Jan. 2, 1968 V. A. ADAMS ET AL 3,361,323

HAT BOX

Filed Nov. 23, 1965 2 Sheets-Sheet 1

FIG. 1

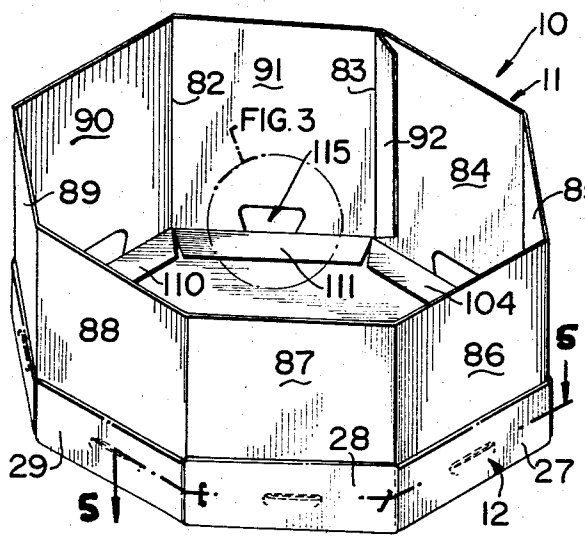
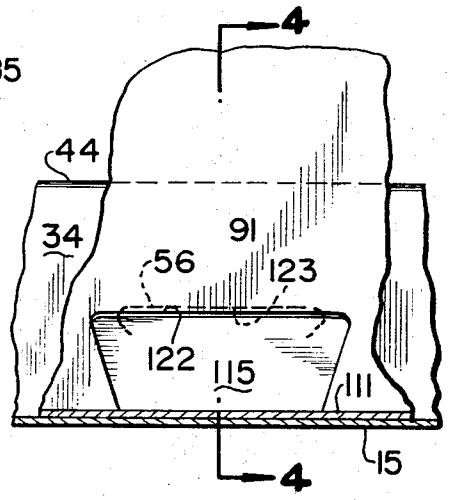


FIG. 3



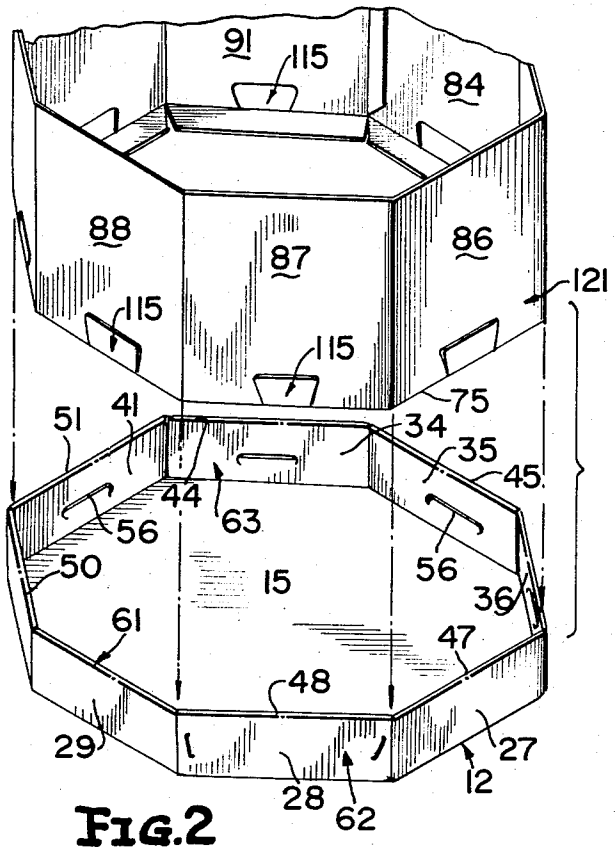


FIG. 2

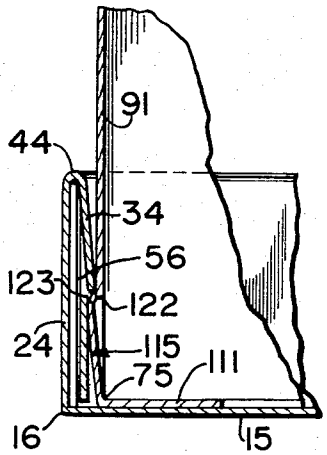


FIG. 4

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Jan. 2, 1968 V. A. ADAMS ET AL 3,361,323

HAT BOX

Filed Nov. 23, 1965 2 Sheets-Sheet 2

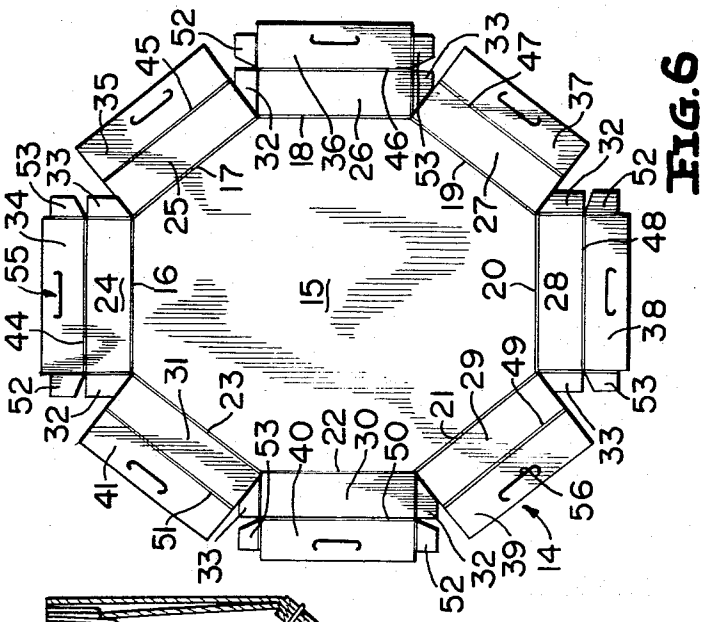


FIG. 6

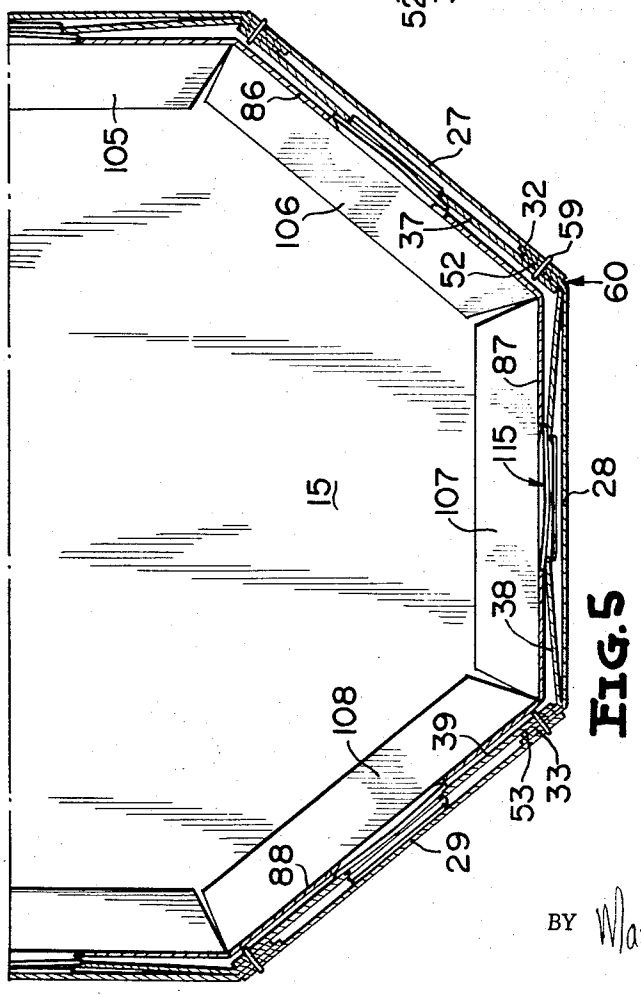


FIG. 5

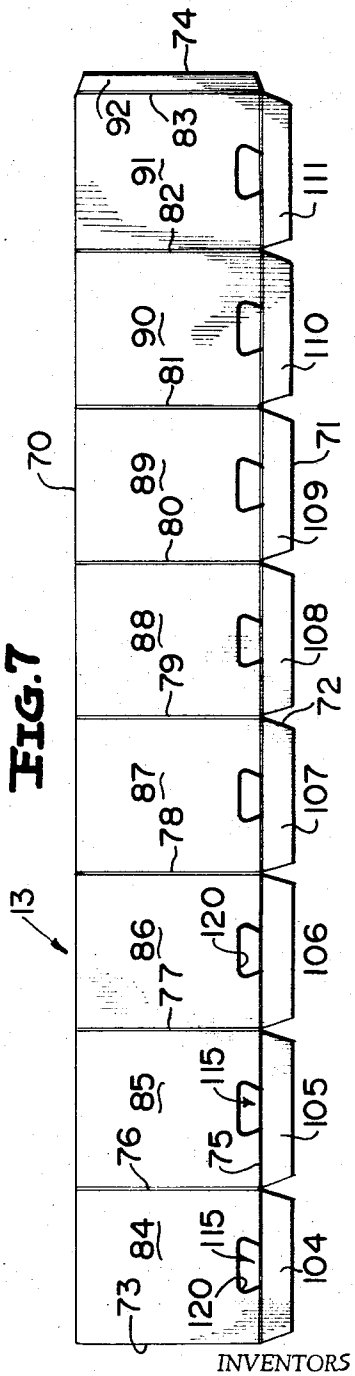


FIG. 7

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HAT BOX

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Filed Nov. 23, 1965, Ser. No. 509,334
5 Claims. (Cl. 229—23)

ABSTRACT OF THE DISCLOSURE

This invention relates to a novel hat box or carton, and is particularly directed to novel means for interlockingly securing a carton body to a closure of the carton. The carton includes a plurality of tabs of a generally inverted U-shaped configuration, and generally inverted U-shaped slits are formed in an inner panel of a multi-ply peripheral skirt of the closure. The slits open in a direction opposite to the direction in which the tabs project, and the engagement between edges of the slits and tabs effectively unite the closure and the carton body.

An object of this invention is to provide a novel carton particularly adapted for containing a hat comprising a generally tubular body having axially opposite end portions, an end closure closing one of the end portions, locking means for securing the end closure to the one end portion, the locking means being defined by a plurality of interlocked slits and tabs of the closure and the one end portion, the closure having an end panel, and the tabs being struck from the carton body and directed away from the end panel in interlocking engagement with slits formed in the one end portion of the carton body.

A further object of this invention is to provide a novel carton of the type including a generally tubular carton body having a lower end portion and an end member closing the lower end portion, a plurality of tabs struck from the body adjacent the lower end portion and directed toward an upper end portion of the body, the tabs terminating in free edges, the end member comprising an end panel and a peripheral skirt having inner and outer peripheral skirt portions, the peripheral skirt being in external telescopic relationship with respect to the lower end portion of the carton body, slit means defining a plurality of edges in the inner peripheral skirt portion, and the edges of the tabs and the edges of the slit means being in abutting interlocking engagement whereby the end member is interlockingly secured to the carton body.

A further object of this invention is to provide a novel carton of the type immediately above-described in which the peripheral skirt is of a generally polygonal configuration forming a plurality of corners between adjacent portions of the peripheral skirt, and means are provided for reinforcingly securing together adjacent portions of the skirt at the corners.

With the above and other objects in view that will hereinafter appear, the nature of the invention will be more clearly understood by reference to the following detailed description, the appended claims and the several views illustrated in the accompanying drawings.

In the drawings:

FIGURE 1 is a top perspective view of a novel hat box or carton constructed in accordance with this invention, and illustrates an end member or closure secured to a lower end portion of a carton body.

FIGURE 2 is a fragmentary exploded top perspective view of the carton body and closure of FIGURE 1 prior to being assembled, and illustrates a plurality of tabs and slits formed in the respective carton body and closure.

FIGURE 3 is a high enlarged elevational view of the encircled area of FIGURE 1, and illustrates the interlocking relationship of one of the tabs and one of the slits.

FIGURE 4 is a fragmentary sectional view taken generally along line 4—4 of FIGURE 3, and more clearly illustrates the interlocking engagement between the tabs and slits of FIGURE 3.

FIGURE 5 is an enlarged sectional view taken generally along line 5—5 of FIGURE 1, and illustrates a plurality of interlocked tabs and slits, and means defining reinforced securing corners of the end member.

FIGURE 6 is a top plan view of a blank from which the end member or closure of FIGURES 1 through 5 is constructed, and illustrates a plurality of pairs of panels prior to being folded and secured to form the peripheral skirt of the closure.

FIGURE 7 is a top plan view of a carton blank from which the carton body of FIGURES 1 through 5 is formed, and illustrates a plurality of identical panels foldable to impart the generally polygonal shape configuration to the carton body.

A novel carton constructed in accordance with this invention is best illustrated in FIGURE 1 of the drawings, and is generally referred to by the reference numeral **10**. The carton or box **10** is adapted to receive hats or similar individual articles, and comprises a generally tubular carton body **11** and an end member or closure **12**. The carton body **11** is preferably constructed from a single sheet material blank **13** (FIGURE 7) while the closure **12** is similarly constructed from a single blank **14** (FIGURE 6).

Referring to FIGURE 6 of the drawings in particular, the closure or end member blank **14** includes an end panel **15** defined by a plurality of fold lines **16** through **23**. The fold lines **16** through **23** impart a generally octagonal shape to the end panel **15**, but it is to be understood that other polygonal configurations could be imparted to the end panel **15** by decreasing or increasing the number of existing fold lines **16** through **23**.

Panels **24** through **31** are joined to the end panel **15** along the respective fold lines **16** through **23**. Each of the panels **24** through **31** is substantially rectangular in configuration and the even numbered panels (panels **24**, **26**, **28** and **30**) are provided with securing and reinforcing tabs **32**, **33**. The odd numbered panels **25**, **27**, **29** and **31** are devoid of tabs corresponding to the tabs **32**, **33**. The function of the tabs **32**, **33** will be more apparent hereafter.

Another plurality of panels **34** through **41** are joined to the respective panels **24** through **31** along respective fold lines **44** through **51**. The panels **34** through **41** are substantially identical to the panels **24** through **31** and are similarly of a generally rectangular configuration. The panels **34**, **36**, **38** and **40** are provided with securing and reinforcing tabs **52**, **53** corresponding to the tabs **32**, **33** associated with the respective panels **24**, **26**, **28** and **30**. The odd numbered panels **35**, **37**, **39** and **41** are associated with the panels **25**, **27**, **29** and **31** and are devoid of flaps corresponding to the flaps **52**, **53**.

Each of the panels **34** through **41** is provided with an identical tab **55**. Each tab **55** is of a generally shallow U-shaped configuration and is formed by a cut line **56**. The tabs **55** normally lies in the planes of the panels **34** through **41** but are adapted for movement outwardly thereof as will be more apparent hereinafter for forming portions of cooperative interlocking means maintaining the closure **12** and the carton body **11** in assembled relationship.

The closure blank **14** is formed into the closure **12** by folding the panels **24** through **31** about the respective fold lines **16** through **23** until the panels **24** through **31** are substantially normal to the end panel **15** (FIGURES

2 and 4). In this position of the blank **14** the tabs **32, 33** are positioned internally of the associated adjacent panels **25, 27, 29** and **31**, as is best illustrated in FIGURE 5 of the drawings particularly with respect to the tabs **32, 33** of the panel **28** which respectively overlie inner surfaces of the panels **27, 29**.

The panels **34, 36, 38** and **40** are than folded about the respective fold lines **44, 46, 48** and **50** until the panels **34, 36, 38** and **40** are in overlying relationship with the respective panels **24, 26, 28** and **30**. This folding also brings the flaps **52, 53** of the panels **34, 36, 38** and **40** into overlying relationship with the respective flaps **32, 33** of the panels **24, 26, 28** and **30**, as is again best illustrated in FIGURE 5 of the drawings relative to the overlying relationship of the flaps **33, 53** and **32, 52** of the panels **28, 38**.

The panels **35, 37, 39** and **41** are then folded about the respective fold lines **45, 47, 49** and **51** until each panel **35, 37, 39** and **41** overlies an associated pair of flaps **33, 53** and **52, 32** as shown best in FIGURE 5 of the drawings with respect to the panels **37** and **39**. Conventional staples or similar securing means, generally referred to by the reference numeral **59** secure the various flaps and panels together at each of a plurality of corners **60**, as is best illustrated in FIGURE 5 of the drawings.

It is to be noted that the staples **59** are secured through four plies of material at each corner **60**, thus providing efficient reinforcement at each secured corner.

In the fully assembled condition of the closure **12** (FIGURES 1 and 2), the closure **12** includes a generally tubular body (unnumbered) defined by a peripheral skirt **61**. The peripheral skirt **61** is defined by the interconnected panels **24** through **31** and **34** through **41**. The peripheral skirt **61** includes an exterior peripheral skirt portion **62** defined by the exterior panels **24** through **31** and an interior peripheral skirt portion **63** defined by the interior panels **34** through **41**.

The carton body blank **13** of FIGURE 7 for forming the carton body **11** is a generally rectangular member defined by a longitudinal edge **70**, an opposite longitudinal edge **71** broken by a plurality of identical notches **72**, and opposite transverse edges **73, 74**. A longitudinal fold line **75** parallel to the edges **71, 70** extends substantially the entire length of the blank **13** between the transverse edges **73, 74** and is closely adjacent the longitudinal edge **71**.

A plurality of transverse fold lines **76** through **83** between and normal to the longitudinal edge **70** and the longitudinal fold line **75** divides the blank **13** into a plurality of body panels **84** through **91** and a securing flap **92**. Each of the body panels **84** through **91** is of a generally rectangular configuration and is joined to respective flaps **104** through **111** along the fold line **75**. An identical tab **115** is formed in each of the body panels **84** through **91** by a generally inverted U-shaped score line **120** having a bight portion (unnumbered) and base portions (also unnumbered) converging toward the fold line **75**. The tabs **115** are thereby normally directed away from the fold line **75** and are also normally positioned in the planes of the body panels **84** through **91**.

The body blank **13** is formed into the carton body **11** by folding the body panels **84** through **91** and the securing flap **92** about the respective fold lines **76** through **83** until the securing flap **92** internally overlies an edge of the body panel **84**, as is best illustrated in FIGURE 1 of the drawings.

The securing flap **92** is adhesively secured to the body panel **84**, but staples or other suitable means may be employed in lieu thereof.

The flaps **104** through **111** are then folded radially inwardly about the fold line **75** to the positions illustrated in FIGURES 1 and 2 of the drawings.

After the carton body **11** and the closure **12** have been assembled in the manner just described, these components are secured to one another to form the assembled carton **10** by merely inserting the carton body **11** into the closure or end member **12** such that the peripheral skirt **62** of the

latter is in external telescopic relationship to a lower end portion **121** of the carton body **11**. The tabs **115** are then manually or mechanically forced radially outwardly from their normal coplanar positions relative to the body panels **84** through **91**, as is best illustrated in FIGURE 4 of the drawings. As each tab **115** is forced radially outwardly an associated edge thereof, generally referred to by the reference numeral **122**, engages beneath an associated free edge **123** defined by a portion of the cut line **56** in each of the panels **34** through **31**. Inasmuch as the free edge **122** of each tab **115** is longer than the free edge **123** of each of the slits **120** the tabs **115** are bowed slightly convexly upwardly, as best illustrated in FIGURE 5 of the drawings, and only a central portion of each edge **122** engages an opposing edge **123** of the closure **12**. It is to be particularly noted that the tabs **115** do not enter the openings defined by the slits **120** and only edge-to-edge contact between the edges **122, 123** maintain the carton body **11** and end closure **12** in assembled relationship.

It is also possible to interlockingly secure the carton body **11** to the closure **12** by forcing the tabs **115** radially outwardly of the lower end portion **121** prior to inserting the lower end portion **121** into the closure **12**.

After the tabs **115** are forced radially outwardly the natural resilience of the material from which the body **11** is constructed maintains the tabs **115** projecting radially outwardly of the plane of the panels **84** through **91**. As the carton body **11** is inserted into the closure **12**, the tabs **115** are initially forced back toward their planar positions relative to the panels **84** through **91**. However, as the edges **121** of the tabs pass beneath the edges **123** of the slits **120** the tabs **115** "spring back" toward a more radially outward position forcing the material surrounding the slits **56** outwardly to bring the edges **122, 123** into opposed abutting relationship. In this manner, the edges **122, 123** of the tabs **115** and the members **55**, respectively, define an interlocking means for maintaining the carton body **11** and end closure **12** in assembled relationship in the absence of auxiliary securing means, such as adhesives, staples or similar conventional means.

After the carton body **10** has been assembled as illustrated in FIGURE 1 of the drawings, a hat or a similar article is inserted therein and a suitable closure (not shown) is employed to close the upper end portion (unnumbered) of the carton **10**.

From the foregoing, it will be seen that novel and advantageous provisions have been made for carrying out the desired end. However, attention is again directed to the fact that additional variations may be made in this invention without departing from the spirit and scope thereof as defined in the appended claims.

We claim:

1. A carton particularly adapted for containing a hat or similar article comprising a generally tubular carton body having axially opposite end portions, a plurality of tabs struck from a first of said body end portions and being directed toward a second opposite end portion of said body, said tabs terminating in free edges, a closure for closing said first end portion, said closure including an end panel and a peripheral skirt, said peripheral skirt being in externally telescoped relationship relative to said first end portion, means defining a plurality of edges of said skirt, said edges being in opposed contacting relationship thereby maintaining said body and closure in interlocked assembled relationship, said peripheral skirt being formed of a plurality of pairs of overlapped inner and outer panels, means securing adjacent ones of said panels in assembled relationship, said means defining the plurality of edges being slits in said inner panels, said tabs being generally of an inverted U-shaped configuration and said slots include edges which have an effective length which is shorter than bight portions of said tabs.

2. The carton as defined in claim **1** wherein each of said slits is also of an inverted U-shaped configuration, and said slits open in a direction opposite to the direction in which said tabs project.

3. The carton as defined in claim 1 wherein said means securing adjacent ones of said panels in assembled relationship is a terminal flap of one of said panels sandwiched between and secured to the adjacent pair of said overlapped inner and outer panels.

4. The carton as defined in claim 1 wherein said slits are each of a predetermined length, and the edges of said tabs are of a length shorter than said predetermined length whereby said edges are in partial contacting relationship along the length thereof.

5. The carton as defined in claim 1 wherein said tabs are defined by a pair of spaced side edges and a bight edge

therebetween, and said side edges diverge in a direction toward said bight edge.

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