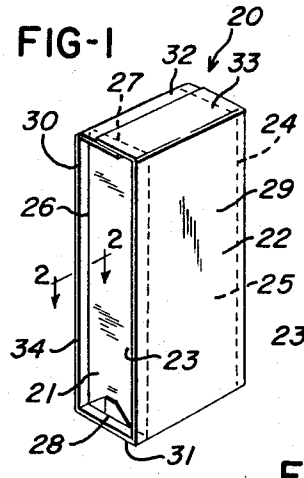
Feb. 4, 1969 W. C. BECKER ET AL 3,425,324

CONTAINER CONSTRUCTION AND METHOD AND APPARATUS FOR MAKING THE SAME

Original Filed Oct. 6, 1965

FIG-1



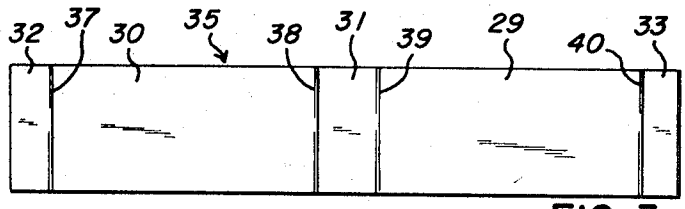
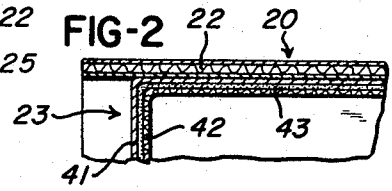


FIG-3

FIG-2



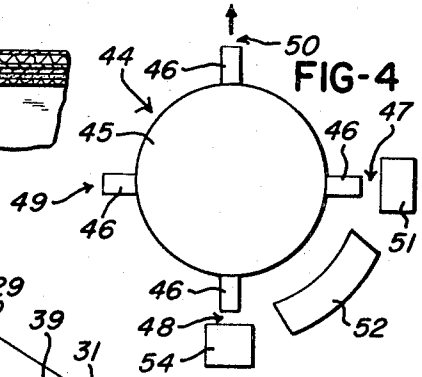


FIG-4

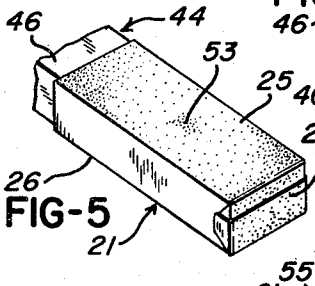
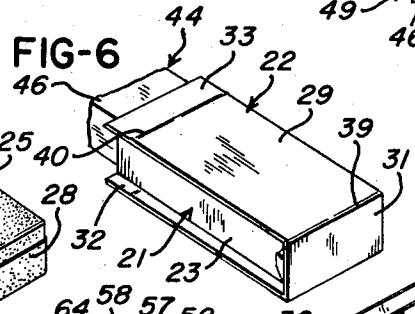


FIG-5

FIG-6



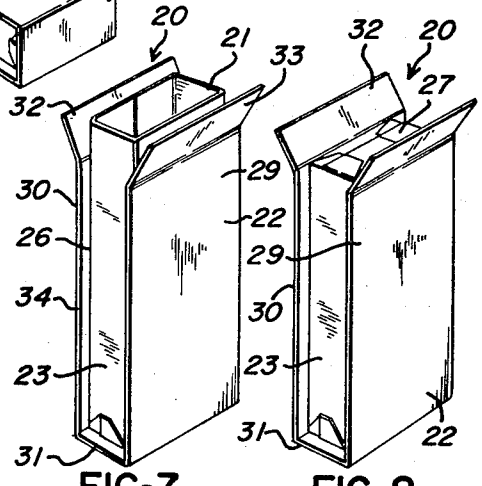


FIG-7

FIG-8

FIG-9

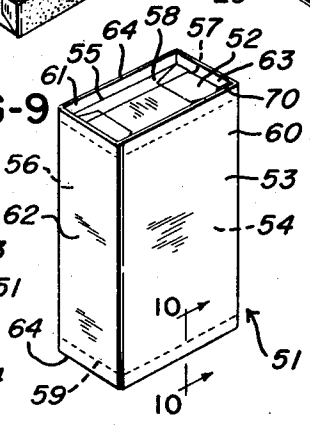
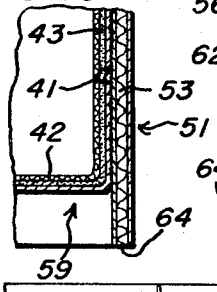


FIG-10



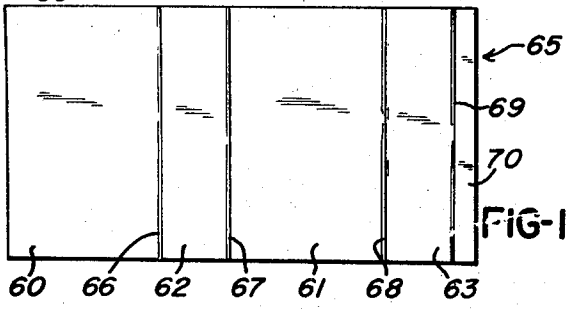


FIG-11

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3,425,324

CONTAINER CONSTRUCTION AND METHOD AND APPARATUS FOR MAKING THE SAME

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Original application Oct. 6, 1965, Ser. No. 493,406, now Patent No. 3,325,077, dated June 13, 1967. Divided and this application Apr. 19, 1967, Ser. No. 660,534
U.S. Cl. 93—36.01 12 Claims
Int. Cl. B31b *11/60, 11/74*

This is a division of application Ser. No. 493,406, filed Oct. 6, 1965, now Patent No. 3,325,077, issued June 13, 1967.

This invention relates to an improved container construction as well as to an improved method and apparatus for making such a container construction or the like.

It is well known that apparatus has been provided for forming a bag-like liner around a substantially rectangular mandrel so that the bag-like liner has one end thereof sealed closed at the end of the mandrel. Thereafter, the apparatus folds a cardboard structure around the liner on the mandrel so that the cardboard structure forms a complete container around the liner except at the opened end thereof.

Thereafter, the liner and container are ejected off the mandrel by air or the like whereby the desired product can be disposed in the opened end of the bag-like liner, the open end of the bag-like liner being sealed closed and the top flaps of the surrounding container being closed over the closed top of the bag-like liner to provide a complete package construction.

However, according to the teachings of this invention, it has been found that the cardboard container need not completely cover all of the side walls or top and bottom walls of the bag-like liner so that a more economical package container construction is provided. This feature is accomplished by having the exposed walls of the bag-like liner recessed inwardly from the edges of the cardboard container so that the cardboard container fully protects the bag-like liner even though the same is exposed.

Accordingly, it is an object of this invention to provide an improved container construction having one or more of the novel features set forth above or hereinafter shown or described.

Another object of this invention is to provide an improved method for making such a container construction or the like.

A further object of this invention is to provide an improved apparatus for making such a container construction or the like.

Other objects, uses and advantages of this invention are apparent from a reading of this description which proceeds with reference to the accompanying drawings forming a part thereof and wherein:

FIGURE 1 is a perspective view of an improved container construction of this invention.

FIGURE 2 is an enlarged, fragmentary, cross-sectional view taken on line 2—2 of FIGURE 1.

FIGURE 3 is a plan view of the blank structure for forming the container construction of FIGURE 1.

FIGURE 4 is a schematic view illustrating the apparatus of this invention.

FIGURE 5 is a fragmenatry, perspective view illustrating one of the steps in the operation of the apparatus of FIGURE 4.

FIGURE 6 is a view similar to FIGURE 5 and illustrates another step in the operation.

FIGURE 7 is a perspective view illustrating the open container construction of FIGURE 1.

FIGURE 8 is a view similar to FIGURE 7 with the bag-like liner in its closed position.

FIGURE 9 is a view similar to FIGURE 1 and illustrates another container construction of this invention.

FIGURE 10 is an enlarged, fragmentary, cross-sectional view taken on line 10—10 of FIGURE 9.

FIGURE 11 is a view similar to FIGURE 3 and illustrates another blank structure of this invention for forming the container construction of FIGURE 9.

While the various features of this invention are hereinafter described and illustrated as being particularly adaptable for providing a container construction for a food product or the like, it is to be understood that the various features of this invention can be utilized singly or in any combination thereof to provide container constructions for other uses as desired.

Therefore, this invention is not to be limited to only the embodiments illustrated in the drawings, because the drawings are merely utilized to illustrate one of the wide variety of uses of this invention.

Referring now to FIGURE 1, an improved container construction of this invention is generally indicated by the reference numeral **20** and comprises a flexible bag-like liner **21** being protected by a rigid board means **22** in a manner hereinafter described.

The bag-like liner **21** is formed in a substantially rectangular shape whereby the same has two pairs of opposed side walls **23**, **24** and **25**, **26** as well as opposed top and bottom walls **27** and **28**.

The rigid board means **22** is so constructed and arranged that the same defines a pair of opposed side walls **29** and **30** superimposed on and secured to the opposed side walls **25** and **26** of the bag-like liner **21**, the rigid board means **22** also defining bottom wall means **31** superimposed on and secured to the bottom wall **28** of the bag-like liner **21**. The rigid board means **22** has a pair of overlapping top flaps **32** and **33** covering the top wall **27** of the bag-like liner **21**.

Therefore, it can be seen that in the container construction **20** of FIGURE 1, the opposed side walls **23** and **24** of the bag-like liner **21** are fully exposed. However, the rigid board means **22** is so constructed and arranged that the same extends beyond the side walls **23** and **24** of the bag-like liner **21** in the manner illustrated in FIGURES 1 and 2 so that the peripheral edges **34** of the rigid board means **22** protect the bag-like liner **21** at the exposed surfaces **23** and **24** thereof when the container construction **20** is being stored, transported, and merchandised.

Therefore, it can be seen that the package construction **20** of this invention provides rigid board means **22** protecting the flexible bag-like linear means **21** thereof while the board means **22** is more economical than prior known container constructions because the same does not completely cover the bag-like linear means **21**.

While the rigid board means **22** can be formed of any suitable material the embodiment thereof illustrated in the drawings is formed from paperboard in a well known manner. In addition, the rigid board means **22** is provided in blank form as generally indicated by the reference numeral **35** in FIGURE 3. The blank **35** is substantially rectangular and has a plurality of transverse parallel scores **37**, **38**, **39** and **40** respectively defining the top flap **32**, side wall **30**, bottom wall **31**, side wall **29** and top flap **33**.

In addition, the flexible bag-like liner **21** of this invention can be formed of any suitable material and in any suitable manner. However, the embodiment illustrated in the drawings comprises a lamination of a layer of metallic foil **41** being secured to a porous paper backing material **42** by an interposed layer **43** of migratory waxlike material, such as microcrystalline wax or the like.

In this manner, the bag-like liner **21** is adapted to be formed from a flat sheet that is folded into the rectangular shape of FIGURE 1 whereby the seams, top and bottom thereof can be sealed closed by merely applying heat in the desired areas to the liner **21** to cause the waxlike material **43** to exude through the paper layer **42** to secure the overlapping areas of the liner **21** together whereby the product can be fluid sealed in the liner **21** with the metallic foil providing a moisture barrier completely around the product.

However, it is to be understood that other heat sealing means can be utilized to form the linear **21**, such as wax paper, film of polyethylene, film of polyvinylchloride and the like.

The apparatus for forming the container construction of FIGURE 1 is generally indicated by the reference numeral **44** in FIGURES 4, 5 and 6 and can comprise a well known apparatus modified in a manner hereinafter set forth.

In particular, the apparatus **44** can be of the well known type set forth on pages 4 and 5 of Bulletin No. 133 of the Pneumatic Scale Corporation Limited and entitled "Automatic Packaging Machinery." This double package maker as set forth in the aforementioned publication comprises a structure **45** having a plurality of substantially rectangular mandrels **46** indexible through stations **47, 48, 49** and **50**.

When each mandrel **46** is indexed to the station **47**, suitable machinery **51** cuts a sheet of liner material from a roll thereof and wraps, folds and heat seals or glues that sheet of linear material into the open ended bag-like liner **21** illustrated in FIGURE 5.

As the mandrel **46** at station **47** is indexed from station **47** to station **48**, other machinery **52** applies glue or other suitable adhesive **53** on the opposed side walls **25** and **26** as well as on the bottom wall **28** of the liner **21**.

When that particular mandrel **46** is now disposed at station **48**, other suitable machinery **54** takes a blank **35** of FIGURE 3 and folds the same onto the liner **21** on the mandrel **46** to complete the container construction as illustrated in FIGURE 6.

The mandrel **46** is then indexed to station **49** and, subsequently to station **50** whereby the container construction **20** of FIGURE 6 is ejected from the particular mandrel **46** by a jet of air or mechanical means, the adhesive of the container construction **20** drying while being indexed between stations **48** and **50**.

When the package is blown off the mandrel **46** at station **50**, the same drops down onto a conveyor which will pass under a filling head wherein the product, such as coffee or the like, will be dropped into the container construction in the manner illustrated in FIGURE 7.

The filled container **20** would then move under a vacuum or gasing filling head wherein the liner **21** would have the top wall **27** thereof heat sealed closed in a conventional manner as illustrated in FIGURE 8. The extending top flaps **32** and **33** of the rigid board means **22** would then be folded over in overlapping relation and secured together by a suitable adhesive or the like to complete the container construction **20** illustrated in FIGURE 1.

Therefore, it can be seen that the container construction **20** then will be ready for shipment or packaging whereby the rigid board means **22** fully protects the flexible liner means **21** even though the opposed side walls **23** and **24** of the liner **21** are exposed.

While one form of container construction has been illustrated in FIGURE 1, it is to be understood that other forms of container construction can be formed according to the teachings of this invention.

For example, reference is made to FIGURE 9 wherein another container construction of this invention is generally indicated by the reference numeral **51** and comprises a flexible bag-like liner **52** being protected by a rigid board means **53**.

The bag-like liner **52** is shaped in rectangular forms in the same manner as the bag-like liner **21** previously described and comprises two pairs of opposed side wall means **54, 55** and **56, 57** as well as opposed top and bottom wall means **58** and **59**. The rigid board means **53** is folded around and secured to the bag-like liner **52** and has two pairs of opposed side wall means **60, 61** and **62, 63** respectively superimposed on and secured to the side walls **54, 55, 56** and **57** of the bag-like liner **52** whereby the top and bottom walls **58** and **59** of the liner **52** are fully exposed.

However, the exposed surfaces of the top and bottom walls **58** and **59** of the liner **52** are recessed relative to the top and bottom edges **64** of the rigid board means **53** so that the rigid board means **53** fully protects the bag-like liner **52** when the container construction **51** is stored, transported and merchandised in much the same manner as the container construction **20** previously described.

For example, see FIGURE 10 wherein the bottom wall **59** of the liner **52** is disposed above the bottom edge **64** of the rigid board means **53** for protection thereof.

If desired, the rigid board means **53** can comprise paperboard and the flexible liner **59** can compirse the lamination of a layer of metallic foil **41** being secured to a paper backing **42** by the migratory waxlike material **43** in the manner previously described.

The rigid board means **53** can be supplied from blanks **65** illustrated in FIGURE 11 wherein each blank **65** is substantially rectangular and has transverse parallel scores **66, 67, 68** and **69** formed thereon to respectively define side wall **60**, side wall **62**, side wall **61**, side wall **63** and an interconnecting flap **70** which will be disposed against the inside surface of the side wall means **60** to form the tubular construction illustrated in FIGURE 9.

It can readily be seen that the container construction **51** of this invention can readily be formed on the apparatus **44** in the manner previously described whereby the resulting container construction will have the top and bottom walls **58** and **59** of the bag-like liner **52** exposed rather than the opposed side wall means of the liner of the container construction **20**. However, it can be seen that the apparatus **44** will readily perform the container construction forming operation in the same manner as previously described.

While the end opening flaps of the liner are illustrated as being superimposed on the top thereof, such as in FIGURE 8, it is to be understood that the end flaps could be folded against the sides of the liner in the same manner that the bottom and flaps are folded as illustrated in FIGURE 8. Also, the bottom end flaps of the liner could be folded in the same manner as the top end flaps, if desired.

Therefore, this invention not only provides an improved container construction wherein the amount of rigid board means being utilized therefor is greatly reduced over the prior art, but also provides an improved method and apparatus for making such a container construction or the like.

While the form of the invention now preferred has been disclosed as required by the statutes, other forms may be used, all coming within the scope of the claims which follow.

What is claimed is:

1. A method for making a container construction or the like comprising the steps of forming a flexible bag-like liner to enclose a product therein, and disposing and securing a rigid board means about said liner so that said board means has opening means therein exposing said liner, said board means being so disposed and secured that the exposed surface of said liner is spaced inwardly from the periphery of said opening means whereby said board means protects said liner.

2. A method as set forth in claim **1** and including the step of forming said liner from metallic foil.

3. A method as set forth in claim 1 and including the step of heat sealing said liner to itself to seal said product therein.

4. A method as set forth in claim 1 and including the step of forming said board means from paperboard.

5. A method for making a container construction or the like comprising the steps of forming a flexible bag-like liner to enclose a product therein, said liner being formed in a rectangular shape defining two pairs of opposed side walls and opposed top and bottom walls, and disposing and securing a rigid board means about said liner so that said board means covers certain of said walls of said liner and exposes the remaining walls of said liner, said board means being so disposed and secured that the surfaces of the exposed walls of said liner are recessed inwardly from the edges of said board means whereby said board means protects said liner.

6. A method as set forth in claim 5 wherein said board means forming step exposes said top and bottom walls of said liner.

7. A method as set forth in claim 5 wherein said board means forming step exposes one pair of opposed side walls of said liner.

8. Apparatus for making a container construction or the like comprising means for forming a flexible bag-like liner to enclose a product therein, and means for disposing and securing a rigid board means about said liner so that said board means has opening means therein exposing said liner, said last-named means disposing and securing said board means in such a manner that the exposed surface of said liner is spaced inwardly from the periphery of said opening means whereby said board means protects said liner.

9. Apparatus as set forth in claim 8 wherein said last-named means heat seals said liner to itself to seal said product therein.

10. Apparatus for making a container construction or the like comprising means for forming a flexible bag-like liner to enclose a product therein, said first-named means forming said liner into a rectangular shape defining two pairs of opposed side walls and opposed top and bottom walls, and means for disposing and securing rigid board means about said liner so that said board means covers certain of said walls of said liner and exposes the remaining walls of said liner, said last-named means disposing and securing said board means in such a manner that the surfaces of the exposed walls of said liner are recessed inwardly from the edges of said board means whereby said board means protects said liner.

11. Apparatus as set forth in claim 10 wherein said last-named means exposes said top and bottom walls of said liner.

12. Apparatus as set forth in claim 10 wherein said last-named means exposes one pair of opposed side walls of said liner.

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