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RECLOSABLE CARTON FOR QUICK COOLING BEVERAGES

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Fig 1.

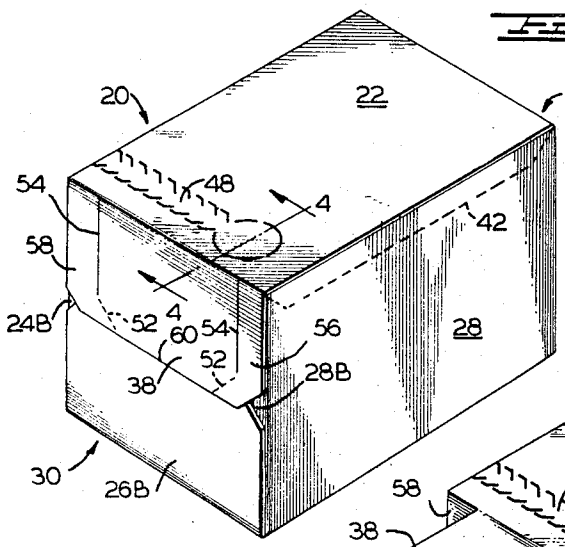


Fig 2.

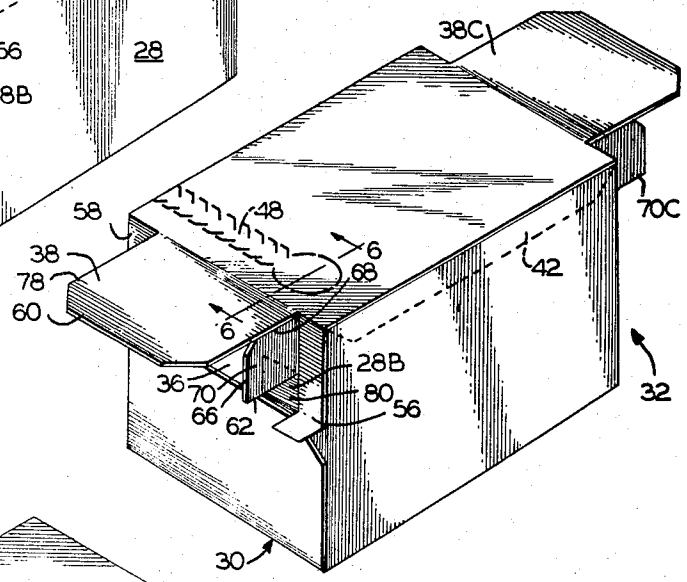
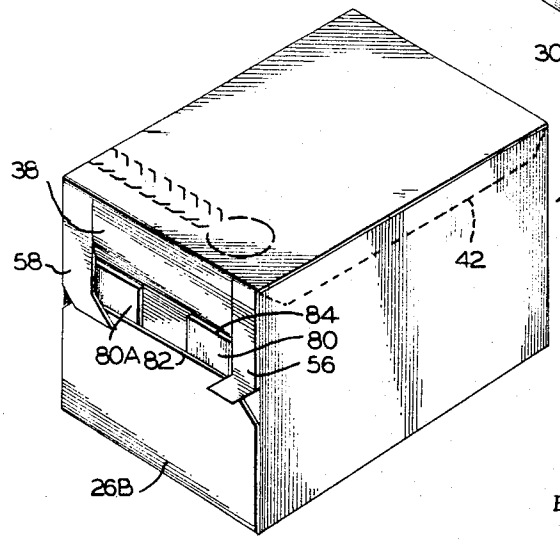


Fig 3.



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RECLOSABLE CARTON FOR QUICK COOLING BEVERAGES

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Fig 4

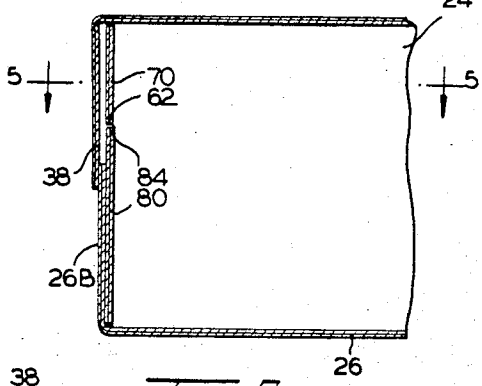

Fig 5.

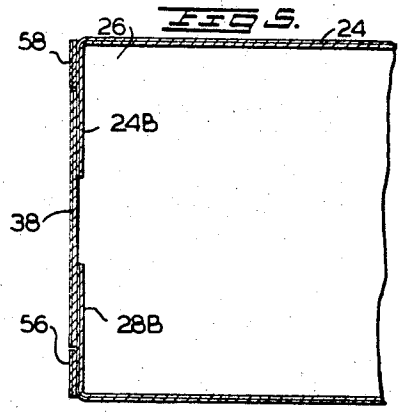

Fig 6.

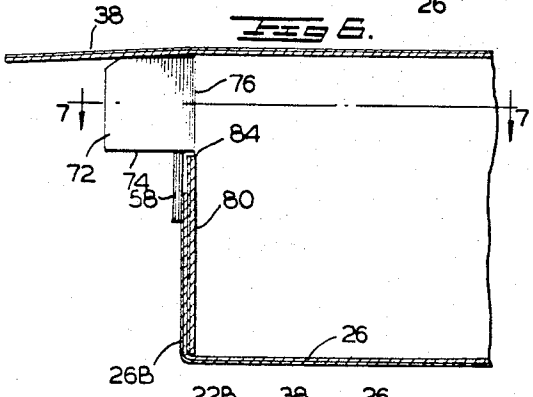

Fig 7.

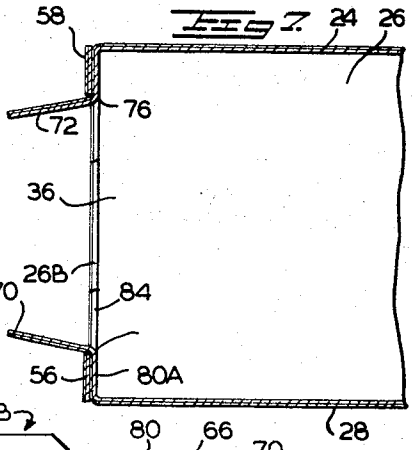

Fig 8.

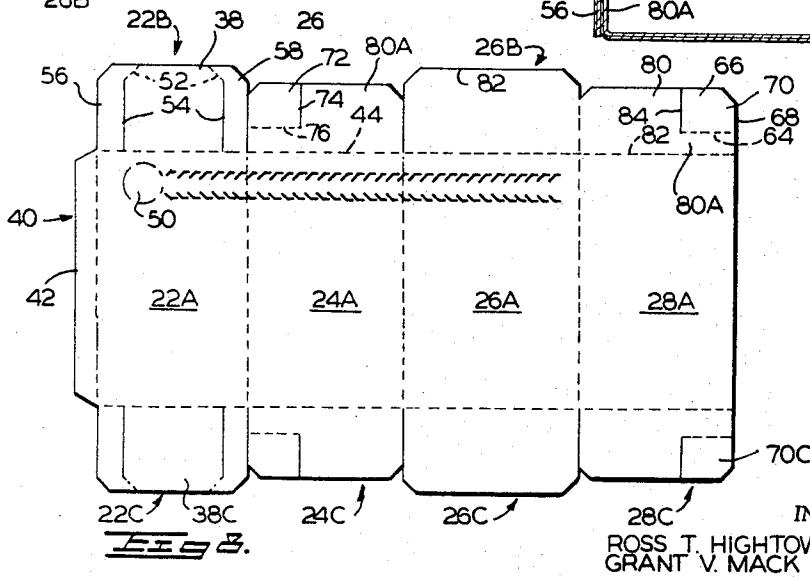

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Fig 9.

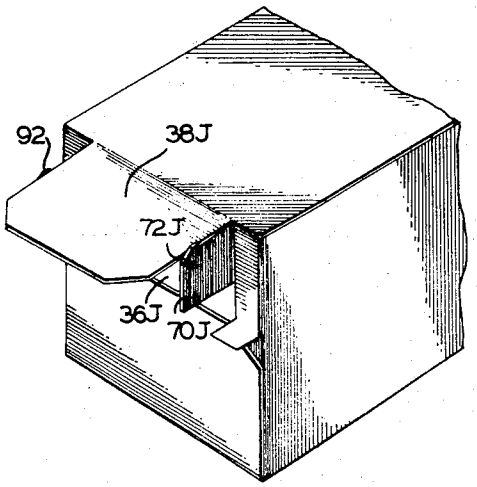
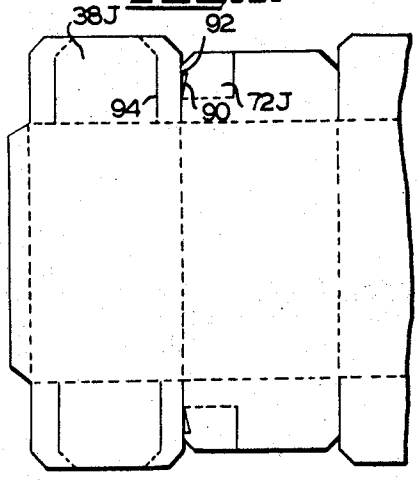


Fig 10.



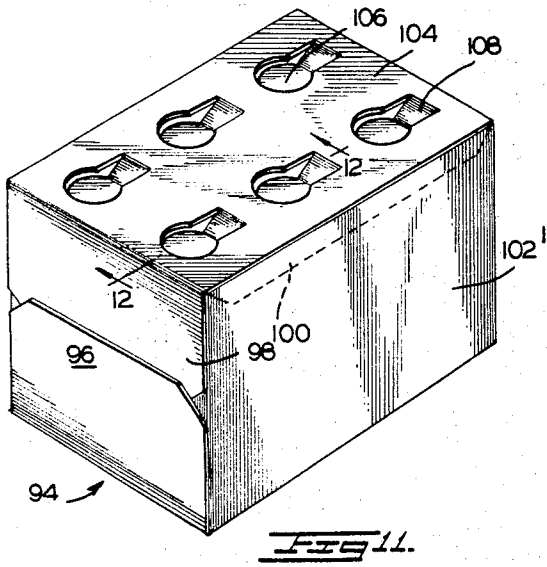
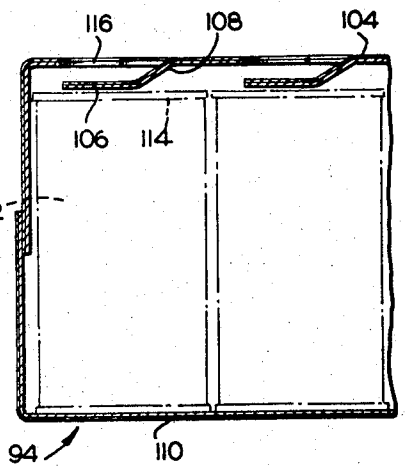


Fig 11.

Fig 12.



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3,411,697

RECLOSABLE CARTON FOR QUICK COOLING BEVERAGES

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9 Claims. (Cl. 229—51)

ABSTRACT OF THE DISCLOSURE

This disclosure relates to a carton construction which in its normally sealed closed condition has spaced apart means in the wall means thereof that can be moved to an open position without destroying the container to provide an air flow path through such container for cooling the product means therein, the container having means for positively closing such openable portions by moving the same to their closed positions to prevent ventilation or circulation through such container, one such reclosing means comprising the product means itself being disposed against the openable portions to hold the same in their closed positions and another reclosing means being interlocking portions on the openable portions and the remainder of the wall means.

This invention relates to reclosable cartons for quick cooling of beverages and the like, and in which the beverages may be in containers which are placed in the cartons.

This invention is particularly adapted to provide a carton for holding a plurality of beverage containers, such as beverage containing cans and the like, in such a manner that the supplier of these loaded cartons may quickly cool the cartons and the containers without removing the containers from the cartons, or breaking the sealed condition of the carton. Additionally, the supplier may reclose the carton before delivering it to the retailer in a condition to maintain the containers cool until delivery to the retailer.

Ordinarily, the cartons are made of an aluminum and fibrous board lamination, and generally the aluminum foil is placed on the outside of the carton, and the board on the inside. The aluminum foil is a good insulator against the passage of heat in either direction. Because of this, the cooling action of the beverage, such as beer or the like, is greatly delayed when placed in a refrigerated space by the insulating action of the aluminum foil of the carton, so that the cartons must be stored in a refrigerator and the like for relatively long periods of time in order properly to cool them.

According to this invention, the carton with the beverage containers within the carton are placed in the refrigerator and the like by the supplier. However, the construction is such that the supplier may open one or more air circulating openings or means without destroying the original seal protection provided by the carton. These air circulating openings permit cold air to enter through the air circulating openings and cool the containers and their content much faster than would be the case if such openings were not provided. When the cartons are to be delivered to the retailer, the air circulating openings or means may be reclosed by the supplier in a manner to retain the original seal of the carton. The carton can then be delivered to the retailer with the assurance that that carton remains cold for a relatively long time, and that the contents of the carton have not been disturbed. The reclosing of the openings helps to maintain the containers within the cartons in relatively cold condition, and the unbroken seals of the carton assure that no beverage containers have been removed from the carton.

While the invention is described as being used by a supplier, retailer, and user, it is understood that such description is by way of illustration only, and that the invention may be used by any one desiring to use the same.

Accordingly, it is an object of this invention to provide a reclosable carton having one or more of the features herein disclosed.

Another object of this invention is to provide a method of producing a reclosable carton, and having one or more of the features herein described.

Another object of this invention is to provide a method of cooling, and maintaining cold, a reclosable carton having one or more of the features herein described.

Other objects are apparent from this description and/or the accompanying drawings in which:

FIGURE 1 is a view in perspective of a beverage carton of this invention as originally sealed and delivered to a supplier and the like.

FIGURE 2 is a view similar to FIGURE 1 showing the carton partially opened by the supplier and the like to permit circulation of cooling air into the carton while the carton is stored in the supplier's refrigerator.

FIGURE 3 is a view similar to FIGURES 1 and 2 and showing the carton reclosed for sale in cooled condition by the supplier.

FIGURE 4 is a vertical cross section along line **4**—**4** of FIGURE 1.

FIGURE 5 is a horizontal cross section along line **5**—**5** of FIGURE 4.

FIGURE 6 is a vertical cross section along line **6**—**6** of FIGURE 2.

FIGURE 7 is a horizontal cross section along line **7**—**7** of FIGURE 6.

FIGURE 8 is a plan view of a blank, with the outer surface up, as used to produce the carton of FIGURES 1–7.

FIGURE 9 is a partial perspective view, somewhat similar to part of FIGURE 2, showing another embodiment.

FIGURE 10 is a partial plan view of a blank to produce the carton of FIGURE 9, and with the tear strip omitted.

FIGURE 11 is a perspective view of another embodiment of a carton according to this invention, and showing the carton with the bottom side up for cooling purposes.

FIGURE 12 is a partial vertical cross section along the line **12**—**12** of FIGURE 11.

A reclosable carton **20**, according to this invention, and as shown in FIGURES 1–8, may have a plurality of carton walls **22**, **24**, **26**, **28**, **30**, and **32**.

These carton walls are secured together initially to hold a plurality of beverage containers, not shown, such as beer or other beverage cans and the like. Sealed portions of the carton walls are in initially sealed condition preferably to prevent removal of any of said containers in the carton without destroying such sealed condition, as more fully hereafter described. An opening-forming portion in each of one or more of such walls, such as **30** and **32**, may be opened without destroying the sealed condition of the carton walls. Such opening or openings form air-circulating means **36** for substantial movement of cooled air into the carton from a refrigerated space and the like while said carton is stored in such space. At least a part of the openable portion or portions of such wall or walls may be reclosed to close the said air-circulation means **36** and to prevent air movement into and out of the carton **20** after removal of said carton from the refrigerated space.

The carton **20** of FIGURES 1–8 may be made from a blank **40**, FIGURE 8, which may be scored, as indicated by dotted lines, to produce a plurality of side-

forming parts 22A, 24A, 26A, and 28A which form respectively the sides 22, 24, 26, and 28 of the carton. These side-forming parts may have respectively front end-forming tabs 22B, 24B, 26B, and 28B and rear end-forming tabs 22C, 24C, 26C, and 28C, which are located respectively at the opposite ends of each side-forming part, as is obvious. If desired, the blank may be provided with the folding tab 42, which may be folded at a corner of the carton either inside or outside of the adjacent side-forming part, such as 28, in FIGURE 1. For example, this tab is indicated in FIGURE 1 as being inside of the side 28, and is adhesively secured thereto.

The tabs 22B, 24B, 26B, and 28B may be folded along the scored line 44 and may have portions thereof in initially sealed condition to prevent removal of any of the beverage containers which are placed in the carton. These last-named tabs may be folded to produce the end wall 30 of FIGURE 1. The end tabs 22C, 24C, 26C, and 28C may be folded along their scored line 46 to produce the opposite end wall 32 which cannot be seen directly in FIGURES 1, 2, and 3 since it is to the rear of the carton as illustrated. If desired, the opposite tabs may be symmetrical to each other so that a description of one set of said tabs suffices for the other set of said tabs. Each set of tabs may be similarly folded and sealed to produce respectively the end walls 30 and 32 as they may be symmetrically the same.

If desired, a tear strip 48 may be scored adjacent one of the ends of the carton and, for example, may extend across three of the parts, such as 22A, 24A and 26A, in FIGURE 8. A tear strip pulling disc 50 may be made, so the same may be first broken and pulled out, and then the tear strip may be torn from the carton. Thereafter the end wall 30 and part of the side walls 22, 24 and 26 may be bent along the side 28 so the beverage containers may be removed for use by the user.

The tab 22B may be scored at 52 and cut or scored at 54 to tear and form a central tongue 38 which may be moved outward, as shown in FIGURES 2 and 6 to produce an air-circulating opening 36 and to form two side tongues 56 and 58. The side tongues 56 and 58 may be adhesively secured to parts of the tabs 28B, 26B and 24B. The tongue 38 need not be adhesively secured to any other members, but may be integrally secured to the side tongues 56 and 58 at the score lines 52. The central tongue 38 may be opened by tearing the central tongue 38 away from the side tongues 56 and 58 along the score lines 52.

In FIGURE 1, the central tongue 38 is not adhesively secured to any portion of any other part of the carton. It is held in place by the untorn score lines 52. The full lines 54 indicate complete cutting along these lines 54. When it is desired to move the tongue 38 upward to the position shown in FIGURE 2, the user inserts finger nails, or any type of handy implement such as a knife or the like, under the unsealed edge 60 of the tongue 38 and then tears along the score lines 52. Thereafter, the tongue 38 may be lifted to the position shown in FIGURE 2.

The side tongues 56 and 58 remain in place, since they are adhesively secured to the carton as elsewhere described.

The tab 28B is cut at 62 and is scored at 64, so its edge 66, FIGURES 2 and 8, may be pulled forward about the score line 64 to form flap 70 and so the edge 68 of flap 70 is provided to cooperate with said central tongue zontal position shown in FIGURE 2. In this manner a flap 70 is provided to cooperate with said central tongue to produce the air-circulating opening 36.

Likewise, the side-forming part 24 has the tab 24B which is cut at 74, and scored at 76 in a manner symmetrical with the previously described cutting 62 and scoring 64, in connection with flap 70. This construction forms a second flap 72 under the central tongue 38 adjacent the edge 78 of the tongue 38. This second flap cannot be seen in FIGURE 2, but it is symmetrically the same as flap 70 which is visible in FIGURE 2.

The remaining portion 80 of the tab 28B is adhesively secured to the tab 26B and extends upwardly from the edge 82 of the tab 26B, as shown in FIGURE 3, and partially shown in FIGURE 2. The cut edge 84 of portion 80 extends upwardly from the edge 82 of tab 26B in FIGURE 3. The side tongue 56 is secured to part of portion 80.

The carton end 32, which is not visible, is symmetrical to the end 30, and hence an opening corresponding to opening 36 may be provided at end 32. Thus two openings corresponding to 36 are provided.

After the beverage and cans in the carton have been properly cooled in the refrigeration space, by the circulation of cold air through openings 36, the carton 20 may be delivered to the retailer. For this purpose, the carton is reclosed to the condition shown in FIGURE 3. This is accomplished by downwardly folding the central tongue 38 and placing it behind the portion 80 of the flap 28B and the portion 80A of the flap 24B. This closes the previous opening 36, and the corresponding procedure may also be produced with respect to end 32, so that the carton is completely closed and is enabled to retain the cooled condition for a relatively long period of time, such as six hours or more.

Similar and symmetrical constructions and operations may be provided in connection with carton end 32. The central tongue 38C and the flap 70C, FIGURE 2, show merely two of the many symmetrical parts forming rear wall 32. The tabs 22C, 24C, 26C, and 28C are used symmetrically for this purpose.

In this manner, with the air-circulating means 36 in open condition, the carton contents may be quickly cooled in a period much shorter than the usual six hours or more which previously were required. Yet the reclosed carton retains the cooled condition for a relatively long period of time, such as six hours or more, after it has been removed from the refrigerator and has been reclosed for insulating purposes, as previously described.

FIGURES 9 and 10 are substantially the same respectively as FIGURE 2 and the portion of FIGURE 8. However, in FIGURES 9 and 10, the member 70J, and the corresponding flap which cannot be seen under the central tongue 38J each has a notch 90, so that the small tongue 92 can hook around the edges 94 of tongue 38J and thus prevent the flaps 70J and/or 72J from bending back and allowing the tongue 38J to fall down and close the opening 36J. Since all of the parts are symmetrical, as previously explained, it is deemed unnecessary to describe in detail or to use reference numerals specifically applicable to the particular flap 70J or 72J, as the case may be.

FIGURES 11 and 12 show another embodiment. In this embodiment, the carton 94 may be made in any suitable manner, to produce, for example, a six-sided carton. The end flaps 96 and 98 are secured together and the short tongue 100 may be adhesively secured to the side 102. Another side 104 has one or more valves 106. These valves may be cut into the side 104 before the formation of the carton 94. The valves 106 may be scored at 108, or bent there, so that they may be hinged along that line. When the carton is in the position shown in the FIGURES 11 and 12, with the side 110 at the bottom, and side 104 at the top, then the cans 112 have their ends 114 spaced a sufficient distance from the side 104, so the valves 106 may be in their down position and uncover the openings 116 to allow the cool air from the refrigerated space to flow downwardly in among the spaces between the cams 112. When the carton is to be delivered to the retailer or used, the carton is inverted, to place the side 104 at the bottom. The weight of the cans 112 causes the cans automatically to close the valves 106 in openings 116, so that substantially no air flows in or out of the carton 94 as long as it remains in this position. In this man-

ner, the carton **94** and its contents can be quickly cooled in a refrigerator in the position shown in FIGURES 11 and 12, and when it is desired to deliver the carton and its cooled contents, the carton **94** may be inverted and then delivered to the retailer or the user, as desired. The carton is automatically sealed and insulated by the closing of the valves **106** when the carton is inverted.

It is thus to be seen that a carton has been provided which can be quickly cooled in a refrigerator space notwithstanding that the surfaces of the carton have high insulating characteristics due to the aluminum foil and the like. When the carton is removed from the refrigerated space, it can be reclosed to render it highly insulative so that the cooled condition is retained for the maximum length of time in which a carton of this character is capable of retaining.

While the form of the invention now preferred has been disclosed as required by statute, other forms may be used, all coming within the scope of the claims which follow.

What is claimed is:

1. A reclosable carton for quick cooling of beverages and the like in beverage containers and the like comprising: a plurality of carton walls secured together initially to hold a plurality of said beverage containers with sealed portions of said carton walls in initially sealed condition, an opening forming portion of one of said walls being openable without destroying said sealed condition to form air-circulation means for substantial movement of cool air into said carton from a refrigerated space and the like while said carton is stored in said space, at least part of said openable portion being reclosable to close said air-circulation means to prevent air movement into and out of said carton after removal of said carton from said refrigerated space, another opening forming portion of one of said walls being openable without destroying said sealed condition to cooperate with said first-named opening forming portion and provide an air-circulating path through said carton from said first-named opening forming portion, at least part of said second-named openable portion being reclosable to close said air-circulation means to prevent air movement into and out of said carton after the removal of said carton from said refrigerated space, said parts of said openable portions each having means for lockingly reclosing its air-circulation means until unlocked therefrom to reopen the same, each openable portion having means for releasably holding the respective part of its openable portion in its fully opened condition.

2. A reclosable carton according to claim **1**, in which each said opening forming portion is part of an end wall of said carton.

3. A reclosable carton according to claim **1**, in which each said opening forming portion is part of a normally vertical wall of said carton.

4. A reclosable carton according to claim **1**, in which each said opening forming portion is in the form of flap means which opens and closes said air-circulation means.

5. A reclosable carton according to claim **1**, in which each said opening forming portion is part of an end tab of said carton.

6. A reclosable carton according to claim **1**, in which a tear strip is provided to open said carton for removal of said containers.

7. A reclosable carton for quick cooling of beverages and the like in containers and the like, which carton is made from a blank having a plurality of side forming parts, one of said parts having a tab, said tab being scored to tear and form a central tongue to be moved outward to produce an air-circulating opening and to form two side tongues to be sealed to other parts of said carton to produce a sealed wall of said carton, a second of said side forming parts having a second tab which is scored to be bent to produce a flap to cooperate with said central tongue to produce said air-circulating opening, a third of said side forming parts having a third tab which is scored to be bent to produce a second flap to cooperate with said central tongue and said first-named flap to produce said air-circulating opening.

8. A reclosable carton according to claim **7** in which said central tongue and said first named flap and second flap are movable to close said air-circulating opening.

9. A reclosable carton according to claim **8** in which said flaps have locking means to lock with said central tongue to maintain said tongue and flaps in open position.

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