

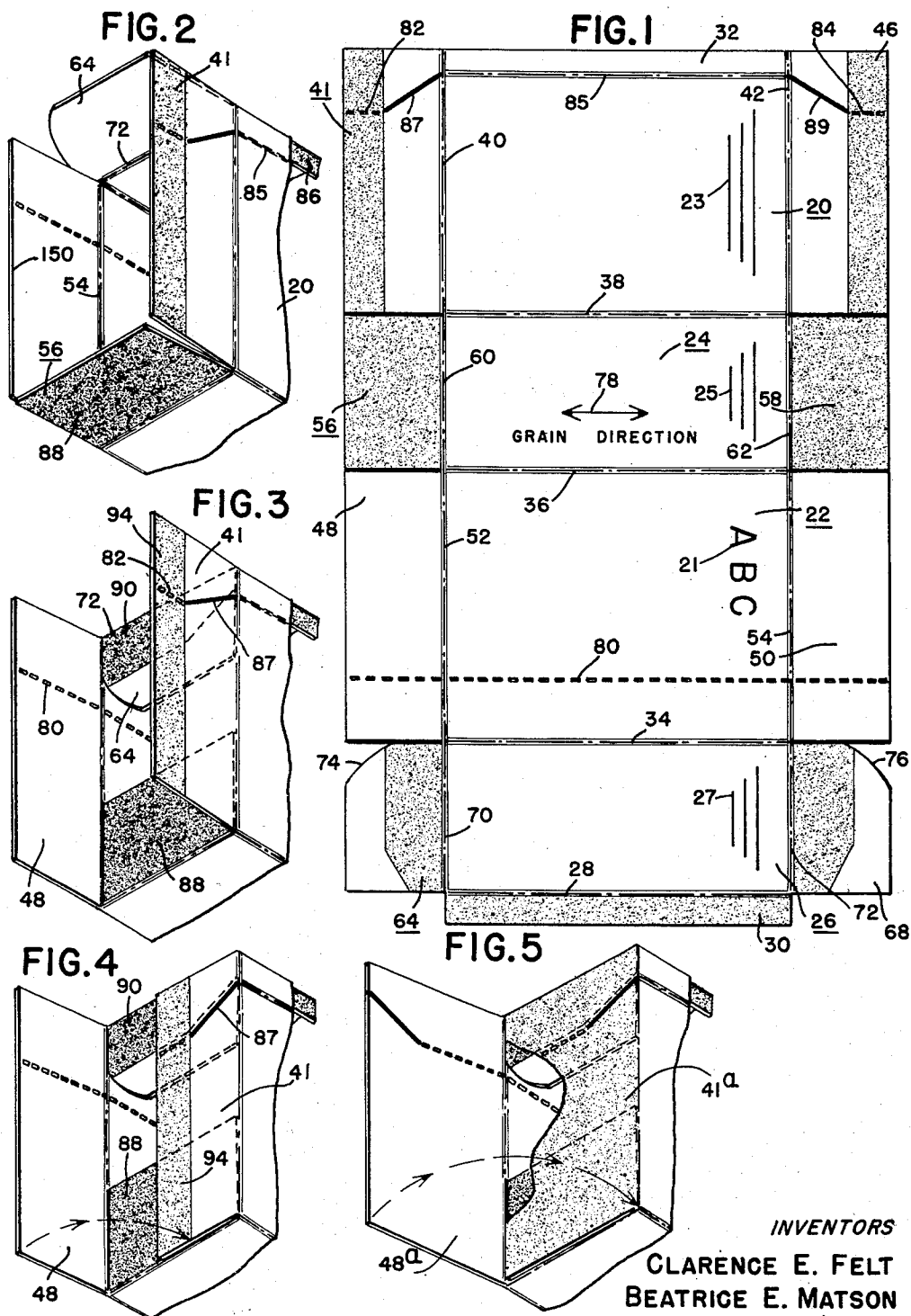
May 20, 1958

C. E. FELT ET AL
CHEST-TYPE CONTAINER

2,835,594

Filed Nov. 10, 1952

3 Sheets-Sheet 1



INVENTORS

CLARENCE E. FELT
BEATRICE E. MATSON

BY *William C. Stueber* ATTORNEY .

May 20, 1958

C. E. FELT ET AL
CHEST-TYPE CONTAINER

2,835,594

Filed Nov. 10, 1952

3 Sheets-Sheet 2

FIG. 6

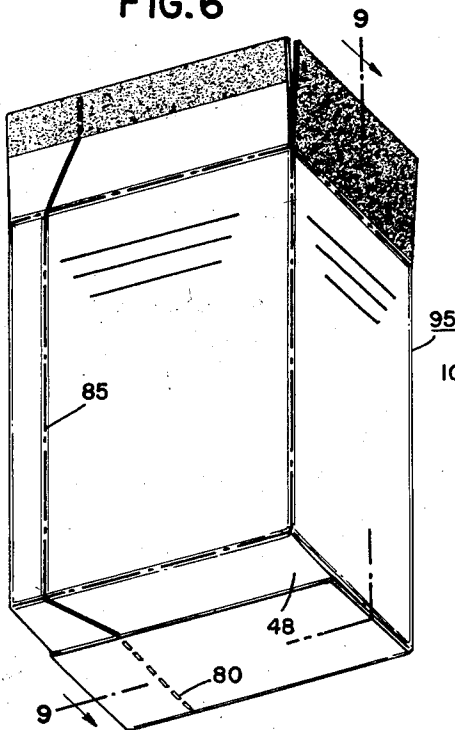


FIG. 7

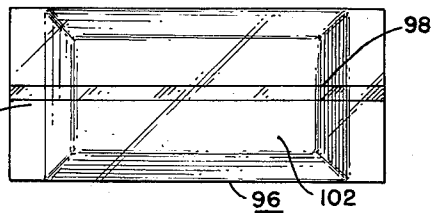


FIG. 8

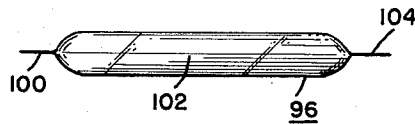
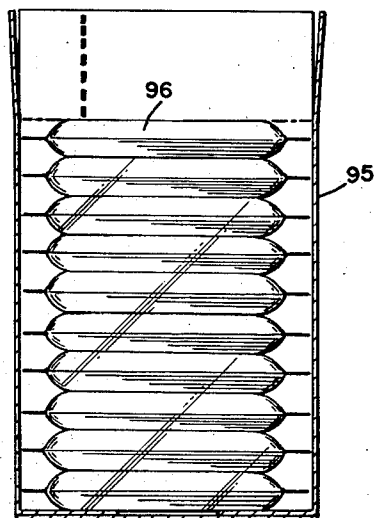


FIG. 9



INVENTORS
CLARENCE E. FELT
BEATRICE E. MATSON

BY *William C. Stueber* ATTORNEY

1

2,835,594

CHEST-TYPE CONTAINER

Clarence E. Felt and Beatrice E. Matson, Minneapolis, Minn., assignors to General Mills, Inc., a corporation of Delaware

Application November 10, 1952, Serial No. 319,762

5 Claims. (Cl. 99—171)

The invention relates to improvements in containers and more specifically to cartons formed of folded paper board which contain a plurality of smaller containers for holding different types of material.

Cartons used for the sale of foodstuffs, such as ready-to-eat cereals, cookies, confections and various similar foodstuffs, are usually formed of paperboard, such as white patent coated newsboard, chipboard and others. The paperboard is economical, has sufficient strength to protect the contents, can be stacked, is easy to print in many colors and, because of its economy and functionality, is in common use.

There are many automatic machines on the market for constructing cartons formed of paperboard which have been tested and used for long periods and which are reliable and through years of improvement have developed to where they reach very high production rates. Thus, in designing a carton, if one is adopted which can use board as a material and can be formed on a standard carton forming machine, it will usually be more economical than other competing types of cartons which do not have these advantages.

In the sale of foodstuffs such as prepared cereal, the costs to the manufacturer of filling, packaging and handling are reduced as larger amounts are packaged and the cereal can be sold most cheaply when dispensed in large units. The householder is acquainted with the large economy sizes in most commodities, the offering of large quantities of foodstuffs at a cheaper price being partially made possible by reduction in carton costs and handling cost.

A disadvantage of purchasing packaged food such as cereal in large quantities, is that the householder often finds a need for buying various cereals because of the various taste preferences within the household. If large economy sizes are purchased in several types of cereal the consumption is too slow and the packages become stale. In addition the packages take up extra kitchen cupboard space needed for other items. In prepared cereals, each member of the household may have a different preference and it is because of this fact that cereal packs containing a plurality of packages containing different types of cereals tied together in a unit have become popular. The cereal packs containing a plurality of smaller packages are also popular in areas which have a very humid climate as this tends to destroy the crispness of ready-to-eat cereals within a short time of the opening of the package. With smaller packages a new package containing a unit serving may be opened for each serving, thus leaving the remainder of the cereal protected where it will retain its crispness. The units containing a plurality of small packages are more expensive per ounce of cereal than cereal purchased in the standard carton because of the necessity of providing a great number of cartons and consequently requiring additional manufacturing steps and the use of greater amounts of cartoning material. Further, special machinery must be provided to construct cartons of a smaller size. Other

2

disadvantages of the multiple carton cereal pack include the space consumption. The small cartons are commonly arranged in a long tray so that any one of the individual cartons may be selected without disturbing the others. These trays are long and unwieldy and do not easily fit into a small cupboard space.

Another disadvantage of a small individual carton is the difficulty of obtaining a moisture-proof pack. The amount of moisture passing through a carton is proportional to its surface area. In a small one ounce package, for example, in some cereals the ratio of surface area to amount of cereal contained may be double what it is in a larger eight ounce package resulting in the cereal in the one ounce package being quickly subjected to moisture from outside air and becoming moist and soggy in a much shorter time. Therefore, using the same type of structure in a small carton, as in a large carton, is often impractical because of lack of moisture protection in spite of its desirability in obtaining certain advantages.

It is accordingly an important object of the invention to utilize a standard large size and style of carton and adapt it for use as a multiple-unit container which is capable of containing a plurality of small individual packaged units of foodstuffs, such as ready-to-eat cereals, which may be individually opened without exposing the remainder of the cereal to air. It is an object to make the adaptation from the standard size and shape container with a minimum of alterations and to be able to form the modified container on a standard packaging machine. A further object is that the adapted carton should have substantially the same finished size and appearance so that it may be easily recognizable by the customer as a product of the same manufacturer that sells the standard large size carton.

Another object of the invention is to provide an improved carton for containing a plurality of small transparent bags of cereal which consume only a small amount of storage space. The carton when opened will permit the consumer to observe the contents of each of the bags while they remain in the carton so that the consumer may selectively withdraw one serving at a time of the type of cereal of his liking.

A still further object of the invention is to adapt a simple standard container to form an improved dispensing container which is sturdy in construction and can withstand the rigors of packing, shipping and handling without receiving damage and yet which is very easy to open and which is readily reclosable for a successive number of times to dispense unit servings of foodstuffs.

Other objects and advantages will become clear with the full disclosure of the invention found in the following specification and claims, taken in conjunction with the accompanying drawings, in which:

Figure 1 is a plan view of a standard type of carton blank as adapted to form the improved carton of the present invention;

Figs. 2, 3 and 4 are perspective views of one end of the carton after it has been formed into tubular shape, teaching the successive steps of folding and closing the end flaps to form the carton end wall;

Fig. 5 is a perspective view of an alternate structure of the invention;

Fig. 6 is a perspective view of the folded carton ready to receive the individual packets of cereal;

Figs. 7 and 8 are front and side elevations respectively of the packets which contain individual servings of different types of cereal and which are contained in the large carton;

Fig. 9 is a sectional view taken along lines 9—9 of Fig. 6, illustrating the position of the packets within the large carton;

3

Fig. 10 is a perspective view illustrating the completion of the closing of the carton;

Fig. 11 is a perspective view showing the carton set on its side and opened to obtain access to the individual servings within;

Fig. 12 is a sectional view taken along line 12—12 of Fig. 11;

Fig. 13 is a perspective view of the carton after opening, showing the cover or lid bent completely back; and

Fig. 14 is a perspective view showing the end of the carton, illustrating the action of the cover upon re-closing and showing the alternative embodiment also shown in Fig. 5.

An important feature of the invention is that the carton used is a standard type of paper board carton which is capable of being constructed on a standard machine, thus eliminating the necessity of providing any special machinery of special type of material for manufacturing the carton. This greatly reduces the packaging cost. In previous manufacture of cartons which offer individual packs of ready-to-eat cereal, it has been necessary to form a small complete carton for each unit of serving, requiring machinery which will manufacture small cartons and requiring the manufacture of a complete carton for each small individual package. Provision of many small packages, each of which had to be moisture-resistant and have rigidity in its own right, required the provision of large amounts of material. This, combined with the fact that the small packages require special printing apparatus and require special assembly and handling, increases the cost of the cereal per unit of weight to a degree where the consumer often felt it unwise to purchase the smaller packages. This created a strong disadvantage deterring sales in spite of the fact that the multiple carton pack affords the advantage to the consumer of his being able to select one of various cereals to satisfy his current taste and in spite of the advantage that the user is assured of always receiving fresh cereal with each individual serving.

The names used herein to designate a vehicle for containing cereal, including container, carton and package will be understood not to be limiting but are used interchangeably and all refer to the type of container herein described.

The use of a large container to hold individual smaller envelopes of foods is not now in the art. However, the provision of a standard type package which offers all the advantages obtained by a standard size package and which in addition offers the advantages afforded by individual-serving small packages has not been previously known. It is to be understood that the invention finds many advantages as a cereal package and is so described for purposes of the embodiment shown but it is not limited to use with any particular commodity and can be used for many purposes.

The blank for forming the carton illustrating a preferred embodiment of the present invention, is shown in Fig. 1 and it will be seen that it greatly resembles the standard type of cardboard carton blank which is used universally in many packages. The blank is formed of paper board and is shown with areas representing different parts of the finished carton, the areas being separated by the broken lines having alternate short and long dashes. Area 20 represents the back wall of the carton and area 22 the front wall with the intermediate side walls being 24 and 26. The side walls receive printing which indicates the trade name of cereal and various other messages. The front side usually carries the trade name indicated at 21 and messages on the other walls are indicated by the lines 23, 25, and 27, shown on the rear and side walls 20, 24, and 26 respectively.

Side wall 26 has hingedly attached to its edge 28, a seam flap 30. This flap, when the carton is folded to form a tubular body, will underlie the area 32 on the rear wall or panel 20 of the carton. This is a change in location from the seam position in a standard type

4

carton wherein the seam is located on a carton end wall. Comparing the standard blank with the blank shown in Fig. 1 the flap 30 would normally be attached to the edge of the panel 20 and be glued to panel 26 to form the carton. The change in location is important to the opening of the present carton as will be seen later in the description.

To fold the carton into tubular shape, it is squared and creased along the fold lines 28, 34, 36 and 38. Adhesive is placed on the seam flap 30, as indicated by the shaded area to attach it to the side wall.

Continuous with the side walls of the carton and projecting from their ends are end flaps which are folded across the ends of the carton to form the completed closed carton. At the upper and lower edges 40 and 42 of the rear wall of the carton are the closure flaps 41 and 46. Similar closure flaps 48 and 50 are attached to the upper and lower edges 52 and 54 of the front wall of the carton. The side wall 24 has upper and lower closure flaps 56 and 58 attached at its ends 60 and 62. Closure flaps 64 and 68 are also attached to the upper and lower ends of the side wall 26 along its upper and lower edges 70 and 72. The inside corners 74 and 76 of the flaps 64 and 68 are cut away for purposes which will later be explained. The shaded areas on the flaps which represent the adhesive coated areas are significant and will also be explained in detail later in the specification.

One of the features to be noted is that the grain direction runs in the direction indicated by the arrows 78, which is contrary to the direction most commonly used. The blanks usually use a grain direction that runs horizontally around the container. One of the purposes for a change in grain direction is to enhance the ease of severance of the perforate line of separation 80 which runs vertically along the front panel 22 and extends outwardly across the end closure panels 48 and 50. Other perforated lines of separation are found at 82 and 84 on the end closure flaps which are attached to the rear wall of the carton and are positioned to correspond to the line 80 when the carton is folded. To open the lid the perforated lines are broken and the material is separated along the lines 87 and 89. Since these lines must run diagonal and not parallel to the grain they are severed and not merely perforated. A perforation would tend to tear crookedly and would be difficult to separate.

After the blank is folded into tubular shape along the lines 28, 34, 36 and 38 and adhesive is placed on the surface of the seam flap 30 it is secured to the inner side of the rear wall 20 to hold the container together, as shown in Fig. 2. The flap extends down to line 85 which is the hinge line of the lid of the carton. The closure flaps 41, 56, 48 and 64 for the bottom end project from the end of the container and are closed by first folding flaps 56 and 64 into the plane of the container end.

Adhesive 88 is placed over the entire surface of flap 56. Adhesive is also placed over the flap 68 but is spread over only a limited area 90, Figs. 3 and 4, which must be clearly defined. This area extends from the outer edge 72 of the carton part way across the flap and terminates where the perforated lines 80 and 82 and the severed ends overlie the flap. This is the line across which the container will be separated when the perforate lines are torn and the lid is opened. The flap 64 is not perforated and will remain whole. For this reason its end is left free of adhesive so that it will be free to slide out of the carton when the perforated lines are separated.

Continuing the end closure, the end closure flap 41 is then folded down into the plane of the container end and adheres to the glued surfaces 88 and 90. Adhesive is also placed over the outer surface of the closure flap 41 indicated by the area 94. To complete the closure, the flap 48 is folded over the top of the flap 41 adhering to adhesive areas 88, 90 and 94.

As an alternate construction, Fig. 5, the container end

flaps 41a and 48a, which are attached to the front and rear side walls, may be longer so that each extends fully across the end of the container. This will serve to add additional rigidity to the container end wall structure.

The completed container 95 is shown in Fig. 6 being ready to be packed with the individual packets containing the varieties of cereal. These packets are shown in detail in Figs. 7 and 8 in which the packet 96 is formed of a transparent material, such as cellophane or the like. The packet or envelope may be formed of a flat piece of material doubled over upon itself and joined along the seam 98 to form a tube. The tube is cross-sealed by a seam 100 at one end and the contents 102 are sealed within a tube by seam 104 at the opposite end. For the sake of clarity of the drawings, the details of the contents are not shown. It will be realized, however, that the contents are clearly visible through material such as cellophane.

The tubular packet has a somewhat flat shape because of the cross-seal at the ends, but is completely filled so as to leave no void space as may be seen by the full shape shown by the end view of the packet in Fig. 8. The individual small containers for the cereal may take various forms although an envelope or packet shape is preferred because of ease of packing and for economy and material which is transparent is preferably used. This has the advantage that when the large carton is opened, the contents may readily be seen so that the user may select the packet with the contents that he wishes to eat. Further, a simple packet of protective material is impervious to moisture and forms an excellent protective container in moist climates. The packets are stacked or dropped in a horizontal position, one on top of the other, in the carton and their relative position within the carton is shown in Fig. 9. The packets rest snugly against each other, which prevents any displacement and jarring which might crumble the cereal.

When the carton has been filled with the individual envelopes containing the varieties of cereals, the end flaps at the top are closed in the same manner in which the bottom was closed.

Referring to Fig. 10, the flaps 68 and 58 are folded over the carton end with the flaps 46 and 50 folded over these. Adhesive 105 is placed over the surface of the flap 58 and a limited area 106 of adhesive is placed on the flap 68. The limited area of adhesive extends from the outer edge 72 of the flap as far as a line which corresponds with the perforated lines 80 and 84 and the severed line 89 when the carton end is closed. Thus the lower area 108 of the flap is free and unattached and is free to slide out of the carton when the perforated lines are broken in the manner shown in Fig. 11. As the flap 46 is folded over the carton end, it adheres to the adhesive coated surfaces of the flaps 58 and 68 and the flap 50 is folded and adheres to the same flaps and to the strip of adhesive on the flap 46 and completes the container.

It will be seen from the steps of folding and securing of the relative parts of the container that the blank has been folded in the same manner as with a conventional container blank, except for the limitation of the gluing area on the two end flaps. This limitation of area can be easily accomplished by changing the glue applying devices of a standard packaging machine so that they will apply glue only to the area shown. The carton has the same appearance as the standard carton and may be packed in standard packing cases with the same machinery and may be shaped in the same manner. Further, the carton itself may have the same printing on its surface as does the standard line of manufacturers' packages, thereby enabling the consumer to easily recognize the packages as coming from the same source.

To open the container, the consumer turns the carton on its side in the position of Fig. 11 and breaks the lines of severance provided in order to be able to tip back the lid 110 from the container in the manner shown in Fig.

12. The perforations 80, running parallel to the grain direction, are easily separated by running the thumb nail along one side of a perforated line in a well known manner and the lines 87 and 89 being pre-cut easily separate. The cover or lid 110 tilts back, breaking at its rear and pivoting about the hinge line 85, which extends along the edge of the seam on the rear wall of the container shown in Fig. 6. This hinge line may be scored but the scoring is not necessary since the hinge line will always break in the same position. This is due to the fact that when the back of the carton is bent, the bending stresses will be concentrated at the point where the seam flap 30 ends, Fig. 12. The break in the carton board will always follow a straight line because of the double thickness at the seam flap 30 which is positioned on the back wall of the carton for forming a hinge for the cover.

The perforated line of separation 80, which extends across the face of the container and is continued and which is extended by the perforations 118 and 120, runs parallel to the grain of the container but the lines are on a lower plane than the hinge line 112. To lead the line of separation from the perforated lines to the hinged line, the diagonal cut lines 87 and 89 are placed in the container end walls and easily separate after the perforated lines have been broken. The continuation of the perforated line 80 into a slanting or diagonal line is formed by a cut because the continuation runs across the grain and would not tear easily if perforated.

Since the ends 64 and 108 of the flaps were not adhered to their overlying end flaps, they are free to slide out with the lid, their curved edges 74 and 76 enabling them to clear the front wall of the carton as the lid is being tilted back. The rear edges 134 and 136 of the flap ends being left square engage the rear wall of the carton when the lid is closed helping restrict the movement of the lid and permitting to move no further than its proper closing position. The flaps themselves, upon closing, slide inside the end walls guiding the abutting edges 130, 132 together to limit the closing of the lid. Thus what has been formed is a readily reclosable lid, the container and reclosable lid resembling a chest. It will be seen in Fig. 12 that the perforated line 80, extending across the front wall of the container, is cut sufficiently low so that the contents of the cereal envelopes 96 will immediately become visible when the lid is tilted back. Thus the user can keep the container in position on a relatively high shelf and tilt the lid back to observe the contents of the individual envelopes which are left in the carton. As the cover is tilted back, the user grasps the envelope he desires, withdrawing it from the carton, and again closes the carton to protect the contents. Since the remaining individual portions are each in their own protected envelope, they will not become moist from exposure.

In Fig. 14 is shown the lid and carton with the embodiment which uses two full-size end flaps. In this alternate embodiment parts which are like the principal embodiment are indicated by like numbers. The end flaps extending completely across the end of the carton, give a wider shoulder against which the shoulder of the lid engages when it is closed. In this embodiment it will be seen that the slanting slit 89 which continues the line of separation across the container end must be cut through both of the end cover flaps.

The container of the present invention has utilized a standard container which has been made commercially cheap because of its wide usage and, with few changes, a dispensing type container has been accomplished. The container has made it possible to utilize a moisture proof bag in order that the higher ratio of container area to cereal will not affect the keeping quality of the cereal. The container is easy to open and is well suited to dispensing individual packets of cereal servings which are packed on the inside. As the cover is tilted back the overlapping seam on the rear wall forms a clearly defined hinge line to insure easy and accurate working of the

cover. The container remains relatively stable after having been open and can be opened and closed for as many as is desired. Before opening, the container has the appearance and substantially the rigidity of an unaltered carton and the advantages which accrue to that type of carton are possessed by the carton of the present invention.

We have, in the drawings and specification, presented a detailed disclosure of the preferred embodiments of our invention, but it is to be understood that as the invention is susceptible of modifications, structural changes and various applications of use within the spirit and scope of the invention, we do not intend to limit the invention to the specific form disclosed but intend to cover all modifications, changes and alternative constructions and methods falling within the scope of the principles taught by our invention.

We claim as our invention:

1. A carton comprised of front, rear and connecting side walls with top and bottom end walls formed of flaps which are articulated to the upper and lower ends of the side walls and are folded in overlying relationship into the plane of the end walls and adhesively joined, the grain of the carton material running vertically on the side walls and continuing across the end flaps, a line of severance positioned parallel to the direction of grain to extend vertically on the front wall of the carton, lines of severance lying in a plane parallel to the side walls and extending across the end walls a portion of the total width and being parallel to the direction of the grain, a hinge line extending vertically across the rear wall, a slanted line of severance extending from the ends of the hinge line to the weakened line of severance on the end wall and being cut completely through the material to avoid the necessity of tearing across the grain, and transparent bags filled with various types of cereals and lying so as to have their ends exposed when the lid is folded back from the carton side.

2. A carton formed of a blank having areas representing front, rear and side walls and continuous top and bottom end flaps attached at the ends of each of said walls, the walls being attached except at the free edges of the blank and having a seam flap extending from the free edge of a side wall, the blank being folded to form a rectangular carton with the seam flap overlying and attached to the adjoining rear wall to complete the tubular body of the carton, the top and bottom end flaps overlaid and attached to form the end walls, a line of separation extending vertically along the front wall and continuing lines of separation extending from the ends of the line of separation on the front wall to terminate at the ends of the edge of the seam flap, said lines of separation defining a lid separable from the carton, the seam flap forming a strengthening member and providing a straight hinge line along its outer edge when the lid is pivoted on the carton by separating the lid along said lines of separation.

3. A carton formed of a blank having attached areas representing front and rear walls and first and second side walls with continuous top and bottom end flaps attached to the upper and lower edges of the walls and a seam flap attached to the side edge of the first side wall to be secured to the rear wall when formed into a tubular carton, the end flaps of the blank being folded into the plane of the carton ends to form the carton with the front and rear wall flaps being folded over the side wall flaps, the front and rear closure flaps being of a length to extend across the full thickness of the carton, a weakened line of severance extending vertically along the front wall and continued across the closure flaps attached to the front and rear walls at both ends, the first side wall flaps extending beneath the line of

severance in the front and rear wall flaps, a hinge line extending along the edge of the seam flap vertically along the rear wall of the carton, the separation of the carton material along said line of severance forming a lid for the carton with the first side wall hinged about said hinge line, the top closure flap attached to the first side wall being attached to the overlying closure flaps over an area extending only between the first side wall and the severance lines permitting the top closure flap to slide out from under the other flaps when the lid is pivoted back on its hinge line.

4. A carton comprised of front, rear, and connecting side walls with top and bottom end walls formed of flaps which are joined to the upper and lower ends of the front and rear walls and are folded in overlying relationship into the plane of the end walls and secured to each other, the grain of the carton material running vertically on the walls and continuing across the end flaps, a first line of severance positioned parallel to the direction of grain to extend vertically on the front wall of the carton, supplemental lines of severance lying in a plane parallel to the side walls and extending from the ends of the first line of severance across the end walls a portion of the total width and being parallel to the direction of the grain, a hinge line extending vertically across the rear wall, a slanted line of severance extending from each of the ends of the hinge line to said line of severance on the adjacent end wall and a portion of said slanted line adjacent the junction with said line of severance of the end wall being cut completely through the end wall material to avoid the necessity of tearing across the grain.

5. A carton formed of a blank having attached areas representing front and rear walls and first and second side walls with continuous top and bottom end flaps attached to the upper and lower edges of the walls and a seam flap attached to the side edge of the first side wall to be secured to the rear wall when formed into a tubular carton, the end flaps of the blank being folded into the plane of the carton ends to form the carton with the front and rear wall end flaps being folded over the side wall end flaps, the front and rear wall end flaps being of a length to extend across the full thickness of the carton, a weakened line of severance extending vertically along the front wall parallel to the line joining the front wall and one adjacent side wall and continued across the closure flaps attached to the front and rear walls at both ends, the first side wall flaps extending beneath the line of severance in the front and rear wall flaps, a hinge line extending along the edge of the seam flap vertically along the rear wall of the carton, the separation of the carton material along said line of severance forming a lid for the carton with the first side wall hinged about said hinge line, the top and bottom flaps attached to the first side wall being free of attachment in the areas thereof extending beyond the severance lines in a direction away from said first side wall.

References Cited in the file of this patent

UNITED STATES PATENTS

2,038,893	Davidson	Apr. 28, 1936
2,104,195	Groeling	Jan. 4, 1938
2,105,367	Parsons	Jan. 11, 1938
2,122,885	Lowey	July 5, 1938
2,133,701	Holmes et al.	Oct. 18, 1938
2,348,509	Wheeler	May 9, 1944
2,577,765	Irmischer	Dec. 11, 1951

FOREIGN PATENTS

439,720	Great Britain	Dec. 12, 1935
459,734	Great Britain	Jan. 14, 1937