

Nov. 7, 1939.

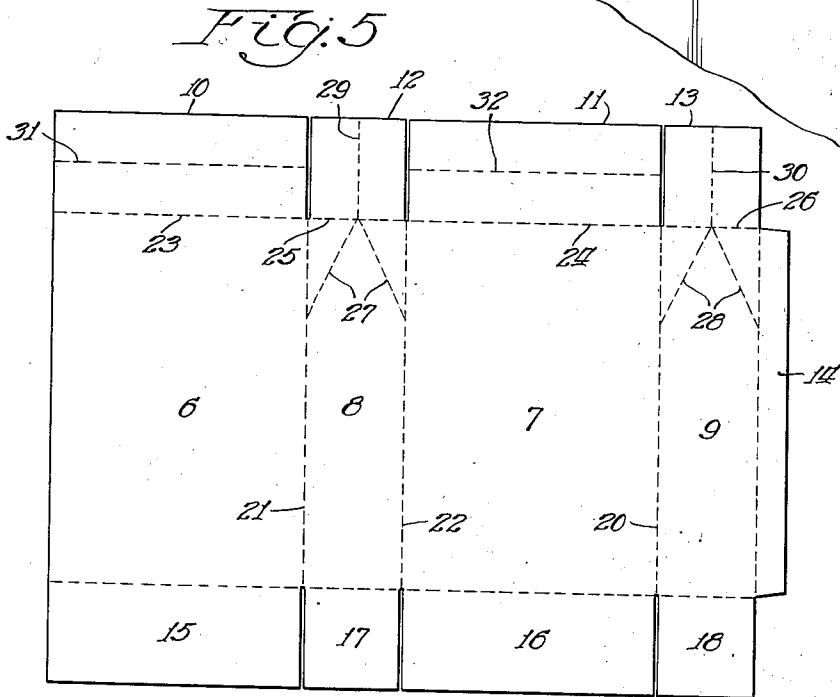
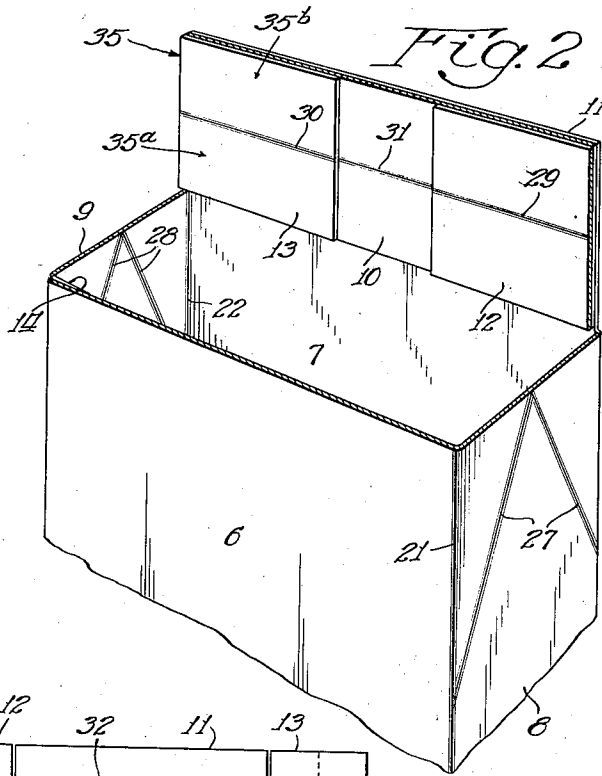
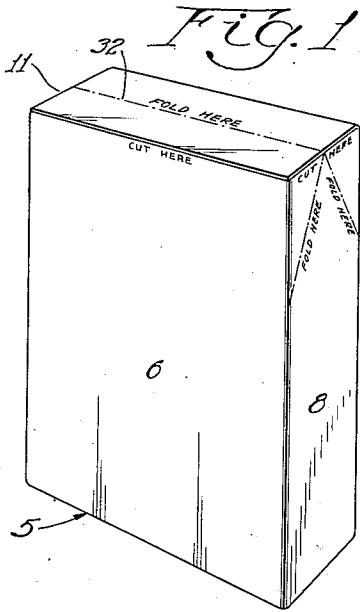
D. D. STEIN

2,178,730

CARTON

Filed March 21, 1938

2 Sheets-Sheet 1



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2 Sheets-Sheet 2

Fig. 3

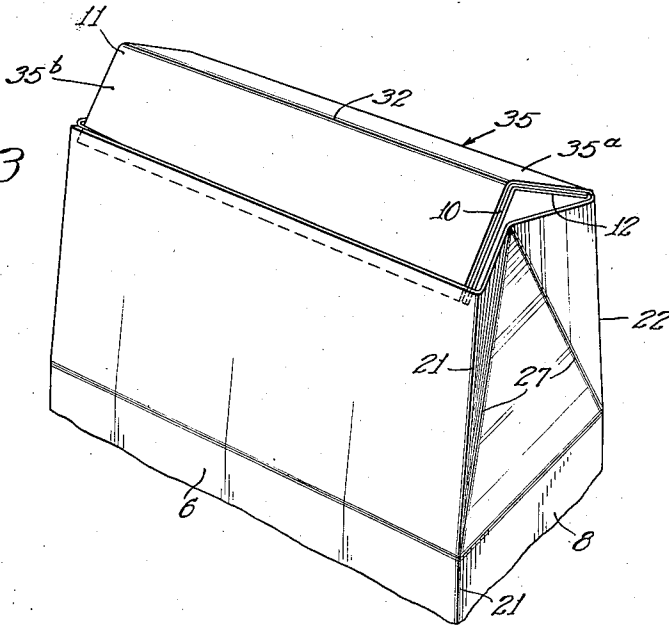
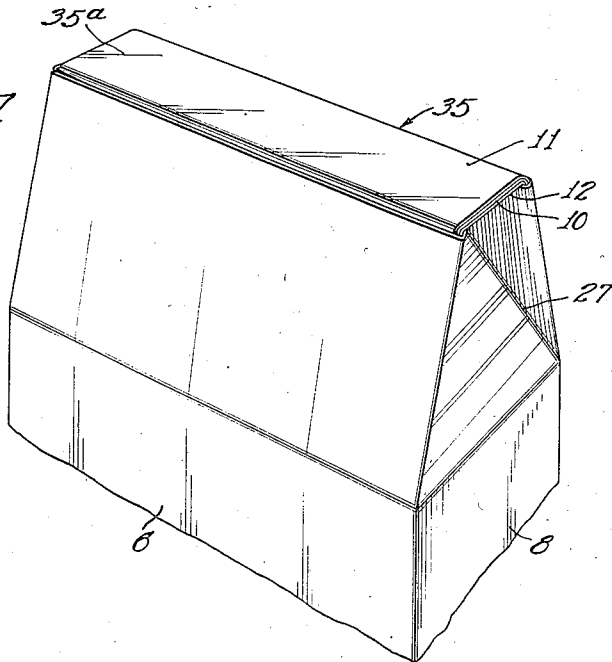


Fig. 4



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UNITED STATES PATENT OFFICE

2,178,730

CARTON

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Application March 21, 1938, Serial No. 197,060

5 Claims. (Cl. 229—51)

The present invention relates to cartons and more particularly to a form of carton which, after being opened and part of the contents dispensed, may be reclosed in a convenient and effective manner.

One object of the invention is to so modify a collapsible form of tubular carton, having ordinary closure flaps, that, after closing and sealing the carton in a usual manner, it may then be opened to provide a hinged flap and the side walls of the carton may be so modified as to readily adapt them for cooperation with the hinged flap to enable same to act as a supplemental closure for the carton, whereby the carton may conveniently be reclosed after removing or dispensing a portion of the contents.

Another object of the invention is to provide a convenient method by which the foregoing results are obtained.

Other objects of the invention will become apparent as the description proceeds.

In the drawings, illustrating a preferred embodiment of the invention:

Fig. 1 is a perspective view of the carton of the present invention after being filled and sealed in a usual manner;

Fig. 2 is a fragmentary perspective view of the carton, illustrating the manner of severing the top portion thereof to form a supplemental closure;

Fig. 3 is a fragmentary perspective view showing the carton in process of being closed by the supplemental closure means;

Fig. 4 is a fragmentary perspective view showing the carton completely closed by the supplemental closure means; and

Fig. 5 is a plan view of the carton blank.

According to the present invention a folding carton of rectangular tubular form, having rectangular closure flaps at both top and bottom, is so provided with folding lines as to enable the top closure formed by one set of adhered closure flaps to be folded after severance along three sides to provide two sections, one section of which provides a supplemental closure proper and the other section provides a tuck flap adapted to enter the carton and to be retained therein between one main wall of the carton and infolded portions of two of the side walls of the carton.

Referring more particularly to the drawings, the carton, represented as a whole at 5, is preferably formed of a single blank of folding paper-board. The carton blank, illustrated in Fig. 5, is suitably cut and scored to provide front and rear panels 6 and 7, and side panels 8 and 9.

The front and rear panels 6 and 7 are provided, respectively, with closure flaps 10 and 11 and the side panels 8 and 9 are provided, respectively, with closure flaps 12 and 13. One of the panels, herein illustrated as side wall panel 9, is preferably provided with an attaching flap 14 for adhesive connection with the panel at the opposite side of the carton blank, herein illustrated as front wall 6.

The lower ends of panels 6, 7, 8, and 9, are preferably formed respectively with flaps 15, 16, 17, and 18, which may be secured together to close the bottom of the carton as by means of adhesive or in any other well known manner. The side wall 9 is defined from the rear wall 7 by score line 20 and the side wall 8 is defined from the front and rear walls 6 and 7 by score lines 21 and 22. The walls 6, 7, 8, and 9 are defined from the top flaps which are integral therewith by score lines 23, 24, 25, and 26.

The upper ends of the panels 8 and 9 are preferably so treated so as to enable them readily to be bent or folded inwardly whereby the upper end portions of the front and rear panels 6 and 7 may be inclined toward each other, and whereby the top closure formed by the adhered closed flaps, after being severed from the front and side walls and, after being bent or creased along a line spaced from but substantially parallel to its hinge connection with the rear wall, will have a portion thereof adapted to be tucked into the carton along the inside surface of the front wall 6.

In the present instance the upper ends of the side walls 8 and 9 are creased or scored along lines 27, 27 and 28, 28 beginning adjacent the edges of such side walls and converging upwardly to substantially meet at the score lines 25 and 26 at the top edge of the carton. The angles formed between the inclined lines 27, 28 and the adjacent corners of the carton are preferably angles of less than forty-five degrees.

The closure flaps 12 and 13 are preferably formed with crease lines 29 and 30 preferably centrally thereof extending substantially at right angles to the crease lines 25 and 26, these lines 29 and 30 extend from the points where the convergent crease lines 27, 27 and 28, 28 meet with the crease lines 25 and 26, respectively.

The closure flaps 10 and 11 are provided with crease lines 31 and 32, preferably formed centrally of such flaps and substantially parallel with the respective score lines 23 and 24.

After the container blank has been formed, as above described, it is then ready to be converted into tubular shape by securing the flap 14 to the

front wall 6. When the blank has been formed into a tube with the bottom flaps closed it is then ready for filling and sealing. The carton may then be filled with whatever type of contents it is designed to receive, after which the top closure flaps 10, 11, 12 and 13 will be closed and secured together as by means of adhesive to form a top closure. The flaps 12 and 13 will preferably be turned in first, after which the flaps 10 and 11 will be folded over the first mentioned flaps. In the present instance the flap 11 is illustrated as being folded over the flap 10.

When it is desired to open the carton so as to form the supplemental closure means, the first step is to cut around the three sides of the carton, in the present instance illustrated as the sides 8 and 9 and front panel 6, this cut being made substantially along the line of juncture between the closure flap and attached walls, thus releasing the assembled top flaps for hinging or swinging movement around crease line 24 at the top of rear panel 7.

As soon as the supplemental closure, illustrated as a whole by the numeral 35, has been released, the next step will be to fold this closure along the crease lines 29, 30, 31 and 32, formed in the top closure flaps, which lines, it will be noted, are in substantial registration with each other. This forms the supplemental closure 35 into a closure proper, indicated at 35a, and a tuck flap, indicated at 35b.

The next step is to fold the side walls 8 and 9 along the convergent score lines impressed therein so that portions of such walls may be deflected inwardly, thus permitting the top portions of the front and rear walls to swing toward each other. With the carton held in the hands, the top portion of the front wall 6 may conveniently be pressed inwardly in the direction of the rear wall 7 and the free edge of the tuck flap 35b, at the same time, is moved into place along the inner surface of the front wall until the top edge of the front wall has been moved toward the rear wall a distance equal to the width of the portion 35b. At this point the top of front wall 6 is spaced from the hinge line 24 at the top of wall 7 a distance equal to the width of portion 35a of the supplemental closure. When this point is reached the tuck flap 35b of the supplemental closure will be moved to its full extent into the carton and the closure portion 35a will be in a position lying substantially flat on the upper edges of the inwardly folded sections of the side walls 8 and 9. In this condition the upper end of the carton is completely closed in a substantially dust-proof and air-tight manner.

Due to the inherent stiffness of the supplemental closure 35, as formed of several thicknesses of material substantially throughout its area, there will be a substantial resistance to the bending of the tuck flap 35b, relatively to the closure portion 35a and this causes a substantial tension to be exerted against the inside of the front wall 6 of the carton when the tuck flap 35b has been inserted into the carton, as illustrated in Fig. 4.

The multiple thickness of the supplemental closure 35 is also advantageous for another reason. It is to be noted that the upper portions of the side walls 8 and 9 which lie adjacent the front wall 6 will swing inwardly about the hinge lines 14a and 21 respectively, thereby leaving an opening which is substantially as long as the width of the front panel 6 but which has the end portions thereof restricted due to the angle

formed between the inwardly swinging portions of side walls 8 and 9. The closer the inwardly swinging portions of the side walls 8 and 9 come into engagement with the front wall 6, the more restricted will be the opening formed between these portions and the inner portion of the side wall 6. Thus when the tuck flap 35b of the supplemental closure begins to enter at the rear side of the front wall 6, the outer edge portions of the tuck flap will be engaged with a clamping action between the parts just mentioned. This clamping action will be increased as the parts come into final position, as indicated in Fig. 4.

From the foregoing it is apparent that the present invention provides a container which may advantageously be employed to hold freely flowing or granular materials, such as breakfast cereals, soap flakes, and the like, the container being readily opened by severing the walls around three sides of the top thereof and being readily convertible into a structure in which a supplemental hinged closure is formed together with means for engaging a tuck flap portion of the supplemental closure with the body of the carton. The carton made in accordance with the present invention is particularly advantageous in cases where it is desired to have a carton completely filled with granular material and where, for example, immediately after opening the container only a small portion of the contents would normally be removed, as in the case of removing only one serving of breakfast cereal. In such a case it is to be noted that the carton of the present invention may be closed in an effective and substantially dust-proof and air-tight manner without materially restricting the inner capacity of the carton, this being due to the fact that the front and rear walls do not come completely together at their tops, as would be the case if the supplemental closure was forced completely into the container.

If desired, the printing on the outside of the carton may include (see Fig. 1), directions to the person opening the carton that the upper edges of the carton be cut around three sides thereof so as to provide a supplemental closure hinged to the rear wall of the carton. For example, a dotted line could be printed around the top edges of the carton along the score lines 23, 25 and 26 accompanied by the words "Cut here". Likewise the legend "Fold here" can be applied along the crease lines as indicated in Fig. 1.

It is intended that references to front, rear and side walls, as contained herein, shall be construed in a relative sense, these terms being employed merely for convenience of description. The use of these terms is not intended to limit the disclosure to walls of any particular relative dimensions.

While the present description sets forth a preferred embodiment of the invention, numerous changes may be made in the construction without departing from the spirit of the invention, and it is therefore desired that the present embodiment be considered in all respects as illustrative and not restrictive, reference being had to the appended claims rather than to the foregoing description to indicate the scope of the invention.

I claim:

1. A rectangular tubular carton comprising front, rear and side walls, a closure for the bottom of the carton, top closure flaps integral with the upper edges of the walls, each of the side walls being formed with upwardly converging crease lines extending from points adjacent the

opposite edges of the walls, at least one of the front and rear wall closure flaps being provided with a crease line extending substantially centrally of such flap and in a direction parallel with the upper edge of the wall on which such flap is located, whereby assembling the top closure flaps adhesively and then severing the flaps from the front and side walls, will provide a supplemental hinged closure adapted to be folded along the crease line therein to provide a tuck flap section on the outer free edge thereof and, whereby, after inward deflection of the portions of the side walls lying between the upwardly converging crease lines, the tuck flap portion of the supplemental closure may be inserted into the carton to lie along the inner face of the front wall, and the remaining portion of the supplemental closure will be disposed flatwise on the upper severed edges of the side walls in their inwardly deflected condition.

2. A rectangular tubular carton comprising front, rear, and side walls, a closure for the bottom of the carton, top closure flaps integral with the upper edges of the walls, at least one of the front and rear wall closure flaps being provided with a crease line extending substantially centrally of such flap and in a direction parallel with the upper edge of the wall on which such flap is located, whereby assembling the top closure flaps adhesively and then severing the flaps from the front and side walls, will provide a supplemental hinged closure adapted to be folded along the crease line therein to provide a tuck flap section on the outer free edge thereof, the central upper portions of the side walls being adapted to be deflected inwardly, whereby after deflection the tuck flap portion of the supplemental closure may be inserted into the carton to lie along the inner face of the front wall, and the remaining portion of the supplemental closure will be disposed flatwise on the upper severed edges of the side walls in their inwardly deflected condition.

3. A rectangular tubular carton comprising front, rear and side walls, a closure for the bottom of the carton, top closure flaps integral with the upper edges of the walls, the upper portion of the side walls being formed with crease lines to permit inward deflection thereof, at least one of the front and rear wall closure flaps being provided with a crease line extending substantially centrally of such flap and in a direction parallel with the upper edge of the wall on which such flap is located, whereby assembly of the top closure flap adhesively and then severing the flaps from the front and side walls, will provide a supplemental hinged closure adapted to be folded along the crease line therein to provide a tuck flap section on the outer edge thereof, and

whereby, after inward deflection of the portions of the side walls provided with said crease lines, the tuck flap portion of the supplemental closure may be inserted into the carton to lie along the inner face of the front wall, and the remaining portion of the supplemental closure will be disposed flatwise on the upper severed edges of the side walls in their inwardly deflected condition.

4. A rectangular tubular carton including front, rear and side walls, a flap structure hinged to the upper edge of the rear wall and having front, rear and side edges substantially equal in length to the length of the upper edges of said front, rear and side walls respectively, said flap structure having a fold line extending lengthwise thereof in parallelism with its hinge line whereby the flap structure will provide a closure portion and a tuck portion, the upper portion of the side walls being adapted to be deflected inwardly to permit the upper portions of the said front and rear walls to be moved toward each other until the upper edges of the front and rear walls are spaced a distance substantially equal to the width of the closure portion of said flap structure, whereby, after inward deflection of the upper portion of the side walls, the tuck portion of said flap structure may be inserted into the carton to lie along the inner face of the front wall while the closure portion of the flap structure will be disposed flatwise on the upper edges of the side walls in their inwardly deflected condition.

5. In combination, a rectangular tubular carton including front, rear and side walls, a flap structure hinged to the upper edge of the rear wall and having front, rear and side edges substantially equal in length to the length of the upper edges of said front, rear and side walls respectively, said flap structure having a fold line extending lengthwise thereof in parallelism with its hinge line to divide the flap structure into a closure portion and a tuck portion, the upper portions of the side walls being formed with crease lines to permit inward deflection thereof to allow the upper portion of the said front and rear walls to be moved toward each other until the upper edges of the front and rear walls are spaced a distance substantially equal to the width of the closure portion of said flap structure, whereby, after inward deflection of the upper portions of the side walls, the tuck portion of said flap structure may be inserted into the carton to lie along the inner face of the front wall while the closure portion of said flap structure will be disposed flatwise on the upper edges of the side walls in their inwardly deflected condition.

DORIS D. STEIN.