

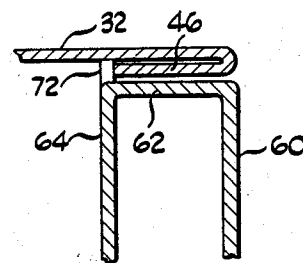
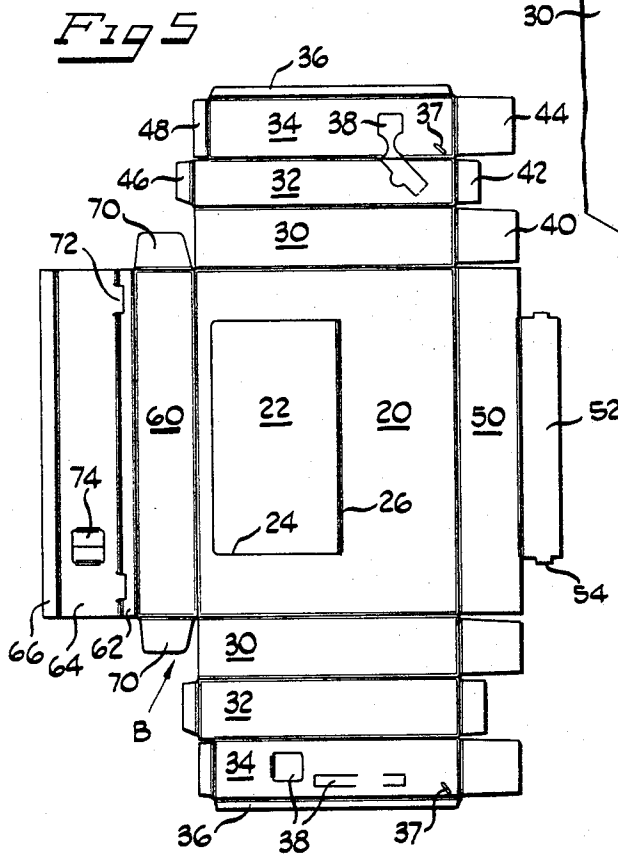
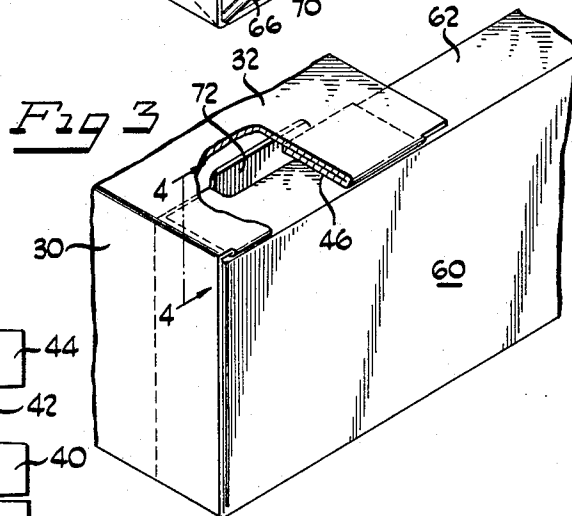
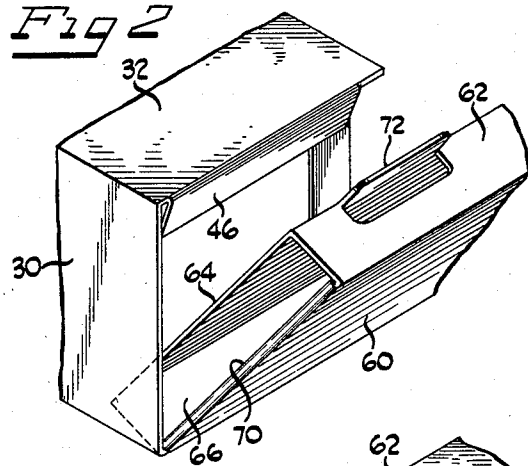
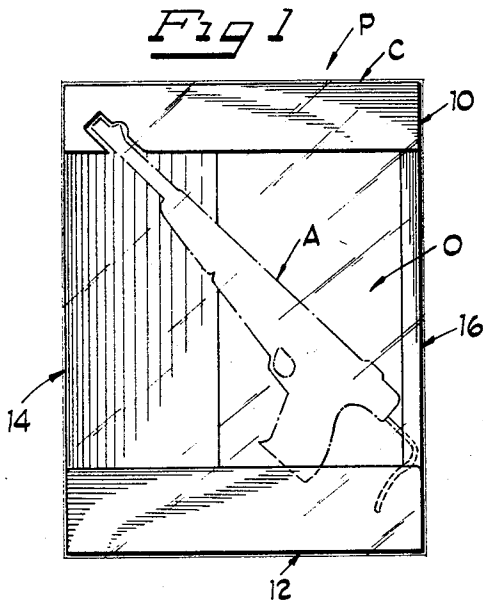
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CORNER CONSTRUCTION FOR HOLLOW-WALL CARTON

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CORNER CONSTRUCTION FOR HOLLOW-WALL CARTON

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ABSTRACT OF THE DISCLOSURE

A hollow wall construction wherein the end of a first wall is received within the adjacent end of a second wall and wherein the end of one panel of the second wall has hinged thereto a lock flap folded under said one panel approximately 180 degrees for engagement with a lock tab projecting upwardly from an inner panel of the first wall.

This invention relates to hollow-wall cartons, and more particularly to a corner construction for cartons of this type.

The invention comprehends an improvement in a lock arrangement between side walls at the corner of a carton.

In conventional hollow-wall or frame type cartons normally a complex connecting arrangement is required to interconnect adjacent ends of the carton side walls at the carton corners.

It is therefore an object of this invention to provide a simplified corner construction for a hollow-wall carton.

Another object of the invention is to provide a hollow-wall carton corner construction which will permit the carton to be formed with one pair of side or end walls glued but collapsed, so that the other pair of side or end walls can be manually or machine formed and erected without additional gluing.

Yet another object of the invention is the provision, in a carton of the type described, of an interlocking corner construction wherein the locking means are hidden from view after the carton has been completely erected.

A more specific object of the invention is the provision of a hollow-wall carton construction wherein the end of a first wall is received within the adjacent end of a second wall and wherein the end of one panel of the second wall has hinged thereto a lock flap folded under said one panel approximately 180 degrees for engagement with a lock tab projecting upwardly from an inner panel of the first wall.

These and other objects of this invention will be more apparent from an examination of the following description and drawings, wherein:

FIGURE 1 is a top plan view of a composite package embodying features of the invention;

FIGURE 2 is a prospective view of the construction of the lower right-hand corner of the carton illustrated in FIGURE 1, as seen before the carton is completely erected;

FIGURE 3 is a view similar to FIGURE 2, but with the carton in an erected condition;

FIGURE 4 is a section taken on line 4-4 of FIGURE 3; and

FIGURE 5 is a plan view of the blank from which the carton illustrated in the other views is formed.

It will be understood that, for purposes of clarity, certain elements have been intentionally omitted from certain views where they are believed to be illustrated to better advantage in other views.

Referring now to the drawing for a better understanding of the invention, and particularly to FIGURE 1, it will be seen that the invention relates to a composite display package, indicated generally at P, for holding one

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or more articles, such as a toy, indicated generally at A in the drawing.

The package includes a frame or carton, indicated generally at C, which may be formed from the unitary blank of paperboard, indicated generally at B in FIGURE 5, and which is overwrapped with a layer of plastic film, indicated generally at O.

Still referring to FIGURE 1, carton C, when in an erected condition, is in the nature of a frame being opened in the center and having opposed pairs of hollow first and second end walls 10 and 12, respectively, and first and second side walls 14 and 16, respectively. All of the walls of the carton illustrated in the drawing are preferably rectangular in cross section, except for the first side wall 14, which is preferably triangular in cross section.

Turning now to FIGURE 5 of the drawing, where blank B from which carton C may be formed is illustrated, it will be seen that the blank is a unitary sheet of paperboard. Blank B includes a generally rectangular main panel 20, which serves as the bottom or rear wall of the carton when the carton is in an erected condition. Panel 20, has a section, indicated generally at 22, which is generally rectangular and forms a flap or panel 22. Panel 22 is defined by a U-shaped cut line 24 and is hinged along one side to panel 20 so that it may be folded over to serve as a front panel of first side wall 14 in a manner which is later described in the specification.

Each of the first and second end walls includes an outer panel 30 hingedly attached to the end edge of panel 20, an upper or front panel 32 hingedly attached to panel 30, an inner panel 34 hingedly attached to panel 32, and a glue flap 36, hingedly attached to panel 34.

Panel 34 may be provided with a lock-slot 37, the purpose of which is described later in the specification. Also, panels 32 and 34 may be provided with one or more openings 38 to accommodate insertions of portions of the packaged article as shown in FIGURE 1.

Still referring to FIGURE 5, it will be seen that panels 30, 32 and 34 have hingedly attached to their right side edges closure flaps 40, 42, and 44, respectively, and that panels 32 and 34 have hingedly attached to their left side edge closure flaps 46 and 48, respectively.

First side wall 14 includes, in addition to front panel 22, an outer side wall panel 50 which is hingedly attached to the side edge of panel 20 and a lock flap 52, which is hingedly attached to the central portion of the outer edge of panel 50. Flap 52 has projecting outwardly from the end thereof a pair of locking tabs 54 which are adapted to be received in the lock slots 37 of end wall inner panel 34, when the carton is in an erected condition, as described later in the specification.

Second side wall panel 16 includes an outer panel 60 hingedly attached to the opposite side edge of panel 20, a front panel 62 hingedly attached to panel 60, an inner panel 64 hingedly attached to panel 62, which serves as an inner rear wall panel. Panel 60 is provided at its opposite end with hingedly attached closure flaps 70. Panel 64 may also be provided with one or more openings 74 to accommodate receipt of the packaged articles as shown in FIGURE 1.

Panel 64 is provided with a pair of lock tabs 72 which are cut from a portion of the stock of panel 62 and which project outwardly from panel 64 across the edge line connecting panels 62 and 66. The purpose of lock tabs 72 will be described in detail later in the specification as it is an essential feature of the invention. The carton blank is shipped to the packer in the glued condition with glue flaps 36 adhesively secured to the inner surface of panel 20 and with the first and second end walls collapsed so that when the carton is formed, the end walls can be easily pushed up to the erected condition.

In erecting the carton which has been partially glued as previously described, after the end walls are erected, flaps 42 are folded 90 degrees toward panel 20. Flaps 40 are then folded inwardly at right angles to panels 30. Flaps 44 are then folded inwardly at right angles to panels 34. Side wall outer panel 50 is then folded inwardly at right angles to panel 20 so as to lie against the outer surfaces of flaps 40. Lock flap 52 is then folded inwardly approximately 45 degrees toward panel 20 until lock tabs 54 engage in lock slots 37 of panel 34. At this point, panel 22, which serves as the front panel of first side wall 14, is folded approximately 135 degrees inwardly so as to lie against the outer face of lock flap 52, to which it may be adhesively secured if desired. It is possible that the packaged article may lie against panel 22 so as to eliminate the necessity of gluing panel 22 to lock flap 52.

The primary novel feature of the carton construction embodied in the present invention is the corner construction between the second side wall 16 and the adjacent end portions of first and second end walls 10 and 12, respectively. One advantage of this construction is that it does not require any glue to close the carton, and the lock tabs are all hidden from view. In a carton of this type, after the first and second end walls and the first side wall 14 have been formed to provide a generally U-shaped structure with three hollow walls, the article to be packaged is inserted in the center of the carton with portions of it projecting in the openings 38 and 74 as previously described. At this point, the carton is closed by the erection of the second side wall 16 in a manner hereinafter described.

In erecting the second side wall 16, flaps 48 are folded 90 degrees into the end walls and flaps 46 are likewise folded at least 90 degrees into the end walls. Flaps 70 are then folded inwardly at right angles to panel 60. At this point panels 60, 62, 64 and 66 are all folded at right angles to each other to form the side wall 16 which is a rectangular tubular structure positioned between flaps 70. This entire side wall is then folded 90 degrees inwardly from panel 20, about the edge line which connects panel 20 to panel 60, so that the side wall inner panel 64 is brought in face to face relationship with the outer surfaces of flaps 48 on panels 34. At the same time, flaps 70, which abut the ends of the side wall, are tucked into the ends of the respective end walls adjacent the respective end wall outer panels 30.

It will be noted that as the side wall 16 is erected, lock tabs 72 project forwardly or upwardly from side wall front panel 62 so that, as the side wall is pushed against the end walls, lock tab 72 will ride over the inwardly bent lock tabs 46 until the side wall is completely in place, at which point the ends of lock flaps 46 will engage the flat surfaces of lock tab 72 to prevent the side wall from moving away from the end wall. Thus, the carton is completely locked in an erected condition without the necessity of glue, and the locking means are completely hidden from view.

After the carton has been formed and filled, it may be overwrapped with a sheet of plastic film, indicated generally at O in a conventional manner.

I claim:

1. In a corner construction for a hollow-wall carton formed from a unitary blank of foldable paperboard, the combination of:

- (a) first and second walls each having top, bottom, inner, and outer panels arranged to form a tubular structure;
- (b) said first wall top, bottom, and outer panels extending beyond the first wall inner panel a distance approximately equal to the width of the second wall to accommodate receipt of the end of the second wall within the end of the first wall;

- (c) means interconnecting the first wall bottom panel and the second wall outer panel;
- (d) a lock tab projecting upwardly a slight distance from the second wall inner panel toward said first wall top panel;
- (e) a lock flap hinged to the end edge of the first wall top panel and folded approximately 180 degrees under said first wall top panel for engagement with an outwardly facing abutment surface presented by the lock tab of said second wall inner panel to secure the ends of the first and second walls to each other.

2. In a corner construction for a hollow-wall carton formed from a unitary blank of foldable paperboard, the combination of:

- (a) first and second walls each having top, bottom, inner, and outer panels arranged to form a tubular structure;
- (b) said first wall top, bottom, and outer panels extending beyond the first wall inner panel a distance approximately equal to the width of the second wall to accommodate receipt of the end of the second wall within the end of the first wall;
- (c) a lock tab projecting upwardly a slight distance from the second wall inner panel toward said first wall top panel;
- (d) a lock flap hinged to the end edge of the first wall top panel and folded under said first wall top panel for engagement with an outwardly facing abutment surface presented by the lock tab of said second wall inner panel to secure the ends of the first and second walls to each other.

3. In a corner construction for a hollow-wall carton formed from foldable paperboard, the combination of:

- (a) first and second walls each having top, bottom, inner, and outer panels arranged to form a tubular structure;
- (b) said first wall top, bottom, and outer panels extending beyond the first wall inner panel a distance approximately equal to the width of the second wall to accommodate receipt of the end of the second wall within the end of the first wall;
- (c) a lock tab projecting a slight distance from the second wall inner panel toward one panel of said first wall;
- (d) a lock flap hinged to the end edge of said first wall one panel and folded approximately 180° under said first wall one panel for engagement with an outwardly facing abutment surface presented by the lock tab of said second wall inner panel to secure the ends of the first and second walls to each other.

4. A corner construction according to claim 3, wherein portions of the bottom panels of the first and second walls are co-extensive.

5. A corner construction according to claim 3, wherein portions of the bottom panels of the first and second walls are formed from a common panel member.

6. A corner construction according to claim 3, and including a flap projecting from the end edge of one of the panels of said second wall and folded inwardly at a right angle thereto and disposed within said second wall adjacent one panel of said second wall.

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