

Nov. 20, 1956

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2,771,186

DISPENSING CARTON, CUTTER AND METHOD OF MAKING

Filed Oct. 24, 1952

2 Sheets-Sheet 1

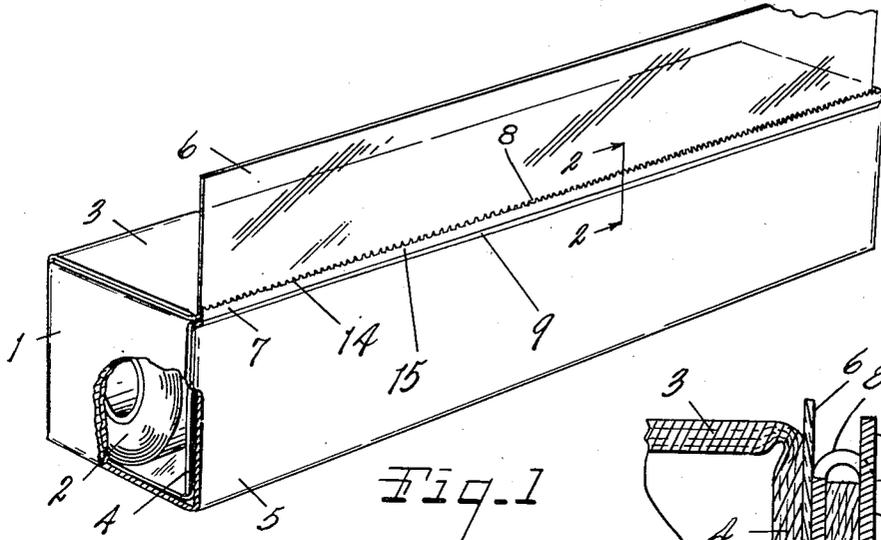


Fig. 1

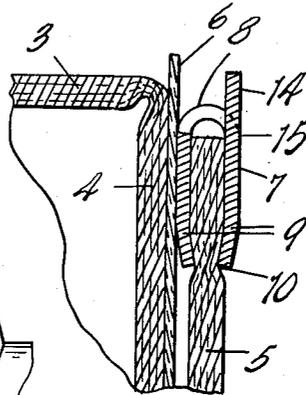


Fig. 2

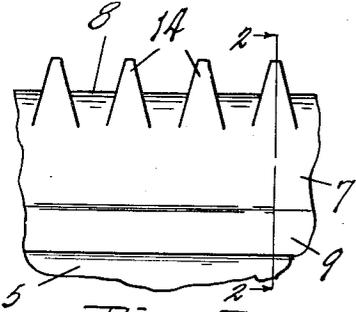


Fig. 3

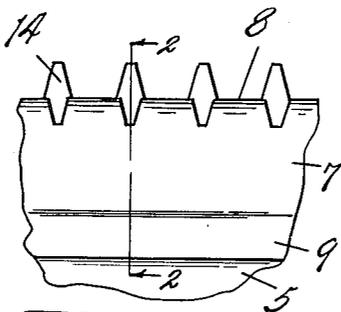


Fig. 4

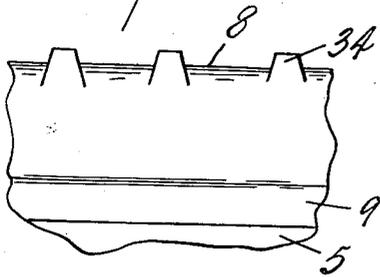


Fig. 13

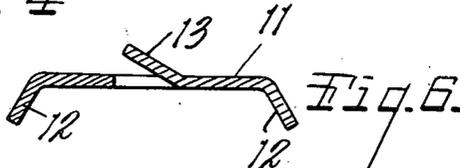


Fig. 6

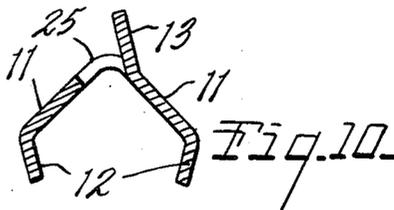


Fig. 10

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Fig. 5.

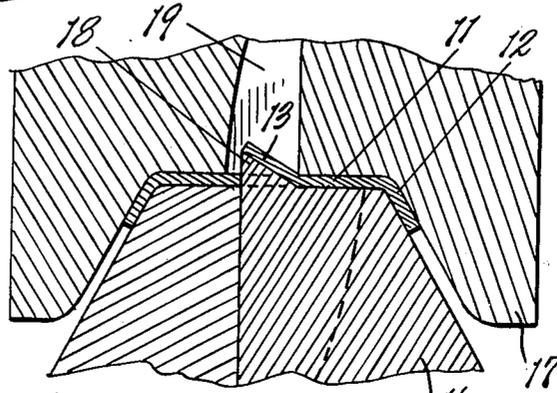


Fig. 7.

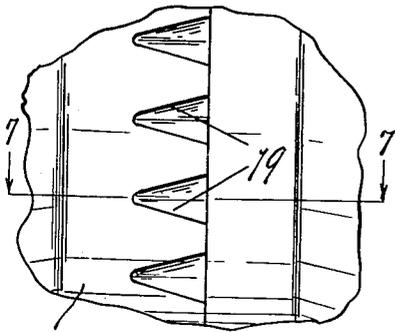


Fig. 8.

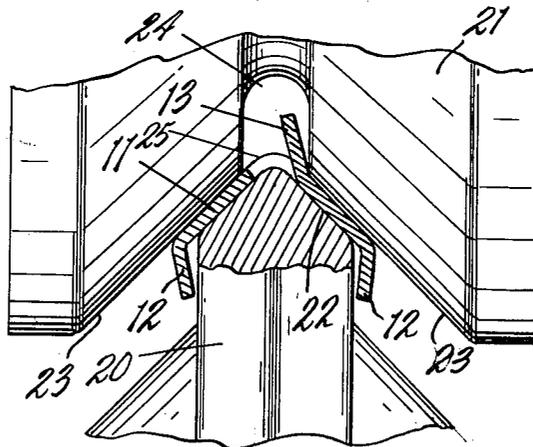


Fig. 9.

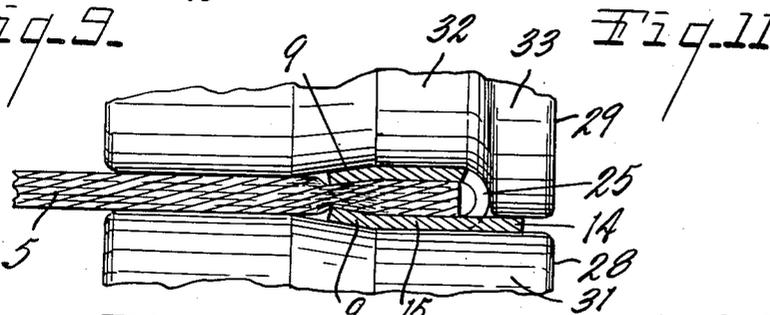


Fig. 11.

Fig. 12.

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DISPENSING CARTON, CUTTER AND METHOD OF MAKING

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8 Claims. (Cl. 206—58)

This invention relates to improvements in a dispensing carton, cutter and method of making.

The main objects of this invention are:

First, to provide a dispensing carton provided with a cutter which is highly efficient as a cutter although formed of very light stock and which effectively reinforces the wall to which it is applied.

Second, to provide in a dispensing carton a cutter which may be very economically formed and applied and when applied is very securely retained without the use of securing prongs or rivets.

Third, to provide a method of forming and applying a cutter to a dispensing carton as a continuous operation.

Fourth, to provide a method for forming cutters for dispensing cartons and the like which enables very rapid and economical production.

Objects relating to details and economies of the invention will appear from the description to follow. The invention is defined and pointed out in the claims.

A preferred embodiment of the invention is illustrated in the accompanying drawing, in which:

Fig. 1 is a front perspective view of a dispensing carton embodying my invention with parts broken away to illustrate structural details.

Fig. 2 is an enlarged fragmentary view in transverse section on a line corresponding to line 2—2 of Figs. 1, 3 and 4.

Fig. 3 is a front elevational view of the front wall of the carton with the cutting member thereon.

Fig. 4 is an inside elevational view of parts shown in Fig. 3.

Fig. 5 is a fragmentary perspective view of a strip of stock employed in the production of the cutter of my invention.

Fig. 6 is a transverse section illustrating one of the steps in the forming of the cutter of my invention and following the step of forming the strip as shown in Fig. 5.

Fig. 7 is a fragmentary sectional view taken on a line corresponding to line 7—7 of Figs. 8 and 9 of a pair of coating rotary forming die members for the step illustrated in Fig. 6.

Fig. 8 is a fragmentary face view of the female die member.

Fig. 9 is a fragmentary face view of the male die member.

Fig. 10 is a cross sectional view illustrating a step following that of Fig. 6 in the forming of the cutter.

Fig. 11 is a fragmentary view of a pair of coating male and female die members for operating on the strip as shown in Fig. 6 to form the strip as shown in Fig. 10.

Fig. 12 is an enlarged fragmentary view illustrating the means for applying the partially conformed cutter as shown in Fig. 10 to the carton wall and completely forming the cutter.

Fig. 13 is a fragmentary front elevational view of a modified form or embodiment of my invention.

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In the accompanying drawing the parts are substantially enlarged for convenience and clarity of illustration.

Referring to the accompanying drawing, the carton generally designated by the numeral 1 is adapted to receive the roll of paper 2 to be dispensed. The hinged cover 3 is provided with a tucking flap 4 disposed on the inner side of the front wall 5. The web 6 of paper is passed under the flap 4 and upwardly between the flap and the front wall 5. I have not illustrated the details of the carton as they form no part of this invention.

The cutter element designated generally by the numeral 7 is of downwardly facing U section, the bight portion 8 being upwardly curved and the lower edges 9 of the arms being converged inwardly to clampingly engage the front wall 5 as shown at 10 in Fig. 2. The cutter is formed of a strip of thin bendable ribbon stock 11 having diverging flanges 12 on its edges. I have illustrated the strip in this form in Fig. 5 as it is commercially available in this form although, of course, it will be understood that the steps of forming might start with flat ribbon stock and subject it to a forming operation to form the flanges 12.

With the strip in the form shown in Fig. 5 it is subjected to a forming step resulting in the shape shown in Fig. 6, the strip 11 then having A-shaped tooth forming portions 13 which in final position, as best shown in Figs. 2 and 12, constitute the teeth 14 which are desirably disposed in the plane of the outer arm portion 15 of the cutter member.

The parts as shown in Fig. 6 are produced by passing the strip 11 through coating roller forming dies 16 and 17, the die 16 being the male die and is provided with a plurality of radially inclined angularly spaced tapered lug-like cutting and forming members 18 while the member 17 has corresponding V-shaped recesses 19 coating therewith. As the die members are rotated, the strip 11 is advanced through the die members and the V-shaped tooth forming members 13 sheared out and struck up therefrom to the inclined position shown in Figs. 6 and 7. The strip 11 is then passed between the pair of coating forming rollers 20 and 21 to conform the strip 11 to the general V-section shown in Fig. 10 with its flanges 12 turned inwardly.

The face 22 of the former roller 20 is of general V-shape while the member 21 has outwardly diverging surfaces 23 disposed at an angle corresponding to the angle of the face 22. The strip 11 is in effect folded or bent over the face of the former 22, the member 21 having an annular recess 24 receiving the tooth forming elements 13. As the tooth forming elements extend from the inner edge of one arm of the cutter member and the cutter member is bent at 25 upon the former 22, the tooth elements 13 are further swung to upright position.

With the cutter strip 11 conformed as shown in Fig. 10 it is disposed over the edge of the wall 5 to which it is to be applied and passed between a pair of coating rollers 28 and 29. These rollers have opposed diverging conical portions 30 which engage the flange portions 12 of the strip and clamp them firmly upon the wall 5. 28 has a cylindrical portion 31 and the roller 29 has an opposed cylindrical portion 32. These cylindrical portions act to bring the arms of a cutter member above the inturned gripping portions 12 thereof into substantially parallel relation. The roller 29 is provided with a cylindrical flange-like end portion 33 coating with the outer end portion of the cylindrical part 31 of the roller 28 to swing the teeth of the cutter to final position in the plane of the outer arm of the cutter.

It will be noted that the tips of the teeth project beyond the bight portion of the cutter to effectively engage the material drawn thereover. While the teeth might be positioned on the inside of the cutter there is a sub-

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stantial advantage in having them on the outer side as is illustrated as the sheet may be very effectively engaged therewith and the web from which a strip has been severed, as shown in Fig. 2, projects sufficiently for convenient grasping.

The cutter of my invention may be formed of very light and quite soft and easily workable stock; at the same time it is strong and rigid and serves as an effective reinforcement for the wall of the carton to which it is applied. The cutter is applied without the use of rivets or attaching prongs and provides a smooth surface except for the teeth on its cutting edge. As stated, the parts are shown in greatly exaggerated dimensions in the accompanying drawing. No effort has been made to show the parts in their relative proportions.

In the embodiment shown in Fig. 13 the teeth 34 are more widely spaced and they are less pointed than in the preferred embodiment. This is satisfactory for the dispensing of some materials. For effective severing of certain materials, such as cellophane, Pliofilm and the like, the closely spaced and sharp teeth of the preferred embodiment are desirable. The more widely spaced teeth are suitable for certain types of waxed and other wrapping papers.

One of the advantages of my cutter and method of forming and applying the same is that the stock provided in the form shown in Fig. 5 is then subjected to the forming and dieing members shown in Fig. 6 resulting in the partially formed strip as shown in Fig. 6. The partially formed strip of Fig. 6 is passed directly between the forming members 20 and 21 resulting in forming the strip to the position shown in Fig. 10. The strip as conformed as shown in Fig. 10 is then associated with the wall to which it is to be applied by positioning over the edge of the wall and passing between the rollers 28 and 29 which securely clamp the cutter to the wall and finally position the teeth as shown in Figs. 2 and 12. These operations may be carried on at high speed and result in a uniform product with little manual labor involved.

In practice the cartons are successively pushed laterally into position so that the wall 5 thereof is aligned with the advancing strip conformed to the shape shown in Fig. 10 and the desired length of the strip advanced over the edge of the wall which at that time is relatively stationary. The strip and the wall over which it is disposed are then simultaneously advanced between the rollers 28 and 29 resulting in the complete assembly of the cutter on the wall. During the forming operations to conform the strip to the shape shown in Fig. 10, the stock is in a continuous piece from which a section of suitable length is cut after it has been associated with the wall to which it is applied.

Another advantage of my invention is that thin, flexible, easily workable stock may be used which when applied constitutes an effective binding and reinforce for the wall to which it is applied, greatly stiffening and strengthening the same, and this permits the use of relatively thin carton or container stock. There are no stresses on the stock such as occur where metal cutters of certain used types are attached by means of prongs or rivet-like elements.

I have illustrated and described my invention in a highly practical embodiment thereof. I have not attempted to illustrate or describe other adaptations or embodiments as it is believed that this disclosure will enable those skilled in the art to embody or adapt the invention as may be desired.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent is:

1. A dispensing carton including a front wall and a cover having a closure flap adapted to be positioned on the inner side of the front wall, a cutter of downwardly facing U-shape having a curved bight portion and substantially parallel arms terminating in inwardly converg-

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ing flange-like edge portions, and a series of A-shaped teeth spaced at their bases struck out from the bight portion and disposed in the plane of the outer arm of the cutter to project above the bight portion thereof, the portion of the bight portion intermediate the bases of the teeth integrally connecting the arms to each other, said cutter being disposed over the edge of the front wall and said flange-like edge portions being fixedly clamped upon the front wall, said cutter being of a length corresponding to the length of the front wall and constituting a reinforcement and binding for the edge thereof.

2. A dispensing carton including a wall, a cutter of downwardly facing U-shape having a curved bight portion and substantially parallel arms terminating in inwardly converging flange-like edge portions, and a series of A-shaped teeth spaced at their bases struck out from the bight portion and disposed in the plane of the outer arm of the cutter to project above the bight portion thereof, the portion of the bight portion intermediate the bases of the teeth integrally connecting the arms to each other, said cutter being disposed over the edge of the wall and said flange-like edge portions being fixedly clamped upon the wall, said cutter being of a length corresponding to the length of the wall and constituting a reinforcement and binding for the edge thereof.

3. A dispensing carton including a front wall and a cover having a closure flap adapted to be positioned on the inner side of the front wall, a cutter of downwardly facing U-shape having a bight portion and substantially parallel arms, and a series of teeth spaced at their bases struck out from the bight portion and disposed in the plane of one arm of the cutter to project above the bight portion thereof, the portion of the bight portion intermediate the bases of the teeth integrally connecting the arms to each other, said cutter being disposed over the edge of the front wall and fixedly clamped upon the front wall, said cutter being of a length corresponding to the length of the front wall and constituting a reinforcement and binding for the edge thereof.

4. A dispensing carton including a wall, a cutter of downwardly facing U-shape having a bight portion and substantially parallel arms, and a series of teeth spaced at their bases struck out from the bight portion and disposed in the plane of one arm of the cutter to project above the bight portion thereof, the portion of the bight portion intermediate the bases of the teeth integrally connecting the arms to each other, said cutter being disposed over the edge of the wall and fixedly clamped upon the wall, said cutter being of a length corresponding to the length of the wall and constituting a reinforcement and binding for the edge thereof.

5. An elongated strip of U-section adapted to be disposed over a carton wall formed of a strip of ductile metal folded longitudinally upon itself into a general U-shape and having a curved bight, the arms of the cutter being spaced to receive the wall of a carton between them and terminating in inwardly converging clamping flanges, said cutter having a series of teeth spaced at their bases struck out from its bight and disposed in the plane of an arm of the cutter to project beyond the bight portion thereof, the arms of the cutter being integrally connected between the bases of the teeth.

6. A dispensing carton including a wall, a cutter of downwardly facing U-shape having a bight portion and substantially parallel arms terminating in downwardly converging flange-like portions, a series of A-shaped teeth struck out from the bight portion with their bases spaced and merging into one arm of the cutter with their tips projecting above the bight thereof, the arms of the cutter being integrally connected between the bases of each pair of adjacent teeth, said cutter being of a length substantially that of the front wall and being embracingly disposed over the edge of the front wall with the arms thereof in fixedly clamped engagement therewith, said cutter

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constituting a reinforcing and binding element for the edge of the wall.

7. A dispensing carton including a wall, a cutter of downwardly facing channel section having a bight portion and substantially parallel arms connected thereby, and a series of teeth struck out from and projecting above the bight portion, the bases of the teeth being spaced, the arms being integrally connected by portions of the bight between the bases of adjacent pairs of teeth, said cutter being disposed over the edge of the carton wall with its arms retainingly clamped thereon whereby the cutter is secured to the wall and constitutes a reinforcement and binding for the edge thereof.

8. The method of forming a cutter for a dispensing carton comprising the steps of providing an elongated strip of thin ductile metal having diverging flange-like edge portions, cutting and striking out a plurality of tooth elements from the central part of the strip with the bases of the tooth elements spaced from each other and with the tooth elements angularly positioned relative to the plane of the strip and with the portions of the strip between the base portions of the tooth elements integrally connecting the opposed side edge portions of the strip to each other, bending the strip longitudinally of the

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zone from which the tooth elements are struck to form a pair of arms in approximately V-shape thereby further increasing the angular relation of the tooth elements to the body of the strip, disposing the strip so formed over the edge of a carton wall, and further bending the arms towards each other with their flange-like edge portions converging inward towards each other and into clamping engagement with the carton wall with the tooth elements projecting beyond the bight portion of the cutter.

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