May 14, 1968 G. T. BRANDER 3,383,028

FIBERBOARD CARTON

Filed June 20, 1966 2 Sheets-Sheet 1

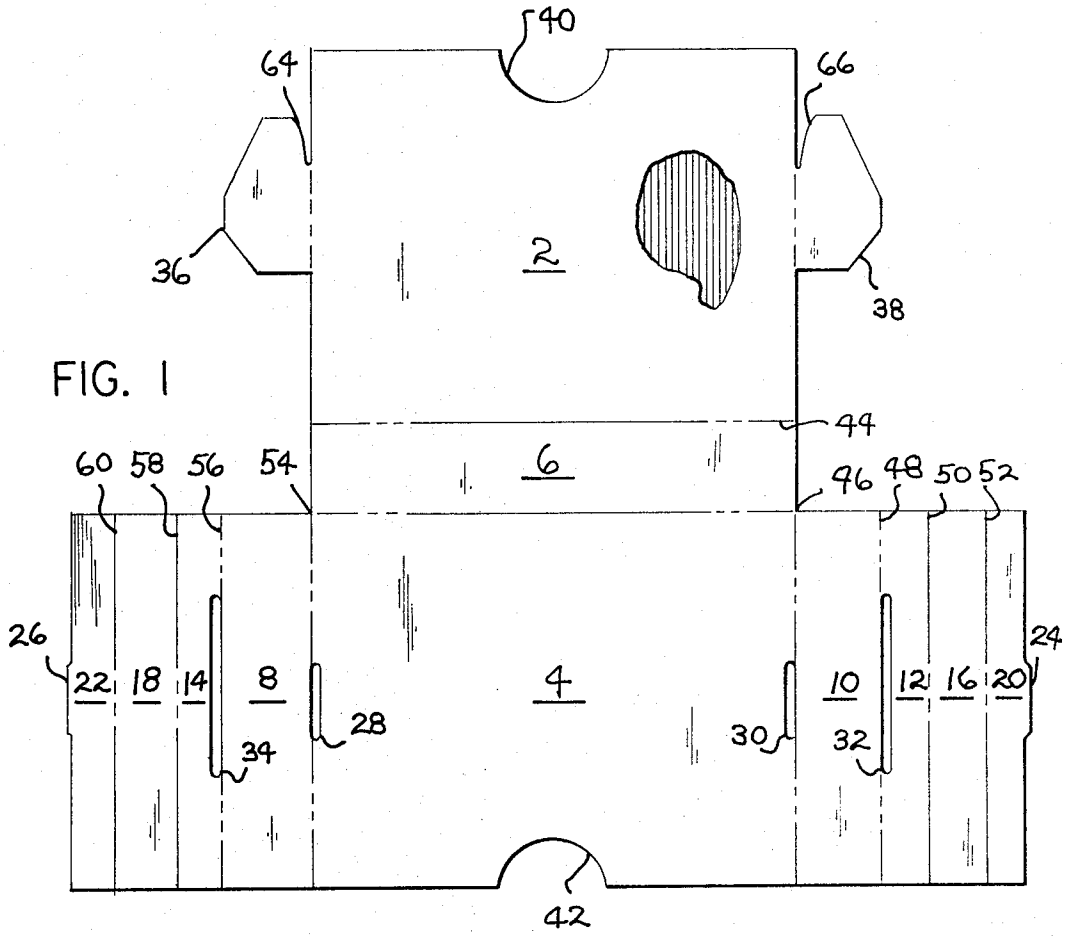

FIG. 1

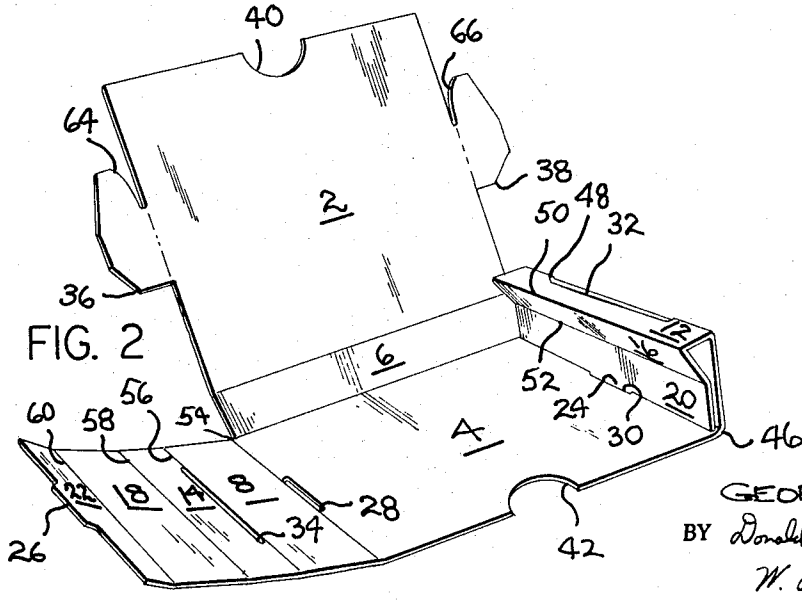

FIG. 2

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FIBERBOARD CARTON

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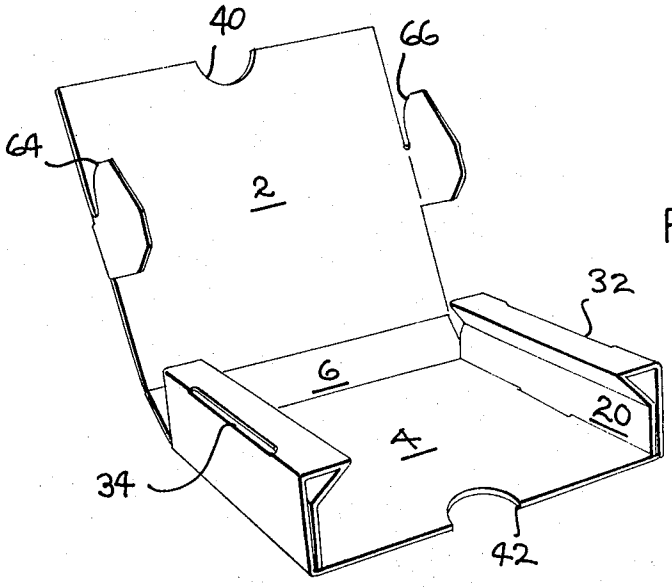

FIG. 3

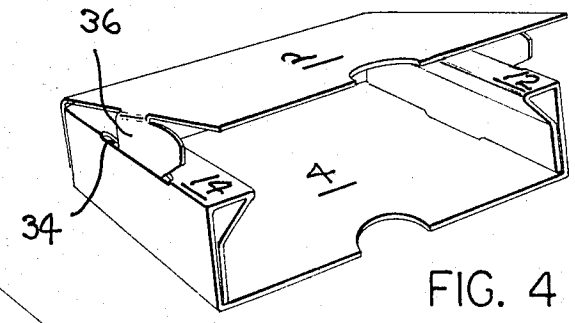

FIG. 4

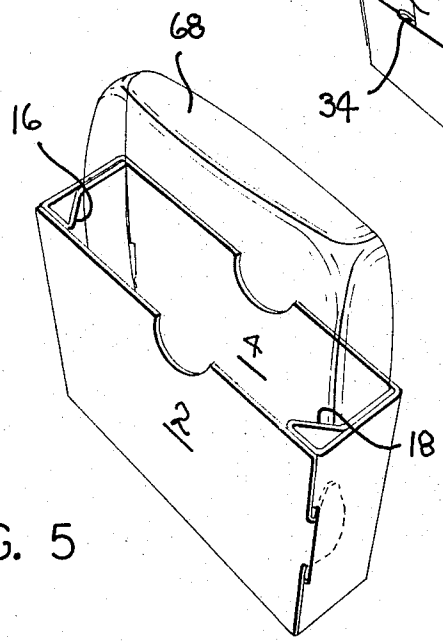

FIG. 5

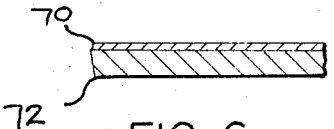

FIG. 6

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FIBERBOARD CARTON

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Filed June 20, 1966, Ser. No. 558,774
5 Claims. (Cl. 229—16)

ABSTRACT OF THE DISCLOSURE

A fiberboard shipping carton formed from a single blank for frangible articles such as glass cathode ray tube faceplates. A shipping carton folded to form a carton with one end open for easy accessability to the glass article protected within. A biasing feature incorporated into the sidewall structure of the carton is to retain the glass article therein. An anti-abrasion coating applied to the interior of the carton to minimize scratching of the glass article.

This invention relates to a fiberboard carton. More particularly, this invention is concerned with a fiberboard container that is particularly adapted to contain television picture tube bulb faceplates.

The container of the subject invention is especially convenient to use and has exceptional strength properties. Likewise, the container of the invention at hand is unique in that it can have a nonabrasive inner periphery. The container of this invention is self-locking and as such can be readily assembled in the field without special fastening means, or disassembled for storage. A further feature of the subject container is that it presents an inner surface which securely biases television bulb faceplates in such a way that they cannot rattle or otherwise move during shipment.

As is mentioned above, the container of this invention is particularly adapted to hold television bulb faceplates. Television picture tube envelopes and their corresponding faceplates are conventionally manufactured as separate units. After manufacture, these components must be moved or shipped to an assembly point. Due to the fact that the face surface of a television bulb faceplate is ground to optical quality, it is imperative that it be given maximum protection after manufacture. In accordance with this invention, these television bulb faceplates can be readily shipped without damage.

The primary object of this invention is the manufacture of a superior carton.

Another object of this invention is the manufacture of a superior carton which is adapted to television bulb faceplates.

Still another object of this invention is the preparation of a superior container for transfer of television bulb faceplates which has a nonabrasive inner periphery.

Finally, the objects of this invention include all the other novel features which will be obvious from the drawings, specification, and claims at hand.

FIG. 1 is a top plan view of the blank used to form the container of this invention.

FIG. 2 is a perspective view showing the container of this invention in a partially assembled state.

FIG. 3 is a perspective view showing the container of this invention in almost a complete assembly state.

FIG. 4 is a perspective view showing the subject container in its final assembly state.

FIG. 5 is a perspective view of the container at hand in its assembled form.

FIG. 6 is a cross-section of a nonabrasive paperboard product that is used in one embodiment of this invention.

Referring to FIG. 1, the container of this invention incorporates two main body panels 2 and 4, a bottom panel 6, and side panels 8 and 10. These panels define an enclosure. A plurality of other inner panel members 12, 14, 16, 18, 20, and 22 are also provided which, upon assembly, form a means for securing television bulb faceplates in the subject container. Respective score lines 46, 48, 50, 52, 54, 56, 58, and 60 are provided for these inner panel members. Panels 20 and 22 are extreme positioning panels. Panels 16 and 18 are biasing panels as they bias the television bulb faceplates in position. Panels 12 and 14 are innermost positioning panels. The subject container is secured in position by tabs 24 and 26, which are a part of extreme positioning panels 20 and 22 and locking tabs 36 and 38 which are part of the main body panel 2. Four cut-outs 28, 30, 32 and 34 are provided to receive these tab portions.

Two cut-out portions 40 and 42 are likewise provided which facilitate the removal of items from the subject container.

In assembly, side panels 8 and 10 are first bent at right angles to body panel 4 along score lines 54 and 46. Panel members 12, 14, 16, 18, 20, and 22 are then bent as is illustrated in FIG. 2 in such a way that tabs 24 and 26 can be inserted into cut-outs 28 and 30. The complete assembly of the side portions is likewise illustrated in FIGURE 2. Panel members 12 and 14 are then positioned in such a way that they are parallel with body panel 4. Bottom panel 6 is then bent at approximately 45 degrees to body panel 4 along score line 62. Body panel 2 is then bent at approximately right angles to bottom panel 6 along score line 44. The carton in this assembly state is as illustrated in FIG. 3.

Body panel 2 is then positioned in such a way that locking tabs 36 and 38 can be inserted in cut-outs 32 and 34. Locking tabs 36 and 38 contain hook portions 64 and 66. Once locking tabs 36 and 38 are inserted into cut-outs 32 and 34, the overall side panel is pushed forward in such a way that hook portions 64 and 66 engage panels 12 and 14 in such a fashion as to secure the container. Again, in this case panels 12, 14, 20, and 22 would function as a means of positioning biasing panels 16 and 18 in their angular biasing position.

It is to be noted that locking tabs 36 and 38 with their respective hook portions 64 and 66 are of such a size and positioned at such a point on panel 2 that they can be inserted into cut-outs 32 and 34 when bottom panel 6 is at an approximate 45 degree relationship with body panel 4. Then, when side panel 2 is put in a parallel relationship to side panel 4, bottom panel 6 can be positioned in a full right angle relationship with body panel 4 by sliding body panel 2 forward, thus allowing hook portions 64 and 66 to bias and engage panel members 12 and 14.

The container in its final assembly state is illustrated in FIG. 5. It is to be noted that in the final carton assembly panel members 20 and 22 secure the sides of television bulb faceplate 68 whereas angularly positioned panel members 16 and 18 bias television bulb faceplate 68 into position and hence prevent its movement during shipment. The relationship of the subject television bulb faceplate 68 in regard to the container at hand is illustrated in FIG. 5.

Television bulb faceplate 68 can be easily removed from the container at hand with the help of cut-out slots 40 and 42 which allow television bulb faceplate 68 to be easily grasped.

The container of this invention can be utilized in the form that is substantially described above. However, in a preferred embodiment, the inner periphery of the subject container is coated with an anti-abrasive coating which will minimize the abrasion tendencies of the board from which the container is formed. In a preferred embodiment, the inner periphery of the container is coated with an anti-abrasive coating 70 as is illustrated in FIG.

6. As can be seen from FIG. 6, anti-abrasive coating **70** is applied over the surface of paperboard product **72**. The invention at hand can utilize any anti-abrasive coating. Examples of suitable anti-abrasive coatings are glycerin, waxes, oleates, etc. A most preferred anti-abrasive coating composition for use in conjunction with this invention is a mixture of fatty acid, alkanolamides and alkanolamines which are the subject of the U.S. patent application, Ser. No. 474,518, filed July 23, 1965, having an assignee which is common to the assignee of this invention.

It is to be noted that while the preferred embodiment of the container of this invention has been illustrated, there are various modifications that would be apparent to a person skilled in the art. Also, it is obvious to vary the dimensions and relative size of the panels of the container to suit the particular application.

The container of this invention can be formed from any fiberboard or paperlike product. However, it is preferred that the container at hand be formed from corrugated board. The particular weight, corrugate flute, etc. of the corrugated board utilized will depend on the environment in which the carton will be subsequently utilized.

It will, of course, be understood that various details of construction can be modified throughout a wide range without departing from the principles of this invention and it is not, therefore, the purpose to limit the patent granted otherwise than necessitated by the scope of the appended claims.

What is claimed is:

1. A fiberboard shipping container formed from a single blank comprising a bottom panel (**6**) of rectangular configuration in which one pair of edges is substantially longer than the other pair of edges, a pair of side wall panels (**2, 4**) foldably attached to, and positioned approximately normal to said bottom panel, said side panels in juxtaposed relationship with respect to each other, one of said side panels (**4**) having a pair of end wall panels (**8, 10**) foldably attached to opposed end edges thereof, said end panels oriented normal to said side wall panels, each of said end wall panels having an inner panel (**12, 14**) foldably attached thereto at the edge opposite the attachment of said end panel to said side panel, said inner panels folded toward each other and substantially normal to said end wall panels, each of said inner panels having foldably attached to the edge remote from said end panel a first biasing panel (**16, 18**) that is positioned to angle from its attachment toward the central region of said end panel, a second biasing panel, (**20, 22**) foldably attached to the edge of said first biasing panel, said second biasing panel arranged substantially parallel to and contiguous with said end wall panel, said second biasing panel having positioning tabs (**24, 26**) attached to the midsection of the edge that is remote from said first biasing panel, said positioning tabs engaging with complementary positioning tab slots (**28, 30**) formed in said side wall panel, the other of said side wall panels (**2**) having foldable locking tabs (**36, 38**) attached to opposed end edges, said locking tabs adapted to interlock with locking tab slots (**32, 34**) formed in said inner panels, thus forming a shipping container with an open top.

2. A shipping container as claimed in claim **1** wherein arcuate cutout portions (**40, 42**) are formed in said side wall panels at the edges most remote from said bottom panel.

3. A shipping container as claimed in claim **2** wherein re-entrant cutouts (**64, 66**) are positioned along the juncture between said locking tabs (**36, 38**) and said side wall panel (**2**) to provide a positive lock to engage with tab slots (**32, 34**) thus preventing inadvertent disassembly of said container.

4. A shipping container as claimed in claim **3** wherein the interior surface is coated with an anti-abrasive coating.

5. A shipping container as claimed in claim **4** wherein the anti-abrasive coating is a mixture of fatty acid alkanolamides and alkanolamines.

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