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W. C. LOVELL ET AL

3,246,814

DRINKING STRAWS AND DISPENSER CAPABLE OF USE THEREFOR

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2 Sheets-Sheet 1

Fig. 1.

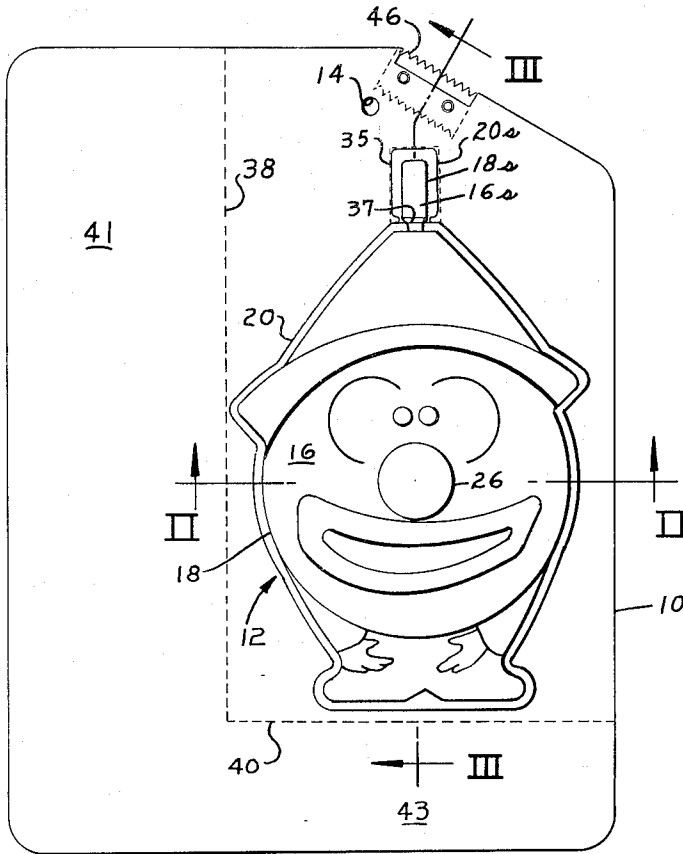
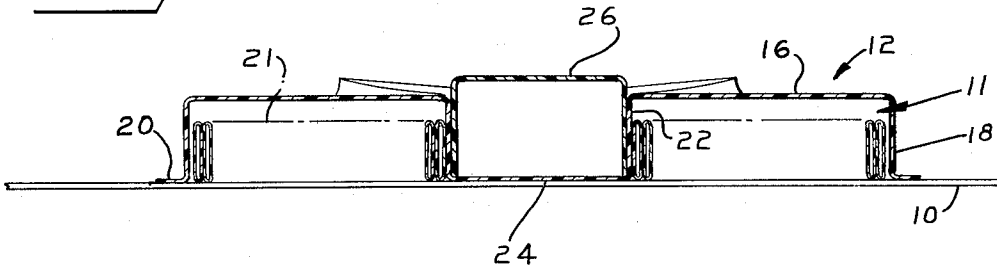


Fig. 2.



INVENTORS
WALTER C. LOVELL
EDMUND S. LEE III
BY *Chapin & Neal*
Attorneys

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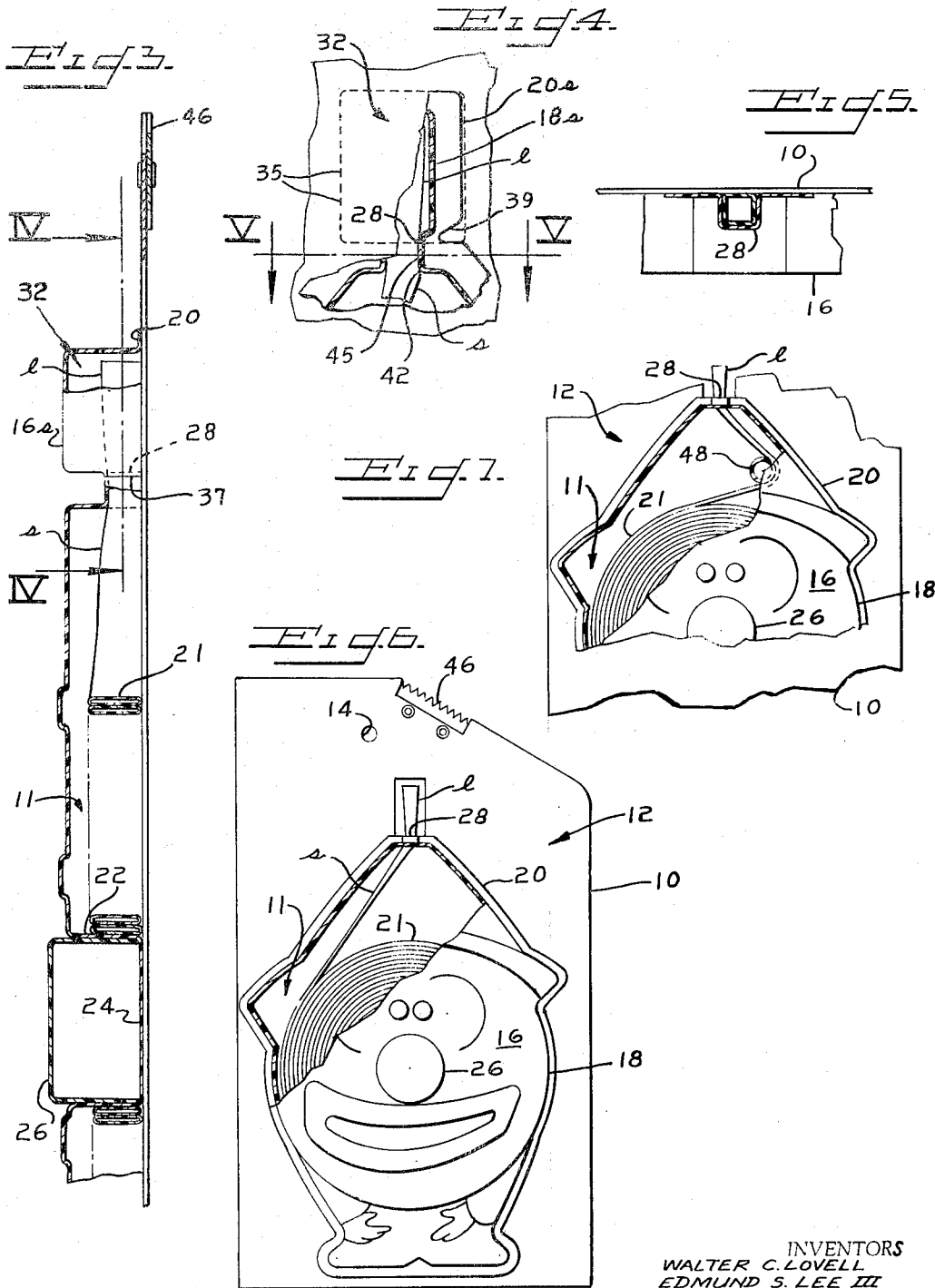
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INVENTORS
WALTER C. LOVELL
EDMUND S. LEE III
BY *Chapin & Neal*
attorneys

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DRINKING STRAWS AND DISPENSER CAPABLE OF USE THEREFOR

Walter C. Lovell, 5 James St., Hazardville, Conn., and Edmund S. Lee III, 559 Stony Hill Road, Wilbraham, Mass.

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The present invention relates to improvements in the merchandising of drinking straws or the like, and further to improvements in dispensers for drinking straws and elongated products in general.

One object of the invention is to reduce the amount of space required by drinking straws or like tubular products in storage and shipment, and further to permit the length of the drinking straw to be readily selected according to the needs of the user.

Another object of the invention is to provide an economical dispenser construction which is particularly applicable to the above ends and which further has general utility for dispensing elongated products.

The invention, in one aspect, is characterized by a flat card to which is secured a plastic shell forming therewith a chamber in which is disposed a coil of elongated product. Advantageously, the coil of elongated product takes the form of a flattened or collapsed tubular drinking straw of indeterminate length. An outlet opening is provided from this chamber through which the product may be drawn and then any length thereof so drawn may be severed for its intended use.

Other dispenser constructions may be employed where the elongated product is a drinking straw which is wound in a coil with its walls collapsed, but in any event, a forming section will preferably be provided to facilitate the straws being returned from their collapsed condition to an open tubular form, as they are drawn from the dispenser.

Other advantageous features include the provision of means for restraining free movement of the elongated product so that the end which is drawn through the outlet opening may not be inadvertently drawn back into the product receiving chamber. Further, a cut-off knife may be provided on the dispenser at a point spaced from the outlet opening so that after a length of the product is severed, there will remain a free end of the product which may be readily gripped for drawing further length of product. Also, it is desirable to provide a protective chamber outside the outlet opening in which the end of the elongated product is disposed. The product may thus be completely protected from dirt and contamination during storage and shipment. The protective chamber is readily detachable from the dispenser so that the product can be drawn from the dispenser by the ultimate user.

In accordance with another aspect of the invention, the coil of elongated straws is wound from an originally straight extrusion of medium density polyethylene or like material having a high degree of elastic memory. The straws are originally of tubular circular cross section and are wound as a coil with the walls collapsed, thereby effecting great space saving economies, both from the coil form and from the fact that the walls of the straws are collapsed.

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The above and other related objects and features of the invention will be apparent from a reading of the following description of the disclosure found in the accompanying drawings and the novelty thereof pointed out in the appended claims.

In the drawings:

FIG. 1 is an elevation of a dispenser embodying the present invention;

FIG. 2 is a section, on an enlarged scale, taken on line II—II in FIG. 1;

FIG. 3 is a section, on an enlarged scale, taken on line III—III in FIG. 1;

FIG. 4 is a section taken on line IV—IV in FIG. 3;

FIG. 5 is a section taken on line V—V in FIG. 4;

FIG. 6 is a view showing portions of the card forming part of the dispenser removed; and

FIG. 7 illustrates a modification embodying an alternate feature of the invention.

The illustrated embodiment of the invention comprises a flat card 10 having a plastic shell 12 secured thereto to form a product receiving chamber 11. The card 10 may be economically formed of paper board, cardboard or the like, and provides a convenient surface for printing advertising, instructions, etc. A hole 14 may be provided in the card 10 so that it can conveniently be hung on a pegboard display in a retail store.

The shell 12 is best formed by a vacuum forming process and the selection of a suitable plastic material for such purposes is well within the ability of those skilled in the art. Simply for the sake of illustration, it may be assumed that the shell 12 is formed of polystyrene. The shell 12 comprises an outer wall 16 and a continuous peripheral wall 18, preferably having an outwardly extending flange 20 which is heat sealed or otherwise secured to the card 10 to space the outer wall 16 from the card and thereby form the product receiving chamber 11 in combination with the card 10. The surface of the card 10 may be plastic-coated to facilitate the heat sealing attachment of the shell thereto, again a practice well known to those skilled in the art.

The outline of the outer wall 16 may take many forms for decorative or ornamental purposes, but tends to be circular in order to minimize the amount of material used. As illustrated, the outer wall 16 is in the form of a grotesque human caricature having an enlarged head. The facial features of this caricature being molded into the outer wall 16.

An inwardly extending projection 22 is formed in the outer wall 10 and is preferably circular in outline with its end surface 24 heat sealed to the card 10 to give greater rigidity to the dispenser. The projection 22 also serves the function of a hub, as will later appear, and will be referred to as such. A cup-shaped piece 26 may be telescoped into the projection 22 and sealed in place. The function of the piece 26 is primarily to enhance the ornamental appearance of the dispenser and may be formed of a distinctive color to accentuate a particular feature of the caricature, in the present instance it represents a nose.

As herein disclosed, the elongated product within the product receiving chamber 11 takes the form of a continuous length of drinking straw *s* of indeterminate length which is wound in a coil 21 about the hub 22. The coil 21 is preferably wound from a length of originally straight

extruded medium density polyethylene or like material having a high degree of plastic memory. In winding the coil 21, the walls of the straw *s* are collapsed from their original circular cross section. The degree to which the walls of the straw are collapsed governs the amount of space which may be saved by the present invention. As illustrated, the walls of the straw are collapsed but not actually flattened. This is preferred since the amount of space which is required is substantially reduced, while at the same time the straws may be more readily returned to their fully opened circular cross section, as will later be more fully described.

One end of the straw, indicated at (e) extends from the coil 21, through an outlet opening 28, formed in the upper portion of the peripheral wall 18, and terminates within a protective chamber 32. The protective chamber 32 is formed by extensions 16s, 18s and 20s, respectively, of the outer wall 16, the peripheral wall 18, and the flange 20. The flange extensions 20s are heat sealed to the card 10 to seal this protective chamber. The portion of the card 10 forming in part this protective chamber is defined by score lines 35 which may be either cut or perforated, or otherwise weakened. The extensions 16s and 18s are defined by a score line 37, and the flange extensions are defined by notches 39, so that the protective chamber may readily be removed to expose the outer end of the straw when it is desired to draw the straw from the product receiving chamber 11.

The card 10 advantageously is provided with margins 41 and 43 at the left hand side and lower side thereof. The inner limits of these margins are defined by score lines 38 and 40 respectively which enable removal of these margins after the dispenser has been purchased. With the margins removed, the dispenser itself is more compact and convenient for use. FIG. 6 illustrates the dispenser after these margins and the protective chamber 32 have been removed.

The outer end of the straw is positioned so that it may be grasped and any desired length of straw drawn through the outlet opening 28. The construction of the outlet opening is such as to facilitate quick return of the straw to its original circular cross section as it is drawn there-through. In this connection it will be pointed out that from a technical standpoint the outlet opening will herein be considered as an outline created by the score line 37 and the portion of card 10 falling in the plane of that line. Inwardly of this outline there is a forming section 45 which is preferably of square cross section which serves the function of returning the straw from its collapsed condition to its original fully opened tubular form of circular cross section. It has been found that this square forming section, having a periphery equal to the circumference of the straw, is highly effective in opening the collapsed straw to a circular cross section. However, it is also possible to employ other shapes which would be effective on the straw to assist in transforming it from its flattened or collapsed condition to an opened tubular form.

At this point it will be noted that the straw *s* is preferably a thin-walled extrusion of medium density polyethylene or other material having equivalent characteristics, and particularly a high plastic memory. The extrusion is originally straight and of circular cross section and is allowed to set with this configuration. This extrusion is then wound into the coil 21 and placed in the described dispenser. As it is drawn through the forming section 45, it is forced from its flattened or collapsed condition to a square shape. The combined effect of the forming section 45 and the plastic memory of the straw material is such that the straw is readily opened to the desired circular cross section and also the straw is essentially straight. Within the broader teachings of this invention, it will be appreciated that straws or other tubular products having a non-circular cross section could also be used and appropriate forming sections provided for opening such

straws or the like as they are drawn from a collapsed condition on a coil.

If a dispenser is desired, a second projection 48 (FIG. 7) may

extend inwardly from the outer wall 16 of a plastic shell 12'. The projection 48 may be secured to the card 10 in the same manner as the hub 22. The length of straw drawn from the coil 21 is trained about the projection 48 to bend the straw in a direction opposite to which it is wound on the coil 21. As the straw is drawn from the coil and bent around the projection 48 before passing through the outlet opening 28, the reverse curl tends to minimize, if not fully eliminate, any curve in the length of straw drawn.

A further function of the constricted outlet 28 opening and forming section 45 is that of restraining free movement of the straw so that its end may not be inadvertently drawn into the product receiving chamber. Such restraining means could be separately provided and for the sake of designating such means, in the present case, it will be considered that the inner outline at 42 serves this function.

The card 10 is generally rectangular in outline and has a portion of its upper edge disposed on a bias. A cut-off blade 46 is secured parallel to this biased upper edge at a point spaced from the outlet opening 28. The cut-off blade 46 preferably has a serrated edge which eliminates the need of sharpening the blade when it is formed of a relatively thin material in the order of .015". The described disposition of the knife facilitates severing of a desired length of straw in that the angular disposition of the blade tends to concentrate the pressure of a single point of the blade as the straw is pulled thereover to thus obtain an initial puncture of the straw material so that it may then be readily severed.

It will, of course, be apparent that the present dispenser may be used for other elongated products and by the same token the specific details of the dispenser construction are not necessarily required in obtaining the advantages of dispensing straws or like tubular products in coil form bearing in mind the advantages which are obtained from the reduction in space requirements in storage and shipment, as well as convenience in being able to readily obtain any length of straw desired. Thus, for example, it will be noted that the space requirements for a 20-foot coil of straw, assuming reasonable hub diameter and with thin-walled (.008") straws completely collapsed from their circular cross section, are approximately 1/3 of what is required as for 24 ten-inch straws packaged in a rectangular container.

Variations of the present invention will occur to those skilled in the art and the scope thereof is to be derived solely from the appended claims.

Having thus described the invention, what is claimed as novel and desired to be secured by Letters Patent of the United States is:

1. A dispenser for a continuous length of drinking straw or the like of indeterminate length, said dispenser comprising a flat card of paper board, or the like, having a generally rectangular outline, a plastic shell in the form of a grotesque caricature and comprising an outer wall having the features of said caricature molded therein, a continuous peripheral wall connected thereto and having an outwardly extending flange along the length thereof secured to said card to space the outer wall from the card and form a product receiving chamber in combination therewith, said outer wall having a central hub forming projection extending towards said card and secured thereto, said peripheral wall having an outlet opening therein in the upper surface thereof, said shell having integrally formed extensions of said outer wall, said peripheral wall and said flange beyond said outlet opening with said flange extensions being secured to said card to form in combination therewith a sealed protective chamber, outer and peripheral wall extensions being defined by a score

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line or the like, and said flange extensions being defined by notches and said card having the outline of said protective chamber defined by score lines whereby the protective chamber may be readily detached from the dispenser, said card having margins to one side of and beneath said product receiving chamber for advertising messages or the like, said card having score lines defining the interior edges of these margins to permit their removal for the remainder of the card, a length of drinking straw of indeterminate length wound into a coil about said hub, said straw being an originally straight extrusion of medium density polyethylene or the like with the walls of said straw being collapsed in coil form from an original circular cross section, one end of said straw extending from said coil through said outlet opening in said peripheral wall and terminating within said protective chamber, said outlet opening having substantial length being generally of square cross section defined on three sides by said shell and on the fourth side by said card, the periphery of said square cross section being substantially equal to the diameter of said straw whereby said straw will be reformed towards its normal circular cross section as it is drawn through the forming section provided by the length of said outlet opening, said outlet opening also restraining free movement of said straw to prevent the outer end thereof from being inadvertently drawn into said product receiving chamber, at least a portion of the upper edge of said card being formed on a bias relative to said side edges and a serrated cut-off blade mounted on said bias edge and generally parallel therewith and spaced from said outlet opening.

2. A dispenser as in claim 1 wherein the outer wall of said shell is provided with a second projection extending towards said card and secured thereto and in which the end of the straw is bent around said second projection with a curvature opposite to the curvature of the straw in said coil to facilitate straightening of the straw as it is withdrawn from the product receiving chamber.

3. A dispenser for a continuous length of drinking straw or the like of indeterminate length, said dispenser comprising a flat card of paper board or the like, a plastic shell comprising an integrally formed outer wall, a continuous peripheral wall connected thereto, and having an outwardly extending flange extending along the length thereof secured to said card to space the outer wall from the card and form a product receiving chamber in combination therewith, said outer wall having a central hub forming projection extending towards said card and secured thereto, said peripheral wall having an outlet opening therein, said shell having integrally formed extensions of said outer wall, said peripheral wall, and said flange beyond said outlet opening, with said flange extensions being secured to said card to form in combination therewith a sealed protective chamber, said shell extensions being defined by means for weakening these extensions to facilitate their removal and said card having the outline of said protective chamber defined by score lines whereby the protective chamber may be readily detached from the dispenser, a length of drinking straw of indeterminate length wound into a coil about said hub, said straw being an originally straight extrusion of medium polyethylene or the like with the walls of said straw being collapsed in said coil form from an original circular cross section, one end of said straw extending from said coil through said outlet opening in said peripheral wall and terminating within said protective chamber, said outlet opening having a substantial length and being generally of square cross section defined on three sides by said shell and on the fourth side by said card, the periphery of said square cross section being substantially equal to the circumference of said straw whereby said straw will be reformed towards its normal circular cross section as it is drawn through the forming section provided by said outlet opening, said outlet opening also restraining free movement of the straw to prevent the outer end thereof from being

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inadvertently drawn into said product receiving chamber, and a cut-off knife mounted on said card at a point spaced from said outlet opening.

4. A dispenser for a continuous length of drinking straw or the like, said dispenser comprising a product receiving chamber having an outlet opening, a hub disposed centrally within said chamber, a sealed protective chamber extending beyond said outlet opening and detachable from said dispenser, a length of drinking straw of indeterminate length wound into a coil about said hub, said straw being an originally straight extrusion of medium density polyethylene or the like with the walls of said straw being collapsed in coil form from an original circular cross section, one end of said straw extending from said coil through said outlet opening and terminating within said protective chamber, said outlet opening being generally of square cross section with the periphery of said square cross section being substantially equal to the circumference of said straw whereby said straw will be reformed to its normal circular cross section as it is drawn through the forming section provided by said outlet opening, said outlet opening also restraining free movement of the straw to prevent the outer end thereof from being inadvertently drawn into said product receiving chamber, and a cut-off knife mounted on said dispenser at a point spaced from said outlet opening.

5. A dispenser for a continuous length of drinking straw or the like, said dispenser comprising a product receiving chamber having an outlet opening, a hub disposed centrally within said chamber, a length of drinking straw of indeterminate length wound into a coil about said hub, said straw being an originally straight extrusion of medium density polyethylene or the like with the walls of said straw being collapsed from an original circular cross section, one end of said straw extending from said coil through said outlet opening, said outlet opening being of generally square cross section with the periphery of said square cross section being substantially equal to the circumference of said straw, a projection within said product receiving chamber about which the end of the straw is bent with a curvature opposite to the curvature of the straw in said coil whereby the straw will be reformed to its normal circular cross section as it is drawn through the forming section provided by the outlet opening and returned to its originally straight condition as it is pulled over said projection, said outlet opening also restraining free movement of the straw to prevent the outer end thereof from being inadvertently drawn into said product receiving chamber and a cut-off knife mounted on said dispenser at a point spaced from said outlet opening.

6. A dispenser for a continuous length of drinking straw or the like, said dispenser comprising a product receiving chamber having an outlet opening, a hub disposed within said chamber, a length of drinking straw of indeterminate length wound into a coil about said hub, said straw being an originally straight extrusion of medium density polyethylene or the like with the walls of said straw being collapsed from an original circular cross section, one end of said straw extending from said coil through said outlet opening, said outlet opening being of generally square cross section with the distance between opposite walls of said opening being spaced apart a distance less than the normal diameter of said straw whereby the straw will be reformed to its normal circular cross section as it is drawn through the forming section provided by the outlet opening, said outlet opening also restraining free movement of the straw to prevent the outer end thereof from being inadvertently drawn into said product receiving chamber and a cut-off knife mounted on said dispenser at a point spaced from said outlet opening.

7. A dispenser for a continuous length of drinking straw or the like, said dispenser comprising a product receiving chamber having an outlet opening, a length of drinking straw of indeterminate length wound in collapsed condition into a coil which is disposed within said product

receiving chamber, one end of said straw extending from said coil through said outlet opening, means disposed between the coil and the exterior of the outlet opening for forming the straw into an expanded tubular shape as the straw is drawn therethrough.

8. A dispenser for a continuous length of drinking straw or the like, said dispenser comprising a flat card of paper board or the like, a plastic shell comprising an outer wall and a peripheral wall connected thereto and secured to said card to space the outer wall from the card and form a product receiving chamber in combination therewith, an outlet opening from said chamber and a length of drinking straw of indeterminate length wound in a collapsed condition into a coil which is disposed within said product receiving chamber, one end of said straw extending from said coil through said outlet opening, means disposed between the coil and the exterior of the outlet opening for forming the straw into an expanded tubular shape as the straw is drawn therethrough.

9. The method which comprises the steps of winding an originally straight extrusion of medium density polyethylene or the like having an original circular cross section into the form of a coil wherein the walls of the straw are collapsed, placing said coil in a dispenser which maintains the straw in coil form and has an outlet opening through which one end of the straw may be drawn to facilitate return of the straw to its circular cross section, and thereafter severing a selected length of straw drawn from the dispenser.

10. The method of drawing a flattened drinking straw or the like from a coil through means for forming the straw into an expanded tubular form and then severing a selected indeterminate length of straw thus drawn and formed.

11. A dispenser for elongated products, said dispenser comprising a flat card of paper board or the like, a plastic shell comprising an outer wall and a peripheral wall connected thereto and secured to said card to space the outer wall from the card and form a product receiving chamber in combination therewith, an outlet opening from said chamber and a coil of elongated product disposed within said chamber with one end of the product extending from said coil through said outlet opening and means restraining movement of said one end of the product in a longitudinal direction relative to its length to prevent its being inadvertently drawn into said product receiving chamber.

12. A dispenser for elongated products, said dispenser comprising a flat card of paper board or the like, a plastic shell comprising an outer wall and a peripheral wall connected thereto and secured to said card to space said outer wall from the card and form a product receiving chamber in combination therewith, an outlet opening from said chamber, a coil of elongated product disposed within said chamber with one end of the product extending from said coil through said outlet opening and a detachable protective chamber into which the end of said product extends, said chamber being formed by an extension of said shell.

13. A dispenser for elongated products, said dispenser comprising a flat card of paper board or the like, a plastic shell comprising an integrally formed outer wall, a peripheral wall connected thereto and having an outwardly extending peripheral flange secured to said card to space the outer wall from the card and form a product receiving chamber in combination therewith, and a central hub-forming projection extending from said outer wall and secured to said card, said peripheral wall having an outlet opening therein and a coil of elongated product disposed within said chamber and mounted on said hub with one end of the product extending from said coil through the outlet opening in said peripheral wall.

14. A dispenser for elongated products, said dispenser comprising a flat card of paper board or the like, a plastic shell comprising an integrally formed outer wall, a continuous peripheral wall connected thereto and having

an outwardly extending flange extending along the length thereof secured to said card to space the outer wall from the card and form a product receiving chamber in combination therewith, said outer wall having a central hub-forming projection extending towards said card and secured thereto, said peripheral wall having an outlet opening therein, said shell having an integrally formed extension beyond said outlet opening providing a protective chamber, said extension being detachable from said shell, a coil of elongated product disposed within said chamber and mounted on said hub with one end of the product extending from said coil through said outlet opening in said peripheral wall and terminating within said protective chamber, and a cut-off knife mounted on said card at a point spaced from said outlet opening.

15. A dispenser for elongated products, said dispenser comprising a flat card of paper board or the like, a plastic shell comprising an integrally formed outer wall and a continuous peripheral wall connected thereto and having an outwardly extending flange along the length thereof secured to said card to space the outer wall from the card and form a product receiving chamber in combination therewith, said outer wall having a central hub-forming projection extending toward said card and secured thereto, said peripheral wall having an outlet opening therein, said shell having integrally formed extensions of said outer wall, said peripheral wall and said flange beyond said outlet opening with said flange extensions being secured to said card to form in combination therewith a sealed protective chamber, said shell extensions being defined by means weakening said plastic material and said card having the outline of said protective chamber defined by score lines whereby the protective chamber may be readily detached from the dispenser, a coil of elongated product disposed within said chamber and mounted on said hub with one end of the product extending from said coil through said outlet opening in said peripheral wall and terminating within said protective chamber, and a cut-off knife mounted on said card at a point spaced from said outlet opening and said protective chamber.

16. A dispenser for elongated products, said dispenser comprising a flat card of paper board or the like having a generally rectangular outline, a plastic shell in the form of a grotesque caricature and comprising an integrally formed outer wall having the features of said caricature molded therein and a continuous peripheral wall connected thereto and having an outwardly extending flange along the length thereof secured to said card to space the outer wall from the card and form a product receiving chamber in combination therewith, said outer wall having a central hub forming projection extending towards said card and secured thereto, said peripheral wall having an outlet opening therein in the upper surface thereof, said shell having integrally formed extensions of said outer wall, said peripheral wall and said flange beyond said outlet opening with said flange extensions being secured to said card to form in combination therewith a sealed protective chamber, said outer and peripheral wall extensions being defined by a score line or the like and said flange extensions being defined by notches and said card having the outline of said protective chamber defined by score lines whereby the protective chamber may be readily detached from the dispenser, said card having margins to one side of and beneath said product receiving chamber for advertising messages or the like, said card having score lines defining the interior edges of these margins to permit their removal from the remainder of the card, a coil of elongated product disposed within said chamber and mounted on said hub with one end of the product extending from said coil through said outlet opening in said peripheral wall and terminating within said protective chamber, said outlet opening providing means for restraining free movement of said product to prevent said outer end from being inadvertently drawn

into said product receiving chamber, at least a portion of the upper edge of said card being formed on a bias relative to said side edges, and a cut-off blade mounted on said biased edge and generally parallel therewith and laterally offset from said outlet opening at a point spaced thereabove.

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WILLIAM W. DYER, JR., *Primary Examiner.*

ANDREW R. JUHASZ, *Examiner.*