June 23, 1970 R. L. DREYFUS ET AL 3,516,537

OPENING DEVICE ON BAGS AND THE LIKE

Filed June 27, 1968 2 Sheets-Sheet 1

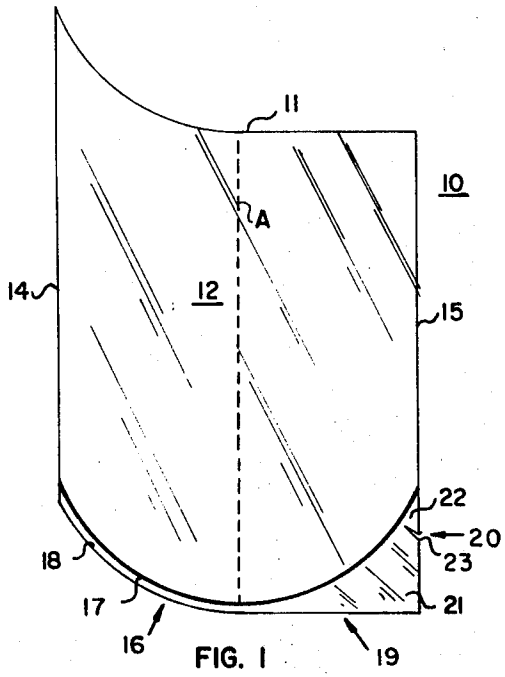


FIG. 1

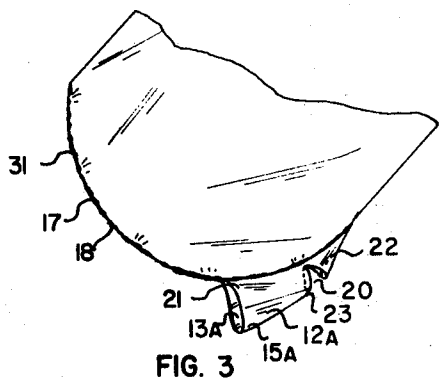


FIG. 3

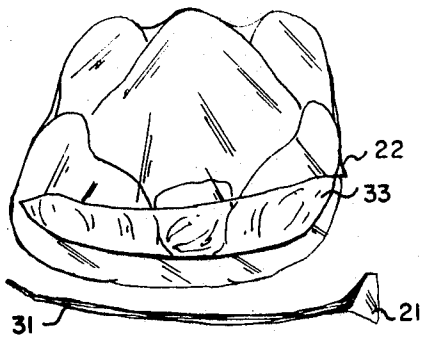


FIG. 5

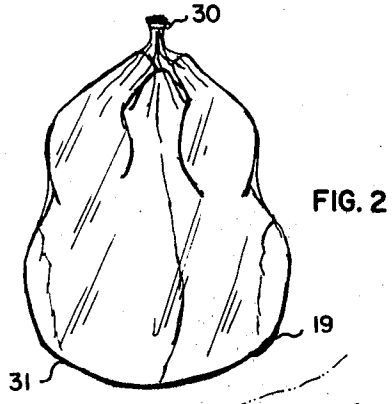


FIG. 2

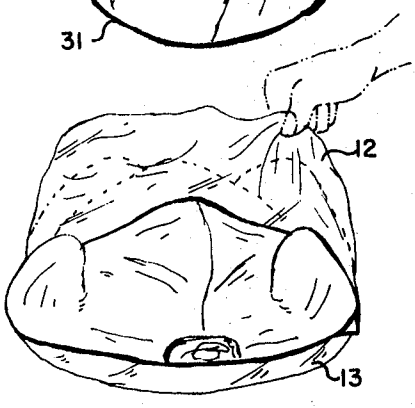


FIG. 6

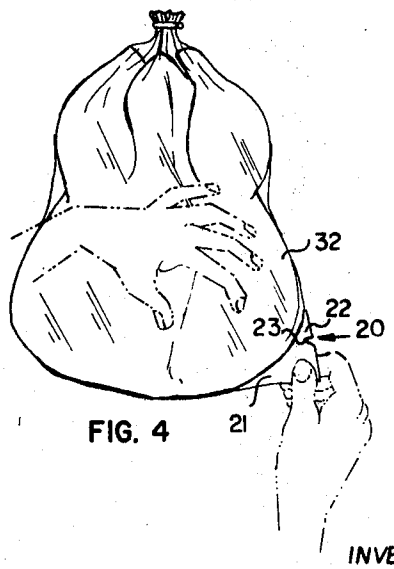


FIG. 4

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OPENING DEVICE ON BAGS AND THE LIKE

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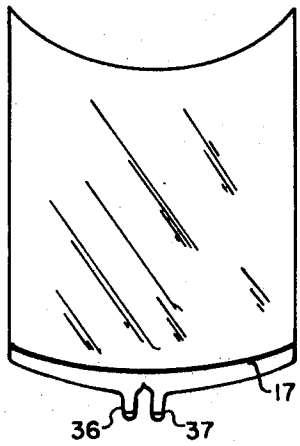


FIG. 7

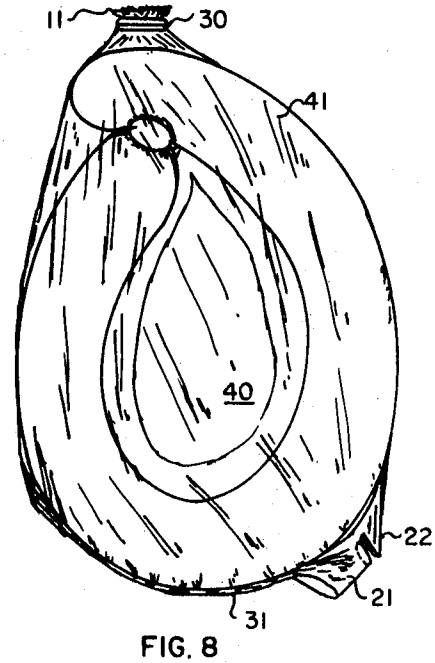


FIG. 8

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OPENING DEVICE ON BAGS AND THE LIKE

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Int. Cl. B65d 85/00, 33/16
U.S. Cl. 206—46 16 Claims

ABSTRACT OF THE DISCLOSURE

A package in which an object is encased in plastic and the plastic has a unitary part formed into a tab external of the package's enclosure that cooperates with a seal to strip an opening in the package along the seal and a bag suitable for forming such a package.

The present invention relates to a new and improved package having walls constructed so that a unitary portion of the material of the walls forms an easy opening structure for the package and to a new and improved bag constructed to form the walls of the package and provide the easy opening structure.

While the opening of packages of the general type described is a problem that needs improving, a special problem is presented in opening packages that are formed by loading an item such as a turkey into a bag and thereafter vacuumizing the bag, gathering and clipping the neck, and then shrinking the bag. Even if the clip is later removed the neck or opening into the bag will generally not open back out large enough to allow the turkey or other item to be removed from the bag. This is, of course, because the total dimensions of the bag have reduced due to shrinking, particularly in those areas where the shrinking was not restrained by the turkey's bulk. Thus the opening of such a package presents special problems. These problems are increased when the bag is made from a material that resists tear initiation.

It is an object of this invention to provide an easy opening package.

It is a more specific object of this invention to provide an improved package that has as a unitary part of its walls a structure enabling the easy opening of the package.

It is another object of this invention to provide such a package that can be easily and economically fabricated from plastic film.

It is a still further object of this invention to provide such an opening structure that will cause a wide opening to be formed in the package without the use of aids evternal of the package's walls.

It is another object of this invention to provide a new and improved bag having an easy opening device unitary with the walls of the bag.

It is a still further object of this invention to provide such a bag that has a simple structural design and is easy and inexpensive to manufacture.

It is a further object of this invention to provide such a bag that will lend itself readily to the construction of a package having the previously described features.

It is a further object of this invention to provide a bag and a package that readily lend themselves to the packaging of perishable food stuffs such as turkeys and ring bologna in automated and semi-automated packing lines in a simple and inexpensive manner requiring relatively unskilled labor and producing a package that is easy for the housewife to open.

In summary, carrying out our invention in one form thereof, a package is provided having plastic walls that

form an enclosure. The enclosure has a closure at at least one location where the enclosing walls are attached or sealed together. As used herein the several walls of the package may be made from one continuous sheet of plastic film. A portion of the plastic walls extends beyond the closure and is formed into a tab suitable for gripping to tear through the closure into the enclosure.

By an aspect of this invention the closure is a thickened region of the package and bounds the enclosure in one region. The entrance edge of the tab is directed so that it tears at a right angle to the outside edge of the closure to secure entrance into the closure. The thickened region of the closure is rendered stronger than the separate walls of the enclosure and thus serves as a tear strip to enlarge the breach into the package along the configuration in which it lies.

By still further aspect of this invention, the package is of shrunk oriented thermoplastic material and maintains a firm pressure on an object enclosed within its walls. A skirt of two walls extends along the closure outside of the enclosure. The skirt is shrunk to increase the thickness of its walls and strengthen the tear strip feature of the closure. A sector of the skirt constitutes the tab sector and this tab sector has a notch entering therein at a right angle to the closure seal. The notch divides the tab sector into a tab and a nub. The shrink of the tab in the direction parallel to the closure line not only thickens the skirt, it is also active in engaging the tab against the outside of the enclosure and in maintaining the tab against the outside of the enclosure with a resiliency allowing easy pulling of the tab away from its position against the outside of the enclosure for opening the closure in the intended manner.

By a different aspect of this invention, in a preferred form thereof, a bag is provided having a closure formed between two walls and a tab formed unitarily with at least one of the walls and lying outside of the closure. The tab has an entrance edge that is disposed at substantially a right angle to the outside edge of the seal adjacent to it.

By an aspect of this invention the bag is made from a sleeve of thermoplastic film stretch oriented about 4:1 to 25:1 biaxaially. The bottom of the bag is formed by sealing the walls of the collapsed sleeve together along an arc extending across the walls of the collapsed sleeve. The sleeve is of uniform circumference, therefore, the side edges of the bag are straight and extend parallel to the axis through the center of the bag from the opening.

A skirt is formed below the seal closing the bottom of the bag. This skirt extends about ¼ inch below the seal at its narrowest point. The skirt has a tab sector that extends from one side of the sleeve to a medial region below said arc. A notch is formed in the tab sector passing through the side edge of the sleeve and dividing the tab sector into a lower tab portion and a smaller upper nub portion. The edge of the tab formed by the notch is directed at a right angle to the outside edge of the seal. The top edge of the bag has a configuration that is an opposite and opposed configuration substantially parallel to the configuration of the bottom edge of the skirt.

By another aspect, a method is provided for using a vacuumized package having plastic walls that enclose an object and a tear tab formed from a pastic wall and positioned wholly outside of a seal attaching two abutting walls together to close the package, the seal extending substantially wholly across one edge of the package and the tear tab having an extrance edge directed across the seal toward the object. In use the package is opened by pulling the tab until its entrance edge leads it through the seal. The pull on the tab is continued until the seal substantially strips from the package substantially opening one entire edge of the package. Then at least part of the

object is withdrawn from the package and the amount of the object is reduced to such an extent that the opened edges of the package may be folded over to form a closure for further storage of the remainder of the object. The remainder of the object is then replaced fully into the package enclosure or left in the package enclosure and the opened edges of the package are folded over to form a closure protecting the remainder of the object in the package. Thus the package part of the enclosure can serve as the container for restoring leftovers.

By an aspect of the method for using a vacuumized package, when two opposed abutting walls are held in engagement due to the vacuum and form a tight package conforming to the shape of the enclosed object, the opening of the seal releases the vacuum and allows the walls to separate easily upon the movement of the object. The parting of the walls increases the volume of the enclosure.

Further aspects of the present invention will become apparent hereinafter and the specification concludes with claims particularly pointing out and distinctly claiming the subject matter which we regard as our invention. The invention, however, as to organization and method of operation, together with other objects and advantages, may best be understood by reference to the following description when taken in conjunction with the accompanying drawings in which:

FIG. 1 is a plan view of one side of a bag embodying our invention;

FIG. 2 is a diagrammatic plan view of the package embodying our invention;

FIG. 3 is a diagrammatic perspective view of the bottom of the package of FIG. 2 with the tab pulled out from the side of the package;

FIG. 4 is a diagrammatic perspective view showing how the tab is gripped for the opening of the package;

FIG. 5 is a diagrammatic perspective view showing the tab and tear strip portion of the package torn away;

FIG. 6 is a diagrammatic perspective view showing how the package is peeled open after the tab and tear strip have been removed;

FIG. 7 is a diagrammatic plan view of the bottom of a variation of the bag of FIG. 1 showing a different tab construction; and

FIG. 8 is a diagrammatic plan view similar to FIG. 2 but showing a different package.

Referring first to FIG. 1 of the drawings, there is shown a plastic bag or container **10** having an open top at top edge **11**, a front wall **12** and a back wall **13** (see FIG. 6), side edges **14** and **15** and a sealed bottom **16**. The sealed bottom has a closing means or closure seal **17** and a skirt **18** along the bottom edge. The skirt **18** has a tab sector **19** which is divided by notch **20** into a tab **21** and a nub **22**. The entrance edge **23** of the tab **21** extends towards the seal **17** perpendicularly to the seal. The notch, of course, also extends towards the seal perpendicularly. The skirt also has a front or top wall **12***a* and a back or bottom wall **13***a* which are, of course, extensions of the walls **12** and **13** respectively of the bag proper (FIG. 3).

The bag **10** is preferably made by processing a single continuous unitary tubular sleeve of biaxially oriented plastic film by sequentially heat sealing or fusing across the collapsed sleeve in an arc having a regular line configuration free of abrupt changes in direction. The arc should preferably be the arc of a 6 to a 12 inch circle, most preferably about an 8 inch circle, which is the one represented at **17** in FIG. 1. After the bag closure is formed, the bag is severed from the sleeve by cutting through the tubular sleeve below the fused seal or closure seal **17** leaving a skirt portion **18** and a tab sector **19**, as may also be seen in FIG. 1. A notch **20** is formed in the tab sector **19** to provide a tab **21** with an entrance edge **23**. It is preferred that the notch be through the folded side edge **15***a* of the side wall edge of the collapsed sleeve and that the bottom of the tab sector extend at a right angle to the side edge **15** in the bag. The skirt should preferably be ⅛ to 3/16 inch wide at its narrowest point, more preferably ¼ inch wide. In some instances it is possible to dispense with the skirt outside of the tab itself when the seal area is sufficiently strong by itself.

Other constructions of the bag are contemplated within the scope of our invention. For example, because the arc may vary and in some cases the bottom of the bag may be sealed straight across or in some other configuration. The tab may be formed by cutting the film so that a tab or tab portion is left projecting beyond the sealed area. In this manner a tab of any desired width can be provided projecting beyond any region of the seal. In fact, two or more tabs could be provided. For example, two tabs **36** and **37** could be provided below a seal **17** as shown in FIG. 7. These tabs could be pulled away from one another to form two openings. Other modifications will also suggest themselves to those skilled in the art. The preferred construction is, however, the construction shown in FIG. 1. The closure can, of course, be formed after the bag configuration has been cut out of the sleeve. The bag can also be formed by assembling several separate sheets of film together. However, the preferred manner of constructing the bag is the one given first.

When the bag is to be used for packaging a perishable food such as a turkey, which has protruding parts such as the wings and legs, it is preferable to make the bag from a thermoplastic film with balanced orientation that has a fairly high shrink tension, about 200 to 400 p.s.i. in each direction at 205° F. Such a film will apply a firm conforming pressure to the packaged product when the bag is of an appropriate size in relation to the product and the amount of shrink. Generally a turkey weighing 12 pounds requires a 13 inch wide bag of unshrunk dimension, having a preferred unrestrained shrink of 40–45% at 205° F. Such products are usually frozen during storage and therefore the preferred film should retain its flexibility at temperatures of less than 0° F. and more preferably −50° F. and even −70° F. to provide good characteristics when the product is quick frozen at low temperatures. The film should preferably be very resistant to tear initiation and have easy tear propagation. The film clarity may range from transparent to opaque, depending on customer preference. The film is frequently tinted with a white or flesh colored pigment to give a good flesh tone to the product as determined by customer need. Such tinted film is generally translucent so that the product can be inspected. Because such packaging usually lends itself to convenient hot water shrinking, the film should have good shrink performance at temperatures of about 200 to 205° F. in water. Cross-linked polyethylene film oriented by stretching biaxially at a total orientation ratio of about 16–1 at 205° i.e., in this particular instance about 4:1 transversely and about 4:1 longitudinally in the machine direction which provides a balanced film having substantially equal orientation in both directions, transversely and longitudinally, is a preferred film. The preferred oriented film is about 0.0015 to 0.0030 inch thick before shrinking.

When the bag is to be used for packaging a perishable food such as ring bologna, which has regular dimensions and is not frozen during storage it is preferable to make the bag from a thermoplastic film that has a low oxygen permeability, on the order of 200–400 cc. at 72° F. per mil of film thickness, one square meter in size per 24 hours at atmospheric pressure. A film of lower shrink tension is appropriate and preferred, on the order of about 30–180 p.s.i. in each direction at 205° F., more preferably about 30 to 100 p.s.i. at 205° F. Such a film will conform well to the packaged product when the bag is of an appropriate size and once set adequately hold the package shape. The bag should be of a size allowing easy insertion of the product and should have sufficient free shrink in relation to the product to form a package free of large wrinkles when shrunk. An unrestrained

shrink of 40–45% at 205° F. has been found desirable and is preferred. A 14 inch length of bologna weighting about 1 pound typically uses a bag 7 inches wide and 12 inches deep of unshrunk dimension having the described characteristics. Such products are usually stored at temperatures of about 35–40° F. and thus the preferred film will retain its flexibility at least as low as about 40° F. The preferred film should have good resistance to fat, grease and oil and low permeability to gases in general. The film should preferbaly also have low water vapor permeability less than 1.0 and, more preferably, 0.8 gram at 100° F., 100% R.H. per mil of thickness one hundred square inches in size per 24 hours. The film should preferably be very resistant to tear initiation and have at least fairly easy tear propagation. It is preferable that the film be transparent to allow inspection of the product. Because the packaging of such food stuffs as ring bologna usually lends itself to convenient hot water shrinking, the film should have good shrink performance at temperatures of about 200 to 205° F. in water. Vinylidene chloride-vinyl chloride copolymer film oriented by stretching biaxially at a ratio of about 16–1 at 120° F. (about 4:1 transversely and about 4:1 longitudinally in the machine direction which provides a balanced film having substantially equal orientation in both directions) is a preferred film. The preferred oriented film is about 0.0010–0.0030 inch thick before shrinking.

The two preferred films specifically described above are balanced biaxially oriented films. Therefore, the shrink tension and unrestrained shrink values are substantially equal to those given both longitudinally and transversely.

Gas permeability is determined by placing a film specimen in a sealed cell so that the film completely separates the upper and lower sections of the cell. The cell and contents are maintained at room temperature (73° F.±2° F.) through the test. The top section is purged with dry nitrogen overnight. Dry oxygen (or gas to be tested) is introduced into the lower cell section and is permitted to permeate through the film for a predetermined period of time. The mixture of nitrogen and oxygen in the top section is introduced into a Haldane-Henderson-Orsat gas analysis apparatus. The oxygen in a sample is determined by absorption of the oxygen. The film thickness is determined in mils with a micrometer. The transmission rate is calculated in cc. (24 hours, sq. meter, atm.). The permeability is calculated in cc (mil, 24 hours, sq. meter, atm.).

Shrink tension is determined by measuring the force exerted by a one inch wide strip of film mounted between two arms of a holder; one arm of which is stationary and the other is connected to an electronic strain gauge. Proper calibration of the strain gauge permits calculation of the force in pounds per square inch of cross-sectional area of the sample.

Unrestrained shrink is determined by marking a piece of test film with a square ink stamp measuring ten centimeters on a side. After a ten second immersion in 205° F. water the percent of linear shrinkage is measured .

Water vapor permeability is determined by placing a film specimen in a sealed cell so that the film completely separates the upper and lower sections of the cell. The cell and contents are maintained at 100° F.±2° F. throughout the test. The lower section of the cell is partially filled with H_2O in order to maintain it at a relative humidity of 100%. Dry air is passed through the upper section of the cell until a measured relative humidity of 0% is obtained. A sensing element in this section of the cell permits continuous monitoring of both temperature and humidity. When the relative humidity in the upper section of the cell reaches 0%, the cells are closed and the air flow stopped. At this point, the rate of increase in relative humidity in the upper section is measured over a narrow range at a constant temperature.

Turning now to a detailed discussion of the package of our invention, attention is directed to FIG. 2 wherein the complete package is shown in a preferred embodiment. The product shown in FIG. 2 is a 12 pound turkey and the bag was a 13 inch wide by 22 inch interior depth, taken along dotted line A in FIG. 1. This turkey was slipped into the bag and the bag was evacuated through a nozzle inserted into the mouth of the bag. The nozzle was connected to a vacuum pump. After evacuation the bag is sealed with a metal clip **30**. This procedure is done in the manner now known in the art. For example, as represented by U.S. Pat. 2,733,442. After the clip has sealed the mouth of the bag the bag is shrunk taut about the turkey. The tension in the shrinking film presses filrmly about the turkey to hold it in a firm conformed shape. The appearance of the turkey is enhanced by the smooth unwrinkled plastic covering.

In FIG. 3 the tab sector may be seen pulled out showing the enlarged notch **20**, and the shrunk nub **22** and tab **21**. It may be seen that skirt **18** has substantially drawn up against the seal **17** to form a tear strip **31**. The skirt **18** shrinks up to increase its thickness and form the tear strip **31** with the seal. The seal **17** and the shrunken skirt **18** each form a part of the tear strip **31**. Thus both the seal and the skirt **18**, in a sense, form tear strips themselves. In some instances the seal **17** may be used along as a tear strip and the skirt may be dispensed with.

The tab sector **19** in shrinking draws against the side of the package in the manner shown in FIG. 2.

The package may be better understood by a more detailed description of a typical filling and opening operation. Typically, a cooled turkey (about 35° F.) is placed in the bag **10** and the bag is evacuated and closed in any manner such as by clip **30**. The closed bag is then passed through a hot water shrink tunnel and passed through one or more curtains of water sprayed from both above the product and below the product. The water temperature is usually about 205° F. and causes the film to shrink to its taut condition on the turkey in about three to five seconds releasing a portion of the film's shrink tension and orientation. Thus the package shown in FIG. 2 is produced. When the bag is chosen for the previously described most favorable characteristics, the shrink tension of 200–400 p.s.i. will produce a firm, tight package. The high shrink tension will draw the protruding parts of the turkey tightly against the body of the turkey to provide a tight package that may be easily stacked and is pleasing to the eye. Because the film is resistant to tear initiation it is unlikely to rupture during the formation of the package. The skirt shrinks the maximum amount at 205° F. lengthwise of the bag because it is wholly unrestrained in that direction. Of course, the film would shrink even more if subjected to temperatures above 205° F. and perhaps also if subjected to the same temperature for a longer period of time. The skirt is restrained widthwise and this longitudinal tension is probably the active force causing the tab to turn against the outside of the bag where it will be out of the way and not exposed for accidental pulling by a customer inspecting the package. It is very advantageous that the tabs lie substantially flush against the side of the bag because this practically eliminates the misuse of the tab to pick the package up by (which might break the seal) or the snagging of the tab because it caught on a projection in the display case, etc. The thickened skirt is stronger than the film in general and thus does not break or tear easily itself. The film in the skirt is relatively or substantially unoriented or of substantially reduced orientation lengthwise of the bag because of its unrestrained shrink in that direction as compared to its widthwise orientation because its shrink in that direction is restrained. Generally, the more highly oriented a film is, the easier is tear propagation in the film. Unoriented film is usually quite hard to tear. It will be noticed that the bottom edge of the skirt and, therefore, the tab is open. If this were not so the tab could form into an air

bubble when the package was shrunk due to air trapped in a closed pocket or skirt portion.

After the package has been shrunk it is transferred to a quick freezing compartment where the package will be quick frozen at a temperature of 0–6° F. for about 30 minutes. After this, the package will be transferred to a holding temperature of 0° F. or lower and maintained frozen during shipment and after shipment until purchased by the housewife. The preferred package's walls, formed of the preferred bag walls, will withstand temperatures dropping down as low as −10° F. and preferably lower, even to −40° F., with good flexibility retention. The housewife will maintain the temperature at the freezing point until a short time before it is time to open the package, at which time it is preferable to thaw the package before the package is opened. However, the package does open satisfactorily before thawing if this is the preferred time of opening.

After the usual procedure such as thawing, the tab **21** is pulled away from the side of the enclosure **32** which encloses the turkey **33** (FIG. 5) as shown in FIG. 4. The tab is lifted away from the side of the enclosure in the obvious manner, such as by lifting it with the finger. The tab is then gripped as shown in FIG. 4 and the bird is held with the other hand. The tab is pulled up and across the bottom of the package in the natural manner. The entrance edge, which is at a right angle to the seal, will tear into and through the seal. The entrance edge of the tab directs the tear across the seal at substantially a right angle to the seal and thereby substantially prevents failure of the tab to bring about penetration of the seal when pulled. As the tab is pulled across the package the package will tear open predominately following the tear strip **31** across the sealed area as shown in FIG. 5.

After the tab and tear strip have been removed from the package the thumb is slipped up under the edge of the bag which has been somewhat loosened from the bird and the package is stripped back as shown in FIG. 6. Tears in the film propagate easily and thus the package will tear back as the film is stripped back. Generally the film will tear back from the points at the edges of the opening where the tab entered through the seal and at the point where the tab tore off of the package during opening.

Turning now to the embodiment of our invention wherein a product such as ring bologna is packaged according to our invention, it is preferable to use a bag having the characteristics preferred for the product as previously described.

Attention should now be directed to FIG. 8. In the preferred manner of packaging ring bologna it is inserted into the package with the tied ends towards the mouth or top edge **11** of the bag and the bag is evacuated in the same general manner as when a turkey is being packaged. With the evacuation of the bag, the bag forms around the bologna and the opposed walls **12** and **13** of the bag go together in the region **40** within the circle formed by the bologna ring **41**. The bag is then closed with a clip **30** as previously described and inserted into hot water as also previously described in discussing the formation of the turkey package. During the shrink-down the walls **12** and **13** will generally cling together in the center region **40** although it is common for the walls **12** and **13** to separate for a short distance directly adjacent to the inside edge of the bologna as the film pulls taut up over the bologna. The central portion **40**, however, generally remains engaged together thus a very attractive package is formed. The package is, in other respects, quite similar to the package of FIG. 2. In particular, the tab and tear strip are the same as previously described and therefore the description will not be repeated here.

The package of FIG. 8 is opened in substantially the same manner as the package of FIG. 2. The tab is lifted up to the position shown in FIG. 8 and then gripped as shown in FIG. 4 and torn in the manner shown in FIG. 5. However, the package is generally not torn back as shown in FIG. 6 but instead the bologna is gripped and pulled out of the package until the length of bologna desired to be cut for immediate use is exposed. This portion of bologna is cut and the remainder of the bologna is stuffed back up into the package and the opening is folded shut. Thus, the package not only is easily opened but forms a package for storing the bologna after the package has been initially opened. It should be remembered that the package is held together in region **40** only by a vacuum and thus when the package is opened the walls of the bag are no longer pressed into conformity with the sides of the bologna and a wholly open bag is provided that allows easy access into its interior.

While in accordance with the patent statutes, we have described what at present are considered to be the preferred embodiments of our invention, it will be obvious to those skilled in the art that various changes and modifications may be made therein without departing from our invention, and we, therefore, aim in the following claims to cover all such equivalent variations as fall within the true spirit and scope of this invention.

We claim:

1. A package comprising a plastic container having film walls, an object in said container, said container having a closure, said film walls extending beyond said closure and being informed into a tab sector that is free of extraneous strengthening members in its essential functioning parts and is strengthened by being shruk, said tab sector including a tab, said tab having an entrance edge, said entrance edge directed to said closure.

2. The package of claim **1** wherein said closure is a seal connecting two walls of film, and said tab lies on the other side of said seal opposite said object, and the entrance edge of said tab is directed across said seal directly toward said object.

3. A package comprising a plastic container having thermoplastic film walls, an object in said container, said container having a fused seal closure connecting two of said film walls, the walls of said enclosure being shrunk oriented plastic taut on said object, a skirt of shrunk film outside of said seal opposite said object, an enlarged tab sector in said skirt, a notch in said tab sector, said notch running at a right angle to said seal and dividing said tab sector into a tab and a nub, said tab having an entrance edge, said skirt being shrunk to substantial relief of the tension of orientation in one direction and said tab lying against the outside of said enclosure, the shrink of said skirt in the other direction both engaging the tab against the outside of said enclosure and maintaining said tab against the outside of said enclosure with a resiliency allowing easy pulling of said tab away from its position against the outside of said enclosure for opening said closure, said seal and said shrunken skirt cooperating to form a strong tear strip.

4. The package of claim **3** wherein the enclosure is formed of a single continuous unitary sleeve closed at each end, one end closed by a metal clip and the other end closed by the fused seal, said seal extending across said sleeve in an arc, an atmospheric vacuum within the enclosure, the tab sector of said skirt extends from one side of said sleeve and has a bottom edge at a substantial right angle to said one side of said sleeve, said tab sector of said skirt extending to the region of said skirt below the medial region of said arc, the notch passes through the side edge of said sleeve, and the entrance edge of the tab is directed at substantially a right angle to the outside edge of said seal when said tab is held directly away from said enclosure.

5. A bag comprising an enclosure and a closure bounding a portion of said enclosure, a skirt across said

closure from said enclosure, said skirt including a tab, said tab having an entrance edge, said entrance edge directed to said closure.

6. The bag of claim 5 wherein the bag is formed from shrinkabe plastic film and the skirt is free of extraneous strengthening members and is strengthened by being shrunk.

7. The bag of claim 5 wherein said bag is formed from oriented thermoplastic film and said closure is in the bottom of said bag and formed by sealing two walls together, and wherein said skirt has a notch in it dividing it into the tab and a nub, the edge of said tab formed by said notch is the entrance edge.

8. A bag comprising walls formed of a single continuous unitary sleeve of oriented shrinkable thermoplastic film, said film oriented biaxially at a ratio of about 16–1, the bottom of said bag formed by a sealing of the walls of the collapsed sleeve together, said seal extending across the walls of the collapsed sleeve in an arc of between 6–12 inches, the side edges of the bag thus formed being straight and extending along the axis of the opening into the bag, a skirt of film below said seal extending about ⅛ to 3/16 inch below said seal at the skirt's narrowest point, and a tab sector of said skirt extending from one side of said sleeve and having a bottom edge at a right angle to said one side edge of said sleeve, said tab sector of said skirt extending to the region of said skirt below the medial region of said arc, a notch in said tab sector passing through the side edge of said sleeve, said notch dividing said tab sector into a tab and a nub, the edge of said tab formed by said notch being an entrance edge directed at a right angle to the outside edge of said seal and the top edge of said bag having a configuration that is an opposite and opposed configuration substantially parallel to the configuration of the bottom edge of said skirt.

9. The bag of claim 8 wherein said bottom seal is formed by fusing the sides across the collapsed sleeve in an 8 inch circular arc having a regular line configuration free of abrupt changes in direction, the skirt is ¼ inch wide at its narrowest point and wherein the bag is constructed of cross-linked polyethylene that has a shrink tension of about 200 to 400 p.s.i. at 205° F. with an unrestrained shrink of 40–45% at 205° F., said film retaining its flexibility at temperatures of less than —50° F. and having good shrink performance at temperatures of about 200 to 205° F. in water.

10. The bag of claim 8 wherein said bottom seal is formed by fusing the sides across the collapsed sleeve in an 8 inch circular arc having a regular line configuration free of abrupt changes in direction; the skirt is ¼ inch wide at its narrowest point and wherein the bag is constructed of transparent vinylidene chloride-vinyl chloride copolymer; has a low oxygen permeability, about 200–400 cc. at 72° F. per mil of film thickness, one square meter in size per 24 hours at atmospheric pressure; a shrink tension of about 30–100 p.s.i. at 205° F.; an unrestrained shrink of 40–45% at 205° F.; retaining its flexibility at temperatures of about 40° F.; resistant to fat, grease and oil and having low permeability to gases in general; having low water vapor permeability, less than 1.0 gram at 100° F., 100% R.H. per mil of thickness, one hundred square inches in size per 24 hours; having good shrink performance at temperatures of about 200 to 205° F. in water.

11. A method of using a vacuumized package having plastic walls enclosing an object, the package equipped with a tear tab formed from a plastic wall and positioned wholly outside of a seal attaching two abutting walls together closing the package, the seal extending substantially wholly across one edge of the package and the tear tab having an entrance edge directed across the seal toward the object comprising pulling the tab until its entrance edge leads its through the seal, continuing to pull the tab until the seal substantially strips from the package substantially opening one entire edge of the package, withdrawing at least part of the object from the package and reducing the amount of the object to such an extent that the opened edges of the package may be folded over to form a closure for further storage of the remainder of said object and folding the opened edges of the package over to form a closure protecting the remainder of the object restored in said package.

12. The method of claim 11 wherein the package was under vacuum with two opposed abutting walls held in engagement due to the vacuum to form a tight package conforming to the shape of the enclosed object and wherein the opening of the seal releases the vacuum and allows the walls to separate easily upon the movement of the object, the parting of the walls increasing the volume of the enclosure.

13. A package comprising a plastic container having film walls, an object in said container, said container having a closure sealing two of said film walls together, a skirt of shrunk film outside of said closure and opposite said object, said skirt having an enlarged tab sector, a notch in said tab sector running toward said seal, one side of said notch forming an entrance edge, said skirt being shrunk and said tab sector lying against the outside of said enclosure with the shrink of said skirt both engaging the tab against the outside of said enclosure and maintaining said tab against the outside of said enclosure with a resiliency allowing easy pulling of said tab away from its position against the outside of said enclosure for opening said closure, said seal and said shrunken skirt cooperate to form a strong tear strip.

14. The package of claim 13 wherein an atmospheric vacuum exists within the enclosure and said film tightly conforms to the contour of said object.

15. The package of claim 14 wherein center portions of two opposed walls of film are engaged and the object forms a generally circular configuration around the area of the engaged wall portions.

16. A bag comprising walls formed of a single continuous unitary sleeve of biaxially oriented shrinkable plastic film, the bottom of said bag formed by a sealing of the walls of the collapsed sleeve together, the side edges of the bag thus formed being straight and extending along the axis of the opening into the bag, a skirt of film below said seal and a tab sector of said skirt extending from one side of said sleeve a notch in said tab sector passing through the side edge of said sleeve, said notch dividing said tab sector into a tab and a nub, the edge of said tab formed by said notch being an entrance edge directed toward the outside edge of said seal.

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JAMES B. MARBERT, Primary Examiner

U.S. Cl. X.R.

229—66

UNITED STATES PATENT OFFICE

CERTIFICATE OF CORRECTION

Patent No. 3,516,537 Dated June 23, 1970

Inventor(s) R. L. Dreyfus et al

It is certified that error appears in the above-identified patent and that said Letters Patent are hereby corrected as shown below:

Column 1 line 53 "evternal" should be --external--.

Column 8 line 30 "informed" should be --formed--.

Column 8 line 32 "shruk" should be --shrunk--.

SIGNED AND
SEALED
DEC 1 - 1970

(SEAL)
Attest:

Edward M. Fletcher, Jr.
Attesting Officer

WILLIAM E. SCHUYLER, JR.
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