May 19, 1970 J. C. D'ESPOSITO ET AL 3,512,823

COLLAPSIBLE CONTAINER

Filed May 6, 1968

FIG. 1

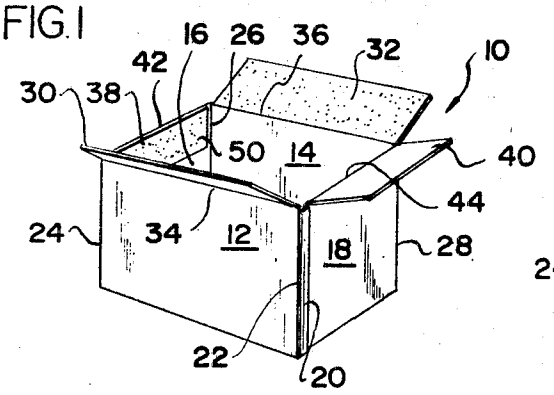


FIG. 2

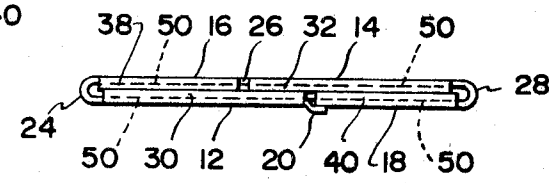


FIG. 3

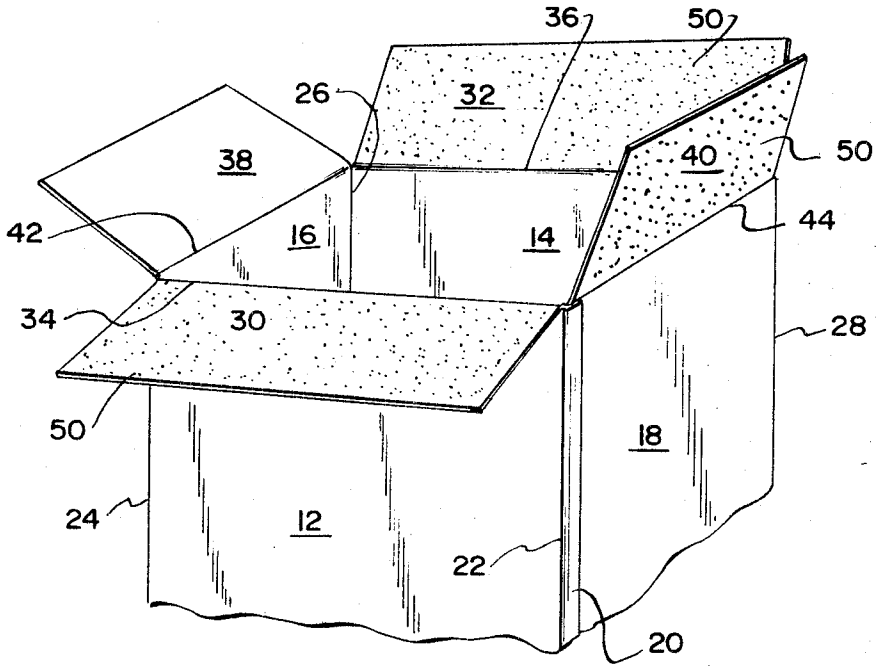
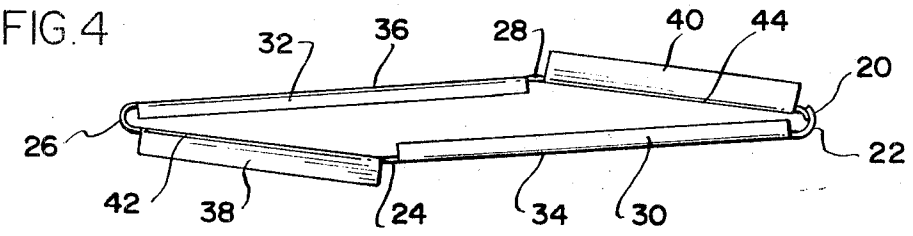


FIG. 4



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COLLAPSIBLE CONTAINER

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U.S. Cl. 229—37 5 Claims

ABSTRACT OF THE DISCLOSURE

A collapsible container is formed from a blank of paperboard and has opposed pairs of hingedly interconnected first and second sidewalls which have first and second closure flaps hinged respectively thereto. The container is erected in the usual manner to form a tubular structure. The inner surface of each of the first closure flaps and the outer surface of each of the second closure flaps is covered with adhesive coating, the adhesive being of the self-sticking type so that a surface coated therewith will adhere only to another similarly coated surface. When the container is collapsed, in order to prevent adherence of adhesively coated surfaces to one another, each of the flaps is folded against the sidewall to which it is hinged so that the adhesively coated surfaces will contact only the uncoated surfaces.

BACKGROUND OF THE INVENTION

Field of the invention

This invention relates to a collapsible container formed from a unitary blank of paperboard and, more particularly, to a collapsible, self-sealing container having adhesively coated closure flaps, the flaps being folded in such a manner as to prevent undesirable adhering of coated surfaces to one another when the container is in collapsed condition.

The prior art

Heretofore, various attempts have been made to form a container from a blank of paperboard, or the like, with adhesive applied by the manufacturer of the container to the closure flaps thereof so that the container could be readily sealed by the user without necessitating any further application of adhesive and, at the same time, preventing adherence of various surfaces of the container to one another when the container is in a collapsed condition. The problem of applying self-sticking adhesive to the closure flaps of a container so that an erected and closed container be provided with readily sealable surfaces in contact with one another, yet the surfaces be free from one another when the container is in a collapsed form, has been somewhat reduced by a patent to Kelsall, No. 2,874,891 and a patent to Greene, No. 3,322,323. Both patents teach application of the adhesive to specified controlled areas of the closure flaps.

However, the application of adhesive to controlled areas of the flaps is time-consuming and requires precise identification of the flap areas where the adhesive is to be applied so that the teachings of the above patents are not suitable for today's mass production techniques. Further, when the shape of the container is varied, the areas to which adhesive is applied, must likewise be varied.

SUMMARY OF THE INVENTION

The present invention overcomes the disadvantages of the prior art and provides a paperboard container having the necessary interior or exterior surfaces of the closure flaps coated with self-sticking adhesive so that an erected container can be readily sealed, but, at the same time,

preventing sticking of the surfaces of the container when the container is collapsed. This invention utilizes the adhesive of the self-sticking type the characteristic of which being that a surface coated therewith will adhere only to another similarly coated surface. The prevention of sticking of the container surfaces when the container is collapsed is accomplished by folding the closure flaps of the container against the walls to which the flaps are hinged so that, when the container is collapsed, the surfaces of the flaps having adhesive applied thereto, will engage only those surfaces which are free of adhesive.

DRAWING

FIG. 1 is a perspective view of the container of the present invention representing the first embodiment thereof;

FIG. 2 is a side elevational view of the container of FIG. 1 when the container is in a collapsed condition;

FIG. 3 is a fragmentary perspective view of the container representing the second embodiment of the present invention; and

FIG. 4 is a fragmentary view showing portions of the flaps of container illustrated in FIG. 3 when the flaps are being folded.

SPECIFICATION

While this invention is susceptible of embodiment in many different forms, there are shown in the drawing and will herein be described in detail, embodiments of the invention with the understanding that the present disclosure is to be considered as an exemplification of the principles of the invention and is not intended to limit the invention to the embodiments illustrated.

Referring now to the drawing, more specifically to FIG. 1, there is shown a container, generally designated **10**, formed from a unitary, suitably cut and scored blank of foldable paperboard, or the like. The container is shown in the erected position and has opposed pairs of first sidewalls **12** and **14** and second sidewalls **16** and **18**. A narrow panel **20** is hinged to the free edge of the first sidewall **12** along a hinge line **22** and is placed in an overlying relationship to the marginal area along the free edge of the second sidewall **18**. The panel **20** is secured by any suitable means to the marginal area of the wall **18** to provide a manufacturer's joint, as the same is known in the art of container manufacturing the first sidewall **12** is hinged to the second sidewall **16** along a hinge line **24**, while the second sidewall **16** is hinged to the first sidewall **14** along a hinge line **26**. Similarly, the wall **14** is hinged to the wall **18** along a hinge line **28**.

First closure flaps **30** and **32** are hinged to the top end edges of first side walls **12** and **14**, respectively, along the respective hinge lines **34** and **36**. Second closure flaps **38** and **40** are hinged to the top end edges of second sidewalls **16** and **18**, respectively, along the respective hinge lines **42** and **44**.

While the bottom closure flaps are not shown on the containers illustrated in FIGS. 1 and 3, it is to be understood that flaps similar to those heretofore described are also hinged to the bottom end edges of the first and second sidewalls of the containers.

An adhesive **50** of the self-sticking type, is applied to the inner surfaces of the first closure flaps **30** and **32** and to the outer surfaces of the second closure flaps **38** and **40**.

In collapsing the container **10**, all closure flaps may be folded inwardly against the interior surfaces of the respective walls to which the flaps are hinged. As best seen in FIG. 2, the surfaces of the flaps coated with the adhesive **50** will engage those surfaces of the flaps which are not coated with adhesive.

The container shown in FIG. 3 is identical to the container of FIG. 1, same numerals being used to designate various individual elements of both containers. In collapsing the container of FIG. 3, first closure flaps **30** and **32** may be folded inwardly against the interior surfaces of first sidewalls **12** and **14**, respectively. The second closure flaps **38** and **40**, having adhesive **50** applied to the outer surfaces thereof, may be folded outwardly against the exterior surfaces of second sidewalls **16** and **18**. The orientation of the folded closure flaps is best illustrated in FIG. 4.

It can be seen that by folding the first closure flaps inwardly and the second closure flaps outwardly each of the adhesively coated surfaces of the flaps will engage an uncoated surface of the respective wall of the container. Since the adhesive **50** has a characteristic whereby it can adhere only to a similarly coated surface, by folding the closure flaps in the manner indicated in FIG. 4, adherence of coated surfaces will be prevented.

The containers illustrated herein, when collapsed, can be stacked on top of one another without any danger that adhesively coated surfaces of two or more containers will come into contact with one another causing the containers to adhere to one another.

While in the exemplary embodiments illustrated the closure flaps of the container were folded after the container had been erected and after the manufacturer's joint, formed by securing panel **20** to the sidewall **18**, has been made, folding of the flaps could be accomplished before the manufacturer's joint is made without departing from the spirit of the present invention.

Further, it may not be necessary to coat the substantially entire inner or outer surfaces of respective flaps. Thus, it may be sufficient to coat at least half of the outer surface of each of the second closure flaps **38** and **40** and to coat only those portions of the inner surfaces of first closure flaps **30** and **32** which will engage the coated outer surfaces of flaps **38** and **40** when the container is closed.

What is claimed is:

1. In a collapsible container, formed from a unitary blank of foldable paperboard, having opposed pairs of first and second sidewalls hingedly interconnected to form a tubular structure open at the ends, self-sealing means for closing each of said open ends, comprising:

(a) a pair of first closure flaps hinged to the corresponding end edges of said first sidewalls and having adhesive coatings on substantially entire inner surfaces thereof;

(b) a pair of second closure flaps hinged to the corresponding end edges of said second sidewalls and having adhesive coatings on substantially entire outer surfaces thereof;

(c) said adhesive coatings being of the self-adhering type which will adhere only to other similarly coated surfaces;

(d) each closure flap being folded against a side wall to which said closure flap is hinged thereby preventing engagement between coated surfaces of any two closure flaps when the container is collapsed.

2. A collapsible container as defined in claim **1**, wherein each of said first side walls is longer than each of said second side walls.

3. A collapsible container as defined in claim **1**, wherein each of said first closure flaps is folded inwardly against a first sidewall to which said first closure flap is hinged, and each of said second closure flaps is folded outwardly against a second sidewall to which said second closure flap is hinged, thereby preventing engagement between coated surfaces of any two closure flaps when the container is collapsed.

4. A collapsible container as defined in claim **1**, wherein each of said closure flaps is folded inwardly against a sidewall to which said flap is hinged thereby preventing engagement between coated surfaces of any two closure flaps when the container is collapsed.

5. In a collapsible container, formed from a unitary blank of foldable paperboard, having opposed pairs of first and second side walls hingedly interconnected to form a tubular structure open at the ends, self-sealing means for closing each of said open ends, comprising:

(a) a pair of first closure flaps hinged to the corresponding end edges of said first sidewalls;

(b) a pair of second closure flaps hinged to the corresponding end edges of said second sidewalls and having adhesive coatings on at least half of the outer surfaces thereof;

(c) portions of said first closure flaps overlapping said second closure flaps when the end of the container is closed;

(d) said portions having adhesive coatings on the inner surfaces thereof so arranged as to engage with and adhere to the substantially entire coated outer surfaces of said second closure flaps when the end of the container is closed;

(e) said adhesive coatings being of the self-adhering type which will adhere only to other similarly coated surfaces;

(f) each closure flap being folded against a wall to which said flap is hinged thereby preventing engagement between coated surfaces of any two closure flaps when the container is collapsed.

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U.S. Cl. X.R.

93—57