Sept. 6, 1966 F. G. PAXTON 3,270,872

MULTI-CLOSURE LABEL-BEARING STRIP

Filed April 20, 1965

2 Sheets-Sheet 1

Fig. 1

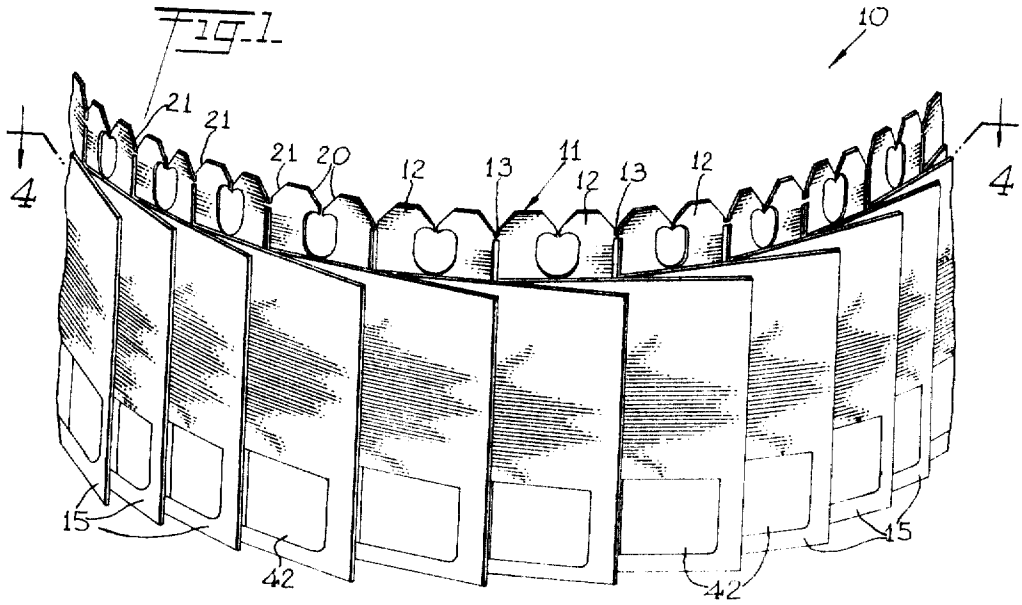


Fig. 2

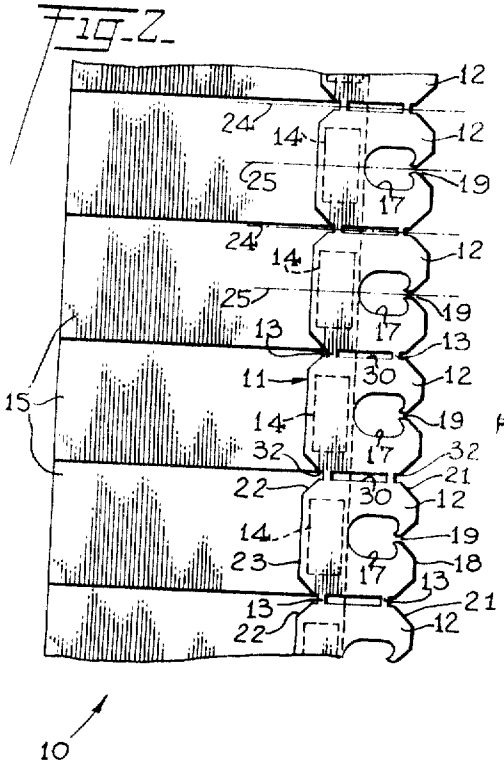


Fig. 3

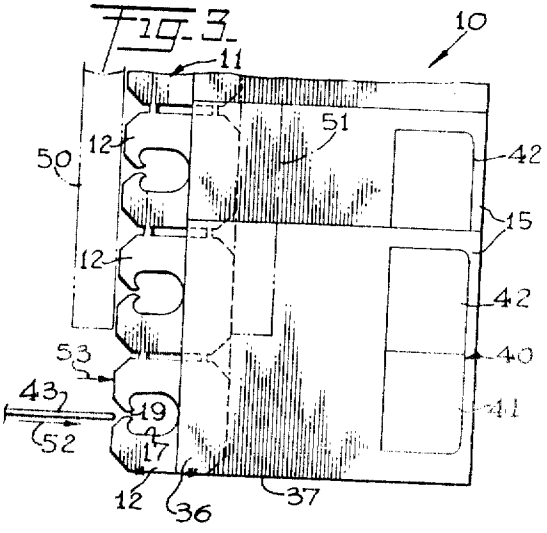


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Fig. 4

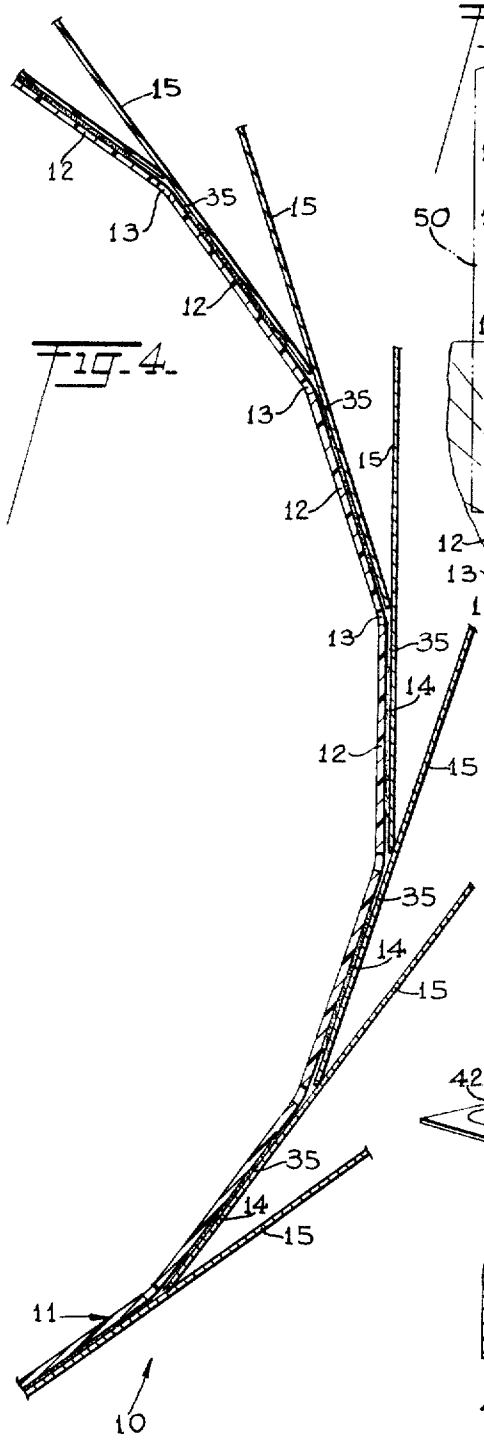



Fig. 5

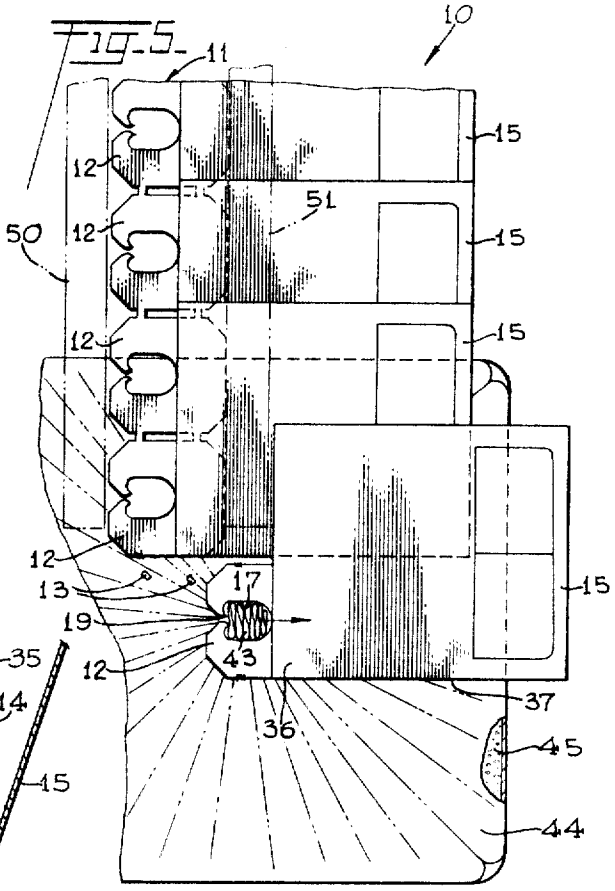
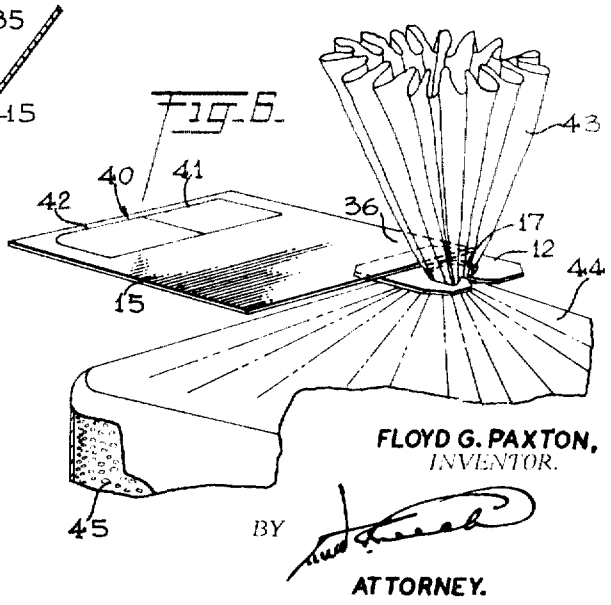



Fig. 6

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United States Patent Office

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3,270,872

# MULTI-CLOSLURE LABEL-BEARING STRIP

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2 Claims. (Cl. 206—56)

This invention relates to flat sheet polystyrene bag closures united in strip form, such as are covered by my U.S. Patent No. 3,164,250, dated January 5, 1965, and particularly to an improvement thereon wherein each closure is separately united with an individual cardboard label.

A bag closing head is disclosed in U.S. Patent No. 3,163,972 which was developed for automatically guiding said patented closure-strip to a bag neck closing station and which functions cyclically, in response to bag necks being received therein, to apply an endmost closure to a bag, separate said closure form the strip and then advance the strip to position the next endmost closure at said station. This machine also prints the price of the product thus packaged on each individual closure as the strip is being fed to the bag closing station. There is a demand, however, for a larger label than that provided by the rather small area of the closure.

It is an object of the present invention to provide a closure strip of the specific type above mentioned which may be fed through and applied to bags automatically by said patented machine, with only slight alterations of the latter, and in which each individual closure has affixed thereto a relatively stiff cardboard label, but with the latter so disposed as not to interfere with the feeding of the strip or the application of the endmost closure to a bag at the beginning of each cycle, or the subsequent separation of said closure from the strip during said cycle.

Another object of the invention is to provide such a combination closure-label strip in which the printing function of said machine is applicable in printing a mark, such as the price of the packaged product, on each of the labels in said combination strip as the latter is being fed towards the bag closing station of said machine.

The manner of accomplishing the foregoing objects as well as further objects and advantages will be made manifest in the following description taken in connection with the accompanying drawings, in which:

FIG. 1 is a front perspective view of a preferred embodiment of the invention which shows how each of the labels is affixed to one of the closures as by gluing a corner portion of said label to a blank portion of said closure so that said labels extend away from over said closures in the opposite direction from the side edge of the strip in which the bag neck receiving openings of the closures are provided, thus leaving the latter free for the application of a bag neck to the endmost closure of the strip.

FIG. 2 is a back elevational view of a portion of the multi-closure label-bearing strip of the invention.

FIG. 3 is a front elevational view of an end portion of the multi-closure label bearing strip of the invention and illustrates how one edge of the label affixed to each closure coincides with the leading transverse edge of said closure so as to not interfere with the separation of the endmost closure from the closure next adjacent thereto after a bag neck has been applied to said endmost closure.

FIG. 4 is an enlarged longitudinal sectional view taken on the line 4—4 of FIG. 1 and illustrating the manner in

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which the labels are preferably affixed to the respective closures of said closure strip so that said labels are disposed in feathered relation and do not interfere with the coiling of the closure strip for storage and shipment.

FIG. 5 is an operation view similar to FIG. 3 and illustrates how the manner of affixing the labels to the closures facilitates the ready separation of the endmost closure from the balance of the strip following its application to the neck of a bag containing a loaf of bread.

FIG. 6 is a fragmentary perspective view of the neck portion of a bag containing a loaf of bread, with this neck closed by an individual closure-label which has been applied to said bag while said closure-label was still a part of the multi-closure label bearing-strip of the present invention.

Referring specifically to the drawings, the invention is there shown as embodied in a combination multi-closure label-bearing strip **10** which includes a multi-closure strip **11** embodying a series of consecutive closures **12** which are integrally connected by transversely spaced webs **13** and have affixed thereto as by glue patches **14** a series of cardboard labels **15**.

The multi-closure strip **11** is described in U.S. Letters Patent No. 3,164,250 (supra), as preferably formed from a thin flat strip of polystyrene or the like which is about .032" in thickness and ⅞" in width and is die formed to produce in said strip a consecutive series of closures **12** each of which has a heart shaped bag neck confining mouth **17** which is connected to one of the side edges **18** of the strip **11** by a narrow opening **19** having widely flaring lips **20** (FIG. 2). To complete the manufacture of the multi-closure strip **1**, the die cutting operation cuts a notch **21** in strip side edge **18** and a notch **22** from the opposite side edge **23** of said strip, each such pair of notches being arranged symmetrically relative to a transverse axis **24**, said axes **24** being equally spaced at opposite ends of each closure from the transverse axes **25** of the bag-neck-confining mouth **17** and opening **19** of said closure. Simultaneously with the formation of notches **21** and **22**, a transverse slot **30** is formed symmetrical with the transverse axis **24** of said notches, this slot constituting a rectangle having a dimension, lengthwise of the strip, of .0625" and having its ends closed by two webs **13**, the length of which is equal to the width of said slot, the transverse dimension of each of said webs being .039". The webs **13** are preferably uniform in width throughout their length and inner portions of notches **21** and **22** preferably have parallel walls **32** which are spaced apart the same distance as the width of slot **30** and are in alignment with the transversely disposed walls of said slots. It is thus to be noted that all four angles with which each of the webs **13** meets the consecutive pair of closures **12** which are integrally joined by said webs, are right angles.

The distinctive feature of the patented multi-closure strip **11** resides in its capacity to respond to relatively slight pressures applied on opposite side edges of the strip above and below the axis **24** located between a given pair of said closures so as to shift one of said closures laterally relative to the other. With the multi-closure strip dimensioned as above noted, and formed of polystyrene or the like, this shifting movement causes the material of the strip to crack in the areas of union between opposite ends of the webs **13** and the closures connected thereby so as to com-

pletely separate the webs from these closures and said closures from each other.

It is a particular object of this invention to provide the multi-closure strip **11** with a multiple of labels uniformly rectangular in shape and having an area many times greater than the area of one of the closures **12** and in which each of these closures has affixed thereto one of said labels. Another object is to so equip the closures **12** of the strip **11** with such labels that these labels will not interfere in any way with the feeding of the strip through a bag closing machine and so their presence will be compatible with the operation of said machine to separate the endmost closure from the strip by the mode of operation inherent in the latter and above described.

In furtherance of these objects, the preferred form of the invention disclosed herein has the glue patches **14** applied to blank areas **35** provided on the closures **12** between the bag closing mouths **17** thereof and the opposite side edge **23** of the strip. This application of glue patches **14** is accomplished incidental to the die forming of the multi-closure strip **11**, and, immediately following the application of such a patch to one of the closures **12** as it emerges from the punch press, a label **15** is pressed downwardly on the strip **11** so that a corner portion **36** of said label compresses said glue patch between said label and said closure and cements the label in place on said closure. When so applied, the longitudinal edges of the label are parallel with the multi-closure strip **11** and the label extends lengthwise of the multi-closure strip so as to overlap another label previously applied to the next adjacent closure in said strip. The portion of the label that overlies the multi-closure strip **11** however is only about ⅙ of the entire area of the label and the balance of the label extends laterally beyond side edge **23** of the multi-closure strip **11** at right angles to said strip. A lateral edge **37** of each label so applied to a closure is disposed adjacent corner portion **36** of the label which is directly cemented to said closure and is preferably aligned with the endmost transverse edge of said closure as shown in FIG. 3. The importance of this feature will be made clear hereinafter.

Each of the labels **15** is preferably provided with a printed box **40** having two sections **41** and **42**, the first of which is preferably used for indicating the minimum net weight of the goods to be packaged. The second of said sections is disclosed to view when the multi-closure label bearing strip **10** is fully assembled so that this box section on each label is available to have the price of the product printed thereon, as the strip **10** is fed through a bag closing machine.

With suitable modification, the bag closing head shown in U.S. Patent No. 3,163,972 may be adapted for feeding the multi-closure label bearing strip **10** downwardly through said machine to present the endmost closure **12** of said strip with a label **15** affixed thereto as above described, with the mouth **17** and side edge opening **19** of said closure disposed in the plane of a flattened neck **43** of polyethylene bag **44** while said neck is being fed into said mouth so as to close said bag and package a loaf of bread **45** previously placed therein.

The multi-closure strip **11** is confined, while thus being fed vertically downwardly through said bag closing head, between a pair of guide bars **50** and **51** disposed adjacent opposite side edges **18** and **23** of said strip. As shown in FIGS. 3 and 5, means are also provided in said bag closing head for feeding said bag neck **43** in flattened condition as shown in FIG. 3 in the direction of the arrow **52** so that this bag neck is very rapidly introduced through the opening **19** into the closure mouth **17** of the endmost closure **12**. As the bag neck passes through said opening into said mouth, it becomes bunched together in said mouth and causes the endmost closure **12** to close the bag.

The bag closing head also has a cyclic closure separation and strip feed mechanism (not shown) but which is fully disclosed in said U.S. Patent No. 3,163,972. This



mechanism is responsive to the arrival of the bag neck **43** at the endmost closure **12** as shown in FIG. 3 to cause said mechanism to apply pressure at the point indicated by the arrow **53** to the edge **18** of said endmost closure. This pressure is applied in uniformly timed relation with the delivery of the bag neck into the mouth of the closure so that just as this operation is consummated said closure is shifted horizontally with respect to the closure next thereabove. This operates, by the mode of operation inherent in said strip and above described, to crack the material of the strip in the areas of union between the webs **13** connecting the endmost closure with the balance of the strip thereby separating said webs from the strip and freeing the endmost closure to be carried away with the bag just closed thereby. It is thus unnecessary to halt the movement of the bag through the machine to accomplish the closing of a bag as above described.

As will be noted in FIG. 5, the manner of affixing the labels **15** to the individual closures **12** of the multi-closure strip **11** permits a much larger label than each individual closure to be affixed to the latter without interfering in any way with the normal mode of operation of separating said closures from the closure strip.

The perspective view in FIG. 6 indicates the tremendous increase in advertising space presented to the prospective purchaser by the label **15** over that available on the closure **12** by which the bag is closed.

It is also desired to point out that while the labels **15** are relatively flat and stiff, they are adapted to bend in response to a moderate degree of pressure so that the multi-closure label-bearing strip **10** may be readily coiled and packaged for storage, transportation and for loading it into a magazine on the bag closing head from which the strip may be fed to a bag closing station.

While only a single form of the present invention is disclosed herein, it is to be understood that this is for illustrative purposes only and that various changes and modifications may be made in this embodiment without departing from the spirit of the invention or the scope of the appended claims.

I claim:

**1.** In a multi-closure label-bearing strip, wherein the closures each have a bag confining mouth and a narrow opening located in a longitudinal side edge of said strip and communicating with said mouth for admitting a bag neck into the latter, the structure comprising: a multiple of closures of transversely stiff, thin sheet material comprising polystyrene or the like, arranged consecutively with their transverse edges in closely spaced relation; a pair of transversely spaced webs integrally connecting with each consecutive pair of closures in frangible areas of union located between opposite ends of said webs and said closely spaced edges of said consecutive closures, said frangible areas being spaced far enough apart lengthwise of said strip and being sufficiently restricted in the cross-sectional dimension thereof, measured transversely of said strip, that compressive forces applied in the plane of said strip from opposite directions respectively to said consecutive closure and through said closures to opposite ends of said pair of webs, without causing said closures to buckle, will cause the material of said strip to substantially simultaneously crack in said frangible areas of union at the opposite ends of said pair of webs and thus separate said webs from said closures and said closures from each other; and a multiple of rectangular stiff, thin, flat labels, the area of each of which is substantially larger than that of a closure, a corner portion of each of said labels being affixed to one of said closures so as not to overlie said mouth or edge opening of said closure, and so as not to overlie the transverse edge of said closure which will be located at the end of said strip when said closure becomes the endmost closure of said strip, each label being feathered in overlapping relation with the labels affixed to adjacent closures.

**2.** A multi-closure label-bearing strip as recited in claim **1** wherein major portions of said labels extend

transversely a substantial distance away from over said strip along the opposite side edge thereof from the side edge having bag neck receiving openings; and means designating printing areas on like portions of said labels which are so disposed laterally away from over said closure strip and are not covered by adjacent labels, and are thus exposed for printing a price mark or the like in each of said areas as said strip is being fed lengthwise to a bag closing station.



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| | | | |
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