June 9, 1925. 1,541,143

R. HOILE

CARTON OR CONTAINER

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Fig.1.

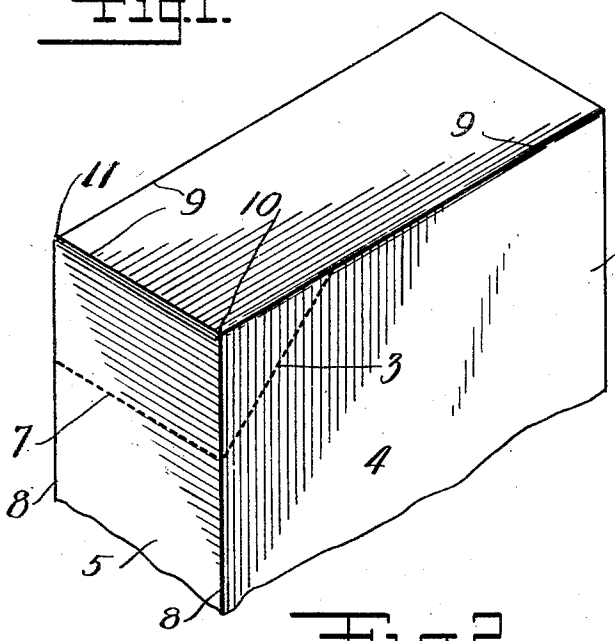


Fig.11.

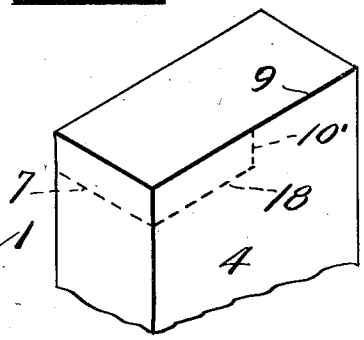


Fig.3.

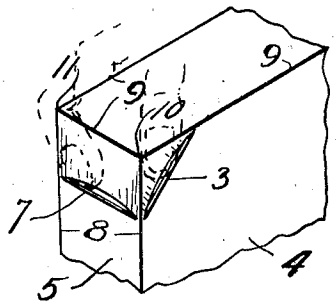


Fig.2.

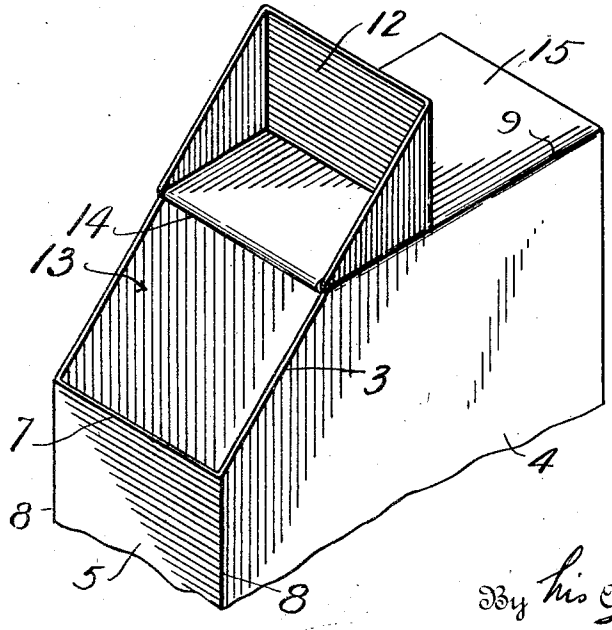
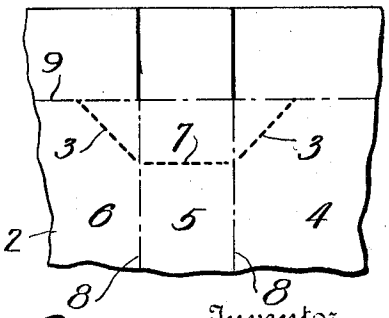


Fig.4.



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Fig. 5.

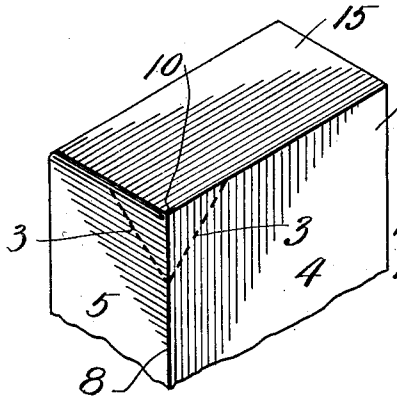


Fig. 6.

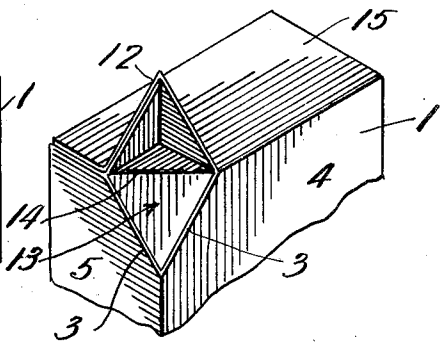


Fig. 7.

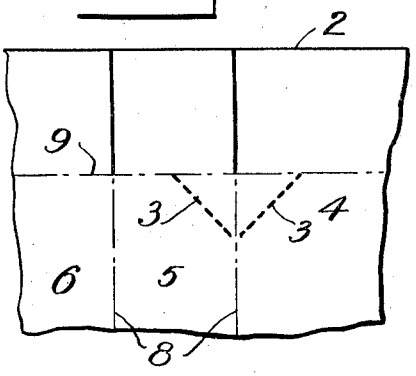


Fig. 8.

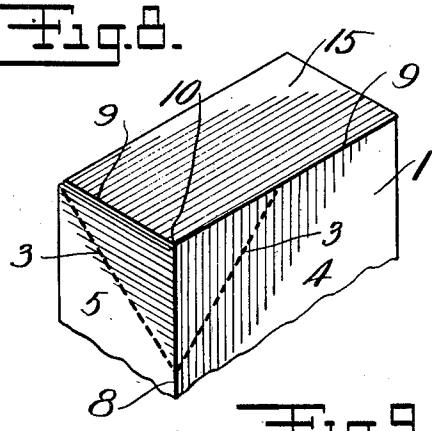


Fig. 9.

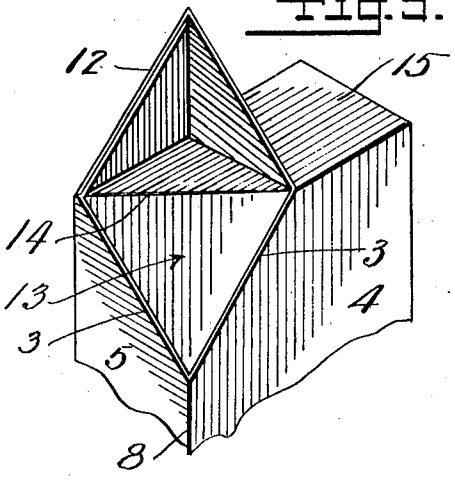
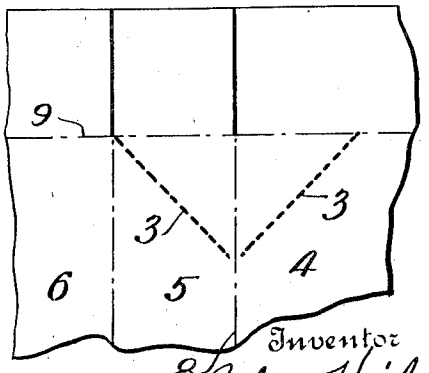


Fig. 10.



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Patented June 9, 1925. 1,541,143

UNITED STATES PATENT OFFICE.

RICHARD HOILE, OF VERONA, NEW JERSEY.

CARTON OR CONTAINER.

Application filed August 23, 1921. Serial No. 494,472.

To all whom it may concern:

Be it known that I, RICHARD HOILE, a citizen of the United States, residing at Verona, in the county of Essex and State of New Jersey, have invented certain new and useful Improvements in Cartons or Containers, of which the following is a specification.

This invention relates generally to cartons or containers and more particularly to a structural feature by which an access opening may be provided through which the contents of the container may be removed as required without unfolding or removing an entire end of the container.

Access openings for the same general purpose referred to have been heretofore provided in containers, and for the same general purpose, but so far as I am aware no device of this general nature has been devised which is free from objectionable features. Certain of these devices necessitate complicated changes in the container structure, which not only add considerably to the cost of the container but which also include covers or closures which are difficult to manipulate. Other of these devices seriously weaken the walls of the container so that the access opening becomes accidentally uncovered under the stress of shipping or other handling with the result that the contents of the containers are wasted.

It is an object of this invention to provide means of access to cartons or containers which are free from the objections referred to, which can be inexpensively formed, which will be secure against accidental or premature opening, and, at the same time, can be easily manipulated without the use of special means other than the fingers of the users.

In the drawing,

Figure 1 is a view in perspective of a portion of a container provided with weakening lines to determine the formation of an access opening in accordance with the invention.

Figure 2 is a view similar to Figure 1 showing the access opening already formed.

Figure 3 is a view showing the manner in which the walls of the carton are ruptured along the weakening lines and across the corners of the carton to form the access opening.

Figure 4 is a diagrammatic view of a portion of a blank which may be folded to form a container, and showing the relation of the weakening lines to the lines of fold of the blank.

Figure 5 is a view similar to Figure 1 and showing an arrangement of weakening lines for forming an access opening at a corner of the carton.

Figure 6 is a view similar to Figure 2 and showing the access opening corresponding to the weakening lines in Figure 5.

Figure 7 is a view similar to Figure 4 and showing the blank and arrangement of the weakening lines for the access opening shown in Figure 6.

Figures 8, 9 and 10 are similar respectively to Figures 5, 6 and 7 and show a corner access opening of still another form.

Figure 11 is a perspective view showing a third form of the invention.

In the drawing, a carton or container 1 is shown which is preferably of a well-known construction formed by folding a paper or cardboard or similar blank 2 into the form of a relatively flat package. Containers of this general type are in common use and may be used in the packaging of materials of a great variety of types.

The invention set forth herein has to do with the provision of an access opening shown in Figures 2, 6 and 9 by means of which large or small portions of the contents of the container can be removed as required without the necessity for unfolding, or cutting, or tearing an end of the container.

I succeed in accomplishing this by providing structure weakening lines or zones by perforating, scoring or otherwise treating at least two of the side walls of the container as at 3 in Figures 1, 5 and 8 of the drawing. It will be seen that the weakening lines 3 extend obliquely across the side walls 4 and 5 in Figures 5 and 8, and across the wall 4 in Figure 1 and an oppositely disposed wall 6, not shown in Figure 1 but indicated in the blank shown in Figure 4 which is arranged to be folded to form the container shown in Figure 1. In addition, in Figure 1 a weakening line 7 is extending substantially across the side wall 5 of the container on a level with the lower terminals of the weakening lines 3. The terminal portions of the line 7 preferably, however, stop somewhat short of reaching the margins 8 of the side wall 7, and the terminal portions of the lines 3 also are spaced

somewhat from the margins 8 so that the margins 8, which are also lines of juncture of two angularly joined sides, are unweakened in their supporting function.

The same characteristic preferably obtains in the construction shown in Figures 5 and 8, that is, the adjacent terminals of the lines 3 do not meet but terminate somewhat short of the corner 8 formed by the junction of the two side walls 4 and 5. The upper terminals of the lines 3, however, in each form of the invention disclosed, extend wholly to the upper margins 9 of the side walls.

The result is that a single corner 10 of the container shown in Figures 5 and 8 is flanked by weakening lines 3 separated by the unweakened angular portion 8, while the two corners 10 and 11 in the container shown in Figure 1 are flanked by the weakening lines 3 and a connecting weakening line 7, the vertical angular portions 8 being unweakened. The weakened portion or section of the container thus obtained can by a simple appropriate pressure of the fingers, as indicated in Figure 3 or Figure 1, be converted into a hinged closure 12 for an access opening 13. It will be seen that the pressure of the fingers ruptures the walls of the container along the weakening lines 3 and 7 and also breaks through the resistance offered by the unweakened angular portions 8 and that thereupon the corner portion 12 can be tilted or folded back along a line 14 extending across the end wall 15 of the container between the upper margins of the weakening lines 3.

A hinged closure is thus provided which can be easily moved from closed to open position or from open to closed position and which, because of the inclusion of one or more corners in its structure is a rigidly braced member that can be readily placed in an effective closing relation to the access opening and cannot easily be distorted out of fitting relation to the opening in ordinary handling.

In Figures 4, 7 and 10 of the drawing are represented suitable blanks from which the containers shown in Figures 1, 5 and 8 can be formed. It will be seen that the weakening lines 3 and 7 are formed in the blanks before they are folded into container form. The lines 3 in Figure 7 are relatively short and provide the relatively small opening at the corner 10 in Figures 5 and 6. The longer lines 3 in Figure 10 provide a larger single-corner opening as shown in Figures 8 and 9.

In Figure 11 of the drawing there is shown a form of the invention somewhat similar to Figure 1 but differing therefrom in the provision of weakening lines 18 in the side walls 4 which, instead of being obliquely arranged, are parallel to the upper edges 9 of the container. The short weakening lines 10′ connect terminal portions of the weakening lines 18 with the edges 9 of the box.

What is claimed is:

1. In a container, means for providing an access opening comprising weakening lines partially enclosing a portion of at least three surfaces of the container, whereby the enclosed portion can be partially separated from the main body structure and swung back along an unweakened zone to provide an access opening of less than a whole surface with a hinged closure.

2. In a container, means for providing an access opening comprising a weakening line partially enclosing a portion of at least three surfaces of the container, whereby the enclosed portion can be partially separated from the main body structure and swung back along an unweakened line to provide an access opening of less than a whole surface with a hinged closure, said weakening line including one or more interruptions to prevent accidental opening of the closure.

3. In a container having end and side walls, weakening lines partially enclosing a portion of at least three surfaces of the container whereby the enclosed portion can be partially separated from the main body structure and swung back along an unweakened line to provide an access opening of less than a whole surface with a hinged closure.

4. In a container having a polygonal relatively flat formation, a corner formed by the juncture of the edges of several faces being separated from the walls on several sides and adapted to form a hinged joint on another side whereby the corner portion can be swung out of normal position to form an access opening of less than a whole surface.

5. In a container having a rectangular relatively flat formation, a trihedral corner of the container formed by the juncture of the edges of several faces being separated from the adjacent walls on all but one side and adapted to form a hinged connection with the wall on the remaining side.

6. In a container having a rectangular relatively flat formation, a weakening line extending around a trihedral corner of the container and being separated from the walls on several sides to form an access opening of less than a whole surface with a hinged joint on an unsevered side.

7. In a container having a polygonal formation, weakening lines so arranged in adjacent faces of one of the trihedral corners that said corner can be swung back to provide an access opening.

8. In a container having a polygonal formation, weakening lines so arranged in adjacent faces of one of the trihedral corners whereby said corner can be swung back to provide an access opening with a hinged

closure, and an interrupted portion included in said weakening lines to prevent accidental opening of the closure.

9. In a container, means for providing an access opening comprising a weakening line beginning and ending at the edges of one surface and extending only through surfaces adjacent to the first mentioned surface.

10. In a container, means for providing a triangular shape access opening comprising a weakening line beginning and ending at the edges of one surface and extending through adjacent surfaces.

In testimony whereof I affix my signature.

RICHARD HOILE.