Nov. 21, 1961 S. R. JOHNSON 3,009,626

COMPOSITE SIDE OPENING BISCUIT CONTAINER AND BLANK THEREFOR

Filed Feb. 20, 1958 3 Sheets-Sheet 1

Fig. 1.

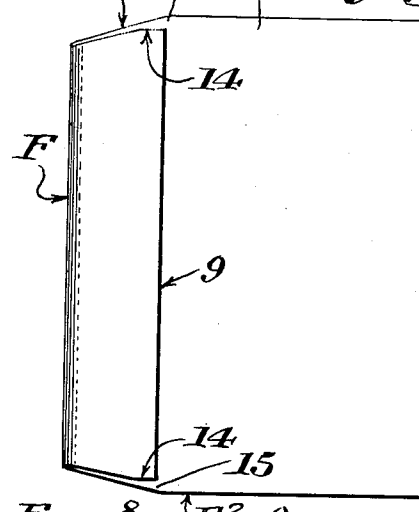


Fig. 2.

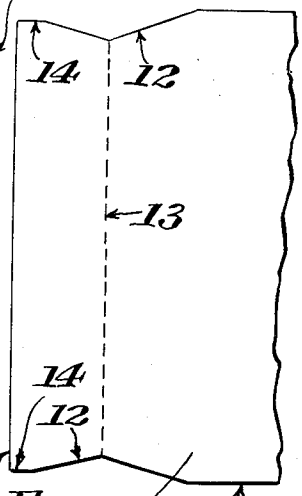


Fig. 3.

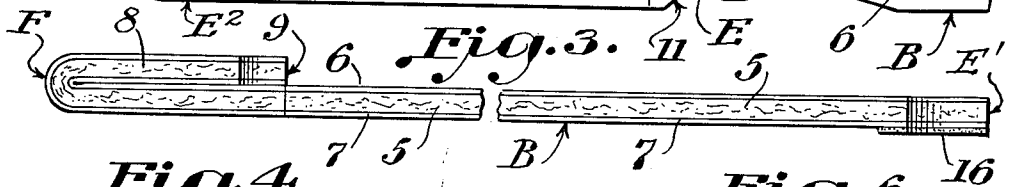


Fig. 4.

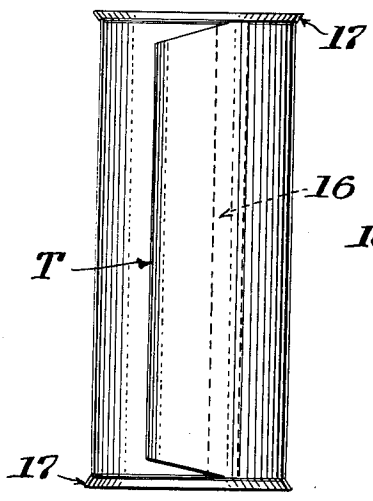


Fig. 7.

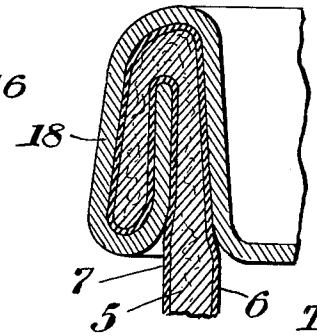


Fig. 6.

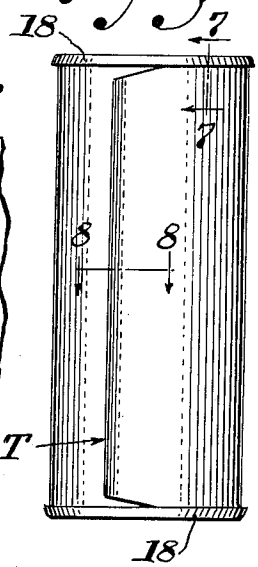
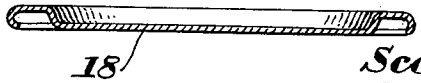


Fig. 5.



INVENTOR.
Scott R. Johnson,
BY
Mason, Porter, Miller & Stewart
ATTYS.

Nov. 21, 1961 S. R. JOHNSON 3,009,626

COMPOSITE SIDE OPENING BISCUIT CONTAINER AND BLANK THEREFOR

Filed Feb. 20, 1958 3 Sheets-Sheet 2

Fig. 8.

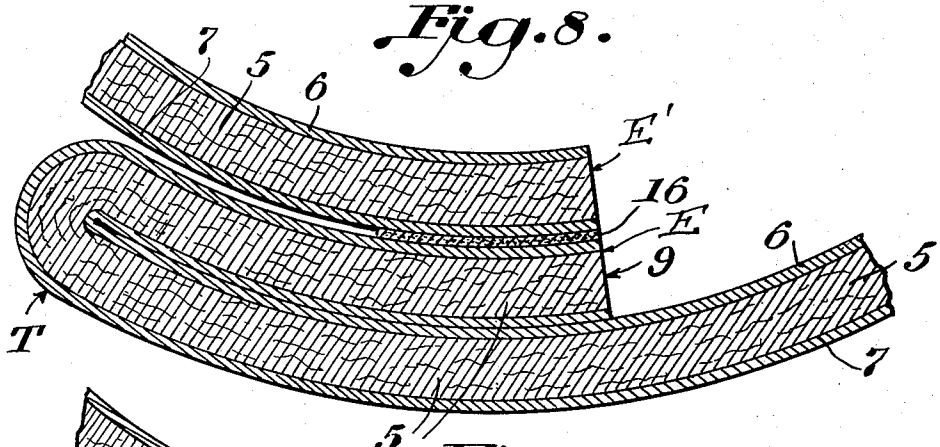


Fig. 9.

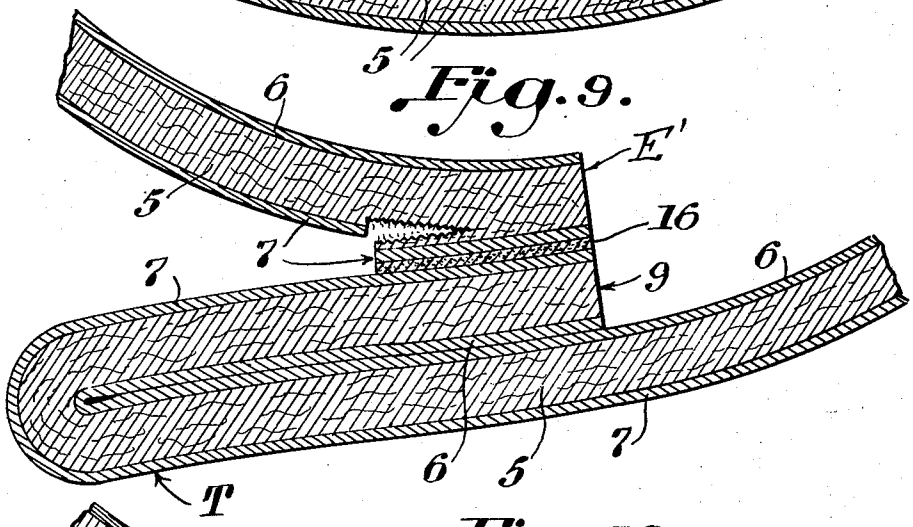
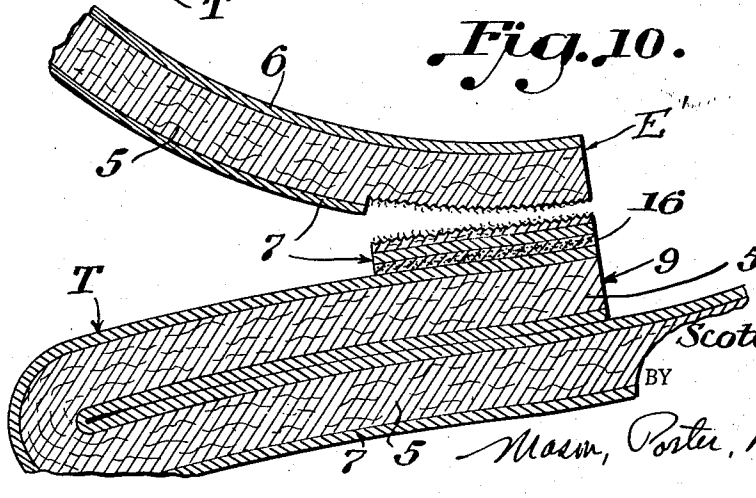


Fig. 10.



INVENTOR.
Scott R. Johnson,
BY
Mason, Porter, Miller & Stewart
ATTYS.

Nov. 21, 1961 S. R. JOHNSON 3,009,626

COMPOSITE SIDE OPENING BISCUIT CONTAINER AND BLANK THEREFOR

Filed Feb. 20, 1958 3 Sheets-Sheet 3

Fig. 11.

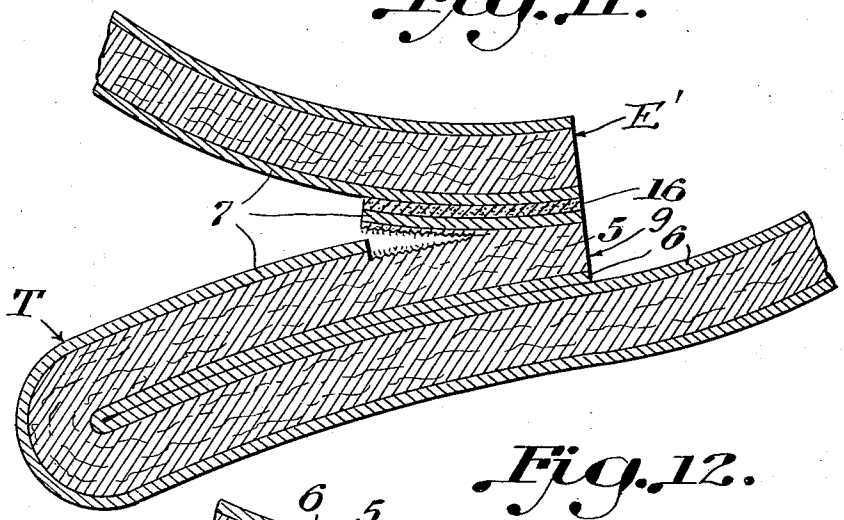


Fig. 12.

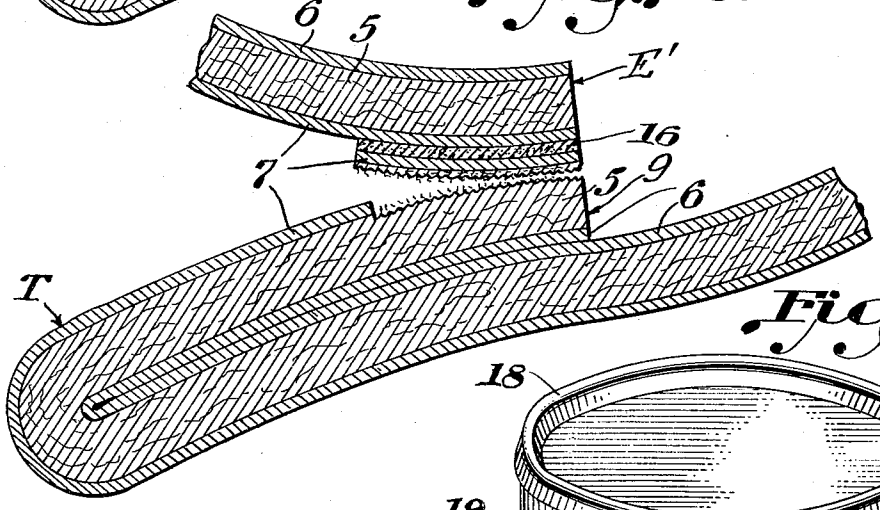
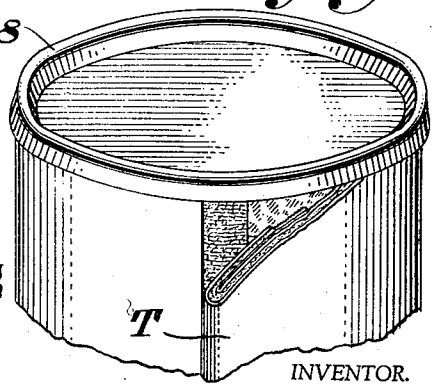


Fig. 13.



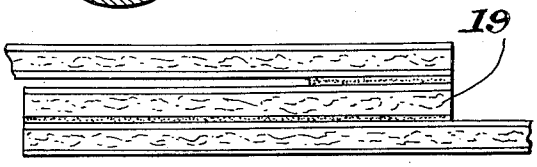


Fig. 14.

INVENTOR.
Scott R. Johnson,
BY
Mason, Porter, Miller & Stewart
ATTYS.

United States Patent Office 3,009,626 Patented Nov. 21, 1961

3,009,626

COMPOSITE SIDE OPENING BISCUIT CONTAINER AND BLANK THEREFOR

Scott R. Johnson, River Forest, Ill., assignor to Continental Can Company, Inc., New York, N.Y., a corporation of New York

Filed Feb. 20, 1958, Ser. No. 716,460
8 Claims. (Cl. 229—51)

The invention relates to a composite container which, while subject to more general uses, is particularly adapted for the packaging of unbaked biscuits, the same being of the general type in which a flexible body wall and sheet metal end closures are seamed together and in which the body wall has a lapped and adhesively bonded side seam and a free flap or pull tab extended beyond the bonded portion of the lapped seam so that it can be grasped and torn away to break open the side seam and cause a circumferential tearing of the body wall away from the end closures.

Some difficulty has been experienced in the use of such containers in that the manipulation of the extended flap or pull tab does not bring about a complete tearing away of the outer or overlapped seam portion and effect a full and clean opening of the container. On the contrary, when the extended flap is pulled to separate the overlapped end of the body wall forming blank from the underlapped blank end, an inner web-like portion of the overlapped end will remain cemented to said underlapped end and split away from said overlapped end, and this splitting or pulling apart of the body wall stock will continue circumferentially of the body wall with continued pull on the flap, leaving the biscuits or other fill in the container at least partially covered by this split-off web instead of fully exposed, and requiring that said web be cut or torn out of the way before the packaged product can be removed from the container. It is the purpose of the present invention to provide a novel container structure wherein provision is made for overcoming this difficulty in a very simple yet effective manner.

An object of the invention is to provide a container structure of the character stated wherein the lapped side seam is adhesively bonded and the outer or overlapped end of the body wall forming blank presents an extra thickness forming a part of the grip tab extension and which is adhered to the inner or underlapped end of the body blank in the bonding of the side seam with an edge extremity thereof directed toward the interior of the container as is the edge extremity of said inner end, thereby assuring that any tearing or splitting away of body wall material incidental to a tearing open of the side seam will be limited to the adhesively bonded area and necessarily will be terminated at the inwardly directed edge extremities of said inner end and said extra thickness.

Another object of the invention is to provide a container structure of the character stated wherein the extra thickness at the outer or overlapped end of the body wall forming blank is provided by inwardly folding the outer end extremity upon itself, thereby providing a gripping fold at the outer terminus of the grip tab extension.

Another object of the invention is to provide a novel blank from which a container structure of the character stated can be formed, said blank having parallel side edges, one end portion to form the overlap of the seam and a second end portion to form the underlap of the seam, said one end portion having an extra thickness at its inner face presenting an edge extremity paralleling the end extremity of said one end and directed toward the central portion of the blank, and an adhesive stripe disposed to provide a side seam bond between said extra thickness and the outer face of said second end portion when the blank is shaped into a body forming tube with said end portions lapped to provide a side seam wherein the edge extremities of said second end portion and said extra thickness are in approximate edge alignment and directed toward the interior of the tube.

Another object of the invention is to provide a novel blank of the character stated wherein the adhesive stripe is applied on the outer face margin paralleling and extending to the edge extremity of the other or inner lap end portion of the blank.

A further object of the invention is to provide a novel blank of the character stated wherein the extra thickness at said one end or outer lap portion is provided by inwardly folding said end portion upon itself, thereby providing a gripping fold for an outer edge terminus at said outer lap portion extremity.

A still further object of the invention is to provide a novel blank of the character stated wherein the double thickness provided by the fold at the outer edge terminus of the outer lap portion is angle cut at each side of the blank and the over folded portion terminates at each side short of the side edge of the blank portion over which it is folded, thereby to avoid presentation of double thicknesses of blank stock where the side edges of the blank are to be incorporated in end closure securing seam structures in a completed container.

With the above and other objects in view that will hereinafter appear, the nature of the invention will be more clearly understood by reference to the following detailed description, the appended claims and the several views illustrated in the accompanying drawings.

In the drawings:

FIGURE 1 is an inner face view illustrating a body blank from which the body wall of a container structure embodying the invention can be formed.

FIGURE 2 is a fragmentary inner face view of the outer lap end portion of the blank before the folding over of the end extremity.

FIGURE 3 is an enlarged edge view of the blank of FIGURE 1, parts being broken away.

FIGURE 4 is a side elevation illustrating a container structure body formed from the blank of FIGURES 1 and 2 and having its ends flanged preparatory to the seaming on of the end closures.

FIGURE 5 is a sectional view of one of the end closures.

FIGURE 6 is a side elevation illustrating a completed container structure.

FIGURE 7 is an enlarged sectional view through one of the end closure seams on the line 7—7 on FIGURE 6.

FIGURE 8 is an enlarged cross sectional view, on the line 8—8 on FIGURE 6.

FIGURE 9 is a view similar to FIGURE 8 and showing the grip tab extension in the process of being torn away in an opening of the side seam, body material in this instance being shown as tearing away from the outer surface of the inner lap.

FIGURE 10 is a view similar to FIGURE 9 and showing the tearing away completed.

FIGURE 11 is a view similar to FIGURE 8 and showing the grip tab extension in the process of being torn away in an opening of the side seam, body material in this instance being shown as tearing away from the inner surface of the inwardly folded thickness of the outer lap.

FIGURE 12 is a view similar to FIGURE 11 and showing the tearing away completed.

FIGURE 13 is a fragmentary perspective view showing the top portion of the container structure in the opening stage illustrated in FIGURE 12.

FIGURE 14 is an enlarged fragmentary cross sectional view showing a modified arrangement in which the double thickness at the outer lap end portion of the blank is provided by adhering a thickness to the blank end portion rather than folding over said end portion.

In the practicing of the invention, it is preferred that the container body be formed from a blank such as is shown in FIGURES 1, 2 and 3 and generally designated B. This blank comprises an intermediate paper board body or ply **5** and two aluminum foil facings **6** and **7** adhered to the opposite faces thereof as clearly shown in FIGURE 3. The end portion E of the blank is to later form the outer lap or overlap in the container body side seam and the end portion E′ is to form the inner lap or underlap in said side seam. It will be apparent by reference to FIGURES 1 and 3 that the outer lap portion is folded upon itself at F to form an extra thickness **8** the infolded edge extremity **9** of which is directed toward the center portion of the blank. The blank includes longitudinal side edges E_2—E_2 and the double thickness outer lap end portion is angularly cut off at the sides at **10**, the other or inner lap end portion being angularly cut off at the sides as at **11**, these angular cut offs being for the purpose of avoiding the presentation of double thicknesses of blank stocks where the side edges of the blank are to be incorporated in end closure securing seam structures in a completed container.

The angle cuts **11** at the outer lap end portion E of the blank are provided by forming shallow V-shaped notches **12** at opposite side edges of the blank as clearly illustrated in FIGURE 2. It will be noted that the apices of the V-shaped notches are cross aligned and mark a fold line as indicated by the dotted line **13** on FIGURE 2. It will also be noted that the over-fold thickness at the outer lap end of the blank is narrowed by short cutting at **14**, thereby to provide single thicknesses at **15** in order to avoid presentation of impractical bulk where the side edges of the blank are to be incorporated in end closure securing seam structure as before stated.

An adhesive stripe **16** is provided on the face margin of the blank along its end edge extremity at the inner lap end portion E′, said stripe being disposed to be bonded to the inwardly turned fold thickness **8** when the blank is shaped into a body forming tube with the end portions in lap seam engaging relation in the manner illustrated in FIGURE 8. While any adhesive which will provide a satisfactory bond for the intended purpose can be employed, an adhesive which has been found satisfactory is the commercially known VMCH vinyl resin, a thermo plastic material, of the class of maleic vinyl chloride, acetate tripolymer.

In any approved manner, as by use of a body making machine such as is used in the making of metal can bodies, the blanks constructed as previously described are shaped into container body form and the underlap and overlap ends E′ and E are brought together as in FIGURE 8 to form the side seam, the seam being bonded along the whole area of the adhesive stripe **16**. Also, the formed body may be flanged at its ends as at **17**. The formation of the side seam, in the manner shown, leaves the non-adhered portion of the outer lap extending as a flange grip tab T which will be readily grasped and peeled back or torn away in the opening of the side seam.

The formed body may be flanged at its ends as shown at **17** in FIGURE 4, in readiness for seam securing on of one of the metal end closures shown at **18** in FIGURE 5. One of the end closures is, of course, seamed onto the body prior to filling of the container, and the other is seamed on after filling, in the manner well known in the art. A closure seam structure is illustrated in detail in FIGURE 7 by way of example.

It will be apparent by reference to FIGURES 7 through 13 that the free grip flap or tab extension T extends well beyond the side seam bond along the adhesive stripe **16**. When it is desired to open the container one holds the same in one hand and firmly grasps the free tab extension T in the other hand. By now exerting an outward pull on the firmly grasped tab T, the same can be peeled back or torn away from the adhesive bond along the stripe **10**, the progressive tearing away being shown in FIGURES 9 through 12.

In FIGURE 14, there is illustrated a modified arrangement in which the double thickness of body stock at the outer lap end portion of the blank is provided by adhering a thickness **19** of body stock to the blank end portion rather than by folding over said end portion in the manner previously described.

It will be apparent that whether the double thickness is provided by folding over the blank end as in the previously described figures of the drawing or by attachment of a separate thickness as in FIGURE 14, the lapped seam will include edge extremities of the inner and outer laps arranged in approximate edge alignment as in FIGURE 8 and directed toward the interior of the tubular body of the container. Thus the double thickness provided at the overlap or outer lap end portion of the blank not only provides a secure and relatively rigid grip hold to be grasped by a user attempting to open the container, but it also assures against webbing resulting from tearing apart of plies or layers of the body stock during the tearing open of the side seam.

FIGURE 9 shows the grip tab T in the process of being torn away in an opening of the side seam wherein body material is tending to tear away from the outer surface of the inner lap, the adhesive stripe **16** and a part of the outer facing of the body stock being torn away with the outer lap. Obviously, no webbing can result from such a tearing because the tearing can only continue through the inwardly directed edge extremity of the inner lap. FIGURE 11 shows the grip tab T in the process of being torn away in an opening of the side seam wherein body material is tending to tear away from the inner surface of the outer lap, the inner surface of the inwardly folded thickness of the outer lap. In this opening, a portion of facing on the inwardly folded thickness remains attached to the adhesive stripe **16** and is torn away from the outer lap portion. Obviously, there can be no problem of webbing here because the tearing away of body stock or facing portion can continue only through the inwardly directed edge extremity **9** of the outer lap thickness **8** and there can be no splitting away of the main body portion of the body such as would result in webbing.

From the foregoing, it will be apparent that applicant has provided a novel structure in which all body stock splitting and webbing is avoided during the opening of the improved container structure.

While a preferred embodiment of the invention is disclosed herein, it is to be understood that variations in the form and arrangement of parts and of the adhesive applications may be employed without departing from the scope of the invention as defined in the appended claims.

I claim:

1. A composite container structure of the character described having a flexible body wall and relatively rigid end closures seam secured thereon, said wall comprising a blank shaped in tubular form with its ends overlapped in a lapped side seam including an inner lap and an outer lap, one said lap having a stripe of adhesive on the face thereof opposed to the other lap and adhesively bonding the seam from end closure to end closure, said outer lap extending circumferentially beyond the adhesive bond in the form of a free grip tab and having an extra inwardly presented thickness to which the inner lap is bonded and which forms a part of said tab and has its inwardly directed terminal edge disposed approximately in edge alignment with the inwardly directed terminal edge of the inner lap, thereby assuring that any tearing or splitting away of body wall material incidental to a tearing open of the side seam will be limited to the adhesively bonded

area and necessarily will be terminated at the inwardly directed edge termini of said extra thickness and said inner lap, opposed surfaces of said inner lap and said outer lap being smooth and uninterrupted and said adhesive bond being of greater strength than the adjacent portions of said inner lap and said outer lap, whereby opening of the side seam will result in the tearing and splitting away of the body wall material.

2. A composite container structure of the character described having a flexible body wall and relatively rigid end closures seam secured thereon, said wall comprising a blank shaped in tubular form with its ends overlapped in a lapped side seam including an inner lap and an outer lap, one said lap having a stripe of adhesive on the face thereof opposed to the other lap and adhesively bonding the seam from end closure to end closure, said outer lap extending circumferentially beyond the adhesive bond in the form of a free grip tab and having an extra inwardly presented thickness to which the inner lap is bonded and which forms a part of said tab and has its inwardly directed terminal edge disposed approximately in edge alignment with the inwardly directed terminal edge of the inner lap, thereby assuring that any tearing or splitting away of body wall material incidental to a tearing open of the side seam will be limited to the adhesively bonded area and necessarily will be terminated at the inwardly directed edge termini of said extra thickness and said inner lap, said grip tab extension being angularly cut at the end portions directed toward the end closures, and end portions of the extra tab thickness being additionally cut away to avoid presentation of double thicknesses in the closure seams.

3. A composite container structure of the character described having a flexible body wall and relatively rigid end closures seam secured thereon, said wall comprising a blank shaped in tubular form with its ends overlapped in a lapped side seam including an inner lap and an outer lap, one said lap having a stripe of adhesive on the face thereof opposed to the other lap and adhesively bonding the seam from end closure to end closure, said outer lap extending circumferentially beyond the adhesive bond in the form of a free grip tab and having an extra inwardly presented thickness to which the inner lap is bonded and which forms a part of said tab and has its inwardly directed terminal edge disposed approximately in edge alignment with the inwardly directed terminal edge of the inner lap, thereby assuring that any tearing or splitting away of body wall material incidental to a tearing open of the side seam will be limited to the adhesively bonded area and necessarily will be terminated at the inwardly directed edge termini of said extra thickness and said inner lap, said extra thickness on the outer lap and grip tab being provided by an inward folding of the blank end upon itself, thereby to provide a gripping fold at the outer terminus of the grip tab extension wherein the grip tab extension is angularly cut at the end portions directed toward the end closures, and end portions of the extra tab thickness being additionally cut away to avoid presentation of double thicknesses in the closure seams.

4. A composite container structure of the character described having a flexible body wall and relatively rigid end closures seam secured thereon, said wall comprising a blank shaped in tubular form with its ends overlapped in a lapped side seam including an inner lap and an outer lap, said inner lap having a stripe of adhesive on the face thereof opposed to the outer lap and adhesively bonding the seam from end closure to end closure, said outer lap extending circumferentially beyond the adhesive bond in the form of a free grip tab and being folded back upon itself inwardly to present an extra thickness to which the inner lap is bonded with the terminal edges of the extra thickness and said inner lap projecting in like direction toward the interior of the container body and approximately in edge alignment, thereby assuring that any tearing or splitting away of body wall material incidental to a tearing open of the side seam will be limited to the adhesively bonded area and necessarily will be terminated at the inwardly directed edge termini of said extra thickness and said inner lap, opposed surfaces of said inner lap and said outer lap being smooth and uninterrupted and said adhesive bond being of a greater strength than the adjacent portions of said inner lap and said outer lap, whereby opening of the side seam will result in the tearing and splitting away of the body wall material.

5. A flexible blank from which to form a container body wall having a lapped side seam, said blank having parallel side edges, one end portion to form the overlapping outer lap of the seam and a second end portion to form the underlapping inner lap of the seam, said one end portion having cross aligned shallow V-shaped notches in its side edges with the apices of the V's marking a fold line defining with the end edge of said one end portion a fold thickness extension adapted to be folded over onto said one end portion at the fold line to provide a gripping fold for an outer edge terminus at the outerlap extremity, said fold thickness extension being narrower than the full width of the blank so that when it is folded over onto said one end portion it will leave single thickness body wall portions widthwise thereof and avoid presentation of double thicknesses where the side edges of the blank are to be incorporated in end closure securing seam structures, and there being included and adhesive stripe on the face margin of the blank along its end edge extremity at said second end portion and disposed to be bonded to said fold thickness when the blank is shaped into a body forming tube with the end portions in lap seam engaging relation.

6. A composite container structure of the character described having a flexible body wall and relatively rigid end closures secured thereon, said body wall comprising a blank formed of fibrous stock and having impervious facing layers, said blank being shaped in tubular form with its ends overlapped in a lapped side seam including an inner lap and an outer lap, said inner lap having a stripe of adhesive on the face thereof opposed to said outer lap and adhesively bonding said seam from end closure to end closure, said adhesive bond being of a greater strength than adjacent portions of said inner lap and said outer lap and said adjacent portions having smooth uninterrupted surfaces, said outer lap extending circumferentially beyond said adhesive bond in the form of a free grip tab and being folded back upon itself inwardly to present an extra thickness to which said inner lap is bonded with the terminal edges of said extra thickness and said inner lap projecting in like direction toward the interior of the container body and approximately in edge alignment, thereby assuring that any tearing and splitting away of body wall material incidental to a tearing open of the side seam will be limited to the adhesively bonded area and necessarily will be terminated at the inwardly directed edge termini of said extra thickness and said inner lap.

7. The container structure of claim 6 wherein said grip tab is angularly cut at the end portions thereof directed towards said end closures, and end portions of said extra tab thickness are additionally cut away to avoid presentation of a double thickness in the closure seams.

8. A generally rectangular flexible blank from which to form a cylindrical container body wall having a lapped side seam, said blank having parallel side edges receivable in container ends, one end portion to form the overlapping outer lap of the seam and a second end portion to form the underlapping inner lap of the seam, said one end portion having an extra thickness at its inner face presenting an edge extremity paralleling the end extremity of said one end and directed toward the central portion of the blank, and an adhesive stripe disposed to provide a side seam bond between said extra thickness and the outer face of said second end portion when the blank is shaped into a body forming tube with said end

portions lapped to provide a side seam wherein the edge extremities of said second end portion and said extra thickness are in approximate edge alignment and directed toward the interior of the tube, said end portions having smooth uninterrupted face surfaces, the extra thickness on the outer lap forming end portion being provided by inwardly folding said end portion upon itself, thereby to provide a gripping fold for an outer edge terminus at the outer lap extremity, and the double thickness being provided by the fold is angle cut at each side of the blank and the overfolded thickness terminates at each side short of the side edge of the blank portion over which it is folded, thereby to avoid presentation of double thicknesses of blank stock where the side edges of the blank are to be incorporated in end closure securing

seam structures in a completed container, said overfolded thickness and said double thickness angle cut both tapering towards the adjacent end of the blank and at different angles, wherein the end of the free edge of the overfolded thickness terminates short of the side edges of the blank.

References Cited in the file of this patent

UNITED STATES PATENTS

2,099,166	Inman et al.	Nov. 16, 1937
2,509,616	Rafoth et al.	May 30, 1950
2,772,827	Rafoth et al.	Dec. 4, 1956
2,814,428	Magill	Nov. 26, 1957