

[54] **INTERNAL INTERLOCKING FLAP BOX**

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[51] Int. Cl. **B65d 13/00**

[58] Field of Search **229/37 E, 23 R**

[56] **References Cited**

UNITED STATES PATENTS

1,703,399 2/1929 Lange 229/23 R
3,572,575 3/1971 Dorofachuk 229/37 E X

FOREIGN PATENTS OR APPLICATIONS

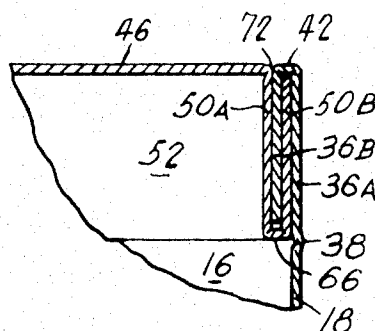
690,695 7/1964 Canada 229/23 C

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[57] **ABSTRACT**

A carton is closed by a closure member having double fold flaps at its sides or ends which cooperate with corresponding double fold flaps on the tubular section of the carton. The double fold flaps on the closure are interfolded with the double fold flaps on the tubular member to provide a peripheral band about the container with the band extending on the inside of the container thereby to provide an internal cushion. The joint between the tubular member and the closure member is exposed at the end of the container adjacent the corner edge thereof so that a tape may be simply applied over the corner of the container and across the joint to hold the container closed.

3 Claims, 7 Drawing Figures



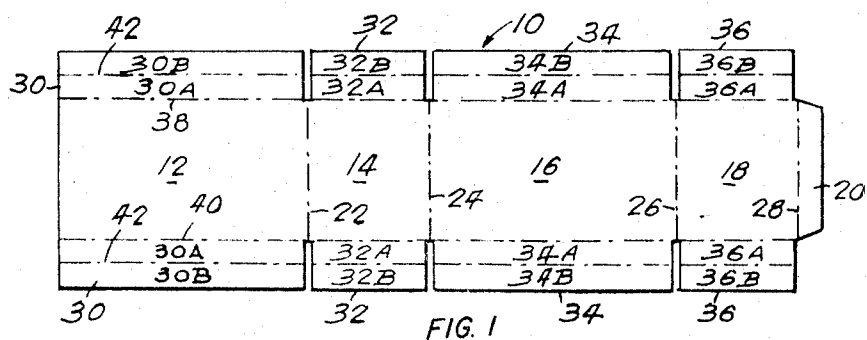


FIG. 1

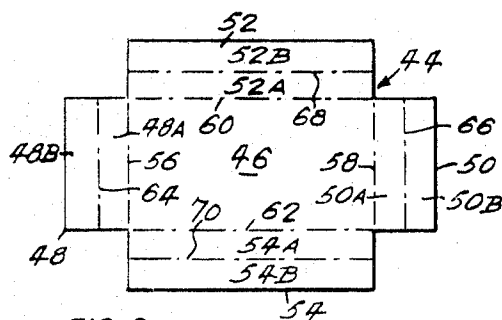


FIG. 2

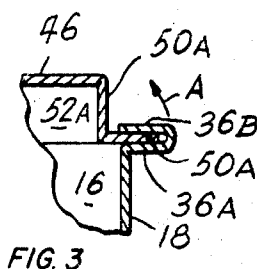


FIG. 3

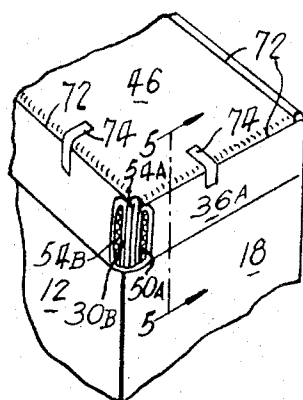


FIG. 4

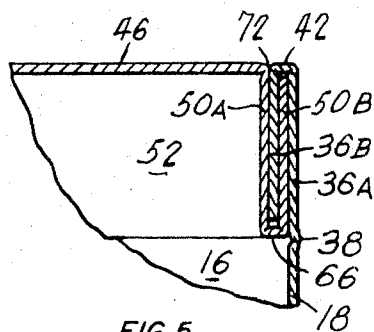


FIG. 5

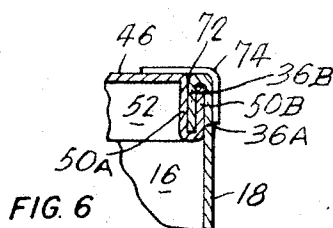


FIG. 6

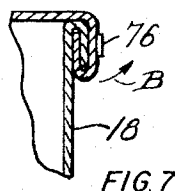


FIG. 7

INTERNAL INTERLOCKING FLAP BOX

FIELD OF THE INVENTION

The present invention relates to a shipping container, more specifically the present invention relates to a flap closure for shipping containers for large articles.

DESCRIPTION OF THE PRIOR ART

Shipping containers for large articles such as furniture, appliances, and the like are generally formed from at least two pieces. Usually the side walls of the carton are formed by a tubular member and the ends are each formed by separate end closure pieces having flaps that fold about end flaps projecting from the walls, i.e., the closures are provided with double fold flaps that fold about an outwardly folded top or bottom flap and lie in face-to-face contact with the outside of a wall of the carton. The carton is held in closed position by banding, generally by means of a metal strap completely encircling the tubular member and overlying the double fold flap. Such a carton is shown, for example, in Canadian Pat. No. 690,695, issued July 4, 1964 to Gile.

Cartons, as above described, with the double folded flap lying on the outside of the tubular member do little, if anything, to cushion the article being packaged. Furthermore, because of the arrangement of the flaps on the outside of the carton an encircling band is essential to proper sealing of the carton.

It is the object of the present invention to provide an improved flap locking construction which aids in cushioning the article being packaged and facilitates tape closing of the carton.

SUMMARY OF THE INVENTION

Broadly, the present invention relates to a carton for packaging large articles wherein the end closure of the box is held in position by means of a locking structure formed by a double fold flap on a closure member cooperating with an adjacent double fold flap projecting from the end of an adjacent wall member. The double fold flaps are foldably interengaged one within the other in such a manner that one of the flaps of the double fold flap connected to the closure member is innermost of the carton relative to the other of said flaps.

BRIEF DESCRIPTION OF THE DRAWING

Further features, objects and advantages will be evident from the following detailed description of a preferred embodiment of the present invention taken in conjunction with the accompanying drawings in which:

FIG. 1 is a plan view of a blank for forming the tubular portion of the container,

FIG. 2 is a plan view of a blank for forming an end closure for the container,

FIG. 3 illustrates a step in closing of the carton,

FIG. 4 is a partial isometric view of the closed carton,

FIG. 5 is a section along the line 5-5 of FIG. 4,

FIG. 6 is a view similar to FIG. 5 but showing the tape closure, and

FIG. 7 is a view of the prior art's closure technique for comparison with FIG. 6 illustrating the present invention.

DESCRIPTION OF THE PREFERRED EMBODIMENTS

The blank 10 of FIG. 1 illustrates one form of blank for forming a sleeve or tubular member that may be

used in conjunction with the present invention. This blank 10 is formed by a side wall 12, end wall 14, side wall 16, end wall 18, and glue flap 20 foldably interconnected by a set of parallel fold lines 22, 24, 26 and 28 respectively. Double fold closure flaps 30, 32, 34 and 36 are connected to opposite sides of the panels 12, 14, 16 and 18 respectively by fold lines 38 and 40 respectively. Each of these closure flaps 30, 32, 34 and 36 are divided to form double fold flaps by fold lines 42 which are substantially parallel to the fold lines 38 and 40. Thus each of the double fold flaps 30, 32, 34 and 36 is composed of an inner flap 30A, 32A, 34A, 36A and an outer flap 30B, 32B, 34B, 36B respectively.

The double fold flaps 30, 32, 34 and 36 are important to the operation of the present invention, however, both ends of the carton need not incorporate the closure of the present invention and thus double fold flaps may be omitted at one end of the blank if that end of the carton is to be closed by a conventional closure. Similarly, the tubular sleeve element may be closed by means other than the glue flap 20 forming the manufacturer's joint, for example, by taping or the like.

A blank 44 for forming an end closure suitable for use with the sleeve of FIG. 1 is illustrated in FIG. 2. As shown, the blank 44 comprises a central end closing panel 46 having laterally projecting double fold end flaps 48 and 50 and laterally projecting double fold side flaps 52 and 54. These flaps 48, 50, 52 and 54 are connected to the end closure panel 46 by fold lines 56, 58, 60 and 62 respectively and are divided into inner and outer flaps 48A, 48B; 50A, 50B; 52A, 52B; and 54A, 54B by means of fold lines 64, 66, 68 and 70 respectively.

The carton of the present invention is made by first forming the blank 10 into a tubular sleeve, for example, by gluing the glue flap 20 to the panel 12. The sleeve so formed may then be positioned about the article to be packaged and the flaps 30, 32, 34 and 36 folded substantially perpendicular to the respective walls 12, 14, 16 and 18 on fold lines 38 and 40. The end closure blank 44 is then positioned in proper relationship to the article being packaged and the outer flaps 48B, 52B, 50B, 54B are folded to a position substantially perpendicular to their adjacent inner flaps 48A, 50A, 52A and 54A on fold lines 64, 66, 68 and 70 and the inner flaps 48A, 50A, 52A and 54A are folded to a position substantially perpendicular to the main end closure panel 46. In this position, the flaps 48B, 50B, 52B and 54B directly overlie their respective adjacent inner flaps on the sleeve member, say, flaps 32A, 36A, 34A and 30A respectively. The outside flaps 32B, 36B, 34B and 30B on the sleeve member then may be folded into face-to-face contact with their adjacent outer flaps 48B, 50B, 52B and 54B so that the flaps are in the position indicated in FIG. 3 for flaps 36 and 50. The flaps 36A, 50A and 36B are then folded in the direction of the arrow A in FIG. 3 into the position illustrated in FIGS. 4 and 5, i.e., with the flap 36B sandwiched between the flaps 50A and 50B and the flap 50A sandwiched between the flaps 36A and 36B and with the flap 50A positioned innermost relative to the carton (see FIG. 5).

It will be noted that when the carton is formed with the locking closure of the present invention on all four sides, a peripheral band is formed on the inside of the carton composed of three layers of cardboard, namely the inner and outer flaps of the double fold flaps 48, 50, 52 and 54 and the outer flaps 30B, 32B, 34B and 36B

which forms a cushion completely encircling the end of the carton. It will further be noted that the exposed line of juncture between the end closure and sleeve faces the end closure as indicated at 72 in FIGS. 4, 5 and 6, with opening of the carton requiring that the flaps, for example, 36B, 50A and 36A be folded in the opposite direction indicated by the arrow A in FIG. 3. This means that by providing tape patches such as those indicated at 74 in FIGS. 4 and 6, adequate closing of the carton may be obtained. In the illustration only one tape for each side has been indicated but several may be provided if desired, or alternatively a full length tape may be used to better seal the carton.

It will be seen that the short tape closure that is applicable to the present invention, as seen for example in FIG. 6, may be used because the stresses applied to the tape when tending to open the carton are substantially parallel to the surface of the tape secured to the end closure panel 46, i.e., there is no tendency to lift the tape from the surface to which it would be secured. With the prior art arrangement as shown in FIG. 7, a peripheral band 76 was required since taping across the double fold flap of the end closure onto the side wall of the carton would not be satisfactory. In the prior art arrangement the flaps fold upwardly in the direction of the arrow B which simply lifts a tape from the surface of the side wall indicated at 78.

While the disclosure has shown the double fold flaps on at least one end of all the side and end walls of the container, it is also possible to have double fold flaps for a given closure on at least one end of the carton only on one pair of opposed end or side walls of the closure member so that the other pair of opposed end or side walls would have different flap closures. It is preferred to have double flaps completely encircling the container in the manner illustrated. Also, the closure member of the present invention has been shown as a separate and distinct integer from the tubular sleeve portion, however, it is possible to integrally interconnect these by, say, omitting the double fold flaps at one side of the container and integrally foldably connecting the main end closure panel of the closure member to one of the side or end walls by a fold line. While a four sided box has been illustrated, a box having three or more sides may incorporate the present invention.

Modifications may be made without departing from the spirit of the invention as defined in the appended claims.

I Claim:

1. A carton comprising a plurality of wall panels defining a sleeve structure, an end closure panel, a first set of double fold flaps, one foldably connected to each of at least a pair of said wall panels at one end of said wall panels, a second set of double fold flaps foldably connected one to each corresponding end of said end closure panel adjacent said ends of said wall panels, each of said double fold flaps having an inner flap and an outer flap, said inner and outer flaps being interconnected by a fold line substantially parallel to the foldable connection between the respective double fold flap and its respective wall panel or end closure panel, flaps of said first set of double fold flaps being interfolded with their corresponding adjacent flaps of said second set so that said inner flaps of said first set of double fold flaps are interposed between said inner and outer flaps of said second set of double fold flaps with said inner flaps of said second set of double fold flaps being innermost of said carton.

2. A carton as defined in claim 1 wherein a first set of double fold flaps comprises a double fold flap connected to an end of each wall of said sleeve and wherein a second set of double fold flaps comprises a double fold flap connected to each end of said end closure panel.

3. A carton comprising a plurality of side walls defining a sleeve structure, end closure panel, first double fold flaps projecting from said wall panels, second double fold flaps projecting from said end closure panel, each said double fold flap having an inner and outer flap, said first and second double fold flaps being foldably interengaged so that an inner flap of each of said second set of double fold flaps is innermost of said carton, a line of closure between the closure panel and the sleeve structure between said inner flaps of said second flaps and corresponding outer flaps of said first flaps exposed at the end of the carton closed by said closure panel and tapes traversing said line to hold said carton closed.

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