March 15, 1960 F. W. FIELDING 2,928,541

CARTON

Filed Nov. 12, 1957

Fig. 1

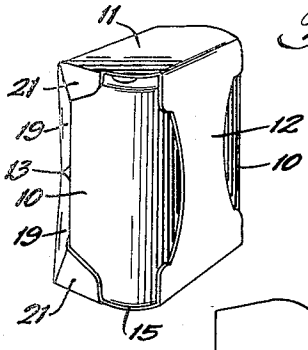


Fig. 2

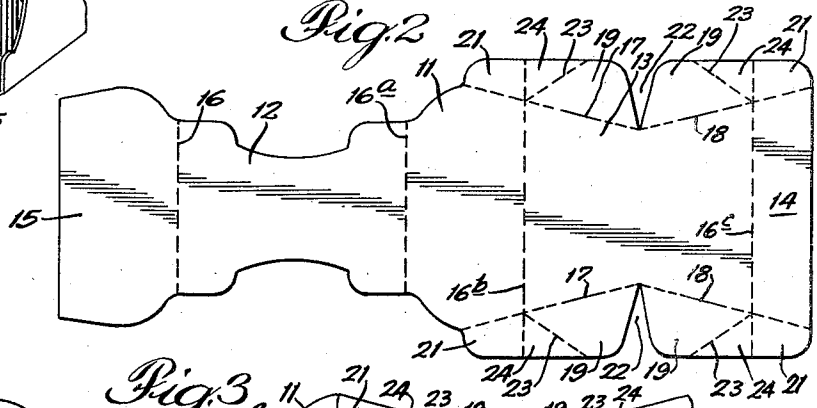


Fig. 3

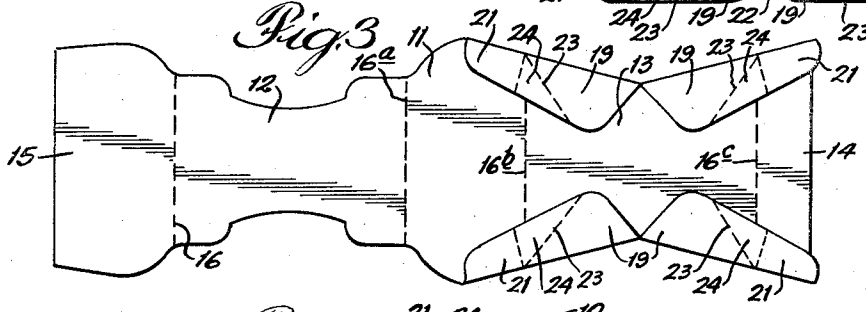


Fig. 4

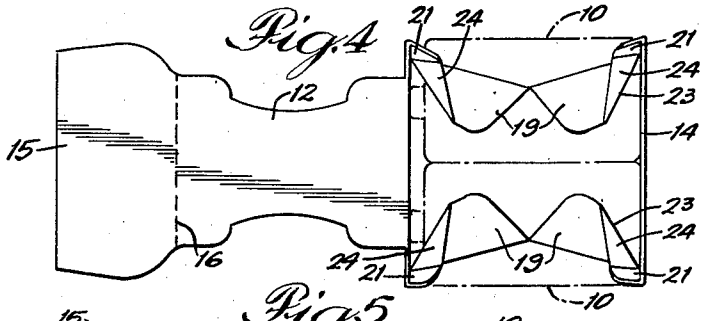


Fig. 5

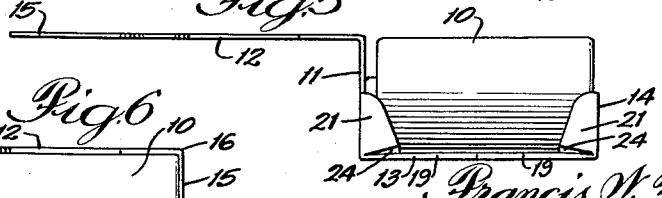
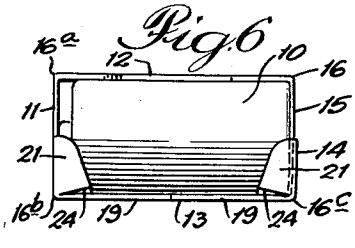


Fig. 6



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2,928,541

CARTON

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Application November 12, 1957, Serial No. 695,643

4 Claims. (Cl. 206—65)

This invention relates to cartons and more particularly to cartons formed of paper board, or the like, for holding a plurality of articles in side-by-side relationship.

Open ended cartons of various different constructions have heretofore been used for containing a plurality of articles such as cylindrical cans or containers and using various means for holding the articles in the carton. One very important consideration in the design of such cartons is their ability to be filled rapidly and preferably by automatic filling machinery.

One very desirable type of open ended carton is more particularly disclosed and claimed in my co-pending application Serial No. 540,981, filed October 17, 1955, now Patent No. 2,849,111, granted August 26, 1958. This construction embodies generally triangular saddles extending across the corners of the open ends of the carton to engage the end edge portions of articles in the carton. The saddles are held in effective position by flaps folded against an adjacent panel of the carton and beneath articles in the carton. Some difficulty has been encountered in filling cartons of this type due to the fact that the flaps and saddles must be folded simultaneously which operation does not lend itself to automatic filling.

It is one of the objects of the present invention to provide a carton having corner saddles to retain the articles therein in which the flaps and saddles are individually foldable and which is therefore easy to fill.

Another object is to provide a carton in which the flaps and saddles are defined by straight score lines extending at an obtuse angle to each other from the central part of one panel of the carton and across the fold lines between such panels and the adjacent panels.

According to a feature of the invention, the flaps and saddles are individually folded with the carton blank flat and the saddles are drawn out to operative position when the end panels of the carton are folded up to receive articles dropped straight into the partially formed carton. Afterwards, the cartons are completed by folding the remaining walls around the articles and gluing a single seam.

The above and other objects and features of the invention will be more readily apparent from the following description when read in connection with the accompanying drawing, in which:

Figure 1 is a perspective view of a filled carton embodying the invention;

Figure 2 is a plan view of a blank;

Figure 3 is a view similar to Figure 2 showing the first folding operation;

Figure 4 is a plan view showing the second folding operation and illustrating the condition of the carton when the articles are placed therein;

Figure 5 is a side elevation corresponding to Figure 4; and

Figure 6 is a side elevation of the completed carton.

The carton, as shown, is adapted to hold a plurality of articles indicated at **10** and in the illustrated carton two such articles are held in side-by-side relationship.

The flashlight batteries, as illustrated, are of cylindrical contour, although it will be apparent that articles of various different contours could effectively be retained in the carton of the invention.

The completed carton is formed of a single sheet of paper board, or the like, folded to define a top panel **11**, a front panel **12**, a back panel **13** and a bottom panel formed by sections **14** and **15** which overlap and are glued to each other. The panels are integrally connected in the blank by transverse fold lines **16**, **16*a***, **16*b*** and **16*c*** which separate the initial flat blank, as shown in Figure 2, into the different panel sections.

In addition to the fold lines, the flat blank is provided with straight score lines **17** and **18** which meet each other at an obtuse angle centrally of the back panel **13** and spaced inwardly from the edges of the blank. The score lines **17** and **18** extend outwardly in opposite directions and cross the fold lines **16*b*** and **16*c***. The score lines and fold lines define generally triangular flaps **19** at the sides of the back panel **13** and generally triangular saddles **21** at the edges of the panels **11** and **14**. The outer portion of the blank is cut, as shown at **22**, between the flaps **19** at each side of the blank so that the flaps are separated from each other and can be individually folded. Additional score lines **23** are formed in the blank extending from the intersections of the score lines **17** and **18** with the fold lines **16*b*** and **16*c*** at an acute angle to the score lines to define triangular webs **24** joining the flaps **19** to the saddles **21**.

With the blank scored to provide the various score and fold lines and cut, as shown in Figure 2, the blank is ready for filling and forming into a completed carton. In the first step, the flaps, saddles and webs are folded inwardly along the straight score lines **17** and **18** to overlie the panels **11**, **13** and **14**, as shown in Figure 3. Due to the fact that the score lines **17** and **18** are straight, this folding operation can be performed very easily on automatic filling machinery and the blank after the first folding will still remain flat to be handled easily in automatic filling.

The second folding step is illustrated in Figures 4 and 5 and in this step the panels **11** and **14** are folded upward at approximately right angles to the back panel **13** in a position to receive the articles. During this folding operation, the webs **24** will pull the saddles **21** outward to the position illustrated in which they extend across the corners between the panels **13**, **11** and **14** in a position to engage the end edge portions of the articles and hold them in place. The panels **12** and **15** may extend at right angles to the back panel **13**, but are preferably bent back at the fold line **16*a***, as shown, for convenience. With the blank in the condition shown in Figures 4 and 5, the articles **10** may be dropped straight down onto the back panel **13** with their end edge portions engaging the insides of the saddles **21** and held in position on the back panel by the saddles.

To complete the carton the edge of the panel **15** may be glued and the panel **12** may be folded over the top of the articles, as shown in Figure 6, with the panel section **15** being bent downward to fit inside of the panel section **14** and being glued thereto. Upon completion of these folding and gluing operations, the carton is completed with the articles securely retained therein.

It will be seen that the carton is completely erected from the blank by a series of straight folding operations which can easily be accomplished in automatic machinery and that the articles can be dropped into the partially completed carton in a very simple manner to be properly enclosed in the completed carton. These operations are made possible because all of the folds are complete folds about straight lines which intersect or made in such a

way as to define the saddle, web and flap portions which function to retain the articles in place.

While one embodiment of the invention has been shown and described herein, it will be understood that it is illustrative only and not to be taken as a definition of the scope of the invention, reference being had for this purpose to the appended claims.

What is claimed is:

1. A blank for a carton to hold a plurality of articles comprising an integral elongated sheet of paper board or the like formed with spaced parallel fold lines to separate it into foldably connected top, bottom and side panels, a pair of straight score lines extending at an obtuse angle to each other from the central portion of one panel toward an edge of the panel between adjacent folding lines and across the fold lines between said one panel and the adjacent panels to the edges of the adjacent panels and defining flaps at the edge of said one panel and generally triangular saddles at the edges of the adjacent panels, said one panel being cut between the flaps whereby they are independently foldable, and additional straight score lines extending from the intersections of the fold lines and first named score lines to the edge of said one panel at acute angles to the adjacent score lines respectively and defining triangular webs joining the ends of the flaps and the saddles, whereby the saddles, flaps and webs being infoldable flat against the panels so that when said adjacent panels are folded up at right angles to said one panel the webs will draw the saddles out across the corners between the adjacent panels

2. A carton to hold at least one article comprising connected top, bottom and side walls joined to each other along parallel fold lines to define an open ended carton, one of the walls having a pair of separated flaps at at least one of its edges folded back upon the wall along a pair of straight score lines diverging at an obtuse angle from each other from the central portion of the wall adjacent to an edge thereof which is at an open end of the carton, each of the walls adjacent to said one wall having a triangular saddle at its edge folded normal thereto along a score line which is a continuation of one of said first named straight score lines and a generally triangular web between and foldably connecting the adjacent flaps and saddles respectively.

3. In combination, a carbon and at least one article in the carton, the carton having a first body wall supporting the articles in side-by-side relationship, a second body wall articulated along a straight fold line to the first body wall and extending at right angles thereto for contact by the sides of the articles, and a third body wall articulated to the second body wall along a straight fold line and overlying the tops of the articles, the body walls having a length substantially equal to the combined cross sectional dimensions of the articles so that the outermost edges of the end articles in the carton coincide substantially with the end edges of the body walls, the second body wall having a pair of separated flaps at at least one edge thereof folded back between the adjacent portion of an article and the first body wall and defined by a pair of straight score lines extending at an obtuse angle to each other from the central portion of the second body wall toward an edge thereof between the fold lines, the first and third body walls having generally triangular saddles at the edges thereof folded normal thereto along score lines which are straight continuations of said first named straight score lines respectively, and triangular webs foldably connecting the adjacent flaps and saddles and being folded in between the adjacent portion of an article and the second body wall.

4. A carton to hold at least one article comprising connected top, bottom and side walls joined to each other along parallel fold lines to define an open ended carton, one of the walls having a pair of separated flaps at at least one of its edges folded back upon the wall along a pair of straight score lines each extending from the central portion of the wall adjacent to an edge thereof which is at an open end of the carton, each of the walls adjacent to said one wall having a triangular saddle at its edge folded outward therefrom along a score line which is a straight continuation of one of said first named straight score lines and a generally triangular web between and foldably connecting the adjacent flaps and saddles respectively, each web being connected to the adjacent flap and saddle along score lines at an acute angle to each other and all of the score lines meeting at a common point at a corner of the carton.

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UNITED STATES PATENT OFFICE

CERTIFICATE OF CORRECTION

Patent No. 2,928,541 March 15, 1960

Francis W. Fielding

It is hereby certified that error appears in the printed specification of the above numbered patent requiring correction and that the said Letters Patent should read as corrected below.

Column 3, line 45, for "carbon" read -- carton --.

Signed and sealed this 20th day of September 1960.

(SEAL)
Attest:

KARL H. AXLINE
Attesting Officer

ROBERT C. WATSON
Commissioner of Patents