July 5, 1966 J. N. BUTZ 3,259,295

HIGH END BOX

Filed March 12, 1965

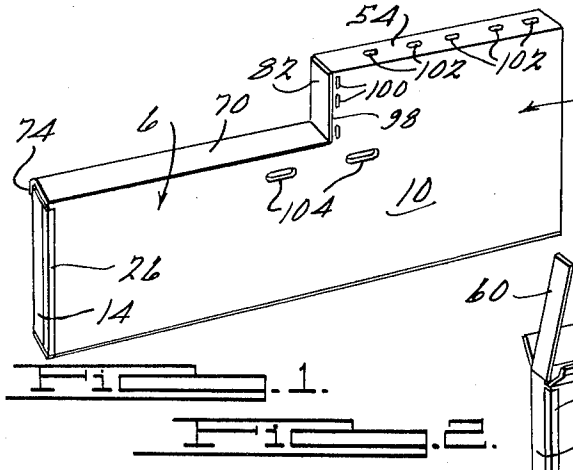


Fig. 1.

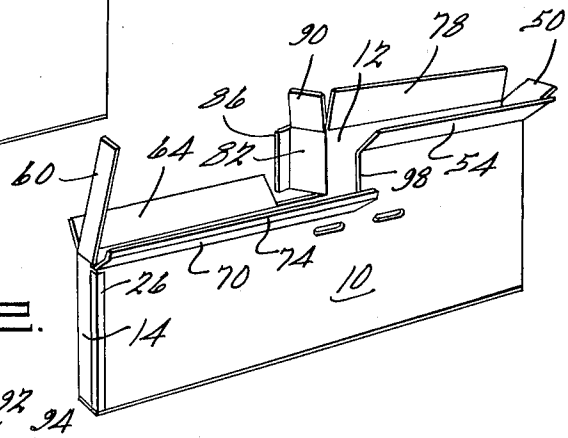


Fig. 2.

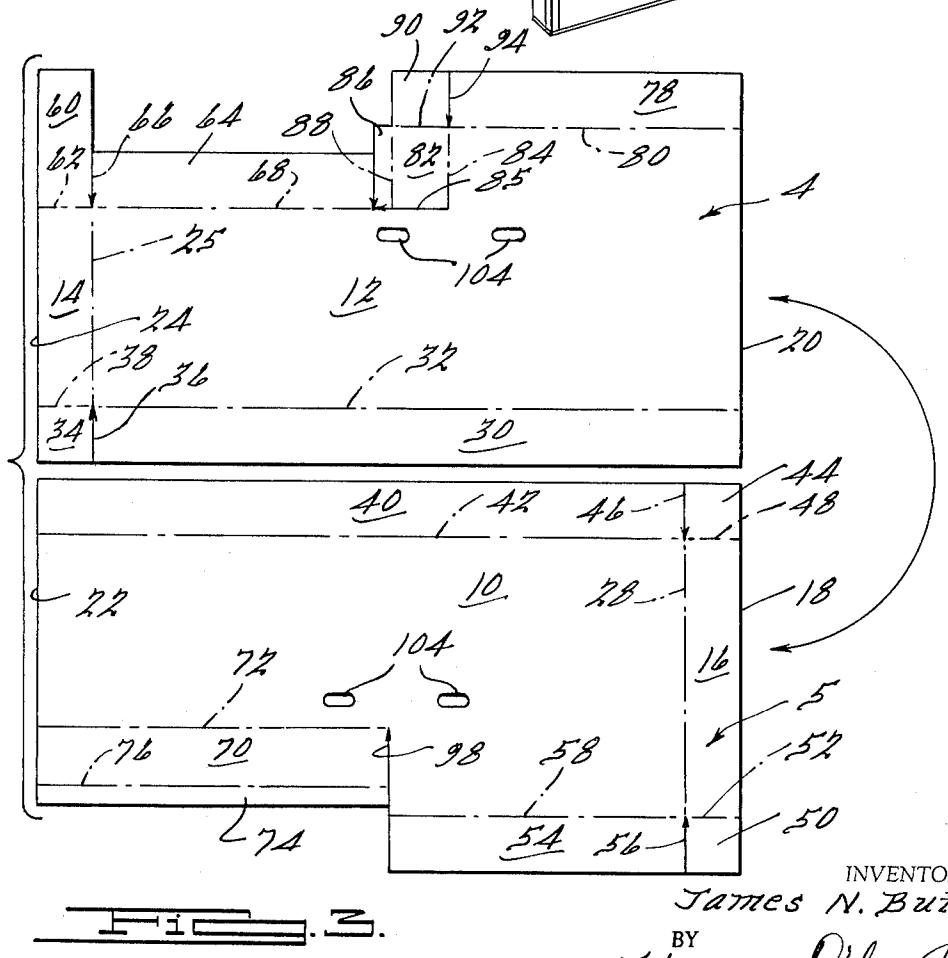


Fig. 3.

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HIGH END BOX

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This invention relates to shipping cartons and particularly to a shipping carton made from corrugated paperboard, or the like, for the shipment of large irregular objects.

It is an object of the present invention to provide a shipping carton of the above character in which one end of the carton is of a height greater than the other end of the carton.

Among the other objects of the present invention are the provision of a shipping container of the above character which is readily fabricated on commercially available machines of the type used for the cutting, scoring, and printing of corrugated paperboard, which is of sturdy construction, which utilizes a minimum amount of material, which occupies a minimum amount of space, which is inexpensive, which is conveniently assembled and fastened, which completely encloses an article packaged therein, and which is easily handled and transported.

These and other objects of the present invention will become apparent from the following detailed description taken in conjunction with the accompanying drawings, wherein:

FIGURE 1 is a perspective view of a carton embodying the present invention, the carton being fully assembled and fastened together;

FIG. 2 is a view of the structure illustrated in FIG. 1 with the various top flaps and walls of the carton being shown in an open, unfastened position; and

FIG. 3 is a plan view of the unfolded sheet material from which the carton of FIGS. 1 and 2 is made, showing the cutting and scoring thereof.

Referring now to the drawings, the carton is shown as being made from two sheets of corrugated paperboard **4** and **5** which are so cut, scored, folded, and fastened, as to form an enclosed carton or box configuration having a low end portion **6** and a high end portion **8**. The shapes of the high and low end portions **6** and **8** are defined by a front wall **10** and an identical rear wall **12**. The front and rear walls **10** and **12** are connected together at opposite ends of the box by a pair of end walls **14** and **16**. The front wall **10** and end wall **16** form a part of the sheet **5** and extend for the entire length of said sheet. The rear wall **12** and the end wall **14** form a part of the sheet **4** and extend for the entire length of this sheet. While the carton is illustrated as being formed from two separate sheets, it could be made from one sheet where the size of the carton and the size of the available cutting and scoring equipment permit. It will be noted, however, that the illustrated carton makes use of two sheets **4** and **5** of the same length, which simplifies inventory problems. In the assembly of the two sheets **4** and **5** an edge **18** of the end wall **16** is joined to an edge **20** of the rear wall **12** by means of a piece of tape (not shown). Similarly, an edge **22** of the front wall **10** is joined to an edge **24** of the end wall **14** by means of a piece of tape **26** (FIG. 1). As will be apparent to those familiar with carton manufacture, stitching or other fastening means may be used instead of tape, if desired. In folding the assembled sheets into the carton of FIGS. 1 and 2, the end wall **14** is folded along a score line **25** which demarks it from the rear wall **12** and the end wall **16** is folded along a score line **28** which demarks it from the front wall **10**. It will be noted that all score lines are shown in broken lines in FIG. 3. Of course, the end

walls **14** and **16** are positioned perpendicular to the front wall **10** and rear wall **12**.

As will be apparent from FIG. 3, a bottom wall **30** is hinged to the rear wall **12** by virtue of the formation of a score line **32** therebetween. The end wall **14** has hinged thereto a flap **34** delineated from the end wall **14** by a score line **38**. The flap **34** will be seen to be separated from the bottom wall **30** by a cut **36**. The solid lines of FIG. 3 indicating a cut which merges with a score line terminate in an arrow to reflect where the cut ends and the score begins.

The front wall **10** has hinged thereto a bottom wall **40** which is delineated from the front wall **10** by a score line **42**. A bottom flap **44** is hinged to the end wall **16** by a score line **48** and is separated from the bottom wall **40** by a cut indicated at **46**.

As is shown in FIG. 3, the end wall **16** is provided with a bottom flap **50** which is hinged to the end wall **16** at a score line **52**, and which is separated from a high end top wall **54** by a cut indicated at **56**. The high end top wall **54** is hinged to the high end portion of the front wall **10** by a score line **58**. The end wall **14** of the sheet **4** is provided with a top flap **60** which is delineated from the end wall **14** by a score line **62**. The flap **60** is separated from a low end top wall **64** by a cut indicated at **66**. The low end top wall **64** is hinged to the rear wall **12** by a score line **68**. Another low end top wall **70** is hinged to the front wall **10** by a score line **72** and is provided with a flap **74** hinged thereto at a score line **76**.

The rear wall **12** has a high end top wall **78** hinged to the high end portion of the rear wall **12** at a score line **80**. In addition, the rear wall **12** has connected thereto a high end closure panel **82** delineated from the rear wall **12** by a score line **84**. The score line **84** may be said to extend vertically from one end of an upper edge of a low end portion of the rear wall **12** to an upper edge of a high end portion of the rear wall **12** defined by the score line **80**. The upper edge of the lower end portion of the rear wall **12** is defined in part by the score line **68** and in part by a cut **85** at which the panel **82** is separated from the rear wall **12**. It will be seen that the end enclosure panel **82** has a side closure flap **86** hinged thereto and delineated therefrom by a score line **88** and also a top flap **90** hinged thereto by a score line **92**. The top flap **90** is separated from the top wall **78** by a cut as indicated at **94**.

In order to form the sheets **4** and **5** into the carton illustrated in FIGS. 1 and 2, it is necessary to join the two sheets together as previously indicated. FIG. 3 illustrates the inside surfaces of the various wall members to be formed from the sheets **4** and **5**. Accordingly, the sheet **5** is laid over the sheet **4** with the edges **18** and **20** adjacent one another and with the edges **22** and **24** adjacent one another. In this position the bottom walls **30** and **40** face one another and the top walls **78** and **54** face one another. The adjacent edges mentioned above may then be joined with tape **26**. The carton is then ready for shipment to a user in a flat condition.

In order to set up the carton from the joined sheets **4** and **5**, the sheets are first bent along the score lines **25** and **28** to position the end walls **14** and **16** perpendicular to the front and rear walls **10** and **12**. Next, the flaps **34** and **44** are bent inwardly perpendicular to the end walls **14** and **16**. Then the bottom walls **30** and **40** are bent inwardly perpendicular to the front and rear walls **10** and **12** so that they overlap one another. The bottom walls **30** and **40** are joined together as by stapling. The carton is then ready for insertion of the article to be packaged therein. While the carton of the present invention is suitable for packaging a wide variety of irregularly shaped objects, an automobile rear quarter panel (not shown) comprises a representative example of such an

article. The article may be supported within the carton by any suitable interior packaging (not shown).

In order to close the carton, the top flap **60** is bent inwardly so as to lie perpendicular to the end wall **14**. The low end top wall **64** is then bent inwardly perpendicular to the rear wall **12**, and the low end top wall **70** is overlapped on the low end top wall **64** and its flap **74** bent to lie flatly against the outer surface of the rear wall **12**. The flap **74** is then stapled or otherwise secured to the rear wall **12**. In this connection, it will be noted that the innermost low end top wall **64** is of a length less than the low end portion **6** by an amount equal to the width of the high end closure panel **82** and its flap **86**. Thus, the top wall **64** would be insufficient by itself to cover the top of the low end portion **6**. However, the low end top wall **70** is of the required length and accomplishes this purpose. Furthermore, the provision of its flap **74** insures complete closure along the edge left by the cut **85**. The high end portion **8** of the box is closed by bending the high end closure panel **82** inwardly so that it lies perpendicular to the front and rear walls **10** and **12**, respectively, and so that its flap **86** is disposed flatly against the inner face of the front wall **10** adjacent to an edge **98** thereof. The flap **86** is then secured to the front wall **10** by staples, as indicated at **100**. Next, the bottom flap **50** is bent inwardly so as to lie perpendicular to the front and rear walls **10** and **12** in a horizontal position. Finally, the high end top wall **78** is bent inwardly perpendicular to the front wall **10** and the high end portion top wall **54** is overlapped flatly onto the top wall **78** and fastened thereto by staples, stitching, or other suitable fastening means. Staples **102** are illustrated for this purpose in FIG. 1.

In securing the closure panel flap **86** to the front wall **10**, it will be appreciated the the flap **86** may be positioned on the outer surface of the front wall **10**, and that a variety of fastening means may be utilized. It will also be seen that hand holes **104** are provided in the front wall **10** and the rear wall **12** to facilitate the handling of the carton. Further, it is immaterial which of the high end top walls **54** or **78** is overlapped on the other, or which of the bottom walls **30** or **40** is overlapped on the other.

While it will be apparent that the preferred embodiment herein illustrated is well calculated to fulfill the objects above stated, it will be appreciated that the invention is susceptible to modification, variation and change without departing from the proper scope or fair meaning of the subjoined claims.

What is claimed is:

1. A carton made from folded sheet material including substantially identical front and rear walls provided with high and low portions at the opposite ends thereof, a generally vertical edge extending between the upper edges of the high and low portions of said front and rear walls, a pair of end walls interconnecting said front and rear walls at opposite ends of the carton, a bottom wall extending between said front and rear walls at the bottom of the carton, a high end top wall extending between said front and rear walls at the high portions thereof, an end closure panel extending between said generally vertical edges for the entire height thereof, said panel being integrally formed from the same sheet as one of said front and rear walls and being secured to the other of said front and rear walls, a first low end top wall integrally formed with the one of said front and rear walls with which said panel is integrally formed, said first low end top wall being spaced from its adjacent vertical edge by an amount at least equal to the width of said panel and extending to the other of said front and rear walls, and a second low end top wall connected to the other of said front and rear walls and extending between said front and rear walls at the end portions thereof.

2. A carton made from folded sheet material including a pair of substantially identical spaced parallel front and rear walls provided with high and low portions at the opposite ends thereof, a generally vertical edge edtending between the upper edges of the high and low portions of each of said front and rear walls, a pair of end walls interconnecting said front and rear walls at the opposite ends of the carton, a bottom wall extending between said front and rear walls at the bottom of the carton, a high end top wall extending between said front and rear walls at the high portions thereof, an end closure panel extending between said vertically extending edges for the entire height thereof, said panel being integrally formed from the same sheet as one of said front and rear walls and being secured to the other of said front and rear walls, a first low end top wall integrally formed from the same sheet as said panel and being spaced from its adjacent vertical edge by an amount at least equal to the spacing between said front and rear walls, and a second low end top wall integrally formed with the other of said front and rear walls and extending between said front and rear walls for the entire length of the low end portions thereof.

3. The structure set forth in claim **2** including a flap integrally formed on said second low end top wall and means securing said flap to the opposite one of said front and rear walls with which said second low end top wall is integrally formed.

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