United States Patent [19]

Smith

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[54] **CONTAINER AND PAPERBOARD BLANKS FOR FORMING SAME**

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[73] Assignee: **Phillips Petroleum Company,** Bartlesville, Okla.

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[21] Appl. No.: **421,507**

Related U.S. Application Data

[63] Continuation of Ser. No. 261,370, June 9, 1972, abandoned.

[52] **U.S. Cl.** ..... **229/5.5;** 229/4.5; 229/21; 229/23 A

[51] **Int. Cl.²** **B65D 3/14**

[58] **Field of Search** ..... 229/41 C, 5.6, 23 A, 21, 229/5.5, 93, 4.5

[56] **References Cited**

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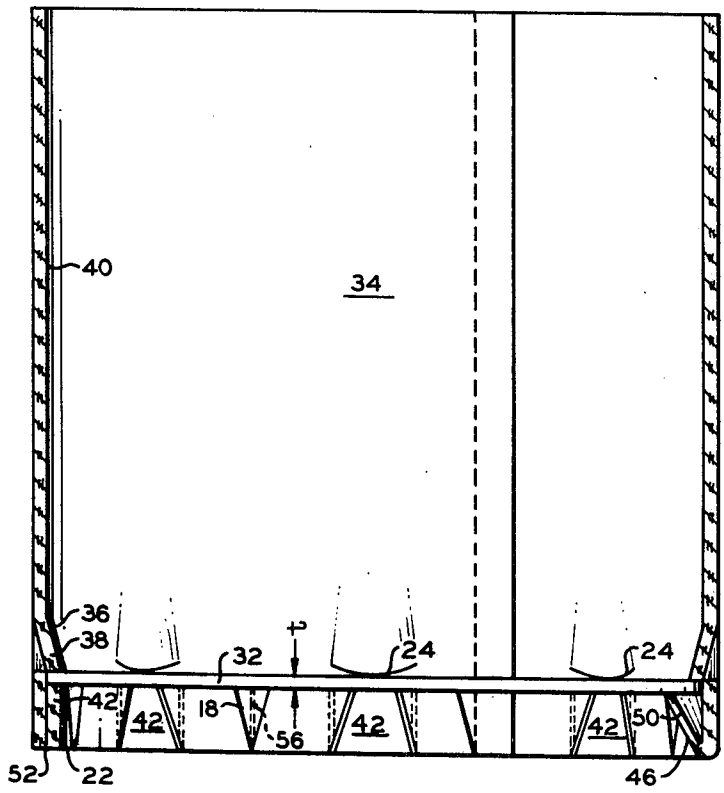
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Assistant Examiner—Bruce H. Bernstein

[57] **ABSTRACT**

A container and paperboard blanks for forming the container have a wall member having cuts formed therethrough with portions of the container adjacent the cuts extending upwardly to form ledges on an inner surface of the wall member. A bottom closure member is positioned in contact with the ledges and there maintained for closing one end of the container.

17 Claims, 5 Drawing Figures



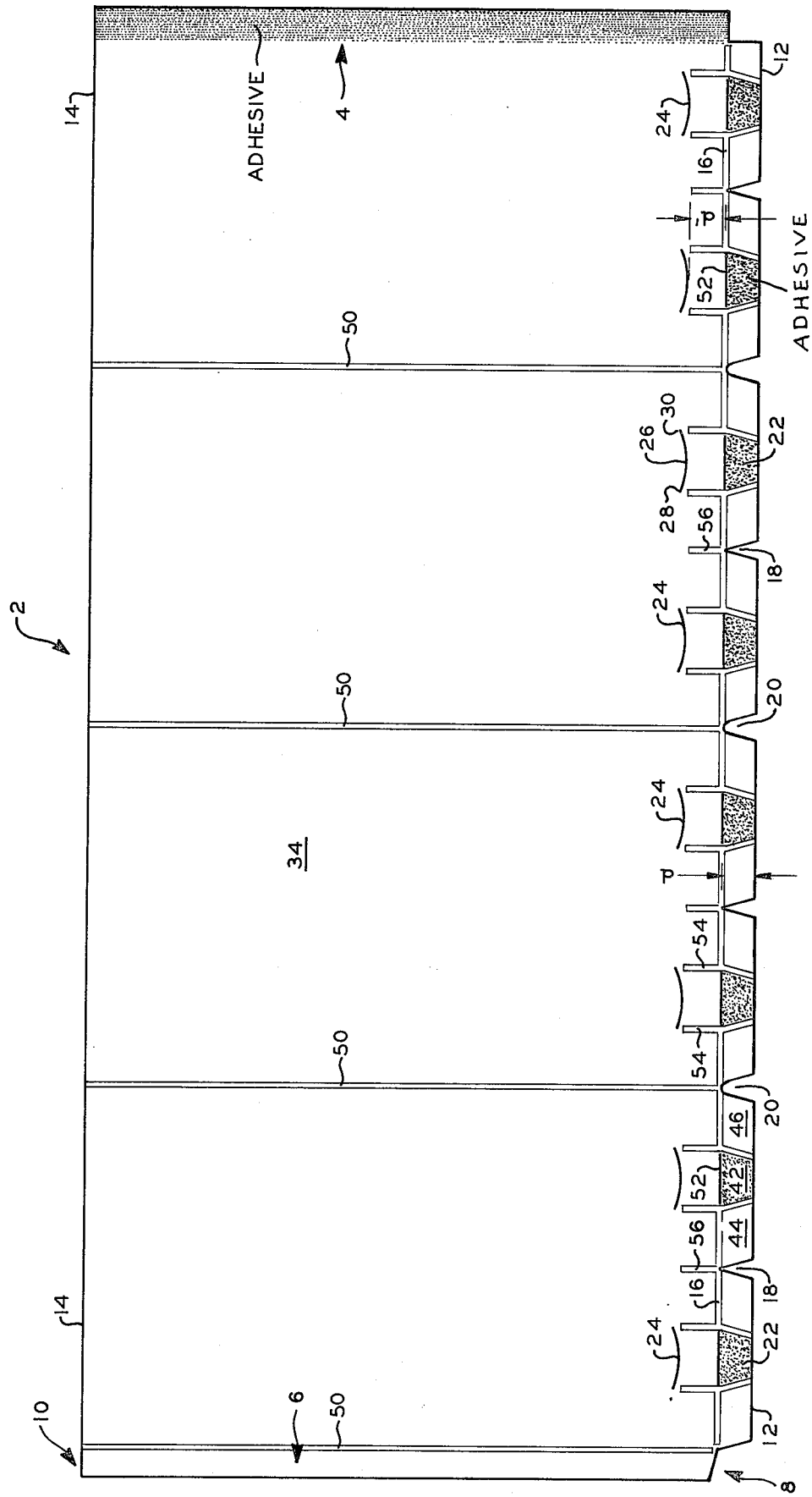

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FIG. 1

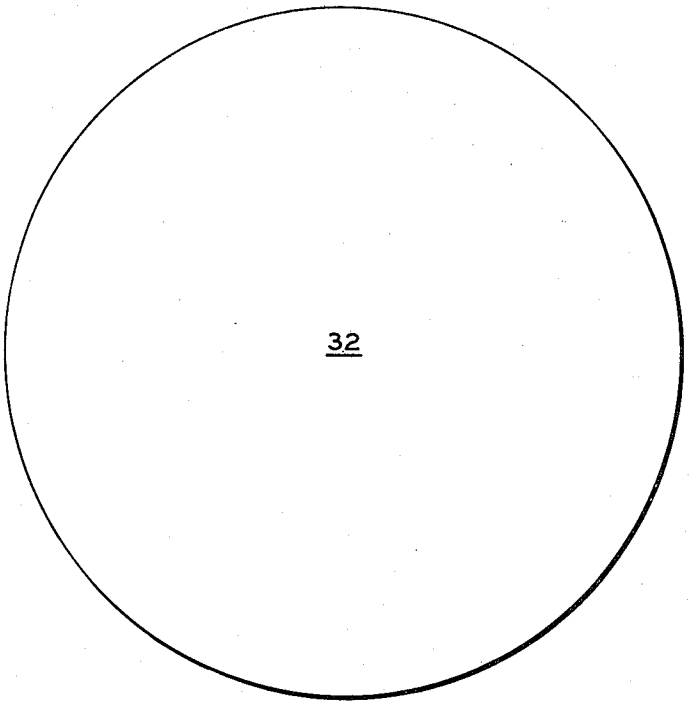


FIG. 2

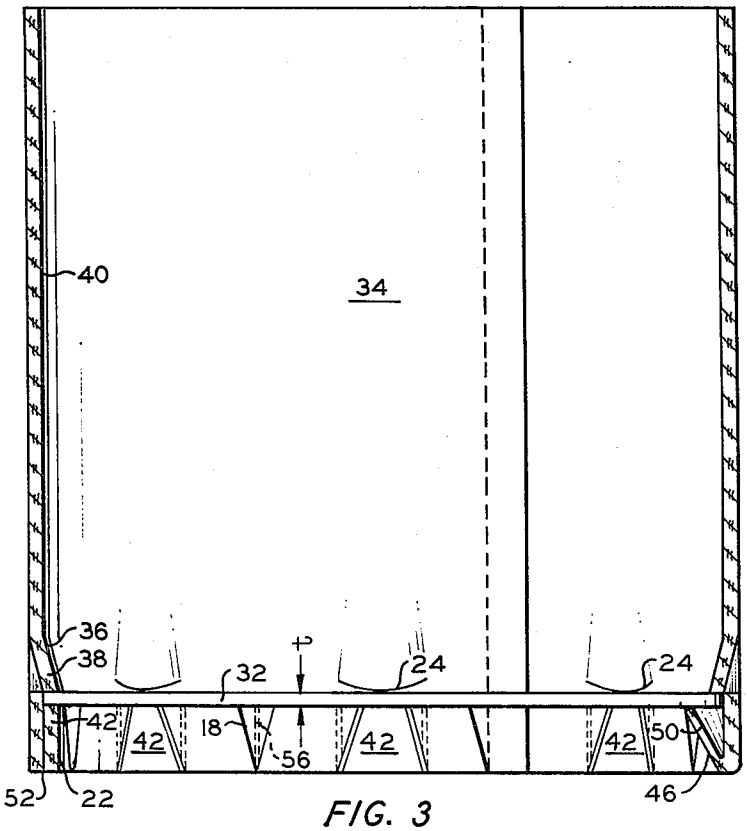


FIG. 3

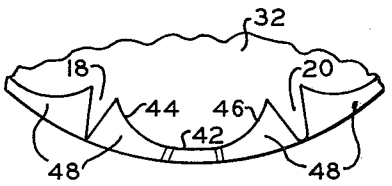


FIG. 4



FIG. 5

CONTAINER AND PAPERBOARD BLANKS FOR FORMING SAME

This is a continuation of application Serial No. 261,370, filed June 9, 1972, and now abandoned.

It is desirable to provide paperboard blanks and a container formed therefrom which is of high quality yet utilizes a low amount of material, labor, and equipment for the formation of said container.

This invention therefore resides in a container and paperboard blanks for forming said container which has a wall member having cuts formed therethrough with portions of the container adjacent the cuts extending inwardly to form ledges on an annular surface of the wall member. A wall closure member is positioned in contact with the ledges and there maintained for closing one end of the container.

Other aspects, objects, and advantages of the present invention will become apparent from a study of the disclosure, the appended claims, and the drawings.

The drawings are diagrammatic views of the paperboard blanks and container formed therefrom.

FIG. 1 shows a wall member,

FIG. 2 shows a bottom closure member,

FIG. 3 is a longitudinal sectional view of the container,

FIG. 4 is a partial sectional view of the container as viewed from the first or bottom end, and

FIG. 5 is a partial sectional view of the container as viewed from the second or upper end.

Referring to FIG. 1, a generally rectangular wall member 2 has first and second overlap end portions 4, 6, first and second edge portions 8, 10 and first and second edges 12, 14. The first edge portion 8 has a fold line 16 extending across the wall member 2 substantially parallel to the first edge 12 and is spaced a distance (*d*) therefrom. A plurality of spaced-apart notches, preferably first and second type notches 18, 20 each having a different configuration, extend from the first edge 12 to said fold line 16 thereby forming tabs 22 between said notches 18, 20. Each first type notch 18 is preferably separated from an adjacent first type notch 18 by an intervening second type notch 20. A plurality of spaced-apart cuts 24, preferably of arcuate configuration are formed on the first edge portion 8 spaced from the fold 16 a distance (*d'*) toward the second edge 14 of the wall member 2. Where arcuate cuts 24 are utilized, it is preferred that a middle portion 26 of each cut be closer to the fold line 16 than the ends 28, 30 of the cut 24. Further, it is preferred that the ends 28, 30 be spaced a common distance from the fold line 16. It is also preferred that the distance (*d*) from fold line 16 to the first edge 12 of the wall member 2 is substantially equal to the difference between the distance (*d'*) from the fold line 16 to the cuts 24 less the thickness (*t*) of the bottom closure member 32 as shown in FIGS. 2 and 3.

The bottom closure member 32 has a peripheral length substantially equal to the length of the first edge 12 of the wall member between said overlap end portions 4, 6.

In the formed condition of the container, as shown in FIG. 3, the overlap end portions 4, 6 are secured one to the other forming container walls 34 having an axis. The curvature of the wall member 2 causes portions 36 of the container walls 34 from the cuts 24 toward the second edge 14 to extend inwardly to a location spaced a distance from the axis less than the distance from the axis to the first edge 12 of said container walls 34, thereby forming a plurality of ledges 38 along an inner surface 40 of the container walls 34.

The bottom closure member 32 is then positioned within the container walls adjacent the first edge portion 8 and in contact with the ledges 38.

The tabs 22 are thereafter infolded into contact with the bottom closure member 32 for maintaining said bottom closure member 32 in contact with said ledges 38.

An adhesive material, such as a wax base hot melt adhesive, a latex type adhesive, contact cement, for example, is preferably located on only a portion of each tab 22, preferably a middle portion 42 of the tab 22, for maintaining each tab portion 42 in contact with associated edge portions of the container walls 34 for maintaining the tabs 22 in contact with the bottom closure member 32. If the paperboard for wall member 2 were polyethylene coated, middle portion 42 of the tab 22 could be maintained in contact with the associated edge portion of container wall 34 by heat sealing. Cuts 52 along score line 16 permit middle portion 42 to be folded closely against container wall 34 for maximum contact of the adhesive. Score lines 54 and 56 cause the container to assume a round configuration along the bottom portion of sidewall 34. It is further preferred that the other tab portions 44, 46 each be folded inwardly towards the axis for providing a plurality of tab ledges 48 for contacting and maintaining the bottom closure member relative to the closure walls 34.

FIG. 5 shows a ledge 38 as viewed from the upper or second edge portion 10 of the container and FIG. 4 shows a tab ledge 48 as viewed from the bottom or first edge portion 8 of the container.

FIG. 1 shows a particularly useful container blank wherein there are eight tabs 22 and a score line 50 extends across the width of the blank from each second type notch 20. These score lines 50 cause the container to be other than cylindrical whereby the bottom closure member 32 contacts the ledges 38 more easily owing to the fact that the score lines 50 urge the walls to lead across the bottom closure member at the cuts 24.

Other modifications and alterations of this invention will become apparent to those skilled in the art from the foregoing discussion and accompanying drawings, and it should be understood that this invention is not to be unduly limited thereto.

I claim:

1. A packaging container comprising:

a wall member having first and second overlapping end portions secured one to the other for forming a continuously curved container wall having a central axis, first and second edges, and first and second edge portions, said container wall having a plurality of spaced-apart cuts formed in said first edge portion of said container wall with a middle portion of each said cut being spaced a uniform distance from said first edge of said container wall, each said cut being of arcuate configuration with the ends of each said cut being located closer to said second edge of said container wall than said middle portion of each said cut, portions of the container wall adjacent said cuts toward said second edge of said container extending inwardly to a location spaced from said axis a distance less than the distance from said axis to the remainder of said container wall,

said portions thereby forming a plurality of ledges along an inner surface of said container wall;

a bottom closure member having a continuously curved perimeter and being positioned at said first edge portion of said container wall in contact with said ledges for closing one end of said container, said perimeter of said bottom closure member being of substantially the same length as said first edge of said container wall; and

means for maintaining said bottom closure member in contact with said ledges.

2. A container, as set forth in claim **1,** wherein said cuts are of an arcuate configuration with the ends of each cut being located nearer than the middle portion of each cut to the second edge of the container.

3. A container, as set forth in claim **1,** wherein said means comprises at least a portion of the first edge portion of the wall member being folded into contact with the bottom closure member.

4. A container, as set forth in claim **1,** wherein a plurality of notches are formed at spaced-apart locations along the first edge portion of the wall member thereby forming a plurality of tabs, said tabs being infolded toward and into contact with the bottom closure member.

5. A container, as set forth in claim **4,** wherein said notches comprise first notches and second notches of different configuration, adjacent first notches being separated by intervening second notches.

6. A container, as set forth in claim **4,** including an adhesive located on only a portion of each said tab thereby maintaining said tab portion in contact with associated edge portions of the container walls for maintaining the tabs in contact with the bottom closure member.

7. A container, as set forth in claim **6,** wherein the other portions of the tab are folded inwardly toward the axis for providing a plurality of tab ledges for contacting and maintaining the bottom closure member relative to the closure walls.

8. A container, as set forth in claim **6,** wherein the portion of the tabs having the adhesive thereon is the middle portion of the tabs as measured around the first edge of the container walls.

9. A paperboard blank for forming a continuously curved sidewall of a container, said blank comprising a generally rectangular wall member having first and second overlap end portions, first and second edge portions, and first and second edges, the length of said first edge between said overlap end portions being substantially equal to the peripheral length of a bottom closure member which is to be employed to form the bottom of said container, said first edge portion having a fold line extending across said wall member substantially parallel to said first edge and spaced a first distance therefrom, a plurality of spaced-apart notches extending from said first edge to said fold line thereby forming tabs between said notches, and a plurality of spaced-apart cuts formed on said first edge portion with a middle portion of each said cut being spaced from said fold line a second distance toward said second edge of said wall member, said spaced-apart cuts each being of arcuate configuration with said middle portion of each cut being closer to said fold line than the ends of the respective cut, each said tab being provided with means for sealing a middle portion thereof to another surface of said wall member, said first distance being at least substantially equal to the difference between said second distance and the thickness of said bottom closure member which is to be employed to form the bottom of said container.

10. A paperboard blank, as set forth in claim **9,** wherein said notches comprise first notches and second notches of different configuration with adjacent first notches being separated by intervening second notches.

11. A paperboard blank, as set forth in claim **9,** wherein the distance from the fold line to the first edge of the wall member is substantially equal to the difference between the distance from the fold line to the portions of the cuts nearest said fold line less the thickness of the bottom closure member to be used in conjunction with said blank to form a container.

12. A paperboard blank, as set forth in claim **9,** wherein said means for sealing comprises an adhesive coating on said middle portion of each said tab.

13. A paperboard blank, as set forth in claim **9,** wherein said means for sealing comprises a heat sealable thermoplastic resin coating on said middle portion of each said tab.

14. A paperboard blank, as set forth in claim **9,** wherein each end of each said cut is spaced a common distance from said fold line.

15. A paperboard blank, as set forth in claim **14,** wherein said cuts are of arcuate configuration with the middle portion of each cut being closer than the ends of said cut to said fold line.

16. Paperboard blanks for forming a continuously curved sidewall of a container, comprising:

a generally rectangular wall member having first and second overlap end portions, first and second edge portions, and first and second edges, said first edge portion having a fold line extending across said wall member substantially parallel to said first edge and spaced a first distance therefrom, a plurality of spaced-apart notches extending from said first edge to said fold line thereby forming tabs between said notches, and a plurality of spaced-apart cuts formed on said first edge portion with a middle portion of each said cut being spaced from said fold line a second distance toward said second edge of said wall member, said spaced-apart cuts each being of arcuate configuration with said middle portion of each cut being closer to said fold line than the ends of the respective cut, said first distance being at least substantially equal to the difference between said second distance and the thickness of a bottom closure member which is to be employed to form the bottom of said container; and

a bottom closure member having a peripheral length substantially equal to the length of said first edge of said wall member between said overlap end portions.

17. Paperboard blanks in accordance with claim **16** wherein said bottom closure member is circular with said peripheral length forming a circumference of the circular closure member.

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