

[54] **SURGICAL GLOVE CARTON**  
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 [73] Assignee: **Eastex Packaging, Inc.**, Oak Brook, Ill.  
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 [21] Appl. No.: **225,159**

2,978,165 4/1961 Bolding..... 229/40 X  
 3,024,900 3/1962 Stanley..... 206/7 F  
 3,369,657 2/1968 Quade et al..... 206/63.2 R  
 3,412,851 11/1968 Coulombe..... 206/63.2 R

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[52] **U.S. Cl.** ..... 206/7 F, 206/63.2, 150/52 R, 229/87 A  
 [51] **Int. Cl.**..... **B65d 45/06**  
 [58] **Field of Search**..... 229/40, 87 A; 206/63.2 R; 150/52 R

[57] **ABSTRACT**

A flat sheet of cardboard suitably shaped and provided with certain fold lines and which may be folded to constitute a carton for enclosing a pair of surgical gloves and may be maintained sterile therein for an indefinite period, e. g., until the carton is opened. The carton is provided with structure which causes it to readily snap open to a flat disposition by merely pulling certain portions thereof in opposite directions, thus presenting the gloves for use in a manner which makes them convenient to don and completely free of contamination.

**5 Claims, 8 Drawing Figures**

[56] **References Cited**  
**UNITED STATES PATENTS**  
 3,409,121 11/1968 Taterka ..... 206/7 F  
 2,810,417 10/1957 Yerk ..... 150/52 R  
 2,908,308 10/1959 Dearholt ..... 150/52 R

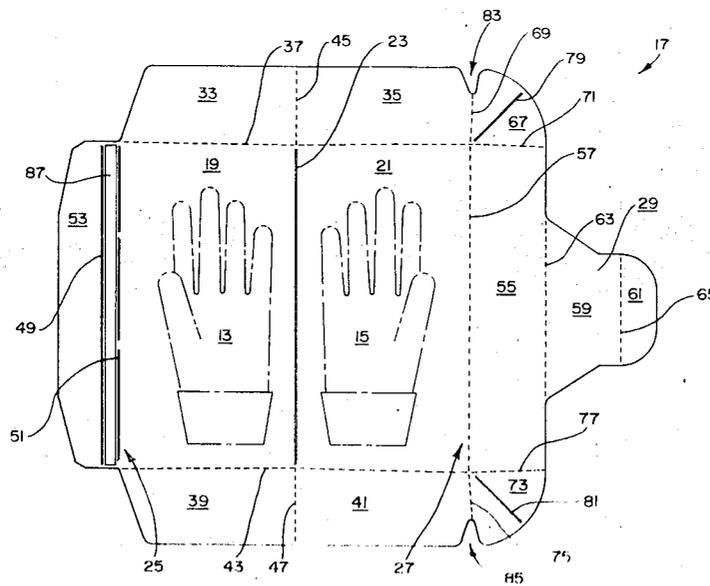




FIG. 3

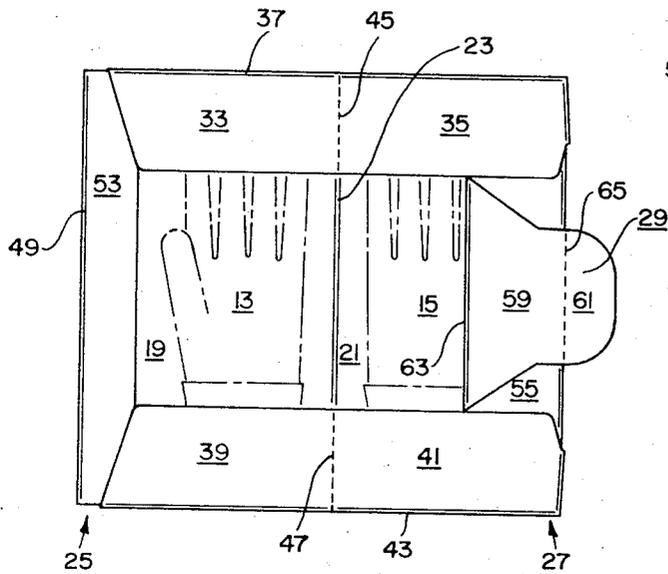


FIG. 4

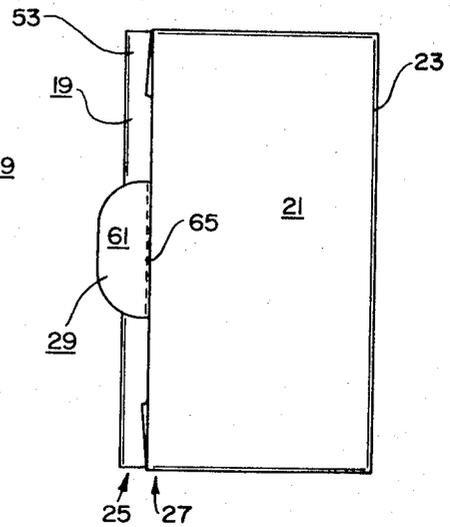


FIG. 5

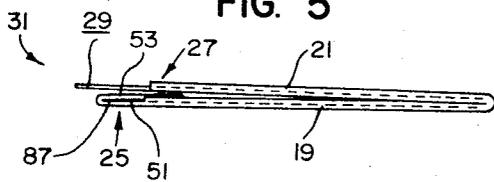


FIG. 6

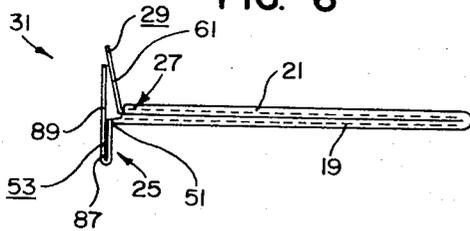


FIG. 8

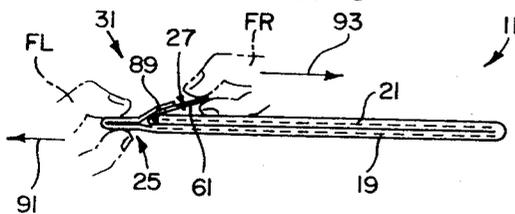
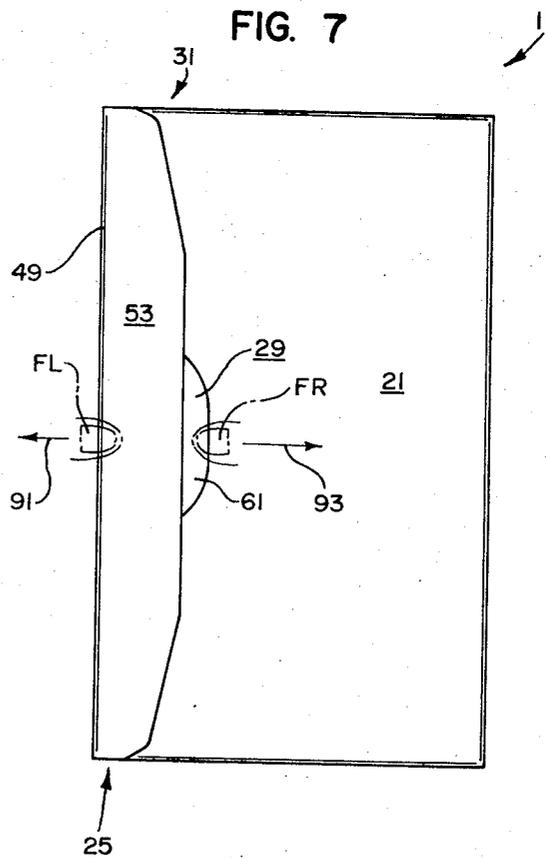


FIG. 7



# SURGICAL GLOVE CARTON

## BACKGROUND OF THE INVENTION

### 1. Field of the Invention:

This invention relates to a carton for packaging a single pair of sterilized surgical gloves.

### 2. Description of the Prior Art:

A preliminary patentability search revealed the following U. S. Patents: Yerk U.S. Pat. No. 2,810,417; Dearholt U.S. Pat. No. 2,908,308; Langdon U.S. Pat. No. 2,915,173; Stanley U.S. Pat. No. 3,024,900; Langdon U.S. Pat. No. 3,187,987; Quade et al. U.S. Pat. No. 3,369,657; and Taterka U.S. Pat. No. 3,409,121. None of the above references show or suggest applicant's device. However, it should be noted that at least two of the above references pertain to a surgical glove carton which is designed to be completely unfolded to expose the gloves in their entirety by pulling a pair of flaps or tabs provided for this purpose, i. e., the '657 patent and the '121 patent. In this regard, it will be appreciated that both the '657 package and the '121 package must be partially opened manually prior to gaining access to certain manipulation tabs or flaps thereof. Further, neither of these latter two patents include means for securing or locking the package per se. However, it should be mentioned that the usual practice is to insert the package inside a pouch or bag as depicted in FIG. 3 of the '121 patent.

## SUMMARY OF THE INVENTION

The present invention is directed toward overcoming certain disadvantages and/or problems relative to previous surgical glove cartons. The concept of the present invention is to provide a flat sheet of flexible cardboard or other relatively stiff sheet material which may be suitably shaped and provided with certain fold lines to be later folded thereon to constitute a carton for enclosing a pair of surgical gloves. The gloves and the carton are processed through the usual sterilizing apparatus, e. g., infrared light or the like. Accordingly, the gloves remain sterile in the carton for an indefinite period, e. g., until the gloves are intended to be placed into service at which time the carton is opened.

The carton is provided with structure which causes it to snap open to a flat disposition which exposes or presents the gloves to the user on a sterile field of cardboard which makes them convenient to don and completely free of contamination. An important concept of the present invention is the locking feature which provides means for positively keeping the carton per se in a flat disposition until such time as the user intends to don the gloves. Equally important is the simplicity in opening a carton, i. e., the user simply grasps certain exposed portions of the enclosed carton and pulls these portions in opposite directions, thus causing the carton to snap open. It should be understood that the term "user" as herein disclosed may or may not be one individual person. For example, the person that opens the carton may be unsterile and assisting the sterile person that will don the gloves. In other words, the outside of the carton will be assumed to be contaminated and should not be touched by the person donning the gloves.

## BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 depicts the blank of the present invention comprising a sheet of cardboard suitably shaped and

provided with a plurality of fold lines which may be folded to constitute the surgical glove carton of the present invention, showing the surgical gloves in a preferred location thereon.

FIG. 2 is similar to FIG. 1 except the first two folding steps in the folding sequence are completed.

FIG. 3 is similar to FIG. 2 except the third and fourth folding steps in the folding sequence are completed.

FIG. 4 is similar to FIG. 3 except the fifth folding step in the folding sequence is completed.

FIG. 5 is an end view of the carton as depicted in FIG. 4.

FIG. 6 depicts the sixth step in the folding sequence showing the preferred arrangement of certain structure for engaging the locking structure of the present invention.

FIG. 7 depicts the completed carton of the present invention showing the preferred manner of gripping certain structure thereof to cause the carton to snap open.

FIG. 8 is an end view of the completed carton as depicted in FIG. 7, more clearly showing the preferred manner in gripping certain structure thereof to cause the carton to snap open.

## DESCRIPTION OF THE PREFERRED EMBODIMENT

The carton 11 of the present invention, as best viewed in FIG. 7 of the drawings, is intended for packaging a pair of surgical gloves 13, 15 as best viewed in FIGS. 1-3 of the drawings. The carton 11 is preferably formed from a flat sheet of cardboard or a blank 17 having a shape substantially as depicted in FIG. 1 of the drawings.

The carton 11 generally comprises a pair of large main body panels 19, 21 for restingly supporting the pair of gloves 13, 15. The main body panels 19, 21 respectively have a greater width and length thereto than do the pair of gloves 13, 15 and are joined together by a first vertically extending fold line 23. The panel 19 includes a distal edge 25 and the panel 21 includes a distal edge 27, i. e., the distal edges 25, 27 being spaced a distance outwardly from the vertical fold line 23. The carton 11 also includes a plurality of smaller panels and a plurality of certain other fold lines which will be fully disclosed later in the specification. Additionally, tab means 29 is included for reasons yet to be disclosed. Also included is a lock means 31 adjacent the distal edge 25 of the panel 19. The lock means 31 includes structure for coacting with the distal edge 27 of the panel 21 for locking the folded carton 11 in a closed disposition with a portion of the tab means 29 being exposed as clearly shown in FIG. 7 of the drawings and which will be more fully disclosed later in the specification. FIGS. 7 and 8 of the drawings depict a manner whereby grasping the tab means 29 and the distal edge 25 of the panel 19 is effective to disengage the lock means 31 and to cause the carton 11 to snap open to a flat disposition substantially as depicted in FIG. 1 of the drawings, i. e., the carton 11 opens in three directions outwardly from the main body panels 19, 21.

A detailed disclosure of the blank 17 as depicted in FIG. 1 of the drawings is as follows: The previously described first vertical fold line 23 extends between the previously described left and right main body panels 19, 21. Accordingly, a pair of upper flap panels 33, 35 are included and respectively are joined to the left and

right main body panels 19, 21 by an upper horizontally extending fold line 37. A pair of lower flat panels 39, 41 are included which respectively are joined to the left and right main body panels 19, 21 by a lower horizontal fold line 43. The upper flap panels 33, 35 are separated by an upwardly directed fold line segment 45 constituting an extension of the first vertically extending fold line 23. The lower flap panels 39, 41 are separated by a downwardly directed fold line segment 47, also constituting an extension of the fold line 23.

The blank 17 also includes second and third vertically extending fold lines 49, 51 which are positioned adjacent the distal edge 25 of the left main body panel 19. An outer margin portion 53 of the panel 19 projects from the second vertical fold line 49, i. e., the fold line 49 defining in part the outer margin portion 53. The outer margin portion 53 has a dimensional width thereto which is greater than the spaced apart distance between the vertical fold lines 49, 51 for reasons yet to be disclosed.

A right flap panel 55 is included and is joined to the distal edge 27 of the right panel 21 by a fourth vertically extending fold line 57. The tab means 29 includes a root portion 59 and a tip portion 61 with the root portion 59 being joined to the right flap panel 55 by a fifth vertically extending fold line 63 and the tip portion 61 being joined to the root portion 59 by a sixth vertically extending fold line 65.

An upper corner panel 67 is included which is joined to the right upper flap panel 35 by a fold line segment 69 constituting an upwardly directed extension of the fourth vertical fold line 57 and being joined to the right flap panel 55 by a fold line segment 71 constituting an outwardly directed extension of the upper horizontal fold line 37.

A lower corner panel 73 is included and is joined to the right lower flap panel 41 by a fold line segment 75 constituting a downwardly directed extension of the fourth vertical fold line 57 and is joined to the right flap panel 55 by a fold line segment 77 constituting an outwardly directed extension of the lower horizontal fold line 43.

It will be appreciated by those skilled in the art that the fold line 37 tapers downwardly or toward the fold line 43 from the distal edges 25, 27 toward the vertical fold line 23. Additionally, the line segment extension 71 tapers downwardly toward the tab means 29 from the vertical fold line 57. Further, the lower horizontal fold line 43 tapers upwardly toward the horizontal fold line 37 from the distal edges 25, 27 toward the vertical fold line 23. Additionally, the fold line segment 77 tapers upwardly toward the tab means 29 from the vertical fold line 57. In other words, the above described non-straight courses for the various scorelines is to prevent folds from overlaying directly one on the other, a common expedient well known to those skilled in the art.

The upper corner panel 67 is provided with an upper diagonal fold line 79 commencing substantially at the convergency of the fourth vertical fold line 57 and the upper horizontal fold line 37 and extends upwardly and outwardly therefrom. The lower corner panel 73 includes a lower diagonal fold line 81 commencing substantially at the convergency of the fourth vertical fold line 57 and the lower horizontal fold line 43 and extends downwardly and outwardly therefrom.

The blank 17 is provided with upper and lower notches 83, 85 with the upper notch 83 being positioned along the uppermost edge of the blank 17 and extending downwardly a predetermined distance so as to partially separate the upper flap panel 35 and the upper corner panel 67. The lower notch 85 is positioned along the lowermost edge of the blank 17 and extends upwardly a predetermined distance so as to partially separate the flap panel 41 from the lower corner panel 73, i. e., the notches 83, 85 being substantially as depicted in FIG. 1 of the drawings.

The carton 11 includes adhesive means 87 which is applied to the blank 17 so as to substantially overlay the entire area of the main body panel 19 between the second and third vertical fold lines 49, 51. The main body panel 19 is doubled or folded over inwardly along the second vertical fold line 49 so that a portion of the outer margin portion 53 is fixedly joined to the adhesive means 87. The outer margin portion 53 was described earlier in the specification as having a width greater than the distance between the second and third vertical fold lines 49, 51. Accordingly, fixedly joining the portion thereof adjacent the second fold line 49 establishes a free portion 89 as clearly shown in FIGS. 6 and 8 of the drawings which may extend inwardly a predetermined distance between the first and third vertical fold lines 23, 51 or between the adhesive means 87 and the fold line 23 to establish in part the previously mentioned lock means 31.

It will be appreciated by those skilled in the art that the blank 17 may optionally have one step in the folding sequence accomplished prior to the shipping thereof to the glove manufacturer. In other words, the above-described adhesive means 87 preferably is applied as above-described and the outer margin portion 53 preferably is folded along the second vertical fold line 49 so that when the blank 17 is received by the glove manufacturer, it is ready to have the gloves 13, 15 packed therein.

Therefore, the following disclosure pertains to the folding sequence of a pre-glued blank 17 which is not separately shown in the drawings. The first step in the packaging sequence comprises laying the gloves 13, 15 flat on the respective left and right main body panels 19, 21 as clearly depicted in FIGS. 1 and 2 of the drawings. The second step includes folding the blank 17 inwardly along the vertical fold line 57 and the extensions 69, 75 thereof. The third step includes folding the tab means 29 outwardly along the vertical fold line 63, thus the blank 17 assumes a disposition substantially as depicted in FIG. 2 of the drawings.

The fourth step includes the transition depicted between FIGS. 2 and 3 of the drawings, i. e., folding the upper pair of flat panels 33, 35 inwardly and downwardly along the horizontal fold line 37 and the extension 71 thereof and folding the lower pair of flap panels 39, 41 inwardly and upwardly along the lower horizontal fold line 43 and the extension 77 thereof.

The fifth step in the packaging or folding sequence includes the transition depicted between FIGS. 3 and 4 of the drawings, i. e., folding the blank 17 inwardly along the vertical fold line 23 and along the extensions 45, 47 thereof. From FIGS. 3 and 4 of the drawings, it may be seen that the main body panel 19 establishes a bottom for the carton 11 and the main body panel 21 substantially establishes a top for the carton 11. In other words, the panels 33, 35, 39, 41, 55, 59, 61, 67,

73 and the gloves 13, 15 are sandwiched between the bottom of the carton 11 or the main body panel 19 and the top of the carton 11 or the main body panel 21. Further, the distal edge 27 and the tip portion 61 of the tab means 29 is in a disposition overlaying the free portion 89 of the outer margin 53 of the panel 19, i. e., a condition preparatory to engaging the lock means 31 in a manner yet to be described.

From FIG. 6 of the drawings, it may be seen that the lock means 31 includes the free portion 89 of the outer margin 53 coacting with the distal edge 27 of the panel 21. The lock means 31 is engaged by folding the outer margin portion 53 downwardly as shown in FIG. 6 along the vertical fold line 51 which causes the tip portion 61 of the tab means 29 to bend upwardly along the vertical fold line 65. Releasing the distal edge 25 or the outer margin portion 53 allows the resiliency of the relatively stiff sheet material to urge the distal edge 25 upwardly to a position in line with main body panel 19.

Accordingly, the free portion 89 assumes a disposition overlaying the distal edge 27 of the panel 21 and a portion of the tip 61 is exposed as clearly shown in FIGS. 7, 8 of the drawings. In the event it is desirable to seal the carton 11, it may be enclosed in a typical sealable package, e. g., like that depicted in FIG. 3 of the aforementioned '121 patent.

Opening the carton 11 is accomplished by simply grasping the distal edge 25 with the fingers FL of the left hand and the tip 61 of the tab means 29 with the fingers FR of the right hand, substantially as depicted in FIGS. 7 and 8 of the drawings. The distal edge 25 is urged in the direction of the arrow 91 and the tip 61 of the tab means 29 is urged in the direction of the arrow 93 which is effective to disengage the lock means 31 and cause the carton 11 to snap open in three directions to a flat disposition presenting the gloves 13, 15 on a sterile field encompassing the entirety of the blank 17 substantially as depicted in FIG. 1 of the drawings.

At least two types of fold lines are well known to those skilled in the art: The scored fold line and the perforated fold line. Accordingly, I prefer that the fold lines 23, 49, 51, 79, 81 be of the scored fold line type. Further, the fold lines 37, 43, 45, 47, 57, 63, 65, 69, 71, 75, 77 preferably are the perforated type. Accordingly, the carton 11 will assume a relatively flat disposition as depicted in FIGS. 5, 6, 8 when folded in the above disclosed sequence.

Although the invention has been described and illustrated with respect to a preferred embodiment thereof, It is not to be so limited since changes and modifications may be made therein which are within the full intended scope of the invention.

I claim:

1. A folded one-piece snap-open carton for sanitarily packaging a pair of surgical gloves, said carton comprising a pair of large main body panels for restingly supporting the pair of gloves, said main body panels respectively having greater width and length thereto than the pair of gloves and being joined together by a first vertically extending fold line, one of said pair of main body panels establishing a bottom for said carton and the other of said pair of main body panels substantially establishing a top for said carton, said main body panels having distal edges spaced from said vertically extending fold line, a plurality of smaller panels joined one to the other and to said main body panels by a plurality of fold lines for foldably overlaying certain portions of the

gloves and for urging said carton to snap open, said main body panels being folded inwardly along said first vertically extending fold line with said plurality of smaller panels and said gloves being sandwiched between said top and bottom of said carton, tab means joined to certain of said smaller panels opposite from said distal edge of one of said main body panels, lock means adjacent said distal edge of said one of said main body panels coacting with said distal edge of the other of said main body panels for locking said folded carton in a closed disposition with a portion of said tab means being exposed whereby grasping said tab means and said distal edge of said one of said main body panels and pulling in opposite directions is effective to disengage said lock means and cause the carton to snap open in three directions outwardly from said main body panels, a second vertically extending fold line adjacent said distal edge of said one of said main body panels, said first and second vertically extending fold lines being parallel one with the other, and adhesive means for fixedly joining certain portions of said one of said main body panels adjacent said distal edge thereof one to the other and with said one of said main body panels being doubled inwardly along said second vertically extending fold line and having a free portion thereof extending inwardly between said adhesive means and said first vertically extending fold line to establish in part said lock means.

2. The carton of claim 1 in which is included a third vertically extending fold line adjacent said distal edge of said one of said main body panels and being parallel with said first and second vertically extending fold lines, said third vertically extending fold line being positioned between said adhesive means and said first vertically extending fold line adjacent said adhesive means, bending said fixedly joined portions of said distal edge of said one of said main body panels downwardly along said third vertically extending fold line being effective to raise said free portion thereof upwardly facilitating engagement of said lock means.

3. A blank of flexible relatively stiff sheet material which may be folded to constitute a sanitary carton for surgical gloves comprising left and right main body panels for restingly supporting the respective left and right gloves, a first vertically extending fold line being provided which extends between said left and right main body panels, said main body panels having distal edges spaced from said first vertically extending fold line, a pair of upper flap panels respectively joined to said left and right main body panels by an upper horizontally extending fold line, a pair of lower flap panels respectively joined to said left and right main body panels by a lower horizontally extending fold line, said upper and lower pairs of flap panels respectively being separated by upwardly and downwardly directed fold line segments constituting extensions of said first vertically extending fold line, second and third vertically extending fold lines positioned adjacent said distal edge of said left one of said main body panels, said second vertically extending fold line defining in part an outer margin portion having a dimensional width which is greater than the spaced apart distance between said second and third vertically extending fold lines, a right flap panel joined to said distal edge of said right main body panel by a fourth vertically extending fold line, a tab panel having a root portion and a tip portion, said root portion being joined to said right flap panel by a

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fifth vertically extending fold line, said tip portion being joined to said root portion by a sixth vertically extending fold line, an upper corner panel joined to the right one of said upper flap panels by a fold line segment constituting an upwardly directed extension of said fourth vertically extending fold line and being joined to said right flap panel by a fold line segment constituting an outwardly directed extension of said upper horizontally extending fold line, and a lower corner panel joined to the right one of said lower flap panels by a fold line segment constituting a downwardly directed extension of said fourth vertically extending fold line and being joined to said right flap panel by a fold line segment constituting an outwardly directed extension of said lower horizontally extending fold line.

4. The blank of claim 3 in which said upper and lower corner panels respectively are provided with upper and lower diagonal fold lines, said upper diagonal fold line

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commencing substantially at the convergency of said fourth vertically extending fold line and said upper horizontally extending fold line and extending upwardly and outwardly therefrom, said lower diagonal fold line commencing substantially at the convergency of said fourth vertically extending fold line and said lower horizontally extending fold line and extending downwardly and outwardly therefrom.

5. The blank of claim 4 which includes providing upper and lower notches, said upper notch being positioned along the uppermost edge of said blank and extending downwardly therein separating in part the right one of said upper flap panels and said upper corner panel, said lower notch being positioned along the lowermost edge of said blank and extending upwardly therein separating in part the right one of said lower flap panels and said lower corner panel.

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