

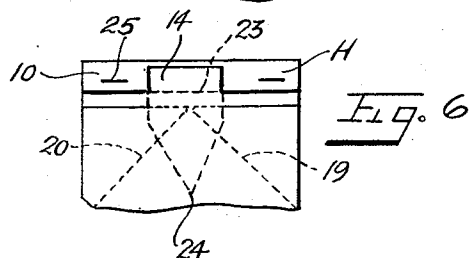
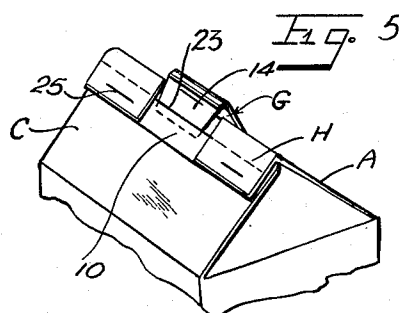
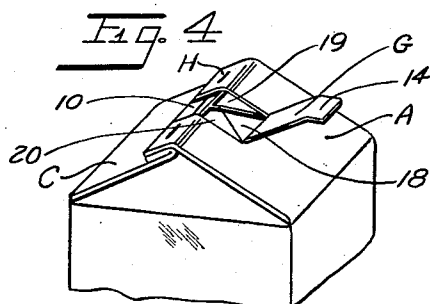
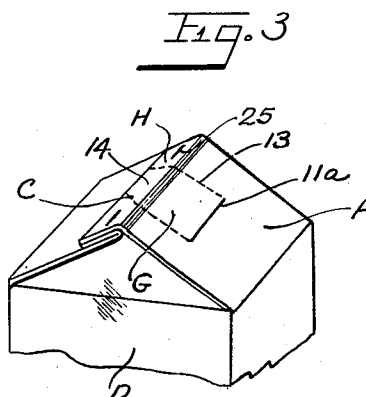
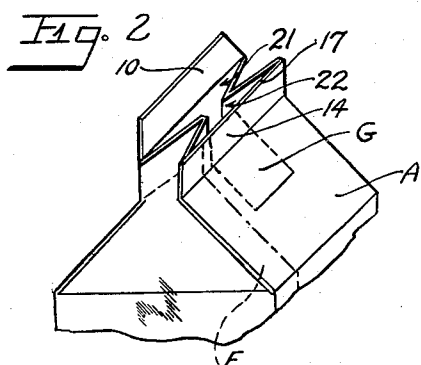
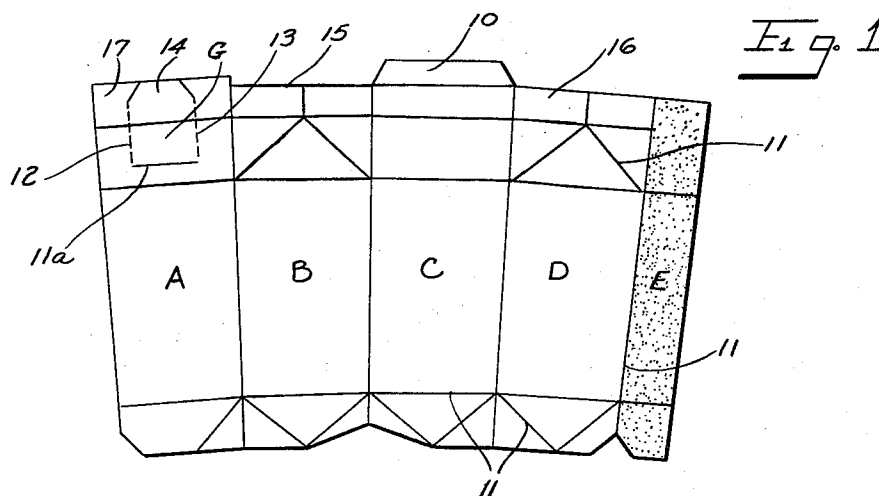
May 17, 1949.

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2,470,199

CARTON AND SECONDARY CLOSURE THEREFOR

Filed Sept. 7, 1945



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2,470,199

CARTON AND SECONDARY CLOSURE
THEREFOR

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Application September 7, 1945, Serial No. 614,896

2 Claims. (Cl. 229—17)

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This invention relates in general to cartons and in particular to closures for paper cartons.

Numerous attempts have been made to provide the trade with disposable containers—in particular, with containers for fluids—which would serve as a substitute for milk bottles and the like.

Among the essential requirements of such containers are that the top should be of such shape and construction as to avoid the accumulation of liquid on the top of the container; secondly, there should be provided a closure which is liquid-tight during storage and shipment of the containers; and, thirdly, there should be provided means for readily opening the container, such opening means preferably also providing means for pouring the liquid from the container. Various means have been provided for providing opening and pouring means in containers for milk and other fluids, but most of the prior devices are objectionable on one or several grounds such as (a) in opening the container, the hand must touch a part which will later be contacted by the liquid flowing from the container; (b) the opening device cannot be closed sufficiently to prevent access to dust and insects; (c) on pouring liquid from the container, the device permits the last few drops to run down the side of the container or collect in a pool on the top of the container; (d) it is difficult, if not impossible, to drink directly from such prior containers because the opening is not immediately adjacent the top edge but is positioned on the side wall; and (e) the liquid cannot be poured from the container in a controlled stream.

Accordingly, it is the general object of the present invention to provide a simple and inexpensive opening and closing device for paper cartons, in particular for waxed cartons for holding liquids, which would be free of all the disadvantages of prior articles.

It is another object of the present invention to provide a carton having a top closure incorporating an integral opening and closing device which can be opened without bringing the hand in contact with any surface which will be contacted by the liquid and which can be readily closed against access to air and insects.

A further object of the invention is to provide a top closure for milk cartons and the like which will provide means for easily opening the container to permit pouring the liquid therefrom and which means can be readily closed.

A specific object of the invention is to provide a novel means for opening the seam to permit pouring liquid therefrom in a controlled stream.

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A further specific object is to provide a pouring means which will enable one to drink directly from the container.

Other objects of the invention will appear obvious and will in part appear hereinafter.

The carton of the present invention is formed by folding a blank having four longitudinal panels forming the sides, front and back, the panel forming the back wall having a tab extending from the top thereof. The primary top closure is formed by inwardly folding opposing side walls adjacent the top to form a bellows fold and flattening the front and back wall on the folded side walls to form a peaked roof. The tab extending from the back wall is now folded down over at least the inwardly folding side walls. The bottom of the carton may be closed in a conventional manner and the method of closing the bottom forms no essential part of the present invention. After the carton has been filled with liquid or granular material capable of pouring, the peak comprising the flattened and sealed top edges is preferably folded over and adhered to that portion of the roof which is formed by the back wall. The secondary opening and closing device is formed by pre-scoring the front wall from the top edge thereof along lines space from the longitudinal sides of the carton, the scoring extending downward on the roof to a point substantially below the flattened primary closure whereby the portion between such scoring is adapted to be torn along the scoring to form an elongated tongue having a tab on the top thereof. The bending back of the tongue reveals an opening lying between the converging edges of the inwardly folded side walls, such edges defining a tapering pouring spout having its apex adjacent the top ridge of the carton. After the product has been poured out, the carton is closed by pressing the tongue back into position while slipping the tab thereof under the folded down tab of the back wall, whereby the secondary closure is maintained in a closed position.

It is to be understood that the carton and closure of the present invention may be used on any type of carton which has a so-called "peak roof" formed by inwardly folding two opposing walls and flattening the remaining walls on the folded walls. Such cartons may be formed of paper, cardboard, plastic sheeting, or other bendable but relatively stiff sheet material. Further, the container may be rendered waterproof and/or moistureproof with wax, wax compositions, rubber, resins, cellulose derivatives, and the like. The container is adapted for packaging liquids of all

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kinds, such as milk, fruit juices, oils, including petroleum oil, vegetable oils and also flowable granular or powdered materials, such, for example, as sugar, salt, face powder, talcum powder, and the like. In the following detailed description reference will be made, for the purposes of illustration, to waxed paper cartons adapted for the merchandising of milk, but the invention is not limited to containers for such materials.

For a more complete understanding of the objects and nature of the invention, reference should be had to the accompanying drawing in which

Figure 1 represents one embodiment of the blank for use in making the carton of the invention;

Figure 2 is a perspective view of the top of a carton formed from the blank shown in Figure 1 illustrating one method of closure;

Figure 3 is a perspective view of the top section of the carton showing the top in a completely closed condition;

Figure 4 is a perspective view of the top of the carton showing the secondary closure in an open position;

Figure 5 is a perspective view of the top of the carton showing the secondary closure in one stage of being closed; and

Figure 6 is a side elevation of another embodiment of the opening device.

In the following description the expression "primary closure" is used to designate the closure formed by folding and flattening the top portions of the carton to form the initial closure as illustrated in Figure 2, while the term "secondary closure" will be used to designate the tab closure which forms an integral part of the top of the front wall of the carton.

The carton of the present invention may be formed from any suitable material by first producing a blank having, in general, the configurations shown in Figure 1. This blank comprises four main longitudinal panels designated A, B, C, D which form the walls, and a narrow panel E which underlies panel A to form the longitudinal seam. Panels B, D and E are of substantially the same length. The top of panel A which forms the front wall is preferably slightly longer than panel B. Panel C which forms the back wall is provided with an extension flap 10 at the top thereof. All of the panels are pre-creased as shown along the solid lines indicated by the general reference numeral 11.

The top of panel A is pre-scored along the broken lines 12, which lines are spaced between the longitudinal edges of panel A and extend downward at least to a point below the closure formed by folding and flattening the walls, for example, down to the creased line 11a. The scoring is of sufficient intensity to permit the material to be torn along the scored line, thus forming a secondary closure designated G, which comprises a tongue 13 and a tapering tab 14 at the top thereof.

The bottom of the carton may be closed in any suitable manner, but in the blank shown the bottom of all the panels are pre-creased along the lines 11 and cut out in such a manner as to form, upon folding, a so-called "cloverleaf" bottom of the type shown in United States Patent Number 2,238,388. A square piece of sheet material having the dimensions of the bottom is now sealed over the cloverleaf bottom by means of a suitable adhesive. Since the particular construction of the bottom closure is not important in the

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present invention, it is to be understood that any other bottom closure may be employed.

In forming the carton the panel E is coated with adhesive and the blank is then folded into a rectangular container so that the panel E underlies a portion of panel A as shown in Figure 2 and the longitudinal seam so formed is sealed.

The top portions of the side walls comprising panels B and D are folded inwardly as shown in Figure 2, and the top portions of the front and back walls comprising panels A and C are then flattened upon the inwardly folded side walls. The tab 10 which extends from the top of the back wall (panel C) may be disposed of in one of three ways: (a) This tab may be folded down inwardly against panel C, that is, folded into the space 21. When this is done, it is preferable to cut away the corners of the inwardly folding side walls so that a central portion of the downwardly folded tab 10 will be exposed for direct contact with the tab 14 of the tongue G. (b) In this embodiment the tab 10 is folded down into the space 22, that is, covering the inwardly folding side walls and thus bringing the tab 10 in direct contact with the tab 14. (c) The tab 10 may be folded over all of the flattened walls, that is, over the top edge 17 of the front wall A. In this case, however, the tab 14 is slit down the sides so that the tab 14 is positioned outside the tab 10 as shown in Figure 6.

The downward and inward folding of the flap 19 is for the purpose of providing means for anchoring the tab 14 of the flap G and not merely for preventing leakage. The flattening, sealing, and bending over of the flattened top effectively prevents leakage. The flattened portions may be sealed together by adhesive, heat-sealing, or stapling. Preferably, the upstanding primary closure H thus formed is folded down upon the back wall C as shown in Figure 3 and is stapled adjacent the outer edges, the staples extending through the inwardly folding side walls but not being exposed to the interior of the carton. The closure so formed is hereinafter termed the "primary closure" of the carton.

To open the carton for the purpose of pouring out some or all of the contents, the flap 14 is raised with the fingernail, thus tearing the panel A along the scored lines 12 down to the folded line 11a. When the flap G thus formed is bent backward, the carton will be open as shown in Figure 4. Referring to Figure 4, it will be noted that the bending back of the flap G exposes an opening 18, the edges of which are defined by the inwardly folded sections 19 and 20 of the side walls B and D, the edges of which converge toward the top ridge of the container. This opening provides a novel pouring spout through which liquids and granular materials may be poured from the container in a well-defined and controlled stream. Moreover, because the apex of the opening 18 is adjacent the top of the container, one may drink directly from the container. Further, after pouring, any excess liquid remaining on the front edges 19 and 20 of the container will drip back into the container and not down the outside of the container. The secondary closure comprising the flap G is pressed down upon the top of the carton, and the tab 14 is inserted under the exposed edge 23 of the folded flap 10. Due to the pressure exerted by the tab 10 against the tab 14, the secondary closure remains in a closed position, thus effectively preventing access of dirt and insects.

In that embodiment shown in Figure 6, the flap

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G is formed by prescoring in the same manner as shown in Figures 2 and 3, but the top edge of panel A is cut half-way down to the folded line on each side of tab 14, and the free portion of the flap 14 overlies the downwardly folding tab 10. This construction makes it easier to grasp the tab 14 and tear the carton downwardly to form the flap G. However, when the flap G is to be closed with the embodiment shown in Figure 6, the tab 14 is again inserted under the edge 23 of the flap 10 exactly in the same manner as shown in Figure 5.

It is sometimes desirable to provide a container for a single use, particularly merchandising motor oil. In this case, the score lines 12 and 13 converge at a point 24 which is well below the top ridge of the container. With this embodiment, the flap G can be completely torn away, thus producing a substantially diamond shaped opening, the top edges of which are defined by the inwardly converging side walls 19 and 20.

It should be noted that it is characteristic of all embodiments of the container that in the initially closed position of the carton, the flap 14 always overlies the downwardly folded flap 10, whereas after opening of the flap G, the tab 14 is inserted under the exposed edge 23 of the flap 10. Thus, the flap 10 on the back wall cooperates with the tab 14 of the front wall to form a novel secondary closure for the cartons.

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

1. In a carton, the combination of, side walls, the centers of the upper edges of which are folded inwardly to form a bellows fold, and back and front walls flattened on either side of the top portions of said folded side walls to form a peaked roof, said back wall having a flap extending from the top thereof folded downwardly towards said front wall, said front wall having an area at the top thereof adapted to be torn downward and bent

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outward and downward to form an opening flap, the top edge of said opening flap overlying the edge of the downwardly folded flap of said back wall when the carton is in the initial sealed condition, the converging edges of said inwardly folded side walls confining the flow of material through said secondary opening when said flap is torn downward.

2. In a carton, the combination of, side walls, the centers of the upper edges of which are folded inwardly to form a bellows fold, and back and front walls flattened on either side of the top portions of said folded side walls to form a peaked roof, said back wall having a flap extending from the top thereof folded downwardly towards said front wall, said front wall having an area at the top thereof formed by prescoring the upper part of the front wall from the top, said area adapted to be torn outward and downward to form a secondary opening, said area overlying the upper part of the opening between the converging edges of the inwardly folded side walls, the top of said area overlying the edge of the downwardly folded flap of said back wall when the carton is in the initial sealed condition, said converging edges of the inwardly folded side walls confining the flow of material through said secondary opening.

GEORGE STEWART VIVIAN.

REFERENCES CITED

The following references are of record in the file of this patent:

UNITED STATES PATENTS

Number	Name	Date
1,020,536	Byrne	Mar. 19, 1912
1,494,518	Whippey	May 20, 1924
2,166,222	Ranko et al.	July 18, 1939
2,270,617	Bennett	Jan. 20, 1942
2,360,439	Monroe	Oct. 17, 1944