April 30, 1957 P. B. HULTKRANS ET AL 2,790,594

ART OF PACKAGING

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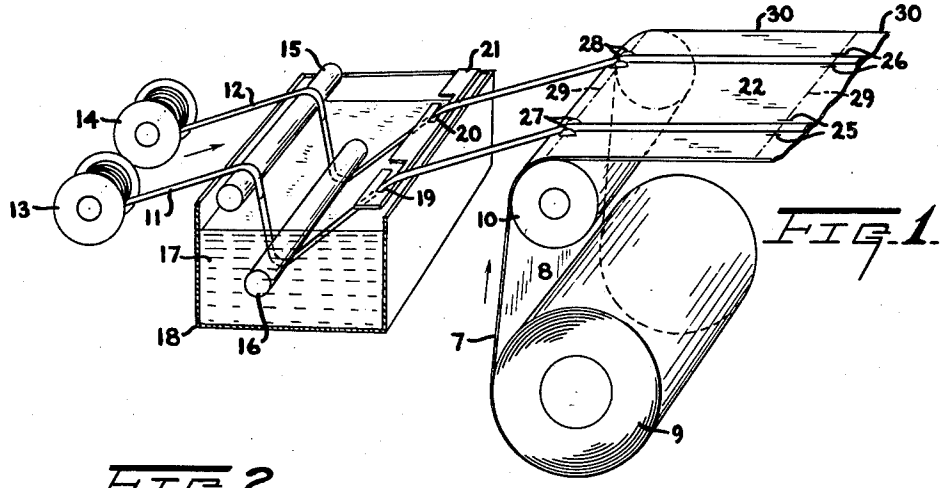
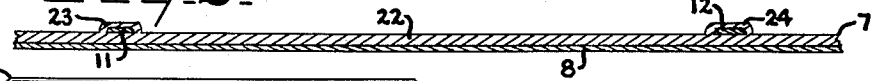


FIG. 1.

FIG. 2.



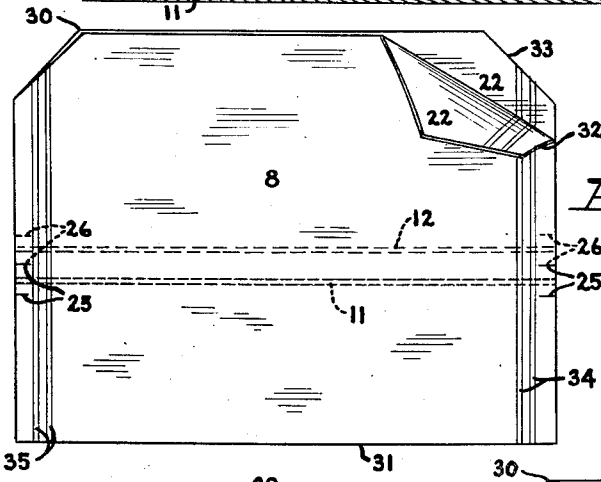


FIG. 3.

FIG. 4.

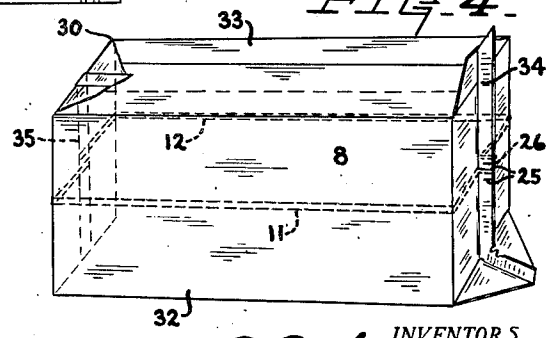
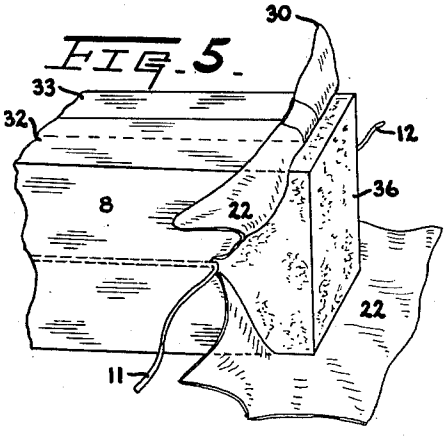


FIG. 5.



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ART OF PACKAGING

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2 Claims. (Cl. 229—87)

The present invention relates generally to improvements in the art of packaging perishable commodities for protective purposes, and relates more particularly to improvements in the production, construction and use of commodity wrappers or packages embodying tearing elements for facilitating opening thereof.

A primary object of this invention is to provide an improved and highly efficient commodity wrapper or package of the type embodying tear tapes for facilitating opening of the package and reclosing thereof after piece-meal distribution of the commodity, and to an improved practical and economical method of commercially producing such wrappers.

It has heretofore been proposed to provide commodity packages with tearing elements commonly referred to as tear tapes for facilitating opening of the wrapper in order to obtain access to the commodity. The most common of these so-called tear tape packages embody a single relatively narrow tearing element in the form of a strip or band disposed adjacent to the inner surface of the wrapper and extending transversely about the commodity so as to sever an end or cap portion of the wrapper for access to the package. Another form of tear tape package utilizes a plurality of tearing elements disposed in spaced series on the inner wrapper surface and likewise transversely encircling the commodity so as to enable removal of successive portions of the wrapper for piece-meal removal of the commodity. In still other cases, it has been proposed to provide a single tear tape extending along the inner surface of the wrapper longitudinally of the package for longitudinally splitting a side wall of the wrapper to obtain access to the commodity. However, all of these previously proposed tear tape packages have proven somewhat objectionable for one reason or another especially in the packaging of relatively perishable commodities such as cheese and meats. For instance, in the type of package wherein an end section or cap is removed by the tearing element, access to the packaged commodity is restricted to the end portion only of the package, and once opened, the package furthermore cannot be effectively reclosed for even temporary protection of the commodity. While the provision of a spaced series of transverse tear strips permits more ready access to the remaining commodity as the packaged contents are dispersed, especially in the case of a transversely sliced commodity such as bread, such wrappers are highly impractical and costly to manufacture, and the objection with regard to reclosure is still not obviated thereby. As for the type of package embodying a single longitudinally extending tear tape as heretofore proposed, the application is extremely limited since, once opened, the package likewise cannot be effectively reclosed, and access to the commodity is also undesirably restricted.

It is therefore a more specific object of the present invention to provide an improved easily opened commodity wrapper and package of the tear tape type which may be readily produced in a novel manner and which obviates

the objections and disadvantages heretofore attendant prior devices of this general type.

Another specific object of our present invention is to provide an improved commodity wrapper incorporating tear tapes extending longitudinally along opposite walls of the package and adapted to sever the opposite walls to any desired extent for ready access to and piece-meal removal of the commodity, the loose flaps of the wrapper resulting from such longitudinal severance being disposable over the end of the remaining commodity to reclose the package.

Another specific object of this invention is to provide an improved simple and rapid method of effectively commercially fabricating or producing easy-opening tear tape wrappers and packages with simple and efficient equipment at minimum cost to the consumer.

Still another specific object of the invention is to provide a new and improved double tear tape wrapper which is extremely durable in construction, which may be readily produced in large quantities in accordance with an improved method, and in which both tapes may be readily grasped and simultaneously manipulated to quickly open the final package to any desired extent.

An additional specific object of the present invention is to provide an improved commodity wrapper comprising, a flexible base sheet, a thermo-plastic coating adhered to a surface of the base sheet, and a pair of laterally spaced tearing elements disposed across the base sheet and adhered to the thermo-plastic coating, the base sheet being folded along a line intermediate the tear tapes with the tear tapes disposed between folds in opposed relation and close proximity to each other.

A further specific object of the present invention is to provide an improved method of producing tear tape wrappers as hereinabove defined for most effectively packaging perishable commodities.

These and other specific objects and advantages of our invention will be apparent from the following detailed description.

A clear conception of the features constituting our present improvement, and of the steps of the improved production method, may be had by referring to the drawing accompanying and forming a part of this specification wherein like reference characters designate the same or similar parts in the several views; and it is also contemplated that certain specific descriptive terms used herein shall be given the broadest possible interpretation consistent with the disclosure.

Fig. 1 is a more-or-less diagrammatic fragmentary and part-sectional perspective view of typical apparatus for performing the steps of coating the tear tapes and applying the same to an advancing coated web of wrapper stock;

Fig. 2 is an enlarged and somewhat exaggerated transverse section through one of the improved interiorly coated wrapper sheets and the laterally spaced tear tapes embodied therein;

Fig. 3 is a plan view of one of the improved wrappers folded and sealed at opposite ends to pouch-like formation and with a corner portion thereof turned back to more clearly reveal the construction thereof;

Fig. 4 is a perspective view of a cheese batch as finally enclosed and protectively housed in one of the improved wrappers, the closure flaps at one end of the package being partially distended to more clearly reveal the wrapper structure; and

Fig. 5 is a fragmentary perspective view of a packaged cheese batch with one end of the wrapper partially severed by the tear tapes and turned back upon itself prior to cutting and removing a portion of the commodity.

In accordance with our present improved method of

producing the improved commodity wrappers, a web of suitable relatively thin and flexible sheet material, having at least one surface thereof coated with thermo-plastic or heat-sealable material, is initially longitudinally advanced along a definite path. A pair of relatively narrow strips or ribbons of other flexible and sufficiently durable material to serve as tear tapes are then simultaneously coated with thermo-plastic or adhesive substance in heated and plastic condition as by passing the strips through a bath of molten wax or the like and removing the excess wax from the strips. The coated strips are then adhesively longitudinally applied to the thermo-plastic web surface in laterally spaced and parallel relation as the web is advanced, the heated and molten coating of the strips fusing with the web coating to provide an integral and unitary sheet. As the strips are thus applied to the web, the coated web is slit locally longitudinally of and on opposite sides of each tear strip in transverse alinement and at regularly spaced intervals, and the coated web and strips are transversely severed at such spaced intervals intersecting each series of local slits to provide successive wrapper sections each having gripping tabs for each of the tear strips at opposite ends thereof. Thereafter, the wrapper sections are each folded along a longitudinal line extending between and parallel with the strips so that the strips are disposed between folds or walls of the wrapper in opposed relation and in close proximity to each other with a slit of each tab forming set of slits in approximate alinement. Finally, the overlying portions or adjacent walls of each folded section are sealed as by application of heat and pressure along transverse lines somewhat inwardly of the opposite ends thereof and also inwardly of the tab forming slits and across the strips to thereby provide a pouch-like receptacle.

In the commercial exploitation of the wrapper production method thus described, it has been found convenient to utilize relatively simple apparatus such as diagrammatically illustrated in the drawing; and since the initial web coating as well as the wrapper cutting, folding and sealing operations may be performed with standard and well known apparatus or manually, the apparatus shown for purposes of illustration has been confined accordingly. Referring to Fig. 1, the web 7 of relatively thin and flexible thermo-plastically coated sheet material 8 is supplied from a rotatably supported roll 9 from which it may be withdrawn, in a known manner over the periphery of a rotatably supported roll 10. Likewise, the strips or ribbons 11, 12 are supplied from a pair of laterally spaced rotatably supported rolls or spools 13, 14 respectively; and as the strips 11, 12 are withdrawn from their respective spools, they are guided over and under guide rolls 15, 16 through a bath 17 of molten thermo-plastic material maintained in a tank 18. To remove the excess coating of thermo-plastic material from the strips 11, 12 and to correctly guide the same in properly spaced relation to the web 7, the strips 11, 12 as they leave the bath 17 are led through laterally spaced slots 19, 20 respectively in the guide member 21 to the coated surface 22 of the longitudinally advancing web 8 to which they are adhesively united or fused by the still relatively warm and molten thermo-plastic coatings 23, 24 respectively thereof as the web 7 and strips 11, 12 are simultaneously advanced. To form the sets of local longitudinal slits 25, 26 on opposite sides of the strips 11, 12 respectively and in spaced series as shown, the roll 10 may be provided with sets of alined peripheral knives 27, 28 respectively; and the web 7 and strips 11, 12 may thereafter be transversely severed along the dot-and-dash lines 29 in a well known manner to provide the successive wrapper sections 30 from which the corner portions may be removed, if desired. Each wrapper section 30 may subsequently be folded in any convenient manner along a longitudinal fold line 31 extending between the laterally spaced tear tapes or strips 11, 12 as shown in Fig. 3, the fold line 31 being so selected as to locate the strips 11, 12 between the folds or walls 32, 33 respectively of the wrapper and in close proximity but slightly offset with respect to each other so that one of the slits of the set 25 is directly alined with one of the slits of the other set 26 to thereby provide adjacent gripping tabs for the strips; and with the wrapper section 30 thus folded, the opposite ends thereof may be sealed along the lines 34, 35 extending perpendicular to the fold line 31 and inwardly of the ends and of the slits 25, 26, the sealing being effected in a known manner by application of heat and pressure. The pouch-like receptacle thus formed may then be supplied with the commodity such as a batch of cheese 36 which may be protectively enclosed therein by sealing the top or mouth portion and folding the end flaps as shown in Fig. 4.

The commodity wrapper thus formed comprises, in general, a base sheet 8 of flexible wrapping material; a coating 22 of thermo-plastic or heat-sealable material adhered to and substantially covering a surface of the base sheet 8; and a pair of laterally spaced thermo-plastically coated tear tapes 11, 12 extending entirely across or longitudinally of the base sheet in substantially parallel relation to the opposite edges of the sheet and adhered to the thermo-plastic coating 22 thereof, the base sheet 8 being slit inwardly from its opposite edges on both sides of the tear tapes as at 25, 26 to provide gripping tabs and being folded along an intermediate line 31 extending between and approximately parallel with the tear tapes 11, 12 whereby the tear tapes are finally disposed between the folds or walls 32, 33 in parallel opposed relation and in close but slightly offset or staggered proximity to each other with one of the slits 25 being in substantial alinement with one of the slits 26 at each end of the folded wrapper, the folds 32, 33 of the base sheet 8 also being heat sealed to each other at opposite ends along lines 34, 35 extending substantially perpendicular to the fold line 31 across the tapes 11, 12 and spaced inwardly of the sheet edges and of the slits 25, 26.

From the foregoing detailed description, it is believed apparent that the present invention contemplates provision of an improved and novel commodity wrapper embodying tear tapes extending longitudinally along the opposite walls thereof for facilitating opening of the final package to any desired extent, as shown in Fig. 5, to thereby obtain access to the enwrapped commodity for piece-meal consumption thereof and for subsequent reclosure of the open end by the loose flaps resulting from the initial tearing operation. To open the final sealed package for access to the commodity 36, it is only necessary to grip one of the adjacent end tabs formed by the respective sets of slits 25, 26 with the fingers of each hand and pull the ends of the respective tapes 11, 12 in opposite directions until the wrapper is slit or torn thereby to the desired extent, after which the flaps of the torn portion may be folded back for access to the commodity and subsequently reclosed in an obvious manner. The improved method of fabricating the tear tape wrappers is also extremely simple and highly efficient and may be economically and rapidly effected with the aid of relatively simple and inexpensive apparatus; and while the step of transversely severing the web into successive sections has been described as preceding the folding operation, these steps may be and often are interchanged with the web being folded immediately after the formation of the local spaced slits, and then transversely severed along lines intersecting the slits. The base sheet 8 may be of any desired packaging material such as regenerated cellulose or the like coated with a protective moisture resistant wax or other thermo-plastic or pressure sensitive material, and the tear strips or tapes 11, 12 may likewise be formed of a relatively strong and durable sheet material coated with a like thermo-plastic substance which will adhere to the coated wrapper surface 22 so as to provide a unitary wrapper. The improved wrappers have

been successfully commercially produced in accordance with the method herein described, and these wrappers have proven highly satisfactory and acceptable in actual commercial use, especially in the cheese packaging industry.

It should be understood that it is not desired or intended to limit this invention to the exact details of construction or to the precise steps of the method herein shown and described, since various modifications within the scope of the appended claims may occur to persons skilled in the art to which this invention pertains.

We claim:

1. A commodity container comprising, a base sheet of flexible wrapping material having a thermo-plastic coating adhered to one surface thereof and folded with the coating disposed between folds to provide similar opposed side walls sealed at opposite ends inwardly of and adjacent to the marginal edges to form a pouch-like container, a pair of tear tapes adhered to the thermo-plastic coating of said sheet and each extending entirely transversely across a medial portion of one of said side walls and terminating outwardly beyond the end seals thereof in substantial parallelism and in opposed but offset relation, and a pair of slits in each of said side walls extending inwardly from a common edge thereof toward the adjacent end seal along opposite sides of the respective tear tapes, one slit of each pair being in substantial alinement with one of the slits of the other pair.

2. A commodity container comprising, a base sheet of flexible wrapping material having a thermo-plastic coating adhered to one surface thereof and folded along an intermediate fold line with the coating disposed between

folds to provide similar opposed side walls sealed at opposite ends inwardly of and adjacent to the marginal edges to form a pouch-like container, a pair of tear tapes adhered to the thermo-plastic coating of said sheet and each extending entirely transversely across a medial portion of one of said side walls and terminating outwardly beyond the end seals thereof in substantial parallelism with each other and with the fold line of said base sheet and in opposed but offset relation, and a pair of slits in each of said side walls extending inwardly from a common edge thereof toward the adjacent end seal along opposite sides of the respective tear tapes, one slit of each pair being in substantial alinement with one of the slits of the other pair.

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