Dec. 9, 1969 J. F. LA PIERRE ET AL 3,482,758

PRELINED TWO WALL PACKET

Filed Jan. 12, 1968 3 Sheets-Sheet 1

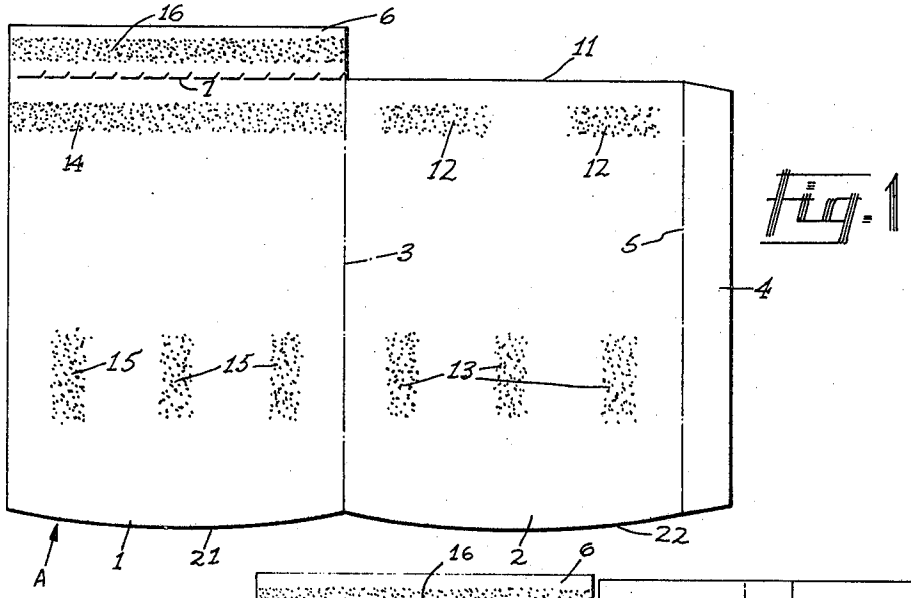


Fig. 1

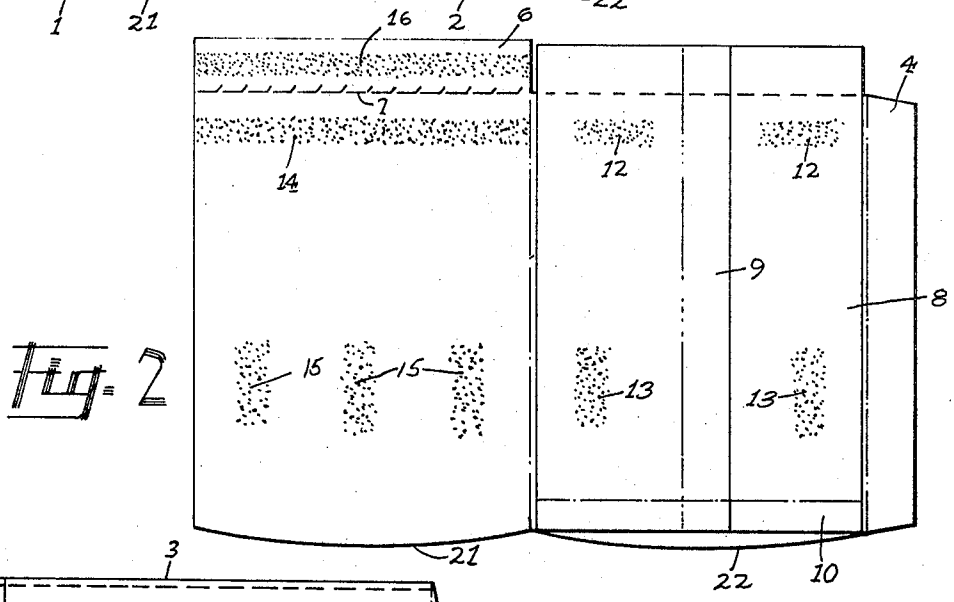


Fig. 2

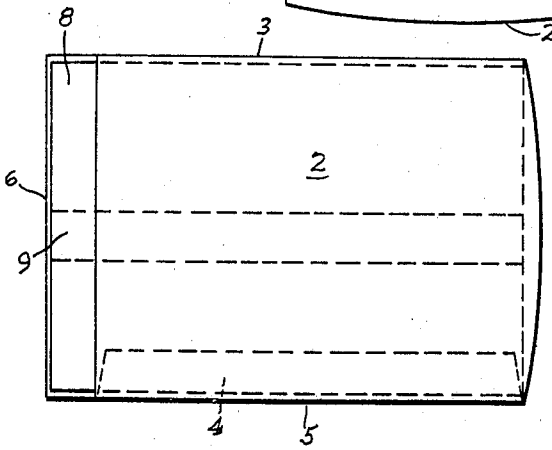


Fig. 3

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PRELINED TWO WALL PACKET

Filed Jan. 12, 1968 3 Sheets-Sheet 2

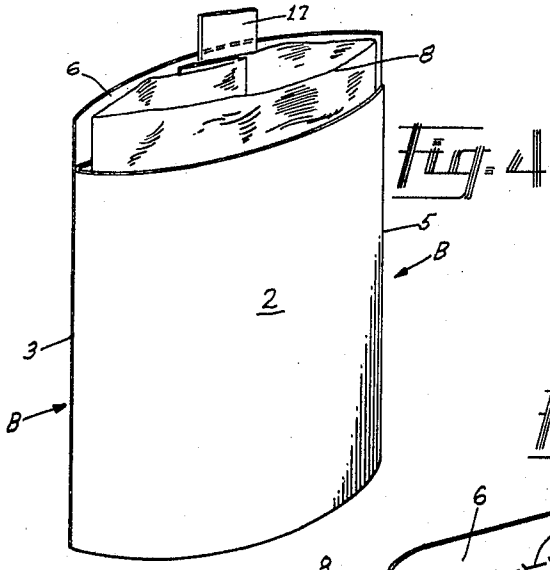


Fig. 4

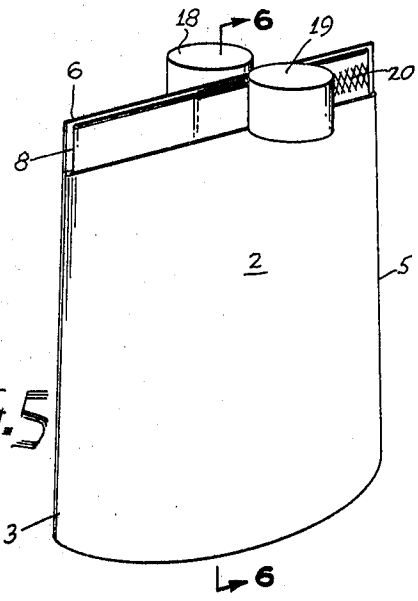


Fig. 5

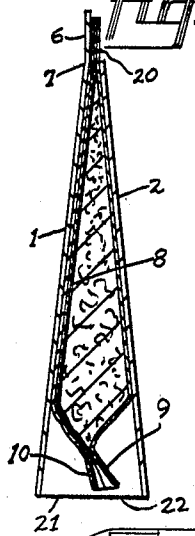


Fig. 6

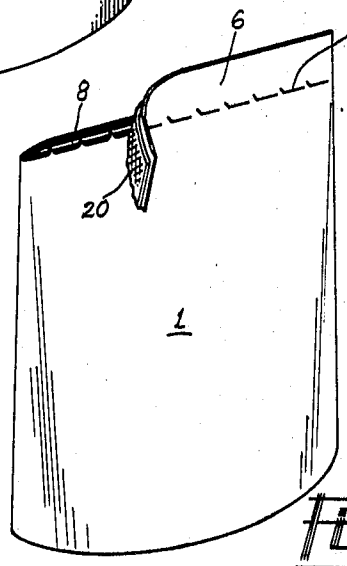


Fig. 7

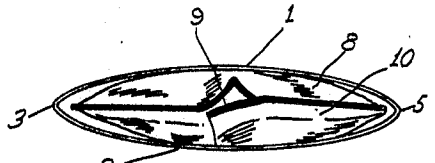


Fig. 8

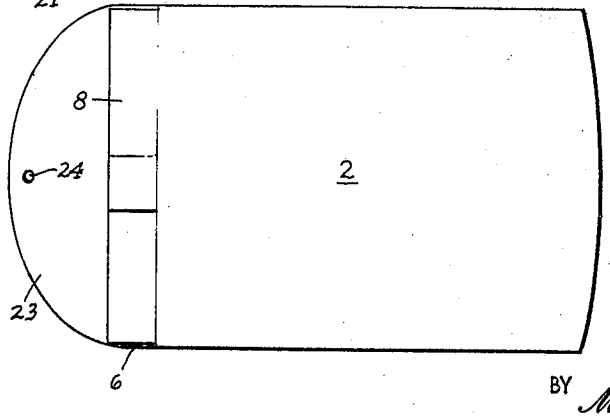


Fig. 9

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PRELINED TWO WALL PACKET

Filed Jan. 12, 1968 3 Sheets-Sheet 3

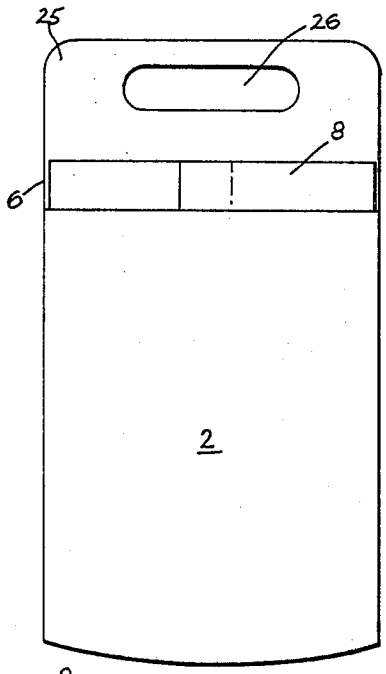


Fig. 10

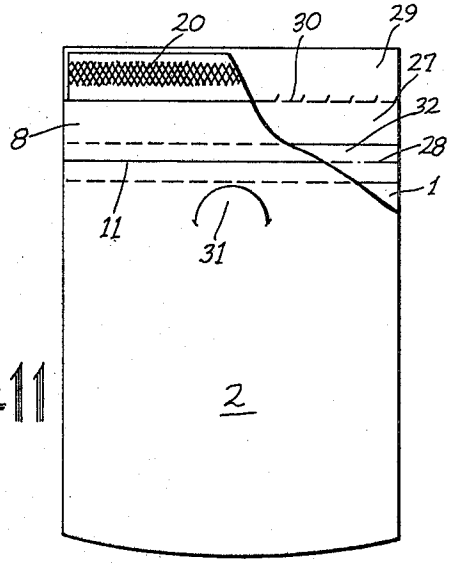


Fig. 11

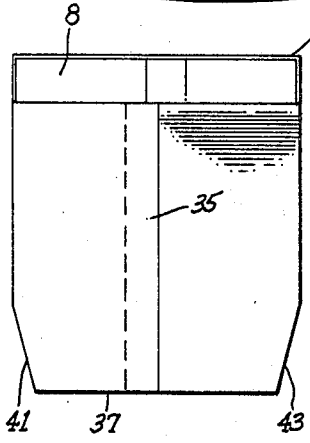


Fig 13

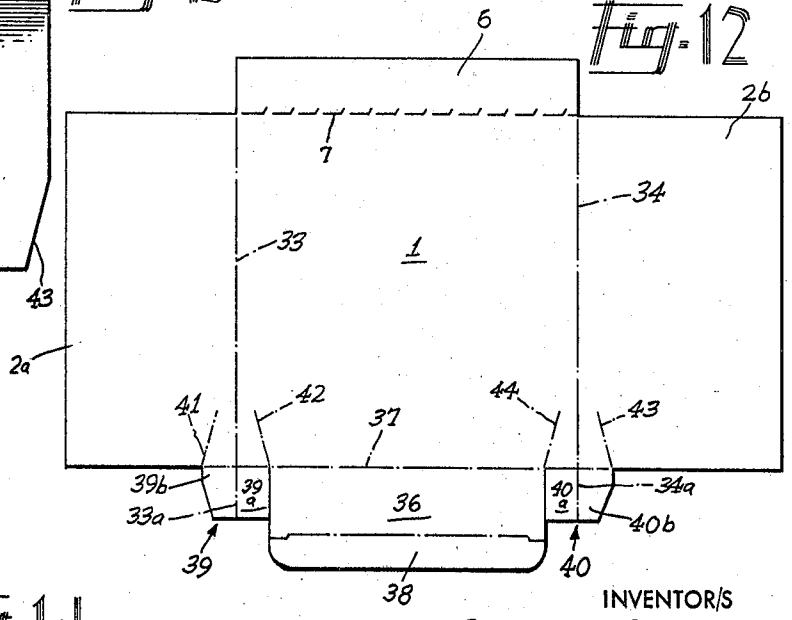


Fig. 12

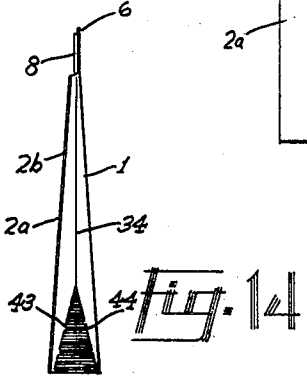


Fig. 14

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3,482,758

PRELINED TWO WALL PACKET

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Filed Jan. 12, 1968, Ser. No. 697,491
Int. Cl. B65d 5/56, 17/24, 83/00
U.S. Cl. 229—14 11 Claims

ABSTRACT OF THE DISCLOSURE

Prelined packets composed of an opposing pair of body walls surrounding a tubular liner initially sealed at one end, the body walls of the packet being expandable to automatically open the remaining end of the liner for filling, whereupon the liner may be readily sealed to close the packet.

BACKGROUND OF THE INVENTION

Various types of lined carton structures have hitherto been proposed wherein a tubular liner is enclosed within a conventional paperboard carton of rectangular cross-section, the arrangement being such that the erection of the carton will concurrently erect the liner. Such carton structures can be prefabricated and shipped to the packager in knock-down, flat-folded condition which is highly advantageous from the standpoint of shipping and storage space. In the hands of the users, the cartons may be readily erected, filled and sealed without the user having to separately handle the cartons and their liners. To this end, the ends of the liners are usually arranged to extend beyond the ends of the carton body walls so that they may be readily engaged for sealing, whereupon the ends of the liners are infolded as an incident of the closing and sealing of the carton end closure flaps.

By and large, lined carton structures of the type just described are intended to package relatively substantial quantities of product, and while it has hitherto been proposed to divide the liners internally into two or possibly three compartments which can be separately opened, such cartons are not generally suited for packaging small quantities of product, as might be required for a single serving of a food product or for use as samples. While flexible packets have hitherto been employed for such purposes, conventional packets are normally formed from relatively light-weight materials which are relatively easy to puncture or rupture and which are difficult to display in that they are not capable of being stood on end or hung on display racks and the like.

SUMMARY OF THE INVENTION

The present invention contemplates provision of self-supporting packets consisting essentially of a flexible liner surrounded by an essentially two-walled paperboard sleeve to which the liner is secured to form an initially knocked-down, flat-folded packet structure which can be readily erected, filled, and sealed by the packager.

The construction of the packets is such that the mouth of the liner may be readily expanded for filling by expanding the opposed body walls of the supporting sleeve outwardly relative to each other, one of the body walls having an integral extension along its uppermost edge to which one side of the liner mouth is secured. The opposite side of the liner mouth is exposed to facilitate sealing of the packet once the contents has been introduced. The mouth of the liner will thus be sealed in the area of the body wall extension which preferably will be defined by a line for severance which, in the hands of the user, provides a means for readily opening the packet to discharge its contents, the tearing away of the extension along its line for severance serving to automatically open the liner immediately beneath its sealed end.

The liner extension may be dimensioned and shaped to provide a convenient means for mounting the packets on a display stand or it may be shaped to define a carrying handle for the packet. In addition, the extension may be dimensioned to provide a reclosable flap in the event it is desired to dispense only a portion of the contents.

The contents of the packet will serve to maintain the opposing body walls of the supporting paperboard sleeve in expanded condition, with the lowermost edges of the opposing body walls providing a base on which the packet will stand upright; and to this end, the bottom edges of the opposing body walls may be curved slightly so as to define planar supporting surfaces when in the expanded or bowed condition. Alternatively, at their bottom ends the body walls may be provided with closure flaps adapted to coact with lines of fold in the corners of the opposing body walls to define a closed rectangular base for the packet.

DESCRIPTION OF THE DRAWINGS

FIGURE 1 is a plan view of a paperboard blank for forming a two-walled supporting sleeve in accordance with the invention.

FIGURE 2 is a plan view similar to FIGURE 1 but illustrating the association of a flat-folded tubular liner with the paperboard sleeve.

FIGURE 3 is a plan view illustrating the packet assembly in its knocked-down, flat-folded position.

FIGURE 4 is a perspective view illustrating diagrammatically the manner in which the opposing body walls of the packet are expanded to open the mouth of the liner for filling.

FIGURE 5 is a perspective view illustrating the manner in which the mouth of the liner is sealed subsequent to the introduction of the contents.

FIGURE 6 is a vertical sectional view taken along the line 6—6 of FIGURE 5 illustrating the manner in which the contents of the packet serve to maintain the opposing paperboard body walls in expanded position.

FIGURE 7 is a perspective view illustrating the manner in which the severance of the body wall extension serves to open the liner for the discharge of its content.

FIGURE 8 is a bottom view looking upwardly into the filled packet from beneath illustrating the manner in which the bottom end of the liner expands upwardly between the opposing body walls of the sleeve when the body walls are expanded.

FIGURE 9 is a front elevational view of a modified packet construction wherein the body wall extension incorporates means for hanging the packet on a spindle or similar support.

FIGURE 10 is a front elevational view of another modification of the invention wherein the body wall extension incorporates a carrying handle.

FIGURE 11 is a front elevational view with parts broken away of still another modification of the invention wherein the body wall extension incorporates a flap part by means of which the packet may be reclosed.

FIGURE 12 is a plan view of an alternative form of paperboard blank for forming an essentially two-walled packet having a flat, rectangular bottom.

FIGURE 13 is a front elevational view of the packet illustrated in FIGURE 12 in the erection condition.

FIGURE 14 is a side elevational view of the packet shown in FIGURE 13.

THE PREFERRED EMBODIMENTS

Referring first to FIGURE 1 of the drawings, there is illustrated a paperboard blank cut and scored to define

opposing body walls **1** and **2** lying in side-by-side relation and hinged together along line of articulation **3**. An attachment flap **4** is hingedly connected to the opposite side edge of body wall **2** along the line of articulation **5**. The body walls **1** and **2** will be of equal length and width so that, when they are juxtaposed and tubed by means of attachment flap **4**, they will define a two-walled sleeve.

The body wall **1** has an integral extension **6** projecting upwardly therefrom, the extension being defined by a line for severance **7** by means of which the extension may be torn away from the body wall **1** in the manner to be hereinafter explained.

The packet is provided with a tubular liner **8** which, in the embodiment illustrated, is formed with a longitudinal fin seal **9** and a bottom seal **10**. The material from which the liner is formed does not constitute a limitation on the invention, and diverse materials may be employed, such as the non-fibrous films, foils, or composite sheets in which a barrier layer of a plastic material is coated or laminated to paper or foil. Such liner materials are normally heat sealable so that both the longitudinal and bottom seams may be readily formed utilizing heat and pressure, all as will be readily understood by the skilled worker in the art. Essentially, the flat-folded liner will have opposing body walls of a width substantially equal to the width of the paperboard body walls **1** and **2**, and in the embodiment illustrated the length of the liner is such that its bottom seam **10** will coincide with the lowermost edges of the body walls **1** and **2**, but at its upper end the mouth of the liner projects beyond the upper edge **11** of body wall **2** so as to overlie the extension **6** when the paperboard structure is tubed.

The paperboard blank and liner may be readily assembled into a knocker-down, flat-folded packet structure utilizing assembly equipment currently available in the industry. Thus, the paperboard blanks may be advanced in the direction of the arrow A shown in FIGURE 1, with the liner deposited on the advancing blank in the manner illustrated in FIGURE 2. Spots of adhesive **12** and **13** will have been previously applied to the inner surface of body wall **2** so that the liner will be adhered thereto. Similar spots of adhesive **14** and **15** will be applied to the inner surface of body wall **1**, and a horizontally disposed strip of adhesive **16** will also be applied to the inner surface of extension **6**. As the paperboard blank with the liner deposited on body wall **2** continues its movement in the direction of the arrow A, the attachment flap **4** will be infolded to overlie the adjacent marginal edge of the liner, adhesive will be applied to the exposed surface of the attachment flap, whereupon the body wall **1** will be infolded along line of articulation **3**, thereby juxtaposing and securing body wall **1** and extension **16** to the underlying surface of the liner, with the marginal side edge of body wall **1** adhesively secured to attachment flap **4**, thereby providing the knocked-down, flat-folded packet structure illustrated in FIGURE 3. It is in this condition that the packets are shipped to the packager for erection, filling and sealing. Being flat-folded, the packets may be readily packed in shipping containers for shipment and storage occupying a minimum amount of space.

In the hands of the packager, the flat-folded packets may be readily erected by applying inwardly directed pressure against the opposite side edges **3** and **5** of the paperboard sleeve, as indicated by the arrows B, such pressure serving to expand the mouth of the liner by reason of its adhesive attachment both to the body walls **1** and **2** and to extension **6**. Alternatively, the opposing walls of the packet may be expanded by holding its opposite side edges in essentially fixed position and contacting the marginal edge of the extension **6** with a tongue or similar implement **17** which will displace the extension laterally to thereby open the mouth of the liner. To this end, it is preferable that the uppermost edge of the liner **8** terminate short of the uppermost edge of extension **6** to provide a marginal edge of extension **6** which may be engaged by the tongue **17** or other deflecting means employed to expand the body walls **1** and **2** relative to each other and hence open the liner mouth for filling.

Once the liner mouth has been opened, the contents may be injected into the packet utilizing conventional filling equipment the nature of which will depend upon the contents with which the packet is filled. In most commercially available filling equipment, the packets, with their liner mouths expanded, will be advanced, usually while engaged in a carriage of other packet holding means, beneath a filling spout which will enter the mouth of the packet and discharge a predetermined increment of contents therein. Such filling spout may be rotatably or pivotably mounted so as to enter the mouth of each packet and effectively travel a short distance with it as the packet is advanced.

Upon receiving its charge of contents, the packet will be conveyed to a sealing mechanism which will close and seal the liner mouth. As illustrated in FIGURE 5, the mouth of the liner may be conveniently heat sealed by being passed between heated pressure rolls **18** and **19** which will coact to juxtapose the opposite side edges of the liner mouth and heat seal them together, thereby effectively securing the end seal **20** so formed to the paperboard extension **6**.

As seen in FIGURE 6, the drawing together and sealing of the opposite sides of the liner mouth acts to give the packet a somewhat triangular shape in cross-section, the contents tending to bow the opposing body walls outwardly and hence space apart the bottom edges of the walls **1** and **2**, thereby effectively providing a base upon which the packet may be stood. Since the body walls be bowed outwardly, their bottom edges will tend to bow upwardly relative to a planar supporting surface so that the bottom edges of the body walls **1** and **2** will not make line contact with the supporting surface. To compensate for such irregularity, the bottom edges of the body wall panels may be curved outwardly in the manner seen at **21** and **22** in FIGURES 1 and 2, such curvature serving to compensate for the bowing of the walls and hence providing essentially line contact between the bottom edges of the wall panels and the counter, shelf or the like on which the packets are stood on end.

It should also be noted that it is important for the spots of adhesive **13** and **15** to be located upwardly from the bottom edge of the liner by a substantial distance. As the packet is filled and the body walls of both the liner and the surrounding sleeve expanded outwardly, the bottom seam of the liner will tend to automatically fold upwardly to compensate for the expansion which takes place. This condition is illustrated in FIGURES 6 and 8 wherein it will be seen that the bottom seam of the liner folds upwardly as the opposing walls of the packet are expanded. Consequently, it is desirable that the spots of adhesive **13** and **15** be placed upwardly by a distance sufficient to permit such natural expansion of the otherwise flat liner.

In the hands of the ultimate user, the packet may be readily opened to discharge its contents by simply tearing the extension **6** along the line for severance **7**. Such tearing action, which is illustrated in FIGURE 7, serves to automatically open the liner in that the mouth of the liner is effectively secured to the extension **6** in the area of end seal **20**, with the body walls of the liner secured to the body walls **1** and **2** of the paperboard sleeve in areas lying beneath the line for severance. It has been found that the opposing walls of the liner will tear away cleanly along the line for severance, thereby effectively and efficiently opening the liner for the discharge of its contents.

FIGURE 9 illustrates the modification of the invention wherein the extension **6** is enlarged to provide a projecting tongue **23** having an opening **24** therein by means of which the packet may be conveniently hung on a hook or spindle for display purposes. Alternatively, and as illustrated in FIGURE 10, the extension **6** may be enlarged to

define a carrying handle **25** having a finger gripping opening **26** therein by means of which the package may be conveniently carried. Such construction is particularly suited for relatively large size packets.

FIGURE 11 illustrates yet another modification of the invention wherein the extension on the upper end of body wall **1** is formed in two parts, the extension having an inner flap part **27** hingedly connected to body wall **1** along a line of articulation **28**, there being an outer extension part **29** connected to the inner part by a line for severance **30**. In this embodiment, the sealed mouth **20** of liner **8** will be adhesively secured to outer extension part **29** so that the liner will be opened when the outer extension part is torn away along line for severance **30**. The inner flap part will, however, remain, thereby providing a reclosure flap by means of which the upper end of the liner may be infolded over the upper edge **11** of body wall **1** upon infolding of the inner flap part **27** along the line of articulation **28** which coincides with edge **11**. If desired, an outwardly deflectable flap-edge receiving tongue **31** may be provided in body wall **2** to receive the free edge of flap **27** when infolded. Alternatively, the line of articulation **28** may be covered with a strip **32** of a dead-soft material, such as a thin sheet of aluminum, adhered both to body wall **1** and to flap **27** on opposite sides of the score line **28**. Such dead-soft strip will serve, when folded over the upper edge **11** of body wall **2**, to maintain the flap **27** in the closed and folded position with the extending ends of the liner **8** sandwiched therebetween.

FIGURES 12 through 14 illustrate yet another embodiment of the invention wherein the packet is provided with a flat, generally rectangular bottom. In this instance, the body wall portions **2***a* and **2***b* are hingedly connected to opposite sides of the body wall **1** along lines of articulation **33** and **34**, respectively, the body wall portions **2***a* and **2***b* being adapted to overlap and form a longitudinal seam **35** when the structure is tubed. An end closure flap **36** is hingedly connected to the bottom end of body wall **1** along line of articulation **37**, the flap **36** being provided with a tuck tab **38**. It will be noted, however, that the end flap **36** is centrally spaced relative to body wall **1**, there being end flaps **39** and **40** lying on opposite sides of the bottom flap **36**. The flaps **39** and **40** are bisected by lines of fold **33***a* and **34***a* formed in prolongation of the score lines **33** and **34**, respectively thereby dividing the flaps into inner parts **39***a* and **40***a* hingedly connected to the body wall **1**, together with outer flap parts **39***b* and **40***b* hingedly connected, to the bottom edges of the body wall parts **2***a* and **2***b*, respectively. It will be also noted that inclined pairs of score lines **41**, **42** and **43**, **44** project upwardly and inwardly through the body walls from the opposite ends of the flaps **39** and **40** toward the lines of articulation **33** and **34**, respectively.

As should be evident, when the blank is initially tubed to form the knocked-down packet structure, the inner and outer flap parts **39***a*, **39***b* and **40***a*, **40***b* will fold relative to each other along the score lines **33***a*, and **34***a*, respectively. However, in the hands of the packager, the end closure flaps may be readily erected to form a rectangular bottom for the packet. To this end, the flap sections **39***a*, **39***b* and **40***a*, **40***b* will be concurrently infolded along their lines of hinged attachment to the body walls, which lines are formed in prolongation of the line of articulation **37**. Concurrently, the adjoining portions of the body wall **1** and the composite body wall **2***a*, **2***b* will fold along the inclined sets of score lines **41**, **42**, and **43**, **44**, accompanied by the bowing of the portions of the body walls lying between the lines of fold **41**, **43** and **42**, **44**, whereupon the bottom flap **36** may be infolded with the tuck tab **38** inserted between the side edges of flap parts **39***b* and **40***b* and composite body wall **2***a*, **2***b*, thereby bring the structure to the erected condition illustrated in FIGURES 13 and 14. Thereafter, filling and sealing of the liner may proceed as has been previously described.

As should now be evident, the instant invention provides prelined packet structures which may be supplied to the packager in knocked-down, flat folded condition such that the user may concurrently erect both the liner and the supporting paperboard sleeve for filling and sealing of the packet. The construction is such that one side of the liner is readily exposed for heat sealing without having to penetrate opposing layers of paperboard. In the hands of the user, the packets may be readily opened to discharge their contents and, if desired, may incorporate a flap arrangement facilitating re-closure if less than the entire contents of the packet is intended to be dispensed at one time.

Numerous modifications may be made in the invention without departing from its spirit and purpose. Various modifications and alternative constructions have already been disclosed, and others will undoubtedly occur to the skilled worker in the art upon reading this specification. Consequently, the true nature of the invention will find its expression in the claims which follow.

The embodiments of the invention in which an exclusive property or privilege is claimed are defined as follows:

1. A knocked-down prelined packet consisting of a flat tubular liner surrounded by a flat-folded tubular paperboard sleeve composed of an opposing pair of body walls hingedly connected together along their opposite side edges, with the opposite sides of the liner secured to the inner surfaces of the opposing walls of said sleeve, said liner having its mouth projecting outwardly beyond the upper end of said sleeve, and an extension detachably connected to the upper end of one only of said sleeve walls along a line for severance, the adjacent side of the liner mouth being secured to said extension.

2. The packet claimed in claim **1** wherein said extension has a portion extending outwardly beyond the mouth of the liner, and wherein the projecting portion of said extension has an opening therein by means of which said packet may be hung on a hook or the like.

3. The packet claimed in claim **1** wherein said extension has a portion projecting outwardly beyond the end of said liner mouth, the projecting portion of said extension being configured to define a carrying handle for said packet.

4. The packet claimed in claim **1** wherein end closure flaps are hingedly connected to the lowermost ends of said sleeve, a first of said end closure flaps being hingedly connected to one only of said sleeve walls, an opposing pair of said end closure flaps being hingedly connected to both of said sleeve walls, said sleeve walls having inclined score lines therein projecting upwardly from the opposite ends of said last named closure flaps.

5. The packet claimed in claim **1** wherein said extension includes an inner part hingedly connected to the sleeve, and an outer part connected to said inner part along said line for severance, said liner being secured at least to the outer part of said extension.

6. The packet claimed in claim **5** wherein the inner part of said extension is foldable inwardly to form a reclosure for said packet subsequent to the removal of the outer portion of said extension along said line for severance, and means operative to maintain said inner part in the infolded condition.

7. A prelined packet structure consisting essentially of a flat tubular liner enclosed within a paperboard sleeve having a single pair of opposing body walls hingedly connected together along their opposite side edges to define an essentially flat sleeve, an extension projecting upwardly from one of the body walls of said sleeve, said liner having a mouth projecting beyond said last named body wall and overlying said extension, a portion at least of said extension being detachable from said sleeve along a line for severance, said liner being secured to the detachable portion of said extension and to said opposing body walls, said liner being closed across its bottom end and packed with product, the opposite sides of said

liner mouth being sealed together to close said packet, the lower portion at least of said opposing body walls being expanded outwardly by the packed product so that the packet will stand upright on the bottom edges of said opposing body walls.

8. The packet structure claimed in claim **7** wherein the bottom edges of the said opposing body walls are curved.

9. A prelined packet consisting essentially of a flat tubular liner surrounded by a flat-folded tubular paperboard sleeve composed of an opposing pair of body walls hingedly connected together along their opposite side edges, said liner having its lowermost end sealed and lying within the confines of said body walls, and its uppermost end defining an open mouth, the opposite sides of said liner being secured to said opposing body walls adjacent their uppermost edges, whereby the mouth of the liner may be expanded for filling by expanding the surrounding body walls of said sleeve and, when the liner is filled and its mouth sealed, its contents will expand the opposing body walls of said sleeve outwardly so that their lowermost edges will define a base on which the packet will stand upright.

10. The packet claimed in claim **9** wherein the bottom edges of said body walls are of curved configuration.

11. The packet claimed in claim **9** wherein an extension is detachably connected to the upper end of one of said body walls, wherein said liner has a mouth projecting outwardly beyond the upper ends of said body walls and overlying said extension, and wherein the mouth of said liner is secured to said extension.

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DAVID M. BOCKENEK, Primary Examiner

U.S. Cl. X.R.

229—51; 206—56