July 16, 1968 R. T. JACKSON 3,392,878

FOLDED FLAT BLANK ARTICLE DISPENSER WITH FOLLOWER DISCHARGE ASSISTANT

Filed May 18, 1966 2 Sheets-Sheet 1

FIG. 1

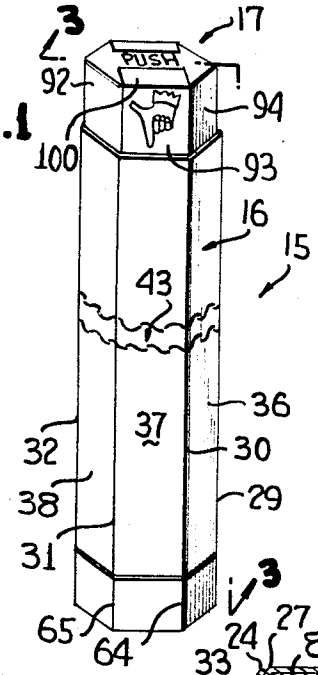


FIG. 2

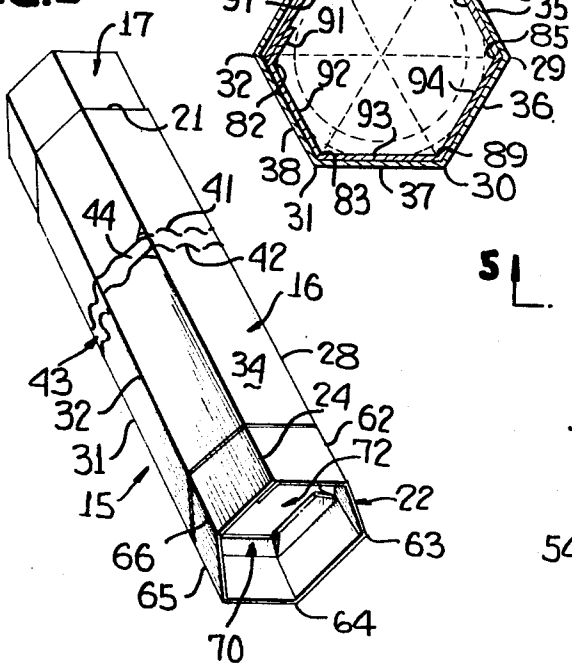


FIG. 3

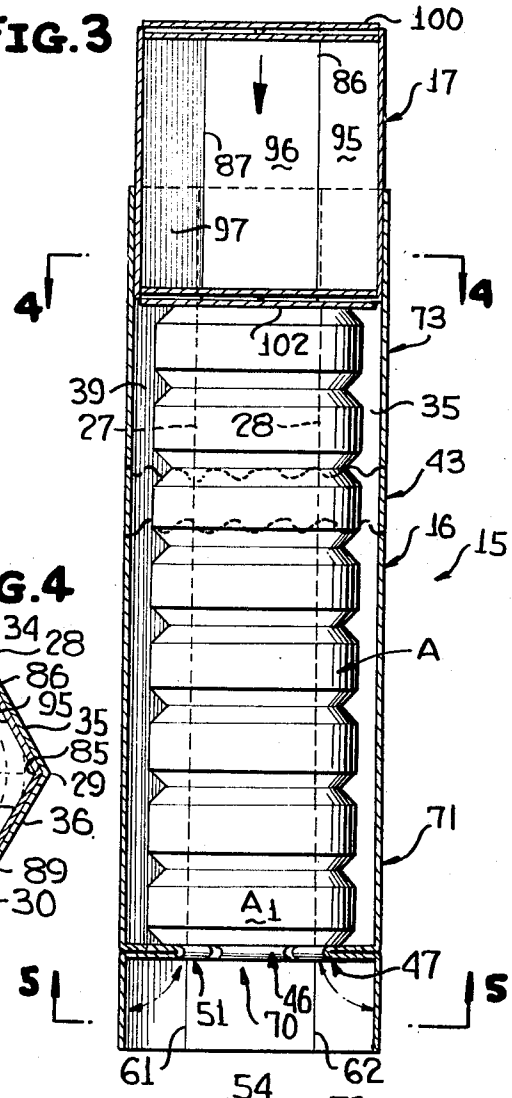
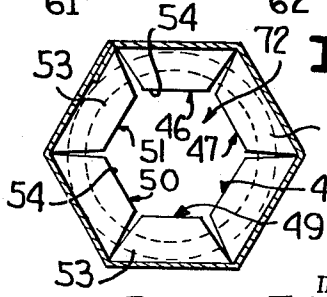


FIG. 4

FIG. 5



INVENTOR
ROBERT T. JACKSON

BY Mann, Porter, Miller & Brown
ATTORNEYS

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Filed May 18, 1966 2 Sheets-Sheet 2

FIG. 6

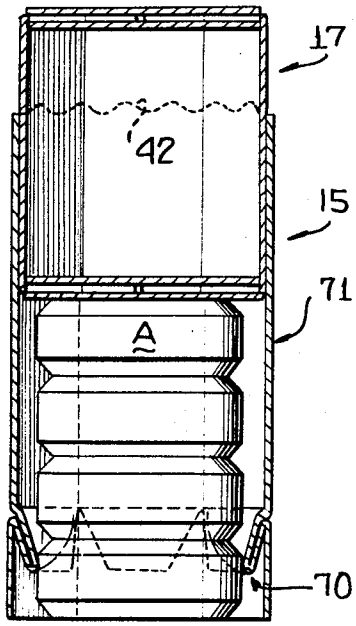


FIG. 7

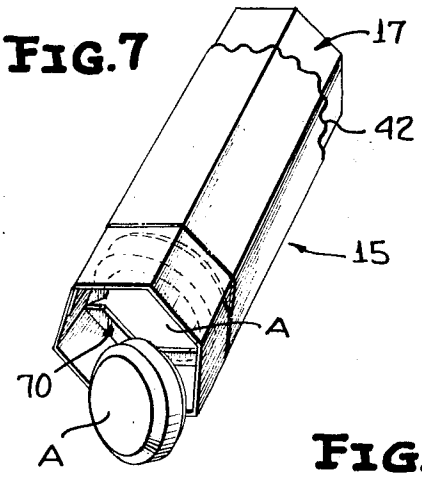


FIG. 8

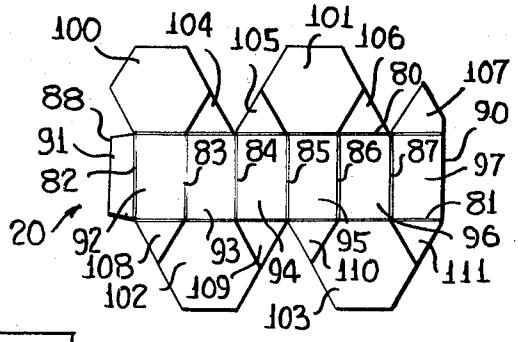


FIG. 9

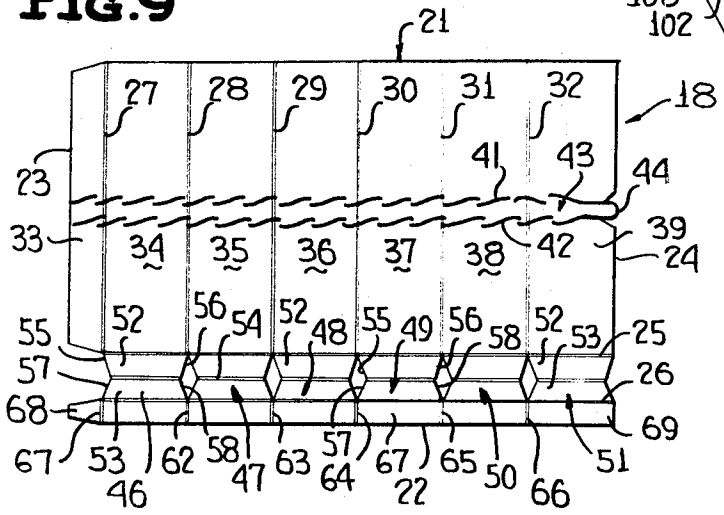
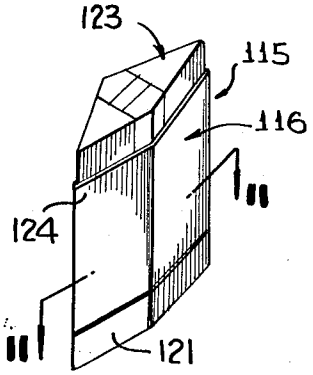


FIG. 10



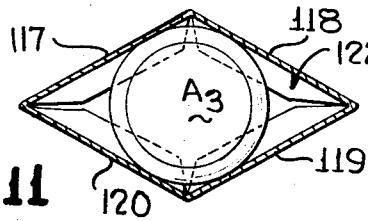


FIG. 11

INVENTOR
ROBERT T. JACKSON

BY Mann, Porter, Miller & Brown
ATTORNEYS

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FOLDED FLAT BLANK ARTICLE DISPENSER WITH FOLLOWER DISCHARGE ASSISTANT

Robert T. Jackson, Park Forest, Ill., assignor to Continental Can Company, Inc., New York, N.Y., a corporation of New York

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4 Claims. (Cl. 221—65)

ABSTRACT OF THE DISCLOSURE

A dispenser which includes a generally tubular body having dispensing means disposed adjacent an end portion thereof. The dispensing means is defined by at least a pair of panels in overlying relationship and normally disposed in a non-dispensing position in a plane normal to the dispeser axis. A plurality of articles are housed in the dispenser in stacked relationship wholly to one side of and supported upon the dispensing means. A plunger is telescopically inserted into the dispenser through an opposite end portion for urging the stacked articles in singular fashion through the dispensing means, and tear strip means are provided for reducing the effective height of the dispenser to facilitate continued introduction of the plunger into the dispenser during successive dispensing operations.

This invention relates to a novel article dispenser, and is particularly directed to a dispensing container for dispensing individual articles in a singular fashion by the movement of a plunger and being provided with means for reducing the axial length of the dispensing container to facilitate the dispensing of articles from the time the first article is dispensed to the time the container has been emptied.

Conventional dispensers of the type to which this invention is directed are generally satisfactory but do include several disadvantages both in the manufacture and the use thereof. In the case of dispensers or dispensing containers constructed from plastic material, the initial cost of the plastic is relatively high, as compared to paper-stock or similar inexpensive material, and intricate and costly molds are required to construct such dispensers. Due to the relatively high cost of plastic dispensers, the same cannot be generally discarded after each of the articles packaged therein has been dispensed. Typical among such dispensers are the type generally referred to as "cup dispensers" which are continually refilled and are generally not expendable after the initially packaged articles have been dispensed.

In the case of dispensers constructed from sheet material, such as paper-stock material, no suitable means have been thus far provided for assuring the continued dispensing of individual articles in a singular fashion. Sheet material dispensers are relatively inexpensive to manufacture but have not met with appreciable consumer acceptance due to the unreliability thereof to dispense articles in a repetitive singular fashion.

Irrespective of the material from which conventional dispensers are constructed, conventional dispensers of the type to which this invention is directed generally include a plunger which is internally telescopically movable from a position normally adjacent one axial end portion of the dispenser toward an opposite axial end portion thereof.

Radially inwardly directed ribs or projections are normally disposed adjacent the opposite end portion of the dispenser for dispensing articles one by one as the plunger is moved toward the ribs or similar means. A major disadvantage of such dispensers is the continued insertion of the plunger into the dispenser until a point is reached at which it is relatively difficult to manipulate the plunger and continue dispensing articles therefrom.

In keeping with the above, it is a primary object of this invention to provide a novel dispenser or dispensing container which overcomes the above and other disadvantages of conventional dispensers by providing a dispensing container constructed from inexpensive sheet material yet including means which assure repetitive dispensing of articles in a singular fashion and means for reducing the axial length of the dispensing container at some time prior to the complete dispensing of articles therefrom to facilitate the manual movement of a plunger which is also preferably constructed from sheet material whereby the dispenser is relatively inexpensive to manufacture and can be discarded after each of a plurality of articles initially packaged therein have been dispensed.

A further object of this invention is to provide a novel dispensing container particularly adapted to dispense a plurality of articles, such as relatively large soap tablets, in a singular repetitive fashion, the dispensing container including a generally tubular body having axially opposite end portions, the tubular body being constructed from folded sheet material, means adjacent one of the end portions for dispensing individual articles from the body in a singular fashion, the dispensing means being defined by a pair of panels integrally formed from the material of the body, the panels being in generally overlying relationship and normally disposed radially inwardly of the body, means maintaining the panels in overlying relationship, and plunger means for movement from an opposite end of the body toward the one end portion for dispensing each article as the panels are deflected under the force applied to the plunger means.

Still another object of this invention is to provide a novel dispensing container of the type heretofore described wherein tear strip means are provided between the end portions of the body for reducing the axial length thereof at some time prior to the complete dispensing of articles from the body to facilitate the manual movement of the plunger means toward the pair of panels.

A further object of this invention is to provide a novel dispenser of the type heretofore described wherein the plunger is also preferably constructed from sheet material folded to the general configuration of the body whereby the entire dispensing container can be discarded after each of the articles packaged therein have been dispensed.

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 claimed subject matter, and the several views illustrated in the accompanying drawings.

In the drawings:

FIGURE 1 is a perspective view of a novel dispensing container of this invention, and illustrates a plunger normally disposed adjacent one of a pair of axial end portions of a body of the dispenser, and tear strip means for removing a portion of the body during a dispensing operation.

FIGURE 2 is a bottom perspective view of the dispens-

ing container of FIGURE 1, and illustrates means integrally formed from the material of the dispenser body for dispensing articles therefrom in a singular fashion.

FIGURE 3 is an enlarged sectional view taken generally along line 3—3 of FIGURE 1, and illustrates a plurality of articles packaged in a chamber of the dispensing container prior to a dispensing operation.

FIGURE 4 is a sectional view taken generally along line 4—4 of FIGURE 3, and illustrates the complementary configuration of the plunger and dispensing container body.

FIGURE 5 is a cross-sectional view taken generally along line 5—5 of FIGURE 3, and more clearly illustrates the structure of the dispensing means.

FIGURE 6 is a sectional view taken generally along line 3—3 of FIGURE 1 after several of the articles have been dispensed from the container, and illustrates a remaining portion of the tubular body after an opposite end portion has been removed along the tear strip means and a lowermost tablet just prior to being released by the dispensing means.

FIGURE 7 is a bottom perspective view of the dispensing container of FIGURE 6, and illustrates the bottom-most of the tablets being dispensed from the container.

FIGURE 8 is a top plan view of a sheet material blank from which the plunger is constructed, and illustrates the particular configuration thereof.

FIGURE 9 is a top plan view of a sheet material blank from which the dispensing container body is constructed, and illustrates the particular configuration thereof.

FIGURE 10 is a top perspective view of another dispensing container constructed in accordance with this invention, and illustrates the generally diamond-shaped configuration thereof.

FIGURE 11 is a slightly enlarged sectional view taken generally along line 11—11 of FIGURE 10, and illustrates deflectable dispensing means supporting a plurality of articles in a chamber of the container.

A novel dispensing container or dispenser is illustrated in FIGURES 1–7 of the drawings, and is generally designated by the reference numeral **15**. The dispensing container **15** is of a two-piece construction including a container body **16** and a plunger **17**. The dispensing container body **16** is constructed from a blank **18** (FIGURE 9) of sheet material while the plunger **17** is similarly constructed from a blank **20** (FIGURE 8) of sheet material.

Referring first to FIGURE 9 of the drawings, the blank **18** from which the container body **16** is constructed is preferably constructed from paperstock or similar foldable material and is generally of a rectangular configuration. The blank **18** includes opposite longitudinal edges **21**, **22** and opposite generally parallel transverse edges **23**, **24**. A pair of spaced generally parallel longitudinal fold lines **25**, **26** are positioned adjacent the longitudinal edge **22** and extend generally between the transverse edges **23**, **24**.

A plurality of transverse fold lines **27—32** extend between the longitudinal edge **21** and the longitudinal fold line **25**. A major securing panel **33** which is relatively narrow is set-off between the transverse edge **23**, the transverse fold line **27**, a portion (unnumbered) of the longitudinal edge **21** and an edge (also unnumbered) forming an extension of the fold line **25**. The fold lines **27–32** and the transverse edge **24** set-off in association with the longitudinal edge **21** and the longitudinal fold line **25** a plurality of generally rectangular panels **34–39**, respectively. A pair of discontinuous cutlines **41**, **42** are positioned substantially midway between the longitudinal edge **21** and the longitudinal fold line **25**. The discontinuous cutlines **41**, **42** define therebetween a removable tear strip **43** having a terminal gripping end portion **44**.

A plurality of pairs of panels **46–51** are positioned between the longitudinal fold lines **25**, **26** and transversely adjacent the respective panels **34–39**. The pairs of panels **46–51** are substantially identical, and each pair of panels includes generally opposed trapezoidal panels **52**, **53** joined to each other along an associated fold line **54** disposed immediately between the longitudinal fold lines **25**, **26**. Each panel **52** is defined by a portion of the longitudinal fold line **25**, an associated one of the fold lines **54**, and opposite free terminal edges **55**, **56**. Each of the panels **53** is similarly defined by a portion of the longitudinal fold line **26**, an associated one of the fold lines **54**, and a pair of free terminal edges **57**, **58**. Adjacent ones of the edges **55–58** define generally diamond-shaped openings (unnumbered) which have longitudinal axes generally in alignment with the associated fold lines **28–32**.

The blank **18** includes a plurality of generally parallel short and transverse fold lines **61–66** which are in alignment with the respective fold lines **27–32**. The fold lines **61–66** set-off a plurality of identical panels each designated by the reference numeral **67** in conjunction with the longitudinal edge **22** and the longitudinal fold line **26**. A minor securing panel **68** is joined to an adjacent one of the panels **67** along the fold line **61**.

The major securing panel **33**, the minor securing panel **68** and at least one of each of the pairs of panels **46–51** is provided with adhesive to maintain the blank **18** in the folded configuration thereof as will be more apparent hereafter.

The blank **18** is formed to the configuration of the dispensing container body **16** by first folding the panels **52**, **53** of each of the pairs of panels **46–51** into overlying adhesive contact with each other. This positions the panels **46–51** in a plane generally normal to the plane of the blank **18** with each of the pairs of panels **46–67** projecting to one and the same side of the blank **18**. Thereafter, the blank **18** is folded along the fold lines **27–32** and **61–66** to impart a generally hexagonal cross-sectional configuration to the tubular body **16**. The securing panels **23**, **68** are secured to the panels **39**, **67** adjacent the transverse edge **24** to maintain the body **16** in the generally hexagonal configuration thereof.

The pairs of panels **46–51** are directed generally normal to the axis of the container body **16**, as is best illustrated in FIGURE 3, of the drawings, and define deflectable dispensing means, generally referred to by the reference numeral **70**. The dispensing means **70** are located adjacent a lower end portion **71** of the container body **16** and are generally in the form of a discontinuous annular shoulder forming a generally hexagonal shaped dispensing opening **72**.

The tear strip **43** is located adjacent an upper end portion **73** of the body **15**, and functions in a manner which will be more fully described hereafter.

Referring now to the blank **20** of FIGURE 8, a pair of spaced parallel fold lines **80**, **81**, a plurality of spaced transverse fold lines **82–87** and opposite transverse edges **88**, **90** define a plurality of generally rectangular panels **91–97**. The width of the panels **92–97** is slightly less than the width of the panels **34–39** of the blank **18** to facilitate the introduction of the plunger **17** into the body **16**, as will be more apparent hereafter.

Hexagonal panels **100–103** are joined to the respective panels **92**, **95**, **93** and **96** while generally triangular shaped panels **104–111** are joined to the respective panels **93**, **94**, **96**, **97**, **92**, **94**, **95** and **97**.

Adhesive (not shown) is preferably applied to the panel **91**, the hexagonal panel **100** and the hexagonal panel **102**.

The blank **20** of FIGURE 8 is folded to form the plunger **17** by first folding the blank **20** along the fold lines **82–88** and adhesively securing the panel **91** to the interior surface of the panel **97**, as is best illustrated in FIGURE 4 of the drawings. The triangular panels **104–106** are then folded radially inwardly into a common plane after which the panel **101** is folded into overlying relationship to the triangular panels **104–107**. Thereafter, the adhesive coated surface of the panel **100** is brought into overlying bonding engagement with the

panel **101** to secure the panels **100**, **101** and **104–107** in assembled relationship. A piece of corrugated board or similar relatively inexpensive rigid material (not shown) having a length generally equal to the distance between the fold lines **80**, **81** can now be introduced into the plunger through the remaining open end thereof. The purpose of such an insert is to reinforce the plunger **17** when axial forces are applied thereto, as will be more apparent hereafter. After the insert has been inserted into the plunger, the triangular shaped panels **108–111** are folded radially inwardly into a common plane, the panel **103** is folded into overlying relationship thereto, and the adhesive coated surface **102** is folded into contact with the panel **103** to complete the formation of the plunger **17**.

After a plurality of articles A (FIGURE 3) have been packaged in a chamber (unnumbered) of the dispensing container body **16**, the plunger **17** is positioned in internal telescopic relationship adjacent the upper end portion **73**, in the manner best illustrated in FIGURES 1 and 3 of the drawings. When it is desired to dispense a lowermost one of the articles A_1, which may be, for example, soap tablets or similar non-edible or edible articles, the plunger **17** is manually urged downwardly in the direction of the unnumbered headed arrow in FIGURE 3 of the drawings. The downward movement of the plunger **17** acts against the plurality of articles A causing the dispensing means **70** to deflect radially downwardly and outwardly causing the dispensing opening **72** to progressively increase in size until a position is reached corresponding to that illustrated in FIGURE 6 of the drawings. Upon continual movement of the plunger **17**, the article A_1 is subsequently dispensed through the end portion **71** and the dispensing means **70** immediately rebound to the solid outline position in FIGURE 3 of the drawings to prevent subsequent ones of the articles A from being accidentally or inadvertently dispensed through the dispensing opening **70** until manual pressure is again applied to the plunger **17**.

After a plurality of the articles A have been dispensed in the manner just described, the plunger **17** reaches a position below the tear strip **43** and is substantially entirely confined within the body **16**. At this time the terminal gripping portion **44** of the tear strip **43** is gripped and pulled to remove the tear strip **44** along the cutlines **41**, **42** whereupon the upper end portion **73** of the body **16** can be removed to again expose the plunger **17**, in the manner illustrated in FIGURES 6 and 7 of the drawings. The plunger can now be readily advanced toward the dispensing means **70** until each of the articles A have been dispensed therefrom, after which the dispensing container **15** can be discarded.

Another novel dispensing container constructed in accordance with this invention is illustrated in FIGURES 10 and 11 of the drawings, and is generally designated by the reference numeral **115**. The dispensing container **115** includes a body **116** defined by four panels **117–120** (FIGURE 11). The body **116** is preferably constructed from a sheet material blank which is generally similar to the blank **18** except that only four body-forming panels and a securing panel are provided. A lower end portion **121** of the body **116** includes dispensing means **122** which are identical to the dispensing means **70** of the dispensing container **16**.

A plurality of generally circular shaped articles A_3, only one of which is illustrated, are preferably supported in stacked relationship upon the dispensing means **122**. A sheet material plunger **123** folded to a generally diamond-shaped configuration is normally positioned adjacent an upper end portion **124** of the body **116**, in much the manner of the plunger **17** of the dispensing container **15**. The diamond-shaped configuration of the plunger **123** maintains the diamond-shaped configuration of the body **116**, in the manner readily apparent from FIGURE 10 of the drawings.

The operation of the dispensing container **115** is identical to that of the dispensing container **15**, and a description thereof is deemed unnecessary for a complete understanding of this invention. However, it is to be noted that while the cross-sectional configuration of the dispensing container **15** is diamond-shaped and the dispensing opening (unnumbered) defined by the dispensing means **122** is similarly diamond-shaped, circular or articles of similar outline can be dispensed by the dispensing means **122** merely by urging the plunger **123** toward the lower end portion **121** of the body **116**. Thus, it is readily apparent that the dispensing means **70** and **122** are adapted for use with dispensing containers of varied transverse cross-sectional configurations and are equally capable of dispensing articles which are other than cylindrical.

While preferred forms and arrangement of parts have been shown in illustrating the invention, it is to be clearly understood that various changes in details and arrangement of parts may be made without departing from the spirit and scope of the invention as defined in the appended claimed subject matter.

I claim:

1. A dispenser comprising a generally tubular body having axially opposite end portions, means adjacent one of said portions for dispensing individual articles from said body in a singular fashion, said dispensing means being defined by a pair of panels integrally formed from the material of said body, said panels being in overlying relationship and normally disposed radially inwardly of said body in a plane normal to the body axis, means maintaining said panels in overlying relationship, tear strip means between said end portions for reducing the axial length of said body at some time prior to the complete dispensing of articles therefrom, a plunger normally disposed in internal telescopic relationship adjacent the other of said axial opposite end portions, and the distance between said tear strip means and a terminal axial edge of said other end portion being substantially equal to the axial length of said plunger whereby after total insertion of said plunger into said body the tear strip means can be removed to again at least partially expose the plunger for further movement into said body.

2. A dispensing package comprising a generally tubular body having axially opposite end portions terminating at associated adjacent edges, means adjacent one of said end portions for dispensing individual articles from said body in a singular fashion, said dispensing means being defined by a pair of panels integrally formed from the material of said body, said panels being in overlying relationship and normally disposed radially inwardly of said body in a plane normal to the body axis, a plurality of non-nested stacked dispensable articles housed in said body wholly to one axial side of said dispensing means, a lowermost one of said articles being seated upon and underlyingly supported by said dispensing means whereby upon the application of an axial force upon an upper one of said articles in a direction toward said dispensing means the lowermost article is forced outwardly of said body through said dispensing means, a plunger seated in internal telescopic relationship relative to said body adjacent said uppermost article for movement towards the dispensing means during a dispensing operation, tear strip means disposed between said end portions for reducing the axial length of said body at some time prior to the complete dispensing of the articles therefrom, and the distance between said tear strip means and the terminal edge of said body remote from said dispensing means is substantially equal to the axial length of said plunger whereby after total insertion of said plunger into said body the tear strip means can be removed to again at least partially expose the plunger for further movement into said body.

3. A dispenser comprising a generally tubular body having axially opposite end portions, means adjacent one of said end portions for dispensing individual articles from said body in a first position and for preventing the dis-

pensing of articles from said body in a second position, tear strip means between said end portions for reducing the axial length of said body at some time prior to the complete dispensing of articles therefrom, a plunger normally disposed in internal telescopic relationship adjacent the other of said axial opposite end portions whereby upon the application of an axial force to said plunger in a direction toward said dispensing means a lowermost article is forced outwardly of said body through said dispensing means, and the distance between said tear strip means and a terminal axial edge of said other end portion is substantially equal to the axial length of said plunger whereby after total insertion of said plunger into said body the tear strip means can be removed to again at least partially expose the plunger for further movement into said body.

4. A blank assembly of the type adapted to be set-up to form a dispensing container comprising a dispensing container blank and a plunger blank, said dispensing container blank being a generally planar rectangular sheet material member, said member being defined in part by a pair of opposite edge portions, means adjacent one of said edge portions for dispensing individual stacked articles in a singular fashion when the blank is set up to form a dispensing container, said dispensing means being defined by a pair of panels, each of said panels including a pair of spaced free edges, means for facilitating the folding of said panels into overlying relationship to each other,

tear strip means between said pair of opposite edge portions for reducing the axial length of a container formed from the dispensing container blank at some time prior to the complete dispensing of articles therefrom, said plunger blank including a body wall to which is joined end panels along spaced fold lines, and the distance between said fold lines corresponds to the distance at which the tear strip means is spaced from the other of said edge portions.

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SAMUEL F. COLEMAN, *Primary Examiner.*