March 17, 1959 L. D. VAN ANTWERPEN 2,877,942

CARTON WITH CUSHION COVER FLAP

Filed June 18, 1956

2 Sheets-Sheet 1

Fig. 1.

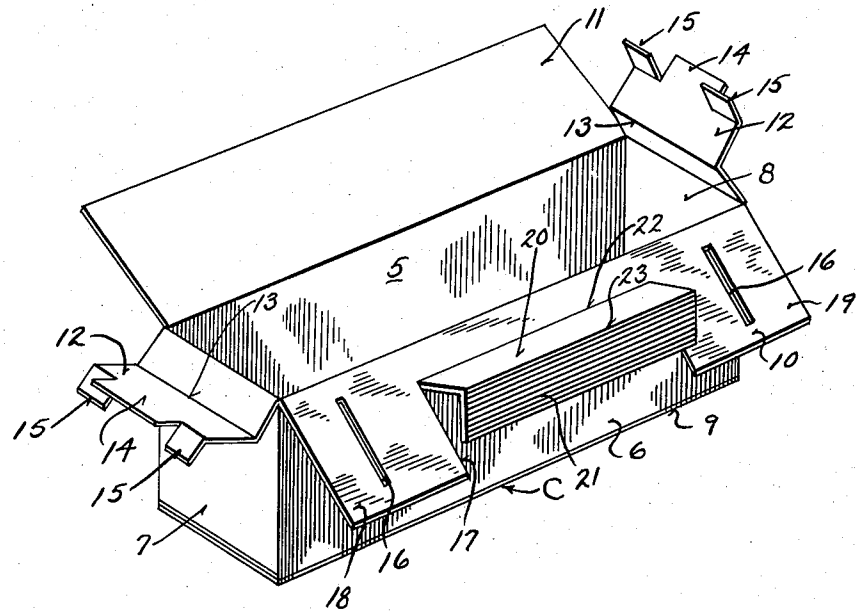

Fig. 2.

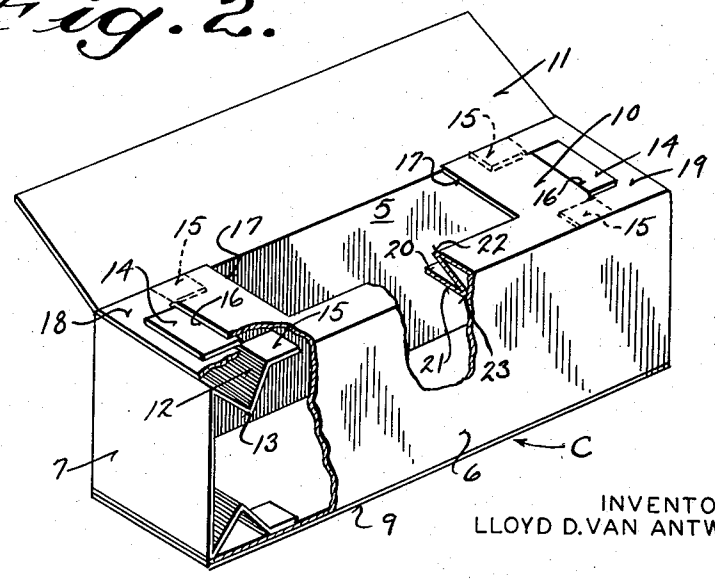

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Fig. 3.

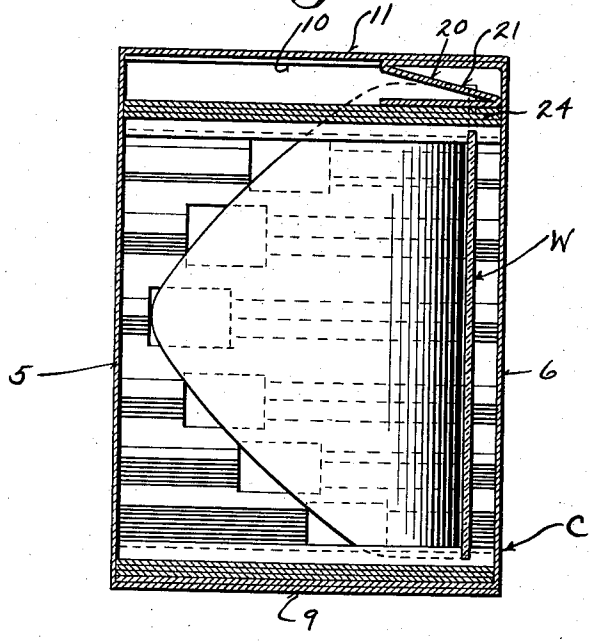
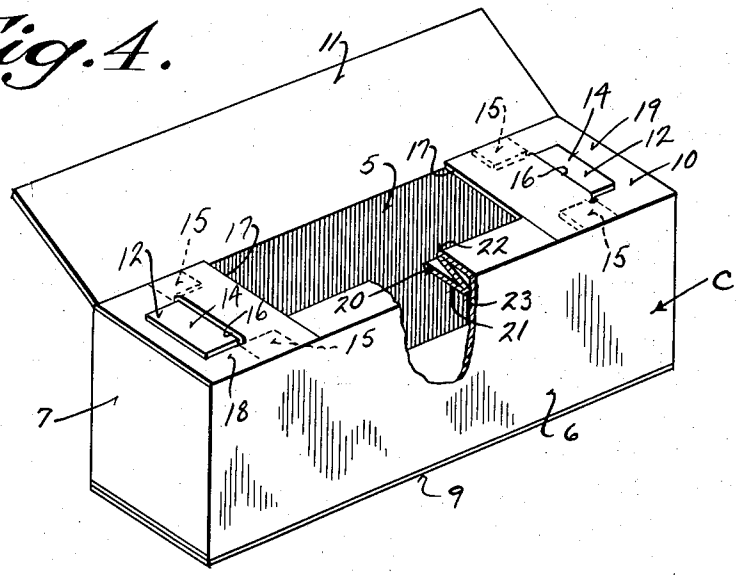


Fig. 4.



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CARTON WITH CUSHION COVER FLAP

Lloyd D. Van Antwerpen, Milwaukee, Wis.

Application June 18, 1956, Serial No. 591,930

1 Claim. (Cl. 229—14)

This invention appertains to packaging and more particularly to shipping cartons for large sheets of glass, such as, the so-called "panoramic" or wrap-around windshields and the like, and the invention is an improvement over the cartons shown in my copending applications for patent, Serial No. 515,394, now Patent No. 2,812,855, and Serial No. 545,326, filed respectively on June 14, 1955, and November 7, 1955.

It is extremely desirable to relieve the end curved wings of wrap-around windshields and the like from all unnecessary strains during shipping and in my previous applications I disclosed means for supporting and cushioning such wings. Due to the fact, that wrap-around windshields and like glass curve inwardly and downwardly toward the center from the wings, such central portion lies below the top of the box and is somewhat unsupported in spite of carefully designed packaging strips. This places undue strain on the curved wings.

One of the primary objects of my present invention is the provision of novel means for forming the cover of the carton so that the same can be bent to form an inwardly extending centrally disposed cushion bellows flap for resiliently engaging the central portion of the glass and its packaging strip for holding such strip in place and for supporting the central portion of the windshield and to prevent injury thereto from shock and strains.

Another salient object of my invention is the provision of an inner cover for cartons embodying novel means for connection with folded shock absorbing end flaps for the curved wings of windshields and the like and a novelly folded central portion defining a resilient bellows fold flap for engaging the central portion of a windshield, whereby all parts of the windshield will be effectively supported and protected against shocks and strains.

With these and other objects in view, the invention consists in the novel construction, arrangement and formation of parts, as will be hereinafter more specifically described and claimed and illustrated in the accompanying drawings, in which drawings:

Figure 1 is a perspective view of my improved carton showing the novel construction of the cover;

Figure 2 is a view similar to Figure 1 and showing the inner cover in its folded condition;

Figure 3 is a transverse sectional view through the central portion of a carton in its completed, folded, sealed condition with a windshield therein and protected by a packaging strip, and

Figure 4 is a perspective view similar to Figure 2 but showing a slightly modified form of the inner cover flap.

Referring to the drawings in detail, wherein similar reference characters designate corresponding parts throughout the several views, the letter C generally indicates the improved carton. This carton can be, and preferably is formed from the same type of blank as illustrated in my above-mentioned co-pending applications and hence this blank will not be described in detail, and the invention resides particularly in the novel formation of a cover flap, as will now be set forth. The carton C, however, includes longitudinally extending parallel side walls **5** and **6**, end walls **7** and **8** and a bottom wall **9**. The top of the box is closed by inner and outer covers **10** and **11** which are approximately of the same size as the top of the body of the carton.

The end walls **7** and **8** carry extensions **12**, which are of the same type and character as the extensions shown in application Serial No. 515,394 now Patent Number 2,812,855. Hence, each extension **12** is folded on a transverse line **13** to provide a substantially V-shaped blocking and supporting member for the wings of a windshield. The free inner edges of the extensions **12** are slit to provide an inserting tongue **14** and side wings **15**. With the box in a folded condition, the extensions extend into the box and the tongues **14** are inserted through transverse slots **16** formed in the inner cover **10**. After this insertion the tongues **14** are folded back, as best shown in Figure 2 and the wings **15** extend under and engage the inner surface of the cover **10**.

Now in accordance with my present invention the inner cover **10** at spaced points and adjacent to its opposite ends is provided with transversely extending slits **17**. These slits divide the inner cover **10** into end sealing portions **18** and **19** and a central portion **20**. In the form shown in Figures 1, 2 and 3, the slits **17** extend inwardly from the outer edge of the flap **10** short of the inner edge of the flap. The central portion **20** is creased and folded to provide a resilient cushioning bellows fold **21**, as best shown in Figures 2 and 3. To bring about the forming of the resilient bellows fold **21**, the central body portion **20** of the cover flap is first bent inwardly and downwardly back on the cover on a longitudinally creased or scored line **22**, after which the portion is folded intermediate its ends on a longitudinally extending scored or creased line **23**. Thus, when the central portion **20** of the cover **10** is folded back, the same is of a substantially **Z**-shape in cross-section.

This resilient bellows fold **21** (see Figure 3) engages a packaging and holding strip **24** placed around the edge of a windshield W placed in the carton, and this fold **21** takes up the space between the cover and the central portion of the windshield and provides an effective resilient support therefor and assures the holding of the packaging strip **24** in proper place on the windshield.

If desired, as shown in Figure 4, the slits **17** can extend all the way across the cover **10** so as to actually divide the cover into three independent parts which can be manipulated independently of one another. While I have shown the outer cover **11** smooth and uninterrupted, it is to be understood that this cover can be slit, slotted and creased the same as the inner cover **10**, and in actual practice this might occur due to the arrangement of the slitting and creasing mechanism relative to the blank.

Changes in details may be made without departing from the spirit or the scope of this invention, but what I claim as new is:

A shipping carton for panoramic windshield of the type having curved end wings; comprising spaced parallel side walls, end walls and top and bottom walls, said top wall including inner and outer covers, said inner cover being slitted transversely on spaced parallel lines defining end portions and a central body portion, inwardly directed V-shaped extensions on the end walls for engaging the wings of a windshield in the carton, tongues on said extensions and said end portions of the inner cover having slots for receiving said tongues, said central portion being folded inwardly on longitudinal lines defining a depending bellows fold for engaging an intermediate portion of a windshield.

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