Sept. 3, 1963 R. J. ZOELLER ETAL 3,102,818

DOUGH PACKAGE

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FIG. 1

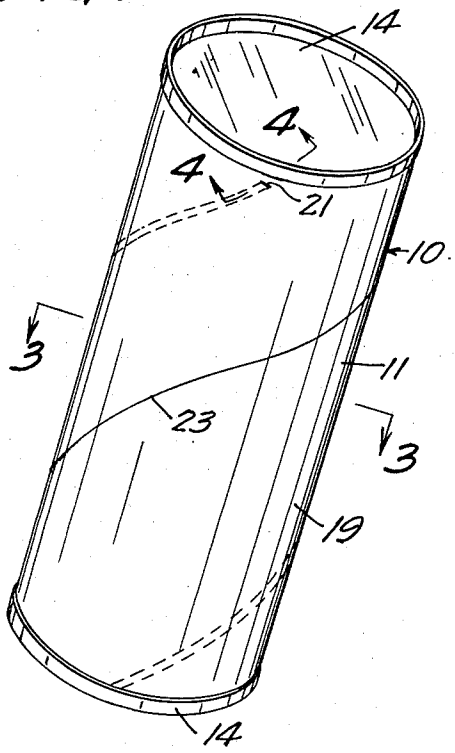


FIG. 2

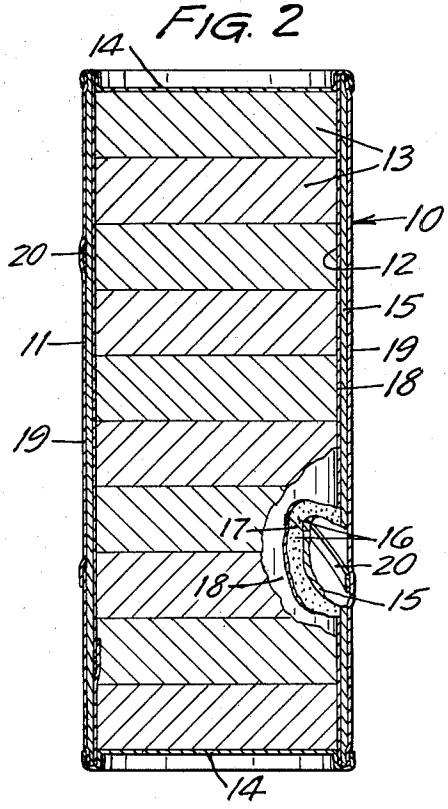


FIG. 3

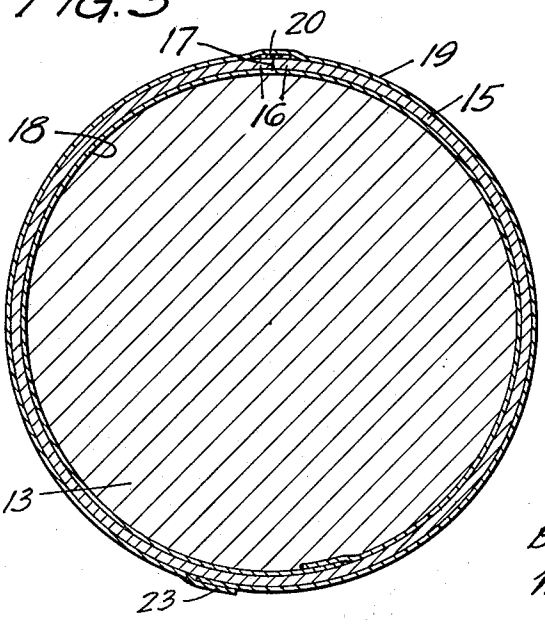
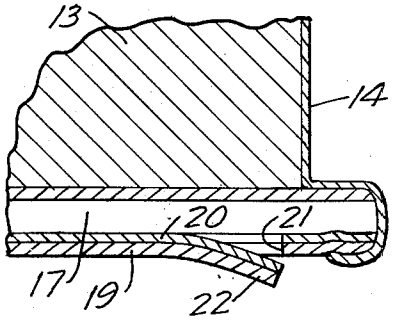


FIG. 4



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FIG. 5

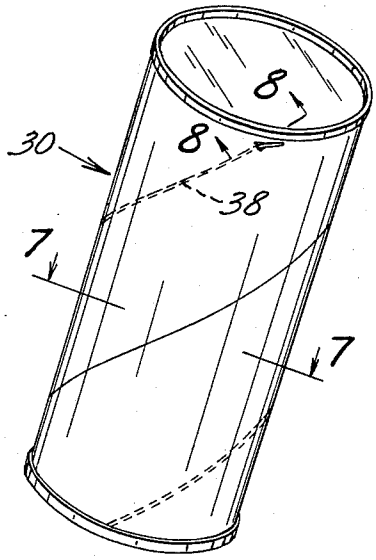


FIG. 6

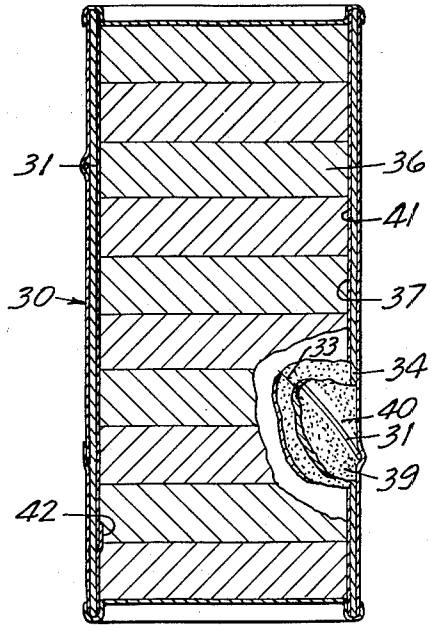


FIG. 7

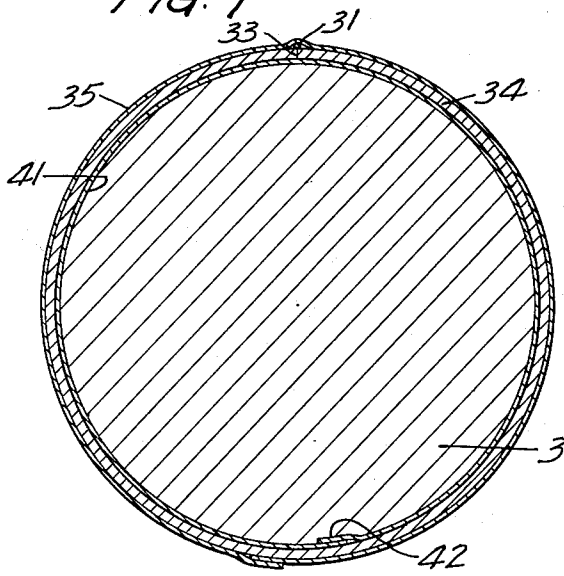
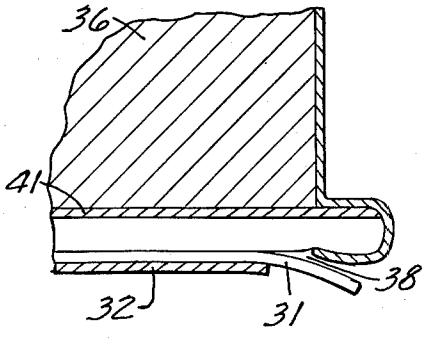


FIG. 8



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FIG. 9

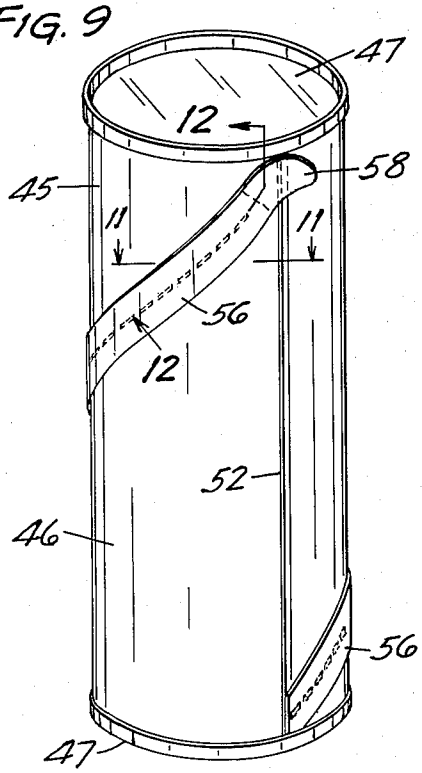


FIG. 10

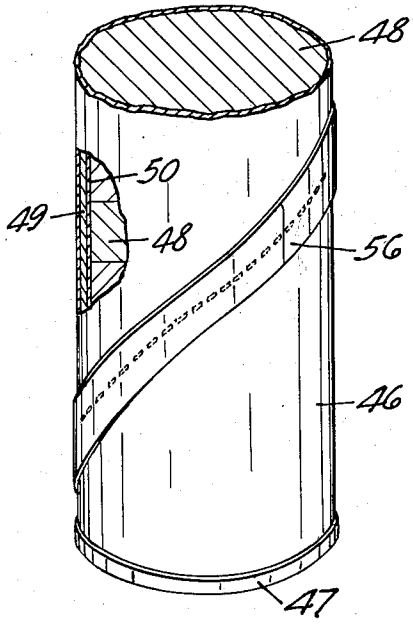


FIG. 12

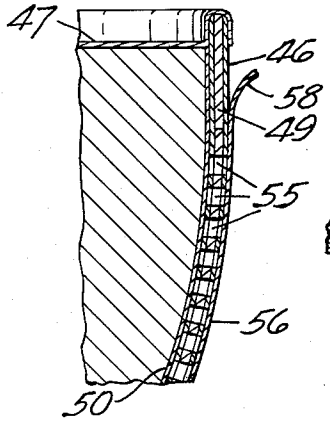
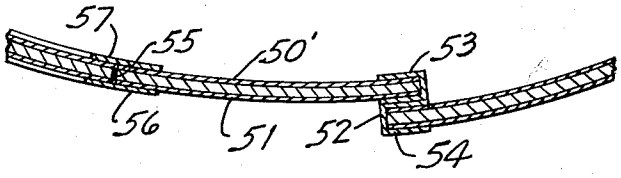


FIG. 11



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FIG. 13

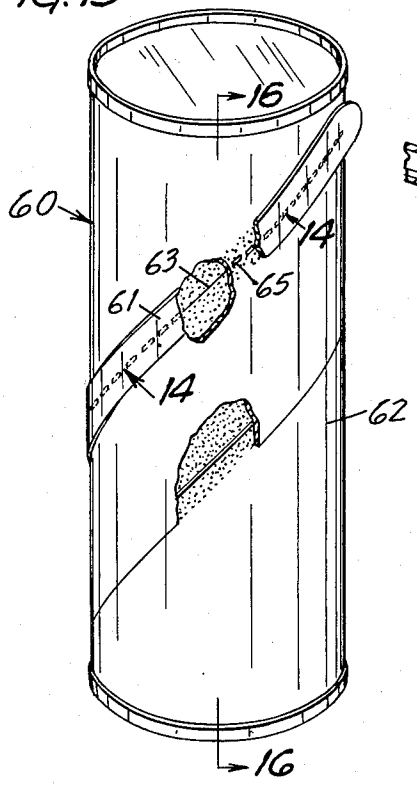


FIG. 14

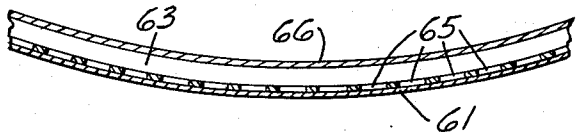


FIG. 16

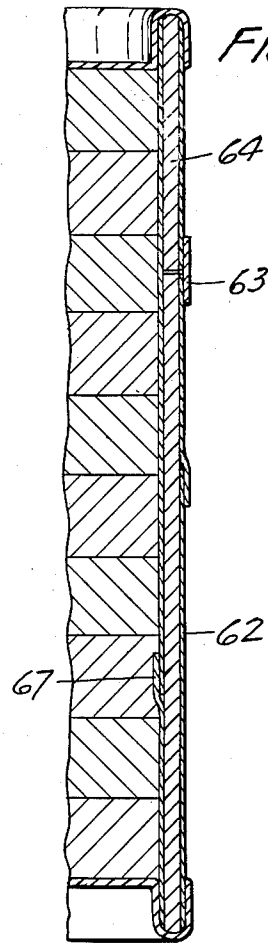
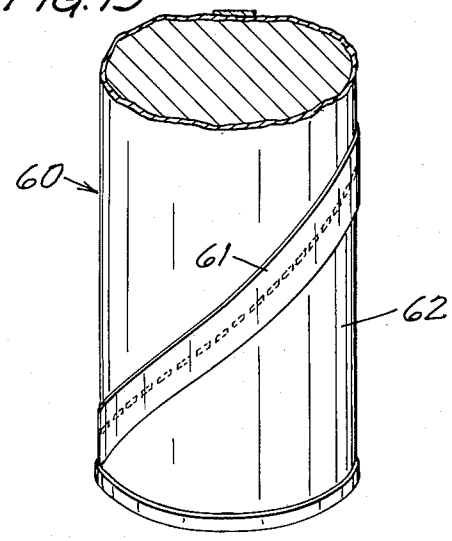


FIG. 15



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3,102,818

DOUGH PACKAGE

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Filed Jan. 16, 1959, Ser. No. 787,194
4 Claims. (Cl. 99—172)

This invention relates to a dough package and more specifically relates to such a package of the type which may be quickly and easily opened through the sidewall thereof.

This application is a continuation-in-part of our prior co-pending application S.N. 565,969, filed February 16, 1956, entitled "Easily Openable Can," now abandoned.

In the prior art, easily openable containers and dough packages have been known previously. However, in connection wtih the packaging of expansible dough for biscuits and the like, the dough packages have had several distinct disadvantages. One of the more important of these disadvantages is the relatively high cost of manufacturing such packages. The high cost of manufacturing has resulted primarily from the complex constructions of such previously known dough packages, which has heretofore been thought necessary in order to adequately confine the dough which, under certain conditions, develops a considerable internal pressure. Another distinct disadvantage of many of the packages in the prior art in which expansible dough has been stored, lies in the construction which makes it quite difficult for the ordinary user of the dough to open the package in the manner in which it is supposed to be opened. In other words, many of the prior art packages which are supposed to be easily openable, are not in fact easily openable.

It is to the elimination of these and other disadvantages to which the present invention is directed, along with the inclusion therein of other and desirable features.

An object of our invention is to provide a new and improved easily openable dough package of simple and inexpensive construction and operation.

Another object of our invention is the provision of a novel dough package which may be quickly and easily opened through the use of an absolute minimum of skill by the person desiring to use the contents of the package.

A further object of our invention is to provide a novel and improved dough package which is extremely simple in construction and therefore may be simply and inexpensively manufactured and which is wholly adequate in confining expansible dough under normal pressures experienced while the package is handled in conventional refrigerated equipment and which will be readily and easily openable by the person desiring to use the dough.

These and other objects and advantages of my invention will more fully appear in connection with the following description made in connection with the accompanying drawings wherein like reference characters refer to the same parts throughout the several views and in which:

FIG. 1 is a perspective view of the dough package;

FIG. 2 is a section view taken on a plane extending longitudinally through the package and substantially on a diameter thereof, with poritons being broken away to show clarity of detail in the wall construction;

FIG. 3 is a section view taken on a plane extending substantially transversely through the package on a plane as indicated at 3—3 in FIG. 1;

FIG. 4 is a detail section view taken on a substantially enlarged scale and on an oblique line substantially at 4—4 in FIG. 1;

FIG. 5 is a perspective view of a modified form of the invention;

FIG. 6 is a section view taken on a plane extending longitudinally through the package and substantially on a diameter thereof, with portions being broken away to show clarity of detail in the wall construction;

FIG. 7 is a section view taken on a plane extending substantially transversely through the package on a plane as indicated at 7—7 in FIG. 5;

FIG. 8 is a detail section view taken on a substantially enlarged scale and on an oblique line substantially at 8—8 in FIG. 5;

FIG. 9 is a perspective view of another modified form of the invention;

FIG. 10 is a perspective view showing the rear side of the package of FIG. 9 and also showing portions broken away and in section for clarity of detail;

FIG. 11 is a detail, substantially greatly enlarged, section view taken on a plane as indicated substantially at 11—11 in FIG. 9;

FIG. 12 is a detail section view taken along a broken line as indicated at 12—12 in FIG. 9, which line extends generally spirally of the package;

FIG. 13 is a perspective view of another modified form of the invention;

FIG. 14 is a detail section view taken along a spirally extending line as indicated at 14—14 in FIG. 13;

FIG. 15 is a perspective view, partly in section, and showing the rear side of the package shown in FIG. 13; and

FIG. 16 is a detail longitudinal section view taken along a line as indicated at 16—16 in FIG. 13.

In the form of the invention shown in FIGS. 1–4, the dough package, which is indicated in general by numeral 10 includes a cylindrically tubular enclosure 11 defining an interior storage chamber 12 which contains a number of pieces of leavened biscuit dough 13 or the like, of such a nature as to expand to fill the entire chamber 12 and to exert a considerable pressure against the enclosure 11. The enclosure 11 has can covers 14 crimped on the upper and lower ends thereof in sealed relation with the enclosure 11 so as to retain the dough 13 in the chamber 12 and prevent endwise expansion thereof.

The tubular enclosure 11 is constructed of laminate sheet material of such a nature as to be adapted to be manually torn, and more specifically, the tubular enclosure 11 includes a single ply of kraft chipboard 15 which is relatively stiff, but which has bending properties such as to permit forming on a spiral mandrel without cracking. The chipboard lamina 15 has spirally extending edge portions 16 cooperatively forming a spirally extending butt joint 17 which extends approximately a full convolution throughout the length of the enclosure 11. The edge portions 16 of the chipboard lamina 15 are in non-adherent engagement with each other at the butt joint 17 and are dispartable with respect to each other as will hereinafter be more fully described.

By way of example, it has been found satisfactory to employ as the lamina 15, a 0.026 point bending chipboard of wet tensile of 45 pounds MD and 13 pounds CD.

The tubular enclosure 11 also includes a lining 18

and an outer label wrapper 19 which cooperate with each other in holding the tubular enclosure, and specifically the chipboard lamina 15 together along the spiral butt joint 17. The wrapper 19 comprises a natural kraft paper laminated to a thin sheet of aluminum foil, and more specifically, by way of example, it has been found successful to employ a 60 pound wet strength super calendered natural kraft laminated to a 0.00035 foil, and having wet tensile values of 33 MD and 17 CD (in laminated condition), and also having a tear strength of 84 MD and 89 CD, and further having a surface strength of 18 by Dennison Wax Pick on the kraft side. It should be understood that the foil lamina of the wrapper 19 is exposed outwardly and the kraft paper is on the inner side, adjacent the chipboard lamina 15. It will further be understood that the foil lamina of the wrapper 19 may be imprinted with suitable copy and coloring for identifying the goods. Under certain conditions it may be desirable to increase the thickness of the foil lamina in the label wrapper 19, such as to 0.0005, possibly for the purpose of additional protection during the manufacturing of the overall enclosure 11.

The wrapper 19 is non-adhesively related to the chipboard lamina 15, at least along a band adjacent to and on opposite sides of, the helical butt joint 17, and in the form shown, the entire wrapper 19 is non-adhesively related to the entire chipboard lamina 15.

The wrapper 19 is provided with an elongate tear element which extends along the spiral butt joint 17 of the chipboard lamina 15 and is arranged so as to materially weaken the wrapper 19 when torn off. In the particular form of the invention shown in FIGS. 1–4, the elongate tear element 20 comprises a relatively narrow strip of high tensile strength kraft paper, underlying the wrapper 19 and adhesively secured to the kraft side of the wrapper 19. The tear element 20 is non-adhesively related to the edge portions 16 of the chipboard lamina 15 so as to be adapted to be readily torn and removed from the enclosure. The tear element 20 and the wrapper 19 are severed at 21, adjacent the upper end of the package 10 so as to form a pull tab 22, facilitating manual gripping of the end portion of the tear element 20, whereby the tear element may be pulled to weaken by disparting the wrapper 19 which materially weakens the overall enclosure 11.

It will be understood that the tear element 20 may be constructed of any suitable material having the necessary tensile strength, but for purposes of the present invention, it has been found that the kraft tear element 20 operates satisfactorily. It should further be understood that the outer aluminum foil lamina of the wrapper 19 might be replaced with a lamina of Saran, polyethylene, or other films, which would work, but would be uneconomical as compared to the aluminum foil.

It will be noted that the side edges 23 of the wrapper 19 are disposed in a spirally or helically extending lap joint, wherein the edges are adhesively secured together.

The lining 18 is constructed of a single lamina of moisture-impervious material which is of sufficiently low tensile strength so that the user of the can will have no difficulty in disparting the line at the butt joint after the wrapper 19 has been disparted by operation of the tear element 20. In the form shown, the lining 18 comprises a lamination of aluminum foil which may have an extremely thin backing of paper to facilitate handling of the foil, and the lining 18 is spirally formed and adhesively secured on the inner side of the chipboard lamina 15 and around the entire inner periphery thereof. The spirally extending lap joint of the edges of the lining 18 is spaced away from the butt joint 17 of the chipboard lamina, as is clearly shown in the drawings. The lining 18 will permit some limited passage of air and oxygen outwardly therethrough as the dough expands in the chamber 12 so as to permit the dough 13 to fill the entire chamber and leave no air pockets therein. However, as previously indicated, the lining 18 is substantially moisture-impervious so as to prevent the escape of any moisture from the dough into the chipboard lamina.

It has been found suitable to employ a 25 pound liner of tensile strength 27 MD and 15 CD.

In the use and operation of the package 10, it will be understood that the pieces of dough 13 are inserted in the container before one of the lids 14 is crimped on and initially, the pieces of dough 13 will not occupy the entire space within the chamber 12. However, after the lids have been crimped on and after a period of time, depending upon the temperature, the pieces of dough 13 will expand in such a fashion so as to substantially fill the entire chamber 12. The air will be forced outwardly through the laminate sidewall of the enclosure 11. As the dough expands, the dough will exert pressure against the inner periphery of the enclosure 11 and under refrigerated conditions, which are normally used in the storage of the dough package 10, the dough will be confined by the enclosure 11. More specifically, the lining 18 and the wrapper 19 cooperate with each other to hold the enclosure together and to prevent disparting of the chipboard lamina 15 at the spirally extending butt joint 17 thereof.

When it is desired to use the pieces of dough 13, the pull tab 22 will be manually gripped and the tear element 20 will be torn off the enclosure 11, simultaneously tearing the wrapper 19 so as to materially weaken the wrapper by disparting it, and when the tear element 20 has been removed, only the lining 18 holds the enclosure 11 together along the spiral butt joint 17. It is preferable that the lining 18 be of such strength so as to necessitate initiation of the disparting thereof by manual means, such as by rapping the side of the enclosure on the corner of a table at the butt joint 17 after the strip 20 has been removed. It has been found that if the package contains biscuit dough which has been maintained under refrigerated conditions, the liner having the strength hereinbefore set forth is substantially ideal to perform the desired results. If the lining 18 is of insufficient strength, the lining will dispart prematurely. It should be pointed out that if the lining 18 has too great a strength, such as being constructed of 30 pound foil, the package will then be unnecessarily difficult to open because of the substantial effort needed to rupture the lining 18 after the strip 20 has been removed.

It is important to note, however, that during normal storage of the package 10, the liner 18 and the wrapper 19 cooperatively hold the enclosure together and resist the effect of bumps and other influences which would tend to dispart or rupture the enclosure along the butt joint 17. Both the lining 18 and the wrapper 19 are extremely thin as compared to the heavy chipboard material in the lamina 15.

After the lining 18 has been ruptured, such as by rapping the enclosure on the edge of a table at the butt joint 17, the lining 18 will dispart all along the butt joint 17 under the influence of the internal pressure provided by the expansible dough in the chamber 12.

The opposite ends of the package 10, adjacent the covers 14, will then be manually gripped and will be twisted in opposite directions with respect to each other so as to widely open the enclosure between the edge portions 16 of the chipboard lamina 15. Access to the pieces of dough 13 is thereby provided, and in fact, most of the pieces of dough will fall out when the package is so twisted.

In the form of the invention shown in FIGS. 5–8, the package 30 is of substantially similar construction as that shown in FIGS. 1–4. One of the primary distinctions of this form of the invention as compared to that shown in FIGS. 1–4 is the provision of a tear string 31 of sufficient strength as to tear through the wrapper 32 along the butt joint 33 of the chipboard main body lamina 34 so as to permit disparting of the enclosure 35 and thereby provide access to the pieces of dough 36 in the interior storage chamber 37. The wrapper 32 has a die-cut notch

38 at the upper end thereof in the shape of a parallelogram so as to expose the end of the string 31. The wrapper 32 may consist in a natural kraft paper as previously described, to serve as a backing sheet laminated to a foil or rotogravure paper. In this form of the invention the wrapper 32 is glued as at 39 to the outer surface of the kraft chipboard lamina 34 except along an unglued band 40 which overlies the butt joint 33 in the chipboard lamina 34. The string 31 is glued to the middle of the band so as to extend along the butt joint 33.

The inner lining 41 will consist in a foil laminated to a paper backing sheet and will be of such width as to provide a small overlap at the edges 42 thereof which are spaced from the butt joint 33 of the chipboard lamina 34.

The operation of this form of package is substantially similar to that described in connection with the form of the invention shown in FIGS. 1–4. The lining 41 may be of a tensile value that will allow it to rupture when it alone is responsible for retaining the pressure of the refrigerated dough in the package and after the entire strength of the outer wrapper 35 has been removed by tearing through the wrapper through the operation of the string 31. The ends of the enclosure will be twisted in opposite directions relative to each other so as to widely separate the edges of the chipboard lamina 34 and thereby permit the pieces of dough 36 to fall out or be taken out.

The form of the invention shown in FIGS. 9–12 is generally similar to that shown in the other forms of the invention, and the dough package 45 includes a tubular enclosure 46 constructed of laminate sheet material of the type which may be manually torn, and which is hereinafter more fully described, and the ends of the tubular enclosure 46 are closed by covers 47 which are crimped thereon. The package 45 contains a number of pieces of expansible dough 48 which exerts a pressure outwardly against the tubular enclosure 46 and the end covers 47.

The tubular enclosure 46 includes a single ply or lamination 49 of kraft chipboard material of the nature hereinbefore set forth in connection with FIGS. 1–4, and the tubular enclosure also has a paper-backed foil liner 50 which is adhesively secured around the inner periphery of the chipboard lamina 49.

The outer label or wrapper lamina 51 is adhesively secured around the outer periphery of the chipboard lamina 49 and the outer lamina 51 may comprise a paper-backed foil. As best seen in FIGS. 9 and 11, the laminate tubular enclosure may have a lap joint at 52, wherein the edges of the chipboard lamina may be wrapped with strips 53 of foil so as to seal these edges and prevent penetration of moisture thereinto.

In this form of the invention, a number of perforations 55 are provided through the kraft chipboard lamina 49, through the outer paper-backed foil lamination 51 and through the inner paper-backed lining foil lamination 50 and the perforations 55 are oriented in a spiral line extending from one end of the tubular enclosure to the other end thereof and throughout a substantially complete convolution. As a part of the outer label wrapper, an elongate tear element or pull strip 56 is removably adhesively secured on the outer side of the foil 51 in overlying relation with the line of perforations 55 so as to strengthen the tubular enclosure and prevent disparting thereof. Similarly, as a part of the lining 50, a strip 57 of foil is adhesively secured to cover the line of perforations 55. The strip 56 is provided at its upper end with a pull tab 58 which may be manually gripped in order to tear off the strip 56 and thereby cause material weakening of the tubular enclosure to permit rupturing of the lining and disparting of the tubular enclosure along the spiral line of perforations. Initially, the lining and label laminations cooperate with the bridging portions between the perforations for holding the tubular enclosure together. When the outer strip is removed, the disparting may be caused to occur by rapping the package on the edge of a table at the line of perforations 55.

In the form of the invention shown in FIGS. 13–16, the package 60 is quite similar to that shown in FIGS. 9–12. This form of the invention also provides the exterior tear element 61 on the outer surface of the label foil 62 and cooperating therewith to define the wrapper for holding the spiral butt joint 63 of the chipboard lamina 64 together. The foil 62 is provided with a paper back which is adhesively secured to the outer surface of the chipboard lamina 64. The paper-backed foil 62 is also provided with a series of perforations 65 oriented in a spirally extending line along the spiral butt joint 63 so that the tubular enclosure is materially weakened when the tear element 61 is removed.

In this form of the invention, the lining 66 is unbroken at the butt joint 63 and has spirally disposed lapped edges 67 spaced from the butt joint 63.

In operation, removal of the rear element 61 materially weakens the outer label structure and permits disparting along the spiral butt joint 63 when the lining 66 is ruptured, substantially in the fashion of the other forms of the invention.

It will, of course, be understood that various changes may be made in the form, details, arrangement and proportions of the parts without departing from the scope of our invention which consists of the matter shown and described herein and set forth in the appended claims.

What we claim is:

1. A dough package including an easily openable container and a quantity of expansible dough therein, said container comprising a tubular enclosure constructed of laminate sheet material capable of being manually torn and having end covers fixedly secured in pressure-sealing relation to the ends of said enclosure to define a closed interior storage chamber containing and confining the dough against expansion, said tubular enclosure including a single lamination of kraft chipboard material weakened along a spirally extending line extending between the ends of the enclosure, said enclosure also having a rupturable lining on the inner side of the chipboard and resisting circumferential disparting of the enclosure, said enclosure also having an outer label wrapper including a kraft paper wrapper layer encompassing and confining the chipboard against expansion at said line and said wrapper layer having an elongate area free from the chipboard and overlying and extending along said line, said label wrapper also including an elongate flexible tear element underlying said layer and secured thereto within said area, said wrapper layer being unbroken and continuous at said area and operating independently of the tear element but in cooperation with the lining to confine and hold the chip board against separation at said line, said tear element having an exteriorly exposed pull tab, whereby when the tear element is torn off, the lining may be ruptured and the enclosure will dispart along said spirally extending line under the influence of the pressure of the dough and thereby provide access to the dough.

2. The invention set forth in claim 1 and wherein said elongate tear element comprises a tear strip extending spirally along said line.

3. The invention set forth in claim 1 wherein said tear element comprises a tear string extending spirally along said line.

4. A dough package including an easily openable container and a quantity of expansible dough therein, said container comprising a tubular enclosure constructed of laminate sheet material capable of being manually torn and having end covers fixedly secured in pressure-sealing relation to the ends of said enclosure to define a closed interior storage chamber containing and confining the dough against expansion, said tubular enclosure including a single ply of kraft chipboard material weakened along a line extending generally endwise and spirally of the enclosure, said enclosure having a rupturable lining on

the inner side of the chipboard and resisting circumferential disparting of the enclosure, said enclosure also having an outer label wrapper including a kraft paper wrapper layer encompassing and confining the chipboard against expansion at said line, said wrapper layer also being weakened along said line, and said label wrapper also including a tear strip removably secured on the outer side of said layer and on opposite sides of said line and cooperating with said lining in holding the layer and chipboard together against circumferential expansion, whereby when the tear strip is torn off, the liner may be ruptured and disparting of the enclosure will occur along said line under the influence of the pressure in the storage chamber and thereby provide access to the dough.

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