

Aug. 11, 1970

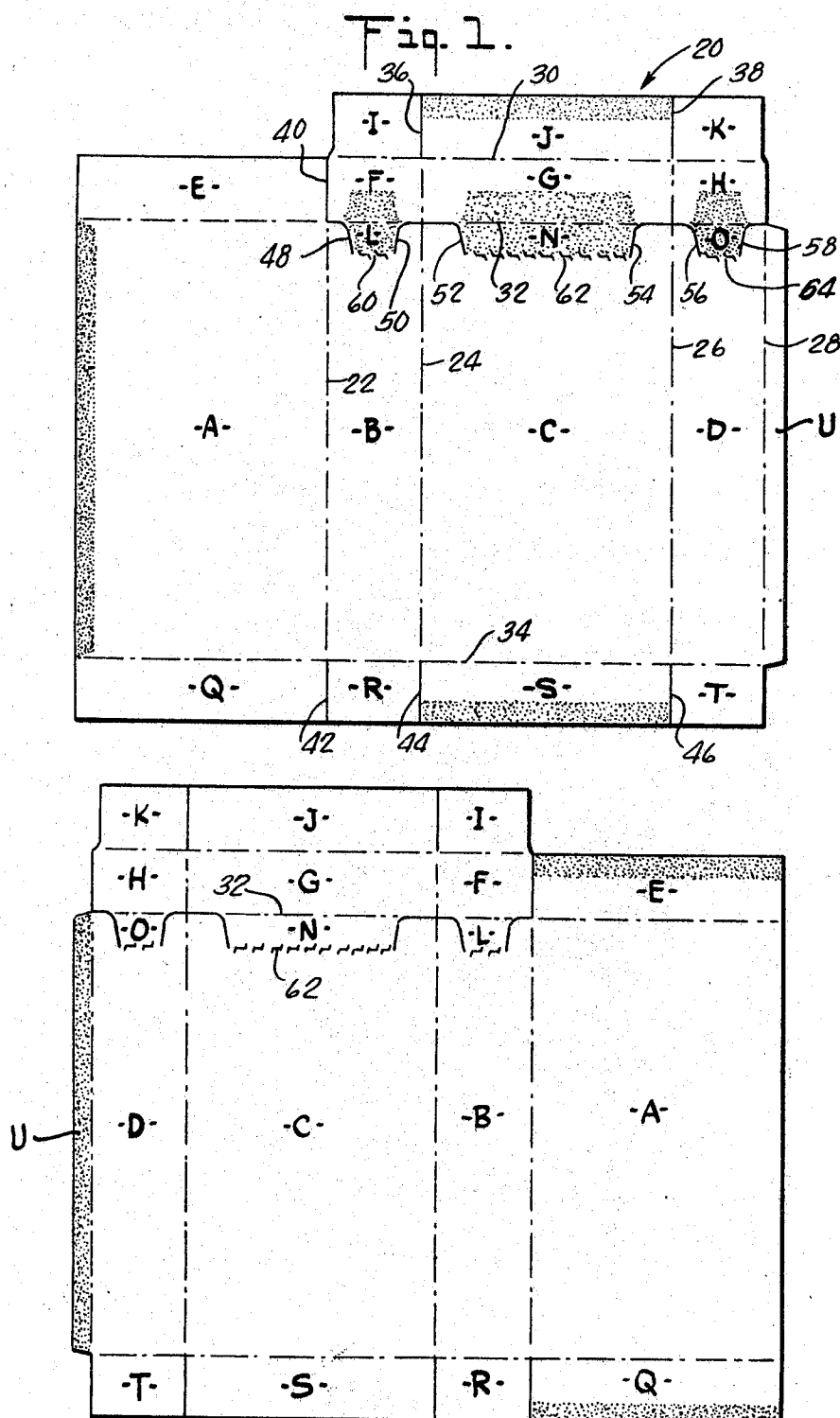
F. L. PHILLIPS, JR

3,523,636

RECLOSABLE CARTON HAVING A HINGED END CLOSURE

Filed July 1, 1968

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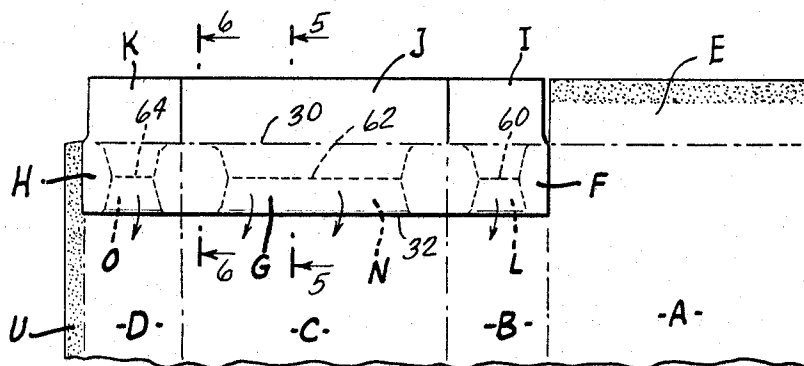


Fig. 3.

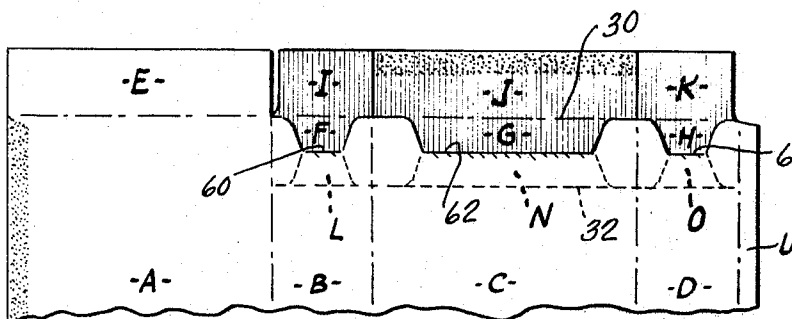


Fig. 4.

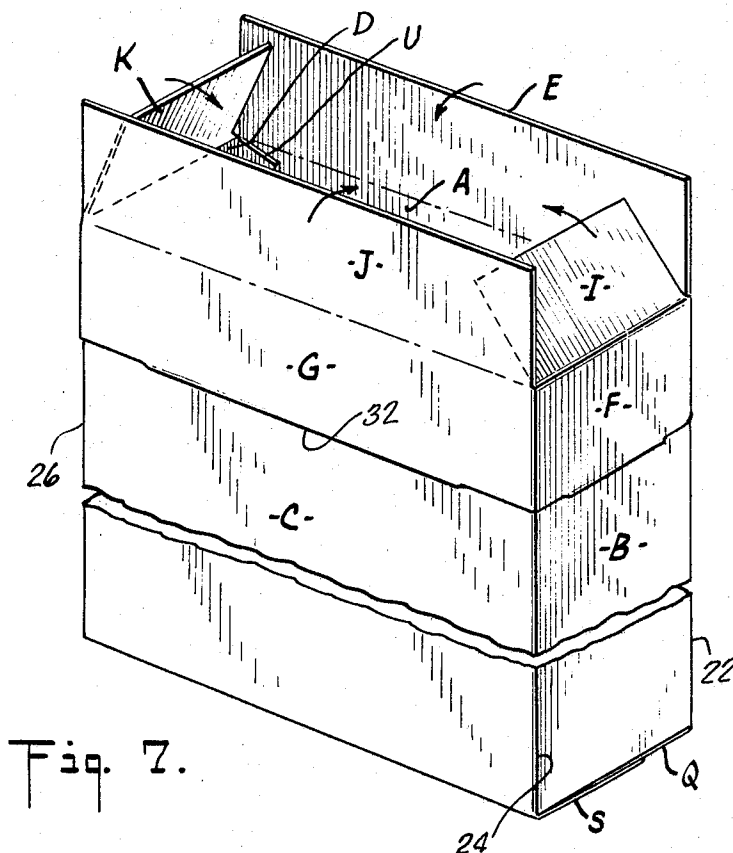


Fig. 7.

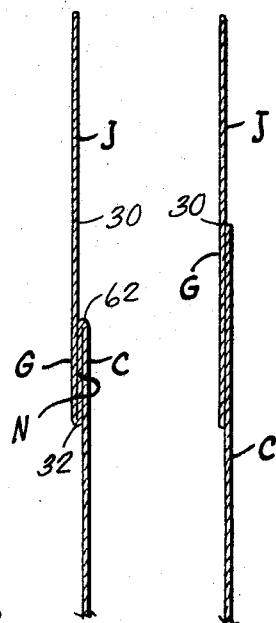


Fig. 5.

Fig. 6.

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Fig. 8.

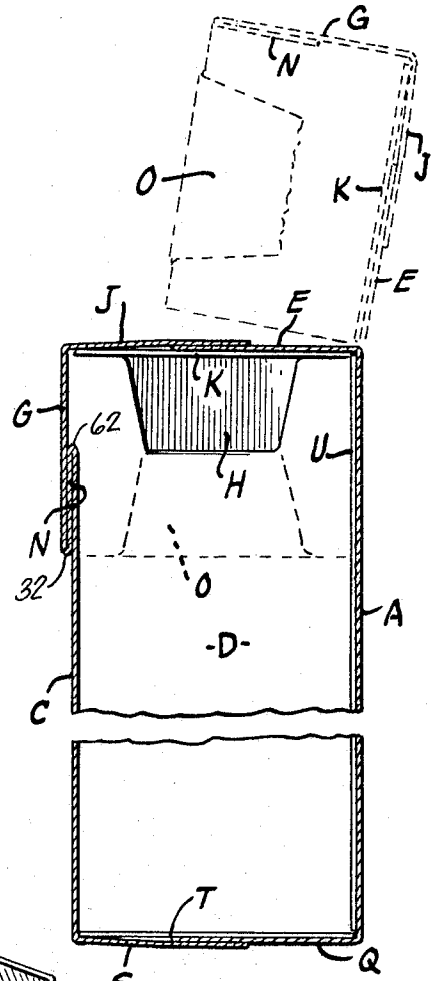
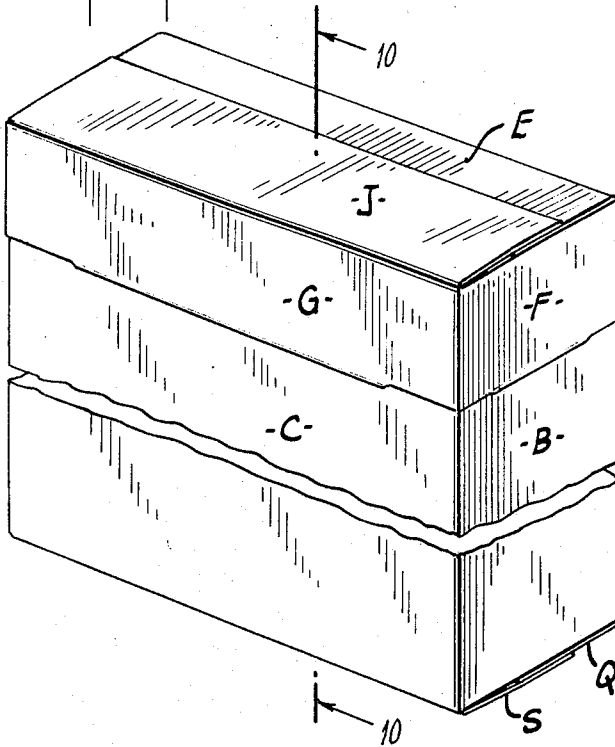


Fig. 9.

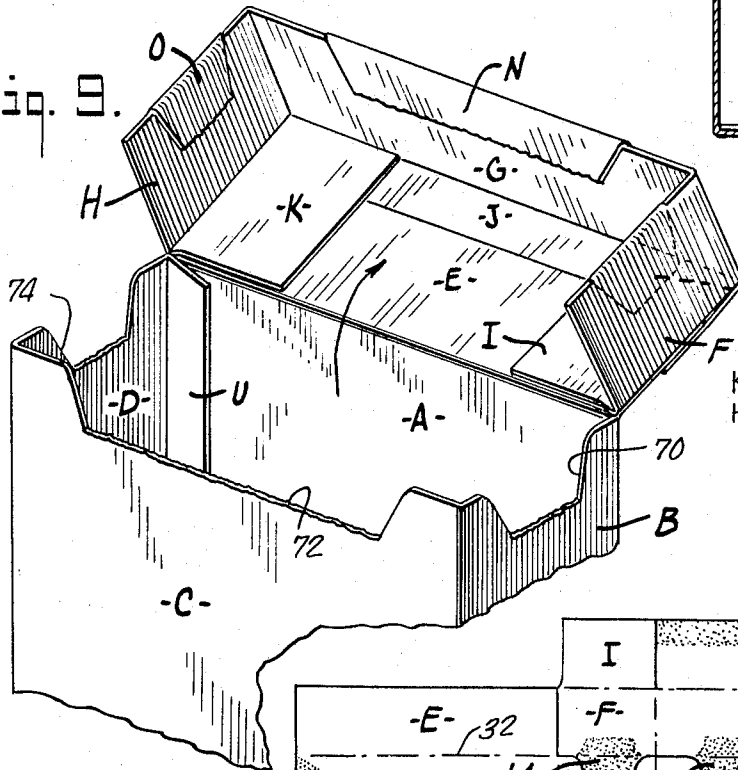


Fig. 10.

Fig. 17.

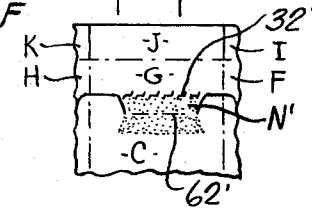
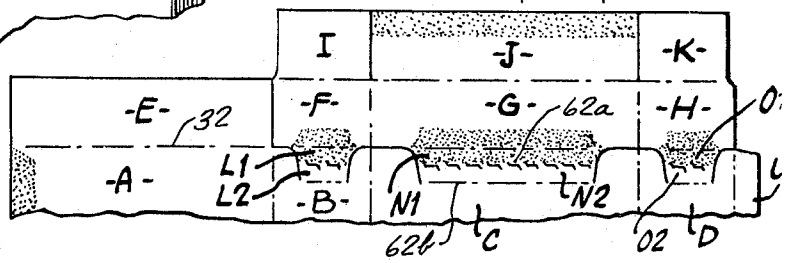


Fig. 16.



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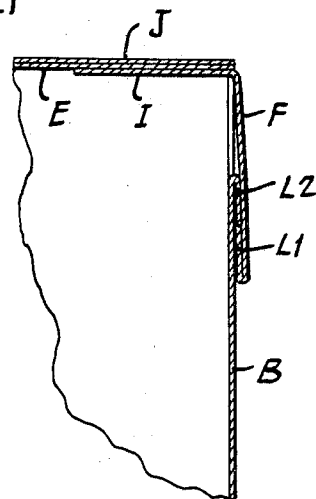
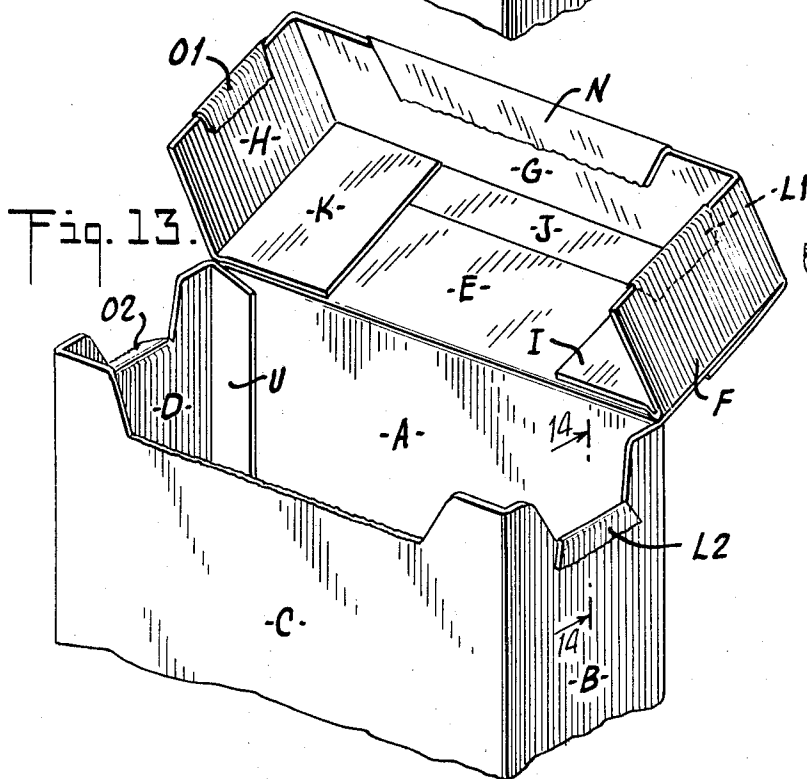
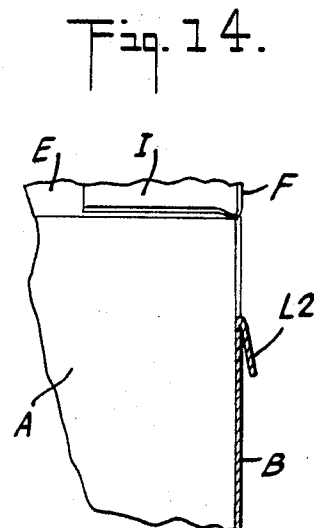
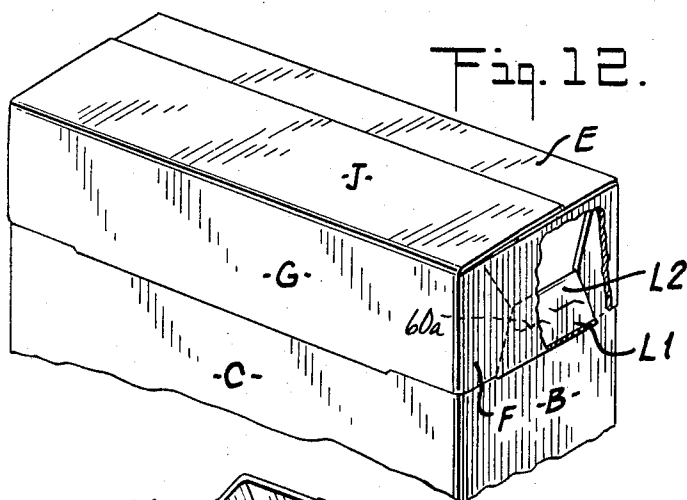
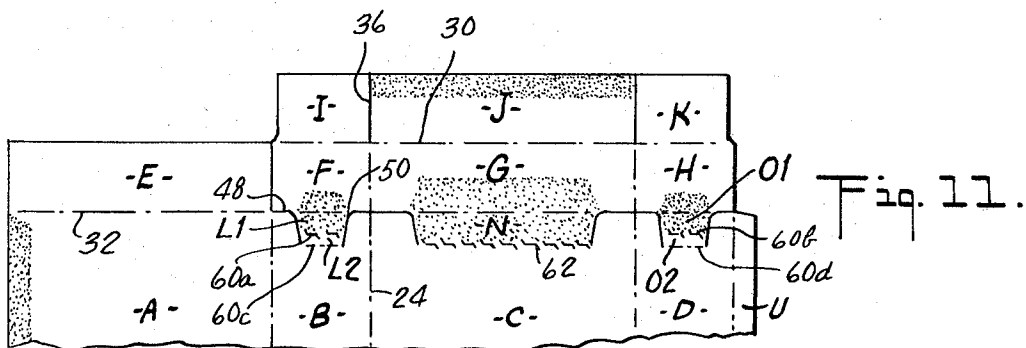
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RECLOSABLE CARTON HAVING A HINGED END CLOSURE

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U.S. Cl. 229—51

31 Claims

ABSTRACT OF THE DISCLOSURE

A carton and a blank for a carton. The carton involves a receptacle portion and a cover portion that telescopes over the receptacle portion. A cover panel in the cover portion and a receptacle panel in the receptacle portion are joined together along a first score line. The receptacle panel is cut and scored to provide a first panel part which is folded along a second score line to leave a cutout in the receptacle panel when the carton is formed. When the cover portion is first opened, the first panel part is torn. The tearing may be along the first or second score line or it may be along a third score line, intermediate the first and second score lines. The carton and the blank may be formed with a plurality of receptacle and cover panels so constructed.

BACKGROUND OF THE INVENTION

This invention relates to a carton and a blank for a carton. The invention particularly relates to a carton and an associated blank for forming the carton in which the carton includes a cover portion that telescopes over a receptacle portion.

The carton and blank of the present invention are specific improvements over the carton and blank of the type disclosed in Meyers (U.S.) Pat. No. 3,191,848 (reissued as No. Re. 26,471) and Henry (U.S.) Pat. No. Re. 26,185. The present invention involves a substantial saving of blank material to form a carton having the same volume capacity as a carton constructed in accordance with the two patents just mentioned.

Specifically, the Meyers and Henry patents involve cartons in which the cover portion is joined to the receptacle portion by an intermediate panel which is scored for tearing when the cover portion of the carton is first raised. The intermediate panel therefore provides a closure for the carton, rendering the carton tamper-proof. In the present invention the same type of carton closure is achieved without requiring an intermediate panel and hence results in a substantial saving of carton material by the elimination of the intermediate panel. In particular, a part of a receptacle panel is cut and scored to take the place of the intermediate panel in the prior art carton of the type disclosed in the Meyers and Henry patents.

Hovland (Canadian) Pat. No. 545,723 discloses a carton of the telescoping cover type in which a cover panel is secured to a part of a receptacle panel which is torn away during the first raising of the cover portion. The cover and receptacle panels are adhesively secured together, since they are formed from nonadjacent portions of the blank for the carton. Thus the closure for the carton is provided solely by the adhesive joining of adjacent panels in the carton. In distinction, in the present invention, the adjacent cover and receptacle panels are formed from adjacent interconnected panels in the carton blank. Adhesive securing of adjacent panel parts is also employed in the present invention. However, since the adjacent panel parts are connected together until part of the receptacle panel is torn away in the first raising of the carton cover, a positive closure of the carton is ensured, not solely de-

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pendent upon adhesive securing together of adjacent panel parts.

Accordingly, an object of the present invention is to provide an improved carton and an improved blank for a carton.

The invention will be more completely understood by reference to the following detailed description of representative embodiments thereof.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a view of a blank for a carton in accordance with the invention.

FIG. 2 is a view of the blank of FIG. 1, looking at the other side of the blank with respect to the side shown in FIG. 1.

FIG. 3 is a view of the blank of FIG. 1 partially folded in setting up a carton in accordance with the invention.

FIG. 4 is a view of the partially folded blank of FIG. 3, looking in a direction opposite to the direction of viewing in FIG. 3.

FIGS. 5 and 6 are sectional views of the partially folded blank of FIG. 3 taken along the section lines 5—5 and 6—6 of FIG. 3.

FIG. 7 is a perspective view of the partially formed carton provided by the further folding of the blank shown in FIG. 3.

FIG. 8 is a perspective view of a completed carton in accordance with the invention, formed from the blank of FIG. 1.

FIG. 9 is a perspective view of the carton of FIG. 8 with the cover portion raised.

FIG. 10 is a sectional view of the carton of FIG. 8 taken along the section line 10—10 of FIG. 8 and showing, in dotted line, the cover portion raised.

FIG. 11 is a view of part of another carton blank in accordance with the invention.

FIG. 12 is a perspective view of a part of a completed carton formed from the blank of FIG. 11.

FIG. 13 is a perspective view of the carton part shown in FIG. 12 with the cover portion raised.

FIG. 14 is a sectional view of a part of the carton shown in FIG. 13, taken along the section line 14—14 in FIG. 13, with the cover in raised position.

FIG. 15 is a sectional view, similar to the view of FIG. 14, showing the cover in closed position.

FIG. 16 is a view of a part of another carton blank in accordance with the invention.

FIG. 17 is a view of a part of still another carton blank in accordance with the invention.

DETAILED DESCRIPTION

Referring to FIG. 1, a carton blank 20 in accordance with the invention is shown. The blank may be of any suitable carton material such as paperboard, for example. The blank is scored with score lines 22, 24, 26 and 28 in one direction and with score lines 30, 32 and 34 in another direction. Additionally, the blank is cut along lines 36, 38, 40, 42, 44 and 46. The blank is thus divided by the score lines and the cuts just mentioned into a plurality of receptacle panels A, B, C and D; cover panels E, F, G and H; cover flaps I, J and K; bottom panels Q, R, S and T; and glue flap U. Additionally, the blank is cut along lines 48, 50, 52, 54, 56 and 58 and scored (typically cut scores) to weaken the blank material for subsequent tearing as at 60, 62 and 64 to provide opening flaps L, N and O, which form parts of the receptacle panels B, C and D, respectively. Taking the receptacle panel B as an example, the cuts 48 and 50 commence at the sides of the panel and extend along the panel edge adjoining the cover panel F and thence downwardly into the receptacle panel. The score line 60 which is weakened for tearing connects together the cuts 48 and 50, specifically, the ends of the

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cuts. The opening flaps L, N and O formed from portions of the receptacle panels B, C and D provide a closure for the carton to be formed from the blank similar to the closure in the Meyers and Henry patents. Since the opening flaps are formed from parts of the receptacle panels, however, a substantial saving of blank material is effected in the present invention.

FIG. 2 shows the carton blank of FIG. 1 looking in the opposite direction. In both FIGS. 1 and 2 the stippled areas of the blank designate the areas to which glue may be applied to aid in the formation of the carton. Alternatively, the carton blank may be of a heat-sealable material, for example, which requires no special adhesive.

FIGS. 3 and 4 show the carton blank of FIG. 1 partially folded. In particular, the blank is folded about the score lines 60, 62 and 64 and also about the score line 32 so that the opening flaps L, N and O are sandwiched between the cover panels F, G and H, on one side, and adjacent parts of receptacle panels B, C and D on the other side. The sectional view of FIG. 5 shows the sandwiching of the opening flap N between the cover panel G and the remaining portion of the receptacle panel C, as well as the folding of the blank about the score lines 32 and 62. The sectional view of FIG. 6 shows the relationship of the cover panel G and the receptacle panel C viewed in a different section of the partially folded blank. In this regard it should be noted that the cuts 48, 50, 52, 54, 56 and 58 permit the folding of the opening flaps L, N and O to sandwich these flaps between the cover panels and the receptacle panels, as noted. The folding of the blank just described produces cutouts 70, 72 and 74 in the receptacle panels B, C and D from the opening flaps L, N and O.

FIG. 7 shows the further folding of the blank in the forming of a completed carton. In particular, the folding is about the score lines 22, 24, 26 and 28 as well as the score line 34 so that the carton is set up in rectangular section, with the glue flap U being adhered to the adjacent surface of the receptacle panel A and with the bottom of the carton being formed in conventional fashion with the overlapping of the bottom panels Q, R, S and T. Before the top of the carton in FIG. 7 is closed, the carton is filled with a product. Next the cover flaps I and K are moved to horizontal positions. The cover panel E is then moved downwardly against the cover flaps I and K, and finally the cover flap J is positioned over the cover panel E and adhered thereto to close the carton, as shown in FIG. 8. It should be noted that the sequence of closing the carton, i.e., bottom first and top last or top first and bottom last, is immaterial.

When the carton is opened, the cover portion of the carton is raised as shown in FIGS. 9 and 10. When the carton cover portion is first raised, the receptacle panels B, C and D are torn along the score lines 60, 62 and 64 which are weakened for tearing, thereby severing the opening flaps L, N and O from the receptacle panels. Typically the opening flaps L, N and O are adhesively secured to the adjacent cover panels F, G and H, respectively. Hence, when the carton is in the closed form, prior to its being first opened, the carton cover portion is maintained in the closed position by the opening flaps which are adhesively secured to the cover panels. Referring again to FIG. 1, because the cover panels F, G and H adjoin the receptacle panels B, C and D, the cover is maintained in the closed position prior to its first being opened by the connection between the cover panels and receptacle panels regardless of adhesive connection therebetween. The opening flaps L, N and O join together these adjoining panels. Thus until the carton cover portion is first raised, and even though the adhesive bond between an opening flap and cover panel may weaken somewhat, the joiner of the cover panel to the receptacle panel retains the cover in closed position.

As may be noted in FIG. 9, the opening flaps L, N and O, since they are formed from parts of the receptacle

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panels B, C and D, leave cutouts 70, 72 and 74 in these receptacle panels. The product packaged within the carton of FIG. 9 typically is contained within an inner wrapper (not shown). Accordingly, if the packaged product is a granular material, it will be retained in place by the inner wrapper and will not flow out the cutouts 70, 72 and 74 when the carton cover is first raised even if the product completely fills the carton. The cutouts 70, 72 and 74 therefore do not effectively reduce the capacity of the carton. By utilizing parts of the receptacle panels to form the opening flaps L, N and O, a substantial saving of blank material is effected as compared with the type of carton disclosed in the Meyers and Henry patents which utilizes opening flaps formed from additional panels and thus requires additional blank material.

The carton cover may be closed from an opened position. It has been found that the carton cover will remain in a closed position due to the frictional engagement which normally develops between the opening flaps L, N and O bearing against adjacent portions of the receptacle panels B, C and D.

If desired, however, a locking feature in connection with the opening flaps may be employed, and this feature is shown in FIGS. 11 to 16.

Referring to FIG. 11, an alternative form of blank in accordance with the invention is shown. The same reference numerals and letters have been used as in FIG. 1 to designate like parts. Only the upper portion of the blank has been shown in FIG. 11, since the bottom of the blank is the same as that in FIG. 1. The only difference between the blanks of FIGS. 1 and 11 is that the cut scores 60 and 64 in the receptacle panels B and D of FIG. 1 have been moved upwardly in FIG. 11 so that they are positioned roughly in the middle of the opening flaps formed in these receptacle panels. The cut scores weakened for tearing when the cover of the carton is raised are designated 60a and 60b in FIG. 11. A score line 60c in the receptacle panel B and a score line 60d in the receptacle panel D replace respectively the cut scores 60 and 64 in the blank of FIG. 1. These score lines 60c and 60f are for folding of the blank material and not for tearing of the material. Accordingly, the cut scores 60a and 60b which are weakened for tearing of the blank material are positioned intermediate the score line 32 and the score lines 60c and 60d. The cut score 60a joins together intermediate points in the cuts 48 and 50, and the cut score 60b joins together intermediate points in the cuts 56 and 58. Hence the opening flap in the receptacle panel B is divided by the cut score 60a into flap sections L1 and L2. Likewise the opening flap in the receptacle panel D is divided by the cut score 60b into opening flap sections O1 and O2.

The blank of FIG. 11 is folded the same as the blank of FIG. 1. That is, the folding of the blank material is about score lines 60c, 62 and 60d as well as the score line 32. The front receptacle panel C and the front cover panel G are joined together exactly as in the carton formed from the blank of FIG. 1. The side receptacle panels B and D are also joined to the side cover panels F and H as in the carton formed from the blank of FIG. 1. FIG. 12 shows, however, the opening flap sections L1 and L2 and shows the cut score 60a in the intermediate portion of the opening flap. When the cover of the carton is first raised, as shown in FIG. 13, the opening flaps are torn along the cut scores 60a, 62 and 60b. The tearing of the opening flaps in the receptacle panels B and D leaves the flap sections L2 and O2 respectively joined to the side receptacle panels B and D while the flap sections L1 and O1 remain connected to the side cover panels F and H. FIG. 14 shows the carton with the cover in open position and the opening flap section L2 projecting somewhat outwardly from the surface of the remaining part of the side receptacle panel B. When the cover is closed, as shown in FIG. 15, the flap sections L2 and L1 abut along edges thereof formed by

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the tearing of the opening flap along the cut score 60a to produce the flap sections L1 and L2. The flap sections L1 and L2 thus lock against each other and serve as a lock for the carton cover after it has been opened and is reclosed.

FIG. 16 shows a blank similar to that of FIG. 11. The only change in FIG. 16 is that the cut score 62 has been raised upwardly in the receptacle panel as shown by the cut score 62a. In place of the cut score 62 of FIG. 11 is a score line 62b for folding only. Hence the cut score 62a along with the score lines 32 and 62b provide two opening flap sections N1 and N2 similar to the flap sections L1 and L2 in the receptacle panel B and the flap sections O1 and O2 in the side receptacle panel D. With the blank construction shown in FIG. 16, locking flaps are employed on the front of the carton as well as the two sides of the carton. It will be noted in FIG. 13 (the carton formed from the blank of FIG. 11) that the locking flaps are only employed in the two sides of the carton.

The blank and the carton formed from the blank in FIGS. 1 to 15 described above show an opening flap N formed from a part of the receptacle panel (c) which is torn from the panel and which is adhered to the adjoining cover panel (G). As may be noted from FIG. 9, the opening flap N remains attached to the cover panel G after the tearing of the opening flap. The opening flap is adhered to the under surface of the cover panel where it remains essentially hidden from view in most positions of the cover portion of the carton. It is possible to have the opening flap N (and any of the other opening flaps L and O associated with the sides of the carton) adhered to the associated receptacle panel rather than the cover panel. FIG. 17 shows a blank similar to that of FIG. 2, which is scored so that the opening flap will remain adhered to the receptacle panel. In particular, a cut score 32' weakening the receptacle panel for tearing is employed, along with a regular score line 62' for folding of the blank material. It will be noted that the score lines 32' and 62' effectively constitute the interchanging of the score lines 32 and 62 in FIG. 2. Glue or similar adhesive material may be provided in the stippled areas of the receptacle panel C, as shown in FIG. 17. Alternatively, if the carton blank is of a heat-sealable material, for example, requiring no special adhesive, the stippled areas of the blank are heat-sealed together when the carton is formed from the blank. In any event, the opening flap N' corresponding to the opening flap N of FIG. 2 remains adhered to the receptacle panel C after the tearing of the panel along the cut score 32'. Similar to the embodiments of FIGS. 1 to 15, the opening flap N' frictionally engages the adjacent surface of the cover panel G when the cover portion of the carton is reclosed aiding in retaining the cover portion in closed position.

SUMMARY

The invention provides a carton of the type that has a cover portion that telescopes over a receptacle portion, as well as a blank for forming the carton. The carton is characterized by the joining together of cover and receptacle panels and the utilization of a part of the receptacle panel to provide an opening flap that closes the carton cover and which is torn in the first raising of the carton cover. By forming the opening flap from the receptacle panel, rather than requiring an additional panel for such opening flap as in the prior art, a substantial saving of blank material is achieved.

What is claimed is:

1. A blank for a carton that has a receptacle portion and a cover portion that telescopes over the receptacle portion, comprising a receptacle panel, an adjoining cover panel, the receptacle panel being cut and scored to form an opening flap hingedly joined to the cover panel for folding in the formation of the carton to leave a cutout in the receptacle panel, which flap provides a closure for

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the carton cover portion which is torn in the first raising of the carton cover portion.

2. A blank for a carton as defined in claim 1, wherein the blank is cut in two places from both sides of the receptacle panel along the edge of the receptacle panel adjoining the cover panel and thence into the receptacle panel, and a score line in the receptacle panel connecting together the two cuts into the receptacle panel and weakening the panel for tearing.

3. A blank for a carton as defined in claim 2, wherein said score line in the receptacle panel constitutes the hinged joining of the opening flap to the cover panel.

4. A blank for a carton as defined in claim 2, wherein the score line connects together the ends of the two cuts.

5. A blank for a carton as defined in claim 2, wherein the score line connects together intermediate points in the two cuts.

6. A blank for a carton as defined in claim 5, including another score line connecting together the ends of the two cuts.

7. A blank for a carton as defined in claim 1, including a plurality of receptacle panels, a plurality of associated cover panels, at least one of the receptacle panels adjoining and being hingedly secured to the associated cover panel and being cut and scored as defined in claim 1.

8. A blank for a carton as defined in claim 7, wherein the blank is cut with respect to at least one of the receptacle panels so adjoining the associated cover panel in two places from both sides of the receptacle panel along the edge of the receptacle panel adjoining the associated cover panel and thence into the receptacle panel, and a score line each of the receptacle panels so cut connecting together the two cuts into the receptacle panel and weakening the panel for tearing.

9. A blank for a carton as defined in claim 8, wherein the score line in at least one of the receptacle panels so cut constitutes the hinged joining of receptacle panel to associated cover panel.

10. A blank for a carton as defined in claim 8, wherein the score line in at least one of the receptacle panels so cut connects together the ends of the cuts into the panel.

11. A blank for a carton as defined in claim 8, wherein the score line in at least one of the receptacle panels so cut connects together intermediate points in the two cuts into the receptacle panel.

12. A blank for a carton as defined in claim 11, including another score line connecting together the ends of the two cuts into each of the receptacle panels in which intermediate points in the two cuts are connected by a score line.

13. A blank for a carton as defined in claim 8, wherein the blank is formed with a plurality of receptacle panels so adjoining the associated cover panels and is so cut with respect to each of said plurality of panels, and the score line in at least one of the receptacle panels so cut connects together the ends of the two cuts into the panel while the score line in at least another one of the receptacle panels so cut connects together intermediate points in the two cuts into the panel.

14. A blank for a carton as defined in claim 13, wherein said another receptacle panel includes another score line connecting together the ends of the two cuts into the panel.

15. A carton comprising a receptacle portion and a cover portion that telescopes over the receptacle portion, a receptacle panel in the receptacle portion, a cover panel in the cover portion secured along a first score line to a first part of the receptacle panel, the receptacle panel being cut and scored to provide said first panel part which is folded along a second score line to leave a cutout in the receptacle panel in the forming of the carton, said first panel part being torn when the cover portion is first raised.

16. A carton as defined in claim 15, wherein said first panel part remains attached to one of said cover panel

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and a second part of said receptacle panel after tearing of said first panel part.

17. A carton as defined in claim 16, wherein said first panel part bears against the surface of the adjacent panel upon reclosure of said cover portion.

18. A carton as defined in claim 16, wherein said first panel part remains attached to said cover panel after tearing of said first panel part.

19. A carton as defined in claim 18, wherein said first panel part bears against said second panel part upon reclosure of said cover portion.

20. A carton as defined in claim 16, wherein said first panel part remains attached to the second part of said receptacle panel after tearing of said first panel part.

21. A carton as defined in claim 20, wherein said first panel part bears against said cover panel upon reclosure of said cover portion.

22. A carton as defined in claim 15, wherein said first panel part is sandwiched between said cover panel and a second part of the receptacle panel.

23. A carton as defined in claim 22, wherein said second score line is weakened for tearing, and said first panel part is torn along said second score line when the cover portion is first raised.

24. A carton as defined in claim 22, wherein said first panel part includes a third score line weakened for tearing and positioned intermediate said first and second score lines, said first panel part being torn along said third score line when the cover portion is first raised.

25. A carton as defined in claim 22, wherein said first score line is weakened for tearing, and said first panel part is torn along said first score line when the cover portion is first raised.

26. A carton as defined in claim 15, including a plurality of receptacle panels and associated cover panels, at least one of the receptacle panels being hingedly secured to the associated cover panel and being cut and scored and folded and torn as defined in claim 15.

27. A carton as defined in claim 26, wherein each of said first panel parts so formed is sandwiched between the associated one of said cover panels and a second part of

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the receptacle panel from which said first panel part is formed.

28. A carton as defined in claim 27, wherein at least one of the first panel parts so formed is torn along the second score line associated therewith when the cover portion is first raised.

29. A carton as defined in claim 27, wherein at least one of the first panel parts so formed is torn along the first score line associated therewith when the cover portion is first raised.

30. A carton as defined in claim 27, wherein at least one of the first panel parts so formed includes a third score line which is weakened for tearing and positioned between said first and second score lines associated therewith and which is torn when the cover portion is first raised.

31. A carton as defined in claim 27, wherein a plurality of first panel parts are so formed and sandwiched, at least one of the first panel parts being torn along the second score line associated therewith when the cover portion is first raised, and at least one of the first panel parts including a third score line which is weakened for tearing and positioned between said first and second score lines associated therewith and which is torn when the cover portion is first raised.

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DAVIS T. MOORHEAD, Primary Examiner

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