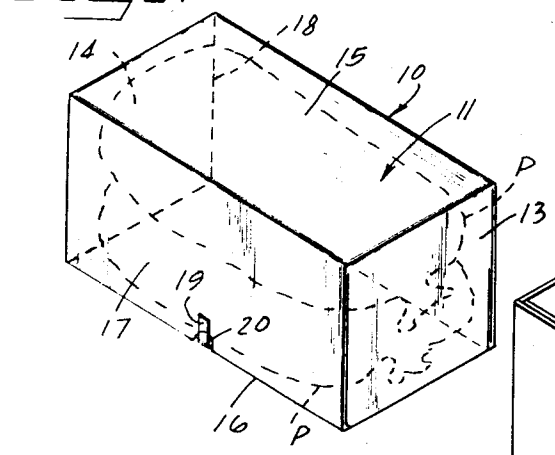


Fig. 4

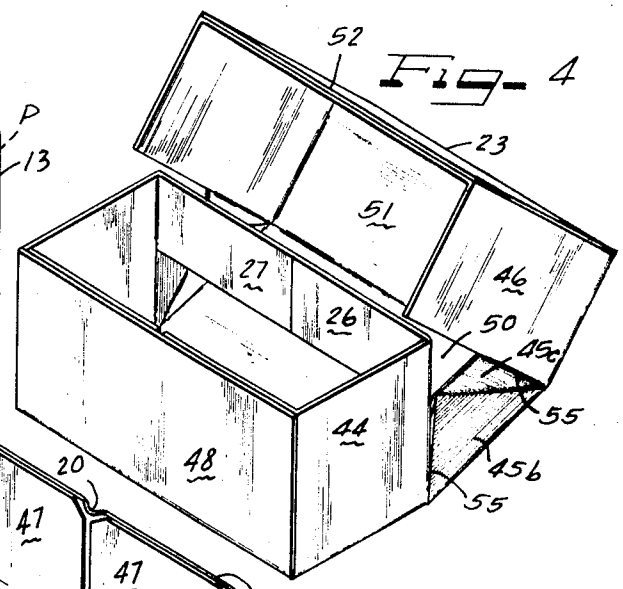


Fig. 2

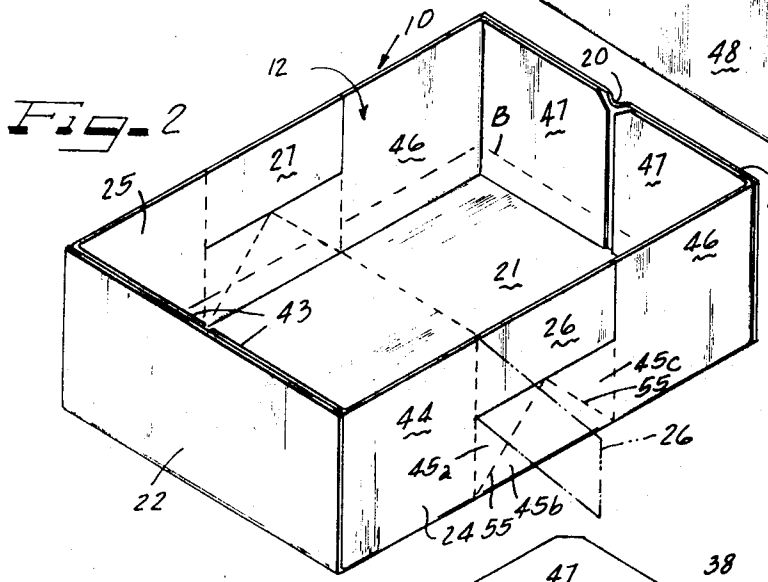
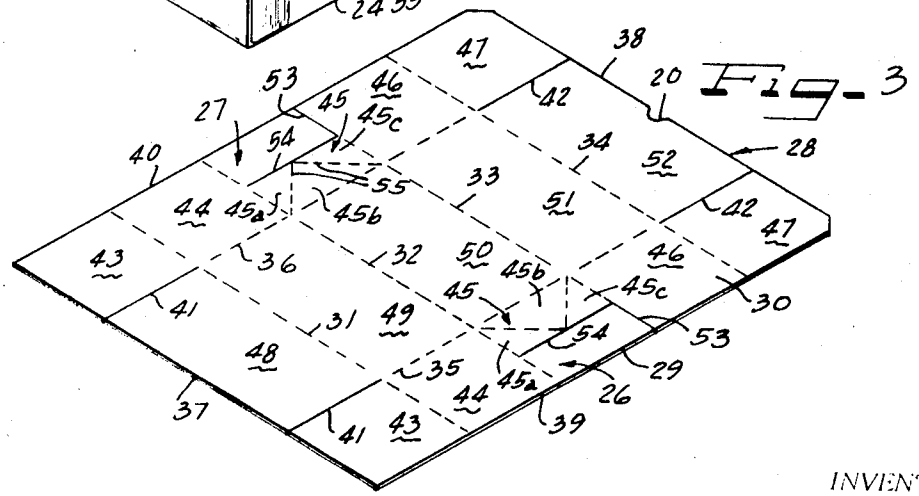


Fig. 3



INVENTOR.
KATHERINE DELIA RICCIO

BY Hill, Sherman, Meroni, Gross & Simpson
ATTORNEYS

Patented July 3, 1973 3,743,170

2 Sheets-Sheet 2

Fig. 5

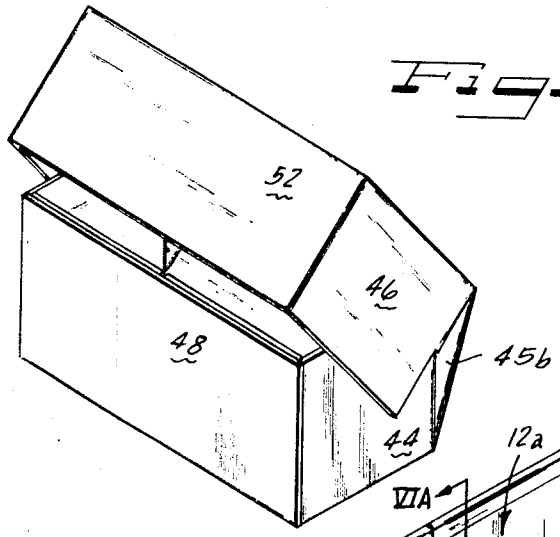


Fig. 6A

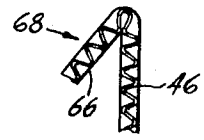


Fig. 6

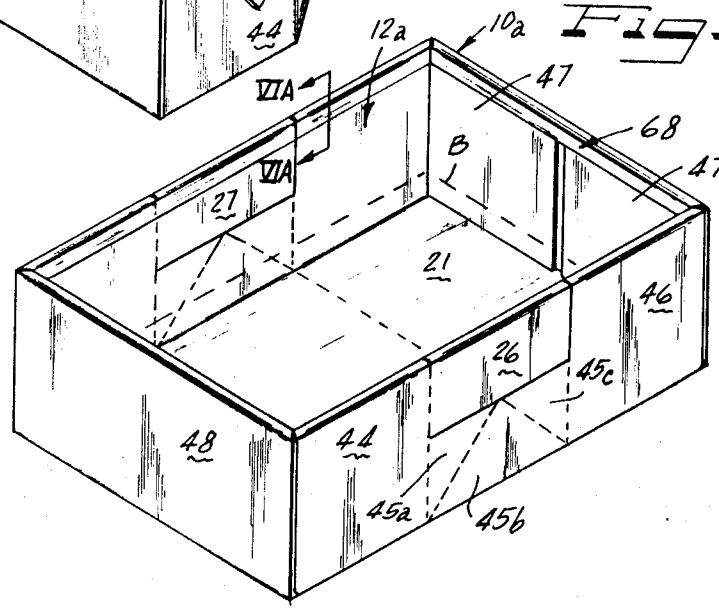
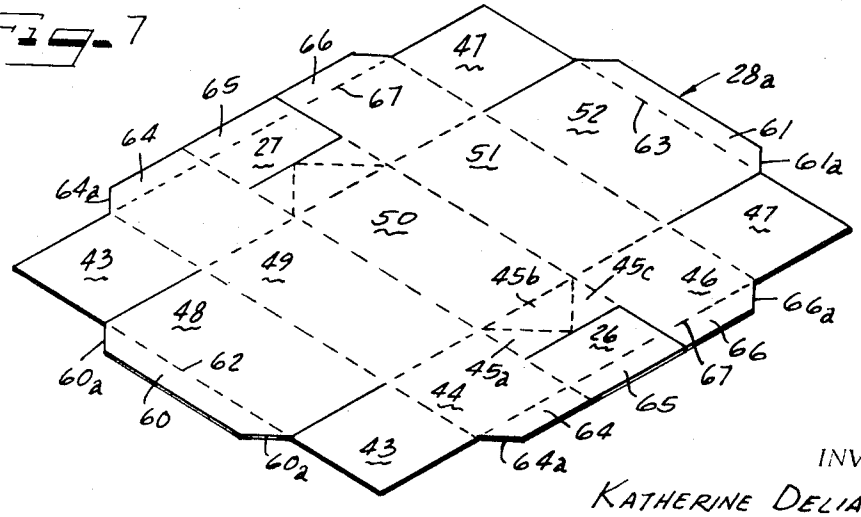


Fig. 7



INVENTOR.
KATHERINE DELIA RICCIO

BY Hill, Sherman, Meroni, Gross & Simpson ATTORNEYS

CONVERTIBLE PACKAGE

RELATED APPLICATION

This application is a continuation-in-part of my application entitled "Convertible Package," U.S. Ser. No. 830,938 filed June 6, 1969, now U.S. Pat. No. 3,581,975, issued June 1, 1971.

FIELD OF THE INVENTION

This invention relates generally to a package having a small compact closed six-sided position and a large open tray or pan position serving as a disposable sanitary commode for pets.

DESCRIPTION OF THE PRIOR ART

Packages which open up from a closed six-sided position to an open top tray or pan position serving as a commode for pets are known for example, in my aforesaid U.S. Pat. No. 3,581,975, and in the Robert Sweeney U.S. Pat. No. 3,154,052 granted Oct. 27, 1964. These prior known packages had troublesome central end panels which had to be folded and overlapped in a very precise manner to accommodate closing of the package. Further, in the opened tray or pan position of the package, these folded panel sections tended to spring back toward their folded condition thereby making it difficult to open up and maintain the package in a flat bottomed tray or pan position. In addition, if the side walls were sufficiently high to prevent discharge of the clay or other contents of the pan when used as a commode by a pet, small pets could not easily enter the pan.

SUMMARY OF THE INVENTION

According to this invention, there is provided a compact folded six-sided closed package which opens up into an open top tray of much larger capacity than the closed package and having upright side walls provided with hinged gate sections forming struts holding the pan in its fully opened position and also providing gates and entrance doorways in the side walls to provide easy access for small pets. A feature of the invention is the provision of gate-like flaps in the side walls of the package which in their closed position form struts forcing the package into a flat bottomed tray position and also being capable of swinging to an open position exposing a recess or doorway giving easy access to the tray. The side walls of the open tray are relatively high to prevent discharge of clay or the like from the tray when it is used as a commode by pets. Preferably, the closed position of the carton has only about one-third of the volume as the open position of the tray so that a bag of clay stored in the carton would only fill the tray to about one-third the height of the side walls.

In a modification of this invention, the side walls are provided with inturned lip sections forming additional barriers against discharge of the clay by the pet using the tray as a commode.

An object of this invention is to provide a carton which opens up from a closed six-sided position to an open tray position having upright peripheral walls and swingable flap sections acting as struts to maintain the tray in an opened position and also serving as gates giving easy access to the interior of the tray for small pets and the like.

Another object of this invention is to provide a box which opens up from a compact six-sided closed position to an enlarged open top tray position providing a commode for pets and the like wherein side flaps hold the tray in opened-up position and provide access doors to the tray.

A still further object of this invention is to provide an improvement in the convertible package of my aforesaid U.S. Pat. No. 3,581,975, which does not require securing together of corner end panels to form the tray from the closed box.

Another object of the invention is to eliminate troublesome folding end panels in boxes capable of being opened up into enlarged trays.

Other and further objects of this invention will become apparent to those skilled in this art from the following detailed description of the annexed sheets of drawings which, by way of preferred examples, illustrate two embodiments of the invention.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a perspective view of the package or carton of this invention in its closed six-sided compact position.

FIG. 2 is a perspective view of the package or carton of FIG. 1 in its opened tray or pan position.

FIG. 3 is a perspective view of a sheet of fiberboard or boxboard cut and scored to fold into the package of FIG. 1 and the pan of FIG. 2.

FIG. 4 is a perspective view illustrating an initial folding of the pan from its opened position of FIG. 2 into its closed position of FIG. 1.

FIG. 5 is a perspective view similar to FIG. 4 but illustrating a further folding from the position of FIG. 4 to form the closed box of FIG. 1.

FIG. 6 is a perspective view similar to FIG. 2 but illustrating a modified embodiment of the invention.

FIG. 6A is an enlarged sectional view taken along lines VIA—VIA of FIG. 6.

FIG. 7 is a perspective view of the blank for forming the opened pan of FIG. 6.

BRIEF DESCRIPTION OF THE PREFERRED EMBODIMENTS

The carton or package **10** of this invention has a closed compact box position **11** of FIG. **1** and an open enlarged or expanded tray or pan position **12** of FIG. **2.** The box position **11** of FIG. **1** is six-sided with square end walls **13** and **14,** rectangular top and bottom walls **15** and **16** and rectangular front and back walls **17** and **18.** In its closed position, the package is a closed ended tube of square transverse section and is held closed by a strip of adhesive tear tape **19** overlying a thumb or finger notch **20** in the front wall **17.** The box **11** preferably houses a pair of stacked plastic bags P of absorbent granular or powdered clay material to form a bed B in the bottom of the open pan or tray formed from the closed box.

In the opened position **12,** the package **10** has a flat rectangular bottom **21,** vertical end walls **22** and **23,** vertical side walls **24** and **25** and flaps or gates **26** and **27** in the central upper portions of the side walls **24** and **25.** The end walls **22** and **23** are provided from overlapped corner panels united by adhesive, staples or the like, so that the closed box **11** opens directly into the open-topped tray **12** without the necessity of uniting corner panels as in my aforesaid Pat. No. 3,581,975.

As shown in FIG. **3,** the carton **10** is formed from a single sheet or blank of fibrous material **28** such as cor-

rugated boxboard, plain cardboard, or a plastic material or any suitable carton forming folding material. At least one face of the blank such as the bottom face **29** is preferably moisture proof leaving an absorbent top or inner face **30** to augment the absorbent capacity of the clay material.

The blank **28**, as shown in FIG. **3**, has four equally spaced transverse score lines **31, 32, 33** and **34** and two longitudinal score lines **35** and **36**. All of the transverse score lines **31-34** are in parallel relation with the end score line **31** spaced inwardly from and parallel to the front end edge **37** of the blank **28** while the opposite end transverse score line **34** is spaced inwardly from and parallel to the rear end edge **38** of the blank **28**. The longitudinal score lines **35** and **36** are also parallel to each other with the score line **35** spaced inwardly from and parallel to the front side edge **39** and the score line **36** spaced inwardly from and parallel to the rear end edge **38** of the blank **28**.

The ends of the score lines **35** and **36** are cut through or slotted up to the adjacent transverse score lines **31** and **34** as illustrated at **41** and **42** respectively.

Square front end and rear end panels **43–47** are thus provided at the opposite ends of five rectangular panels **48–52**.

The center end panels **45** are cut inwardly from the blank edges **39** and **40** along the score line **33** to one-half the height of the panels **45** as illustrated at **53** and are then cut parallel to the side edges **39** and **40** up to the score line **32** as illustrated at **54**. This leaves rectangular flap sections providing the gates **26** and **27** illustrated in FIG. **2** which are hinged to the blank at the ends of the score line **32**. In addition, the inner portions of the center end panels **45** are scored along diagonal score lines **55** extending from the intersections of the score lines **35** and **36** with the score lines **32** and **33** and extending therefrom to the centers of the outer edges of the panel sections **45** underlying the gates **26** and **27**. These score lines **55** divide the panel sections into triangular sections **45*a***, **45*b***, and **45*c***.

The blank **28** of FIG. **3** is initially folded along the score lines **31** and **34** to provide the end walls **22** and **23** of the open tray shown in FIG. **2** and are then folded along the score lines **35** and **36** to provide the side walls **24** and **25** with the corner end panels **43** and **47** underlapping the panels **48** and **52** and glued thereto to form the open-topped tray. The gates or flaps **26** and **27** are next folded inwardly as shown in FIG. **4** and the score lines **55** are creased inwardly to permit the triangular sections **45*a***, **45*b***, and **45*c*** to overlap. Then the right-hand end of the tray shown in FIG. **2** is folded around and over the left-hand end with the end panels **46** overlapping the end panels **44** and with the rectangular panel **51** then forming the top for the carton while the end adjacent panel **52** overlies the other end panel **48**. The panel **50** becomes the back wall for the carton while the panel **49** becomes the bottom wall. FIG. **5** illustrates the progressive folding operation from FIG. **4** to end up with the closed box of FIG. **1**.

In the illustrated disclosures, the panels **48–52** are of the same width so that the folded box **11** of FIG. **1** will have only one-third the volume of the open pan **12** of FIG. **2** because the panels **49, 50** and **51** which form the bottom of the open pan **12**, are folded so that the panel **49** becomes the bottom wall of the closed box while the panel **51** becomes the top wall of the closed box and at the same time, the end panels **48** and **52** overlie each other.

It will especially be noted in FIG. **2** that the gates **26** and **27** have their free ends abutting the edges of the adjoining panels **46**. These gates thus form struts which hold the panel sections **45*a***, **45*b***, and **45*c*** in planar position. This, of course, maintains the open pan **12** in a flat bottom condition and prevents the pan from springing back toward its closed position. When the pan **12** receives the bed B of the absorbent material on the bottom thereof, this material will, of course, hold the bottom in a flat condition and one or both gates **26** and **27** can be swung open either into or out of the pan to provide a doorway so that a small pet can easily enter and leave the confines of the pan. The open doorway reduces the height of the central panel by one-half but the height of the gates **26** and **27** could be varied as desired so that the remaining central panel section can be as low or as high as desired.

One bag P of absorbent material packaged in the closed box **11** will cover the bottom **21** of the open pan **12** to provide the bed B of substantially less height than the side walls of the pan so that the bed material, when scratched by the cat or other pet will not be thrown over the tops of the side walls. Since the open pan **12** has three times the volume of the closed box **11**, and since one bag of clay occupies only one-half of the closed box, the bed B formed from this one bag will only be about one-sixth the height of the open pan.

To further protect against discharge of the absorbent material from the bottom of the open pan, a modified carton **10*a*** of this invention forms a modified four-sided open top pan **12*a*** and is formed from a modified blank **28*a*** all as shown in FIGS. **6** and **7**. Parts identical with parts described in connection with FIGS. **1** to **5** have been marked with the same reference numeral in FIGS. **6** and **7**.

It will first be noted that tabs **60** and **61** project beyond the end panels **48** and **52** of the blank **28*a*** and score lines **62** and **63** are provided between these tabs and panels. In addition, it will be noted that tabs **64, 65**, and **66** are respectively provided on the end panels **44**, the gates **26** and **27**, and the end panels **46** being connected to these panels and gates by score lines **67**.

The ends of the tabs **60** and **61** extend at 45° angles as shown at **60*a*** and **61*a*** from the outer edges of the tabs to the corner panels **43** and **47** respectively. Likewise, the end **64*a*** of the tab **64** and the end **66*a*** of the tab **66** extend at 45° angles from the outer edges of these tabs to these corner panels.

When the blank **28*a*** is folded and glued to form the pan **12*a*** of FIG. **6** as described in connection with FIGS. **2** and **3**, the flaps **60, 61, 64, 65** and **66** are bent into the open pan at about a 45° angle and the edges **60*a*** will mate with and abut the edges **64*a*** while the edges **61*a*** will mate with and abut the edges **66*a***. This provides a continuous inturned lip **68** around the periphery of the top of the open pan, which extends at an angle to the pan walls so as to trap the clay material that might be thrown upwardly from the bed B by the scratching action of the pet. The lip actually provides a downwardly opening gutter that will trap the clay material.

The pan **12*a*** folds into the same box **11** as shown in FIG. **1** with the flaps being folded flat against their adjoining panel so as not to interfere with the compact folding and overlapping of the panels.

From the above description, it will therefore be understood that this invention provides a compact package for housing clay material or the like which can be opened up into a large pan providing a bed for the clay material and forming a pet commode. Flaps or gates hold the pan in open position and also afford access to the interior of the commode provided by the pan. The pan has relatively high side walls and inturned lips may be provided on the upper ends of the side walls to trap the material forming the bed of the commode.

I claim as my invention:

1. A carton having a compact six-sided closed storage position and an enlarged open pan use position formed from a flat rectangular blank of carton forming board having four substantially equally spaced transverse score lines and two longitudinal score lines inwardly from and parallel to the side edges of the blank defining five substantially equal width central panels and a row of end panels of the same width on both sides of the central panels, the middle end panels having outer end portions cut longitudinally parallel to the side edges thereof a substantial distance inwardly from said edges along the entire length of each middle end panel and cut transversely inward from said side edges to the adjacent longitudinal cut at one end of each middle end panel to provide rectangular flaps hinged to adjacent end panels by the transverse score lines between the end panels, the portions of each middle end panel inwardly from said flaps having score lines diverging from the midpoint of the outer edge thereof to the intersections of the transverse score lines thereof with the adjacent longitudinal score line dividing each said portion into three triangular sections, cuts separating the corner end panels from the adjacent central end panels, the corner end panels underlapping the adjacent outer central panels and affixed thereto, the flaps turned inwardly, the triangular sections being folded over each other and the central panel sections wrapped to form the closed six-sided carton whereby when said carton is unwrapped from said closed position the middle three of said five central panels provide the bottom for the pan, the two end panels of said five central panels provide vertical end walls of the pan, the middle three of said rows of end panels provide side walls of the pan, each flap when swung to the same plane as the side wall on which it is hinged forming a strut holding the carton in the open pan position and when swung out of said plane providing a low level doorway into the pan, and said panels of substantially equal width providing the pan with a volume about three times the volume of the closed six-sided carton.

2. The carton of claim **1** wherein said flaps provide doorways reducing the height of the side walls of the pan by about one-half.

3. The carton of claim **1** wherein the outer edges of the outer central panels and the outer edges of the middle three end panels have tabs projecting therefrom, score lines between the tabs and panels, and said tabs being turned on said score lines into the pan to form downwardly opening gutters trapping discharge of material from the pan.

4. The carton of claim **1** having at least one bag of absorbent clay material therein of a capacity to hold two pre-allocated controlled portions of clay with each portion being sufficient to form a bed covering the bottom of the pan and with the entire content of the bag being insufficient to cover the bottom of the pan to a height of more than about one-third of the height of the side walls of the pan.

5. The carton of claim **3** wherein the tabs on the outer end edges of the central panels have end edges mating with adjacent end edges on the tabs of the adjacent end panels in the open pan position of the carton to provide a continuous inturned rim around the top of the pan.

6. A carton having a compact closed flat sided tube position with hinged rectangular central flaps disposed on side walls thereof, said flaps having a height less than that of said side walls, and projecting into the carton into abutting relation with each other from opposite side walls of the carton, said carton being unfolded into an enlarged four-sided open top pan with said flaps selectively acting as struts by abutting their free end edge against an adjacent side wall edge to hold the carton in open pan position and said flaps being swingable from the strut positions thereof to provide doorways in the side walls of the pan giving low level access to the pan.

7. The carton of claim **6** wherein the tube has six sides of the same height and opens into a pan having three times the volume of the tube.

8. A carton formed of carton paperboard having a compact closed six-sided storage position and an enlarged four-sided open top pan position serving as a pet commode pan, said carton having rectangular hinged flap sections on side walls thereof, said flap sections having a height less than that of said side walls and turned inwardly into abutting relation with each other in the closed position of the carton and in the pan position selectively forming struts by abutting their free end edge against an adjacent side wall edge to hold the pan in an open pan position and being selectively turned inwardly from said strut positions to form doorways giving low level access to the pan for small pets.

9. A carton having a compact closed storage position and an enlarged open top pan use position with a bottom and upstanding end and side walls, said end and side walls having tabs on the upper edges thereof joined thereto by score lines, said tabs having outer side edge portions adapted to mate with adjacent tab outer side edge portions, and said tabs being folded into the pan to provide downwardly opening gutters extended at an angle to said end and side walls around the upper periphery of the pan for trapping discharge of material within the pan.

10. The carton of claim **8** wherein the paperboard is coated with moisture-proof material.

* * * * *