June 2, 1942. A. E. SIMONS 2,285,174

CARTON

Filed Oct. 27, 1939

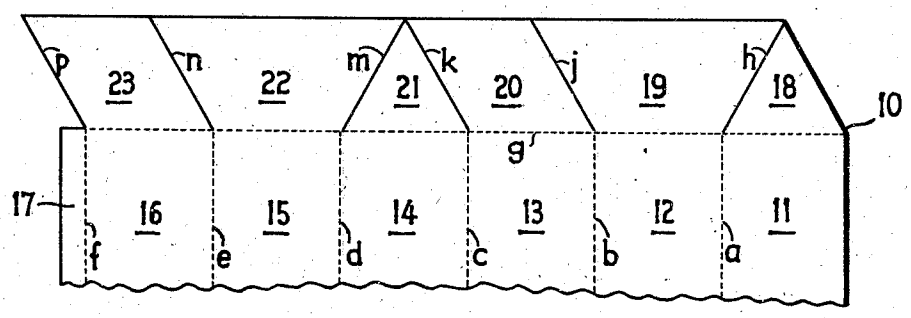


Fig. 1.

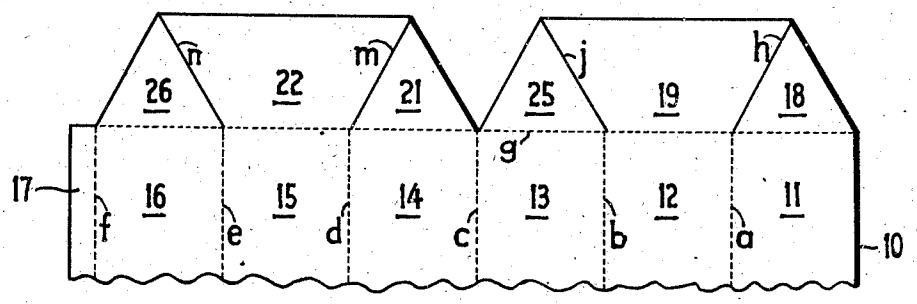


Fig. 2

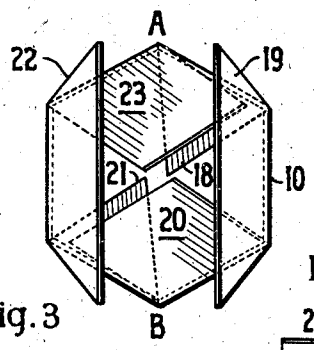


Fig. 3

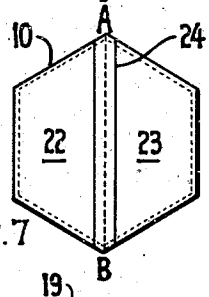


Fig. 7

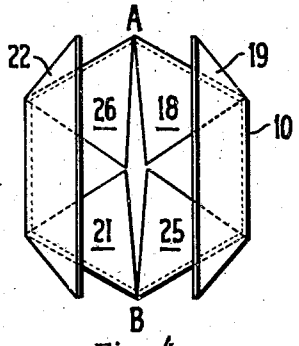


Fig. 4

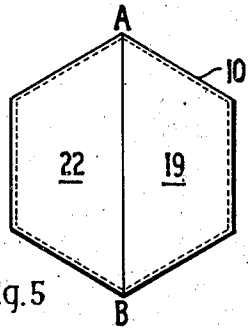


Fig. 5

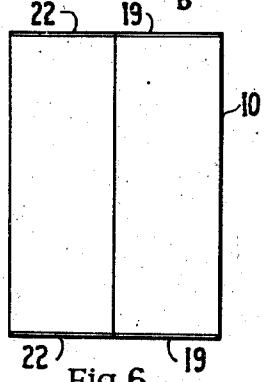


Fig. 6

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CARTON

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Application October 27, 1939, Serial No. 301,609

4 Claims. (Cl. 229—37)

This invention relates to knock-down cartons or containers made preferably from heavy paper board and the like and adapted to hold materials which are initially hot and fluid, such as melted asphalt, and is particularly directed to an arrangement of integral flaps to form end closures for said carton which will have a flat outer surface.

Heretofore cartons in which asphalt and similar materials are packaged for shipment have been formed with end closures which required the use of hexagonal pads or covers which were secured to the inturned triangular end flaps to form a tight closure. It will be appreciated that hot asphalt is very fluent and tends to escape through even small cracks or openings. The use of separate covers which telescope over the open end of such a container has proved to be very costly and also forms a projection that makes such closures liable to be removed during the handling of such packages.

It has also been proposed to use hexagonal cartons in which a continuous band is integral with the side wall, this band being scored to fold inwardly and form a telescopic lock for the opposite sides. Such an arrangement is illustrated in Patent No. 2,044,103. The principal disadvantages of such an arrangement for the present purpose are that the thickness of material required to hold the hot fluent asphalt without bulging must be such that it will not fold together at the ends without making an unsightly bulge and a rounded end on which the finished package will not stand without wabbling. Thus the principal advantage of a hexagonal carton, namely, that it will stack in a minimum of space and will be relatively stable in any position, is lost.

This invention comprehends broadly an improvement over the arrangement just described in that the tabs are separate so that they may be folded inside of a plane of the end of the carton, and in addition that two of the flaps are isosceles trapezoids which are adapted to overlie the remaining flaps forming the end closure and to abut along the major diameter of the end of the hexagonal carton to form a flat closure therefor.

It will be appreciated that such an arrangement requires no hexagonal pads or covers to form a neat and tight closure for either end of such a carton, and that it is particularly adapted to be used where asphalt is filled into a carton, the flaps are pressed together with a suitable adhesive and then the whole package is inverted so that the pressure of the hot asphalt will act to seal the component parts of the closure.

It is an object of this invention to provide a strong and easily assembled carton which is adapted to hold a heavy and originally liquid material such as asphalt without bulging or leakage while the asphalt is in its original heated condition.

Another object is to provide an economical arrangement for a flat blank which is adapted to be formed into an hexagonal carton by any suitable fastening and then to be folded so that end closures may be provided that will leave a flat end closure with a minimum of seams or folds which may cause leakage of an initially plastic or otherwise fluent material.

These and other objects and advantages will be further apparent from the following description and from the accompanying drawing which forms a part of this specification and illustrates a preferred embodiment and an alternative form of this invention as applied to an hexagonal carton for the packaging of asphalt.

In the drawing,

Figure 1 is a fragmentary view of a paper board blank showing the cuts and scores which separate respectively the end closure tabs and the side wall panels of the carton.

Figure 2 is an alternative arrangement of a paper board blank similar to that shown in Figure 1.

Figure 3 is an end view of a carton having closure tabs such as those shown in Figure 1, these tabs being in a partially closed position.

Figure 4 is an end view of a carton having tabs such as shown in Figure 2, these tabs being in a partially closed position.

Figure 5 is an end view of a carton which may be either that of Figure 3 or Figure 4 illustrating the opposed trapezoidal end tabs which form the outer layer of the end closure.

Figure 6 is a side elevational view of the carton of Figure 5 showing the flat nature of the end closures thus provided.

Figure 7 is an end view of an hexagonal carton constructed according to this invention in which a thin sealing strip is applied to the abutting edges of the trapezoidal outer flaps.

Referring to the drawing and particularly to Figure 1, reference numeral 10 designates a blank which may be of paper board or any other suitable sheet material that is foldable to form a carton of this nature. Blank 10 is divided into side-forming panels 11, 12, 13, 14, 15 and 16 and preferably a glue or staple flap 17, these divisions being made by the score lines *a*, *b*, *c*, *d*, *e* and *f*. At the end of panels 11 to 17 inclusive is a score

line extending the full length of blank 10 which will permit the end forming tabs to fold inwardly into the completed carton. If it is desired that the finished carton have integral end closures, each end of blank 10 is provided with tabs 18, 19, 20, 21, 22 and 23 which are separated by cuts *h*, *j*, *k*, *m*, *n* and *p*. These cuts divide the tabs so that they may be independently folded inwardly in a sequence which will be described below.

The arrangement shown in Figure 1 illustrates tabs 19 and 22 as being isosceles trapezoids, these being attached respectively to side panels 12 and 15 which are separated from each other by intermediate panels 13 and 14. Tabs 18 and 21 are equilateral triangles and tabs 20 and 23 are rhombuses, these arrangements being desirable for reasons which will be pointed out below.

Referring to Figure 3, which illustrates the tab arrangement of Figure 1 in a carton of which the body has been formed and which is in process of having an end assembled, it will be noted that triangular tabs 18 and 21 are first folded inwardly at substantially right angles to the side walls of the body. Rhombus shaped tabs 20 and 23 are then folded inwardly so as to cover tabs 21 and 18 respectively and may be secured to those tabs by an adhesive or other suitable fastening means. Finally to complete the closure, trapezoidal tabs 19 and 22 are folded inwardly covering all of the preceding tabs and abutting along the major axis A—B of the end of the carton. Adhesive or other suitable fastening may be used to secure tabs 19 and 22 to those already folded inwardly. As shown in Figure 6, it will be found that this arrangement will give a flat end closure for the carton. If desired, the seam formed along the major axis A—B of the end of the carton may be covered by means of a strip 24 which may be a thin paper or other suitable material.

Obviously the opposite end of the carton may be similarly assembled after whatever material, for example melted asphalt or the like, is placed in the carton.

The alternative arrangement of tabs shown in Figure 2 is substantially similar to that of Figure 1, except that the rhombuses 20 and 23 are cut to form equilateral triangles 25 and 26 respectively. The same designation has been used for the remainder of this figure. The assembly of such an arrangement is shown in Figure 4. In assembling this form of enclosure, triangular tabs 18, 21, 25 and 26 are turned inwardly at right angles to the side panels of the carton and are covered by trapezoidal tabs 19 and 22 in the same manner as described for the embodiment of Figures 1 and 3. Somewhat more care may be required to hold the carton in its truly hexagonal position when assembling this form of end closure. Tabs 19 and 22 may be secured to those beneath by means of an adhesive or any other suitable fastening medium. In addition, cover strip 24 may be applied to the seam formed by the abutting edges of tabs 19 and 22 as shown in Figure 7.

It is apparent that this invention is particularly adapted to form flat and easily assembled end closures for cartons of the type described, that is, those which are intended to be filled with any desired material, in this case asphalt, and to be destroyed upon removal of the carton from its contents. Although specific embodiments have been illustrated and described, it is obvious that modifications in the position of various of the parts, for example glue flap 17, may be made without departing from the invention and all such modifications and changes that are within the scope of the appended claims are embraced thereby.

I claim:

1. A single blank of foldable material for forming a hexagonal carton, comprising a body portion having six side panels and a glue flap, for forming the six sides of the carton, said side panels and flap being defined from one another by score lines, and a plurality of separate infolding cover-forming tabs extending equidistantly from said panels, two of said tabs being rhombuses, two equilateral triangles, and two isosceles trapezoids, said last named tabs being connected, respectively, to side panels separated by two intermediate panels and adapted to form end-closing tabs overlying all of said cover-forming tabs.

2. A carton formed of one blank of foldable material comprising a hexagonal body including six side panels, a separate tab extending equidistantly outwardly from each of said panels, all of said tabs being foldable inwardly to form an end closure for said carton, two of said tabs being opposed and equilateral triangles, the next adjacent tabs being rhombuses adapted to overlie said first named tabs, and the remaining two tabs being isosceles trapezoids opposed to overlie said second named tabs and to abut along the major diameter of the end of said carton to form a flat closure therefor.

3. A single blank of foldable material for forming a hexagonal carton comprising a body portion having six side panels and a flap for joining them to form a body, and a separate infolding tab extending substantially equidistantly from an end of each of said side panels, two of said tabs being substantially equilateral triangles, the next adjacent tabs being substantially of rhomboidal configuration, and the remaining two tabs being isosceles trapezoids adapted to form abutting and end-closing tabs overlying all of said previously named tabs when the latter are folded to form a closure for the end of said carton.

4. A carton formed of one blank of foldable material comprising a hexagonal body including six side panels, a separate tab extending substantially equidistantly outwardly from each of said panels, all of said tabs being foldable inwardly to form an end closure for said carton, two of said tabs being substantially equilateral triangles, the next adjacent tabs being of a configuration that will at least partly overlie said triangular tabs when they are infolded to lie at right angles to said side panels, and the remaining two tabs being isosceles trapezoids opposed to overlie said first and second named tabs and to abut along the major diameter of an end of said carton to form a flat closure therefor.

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