

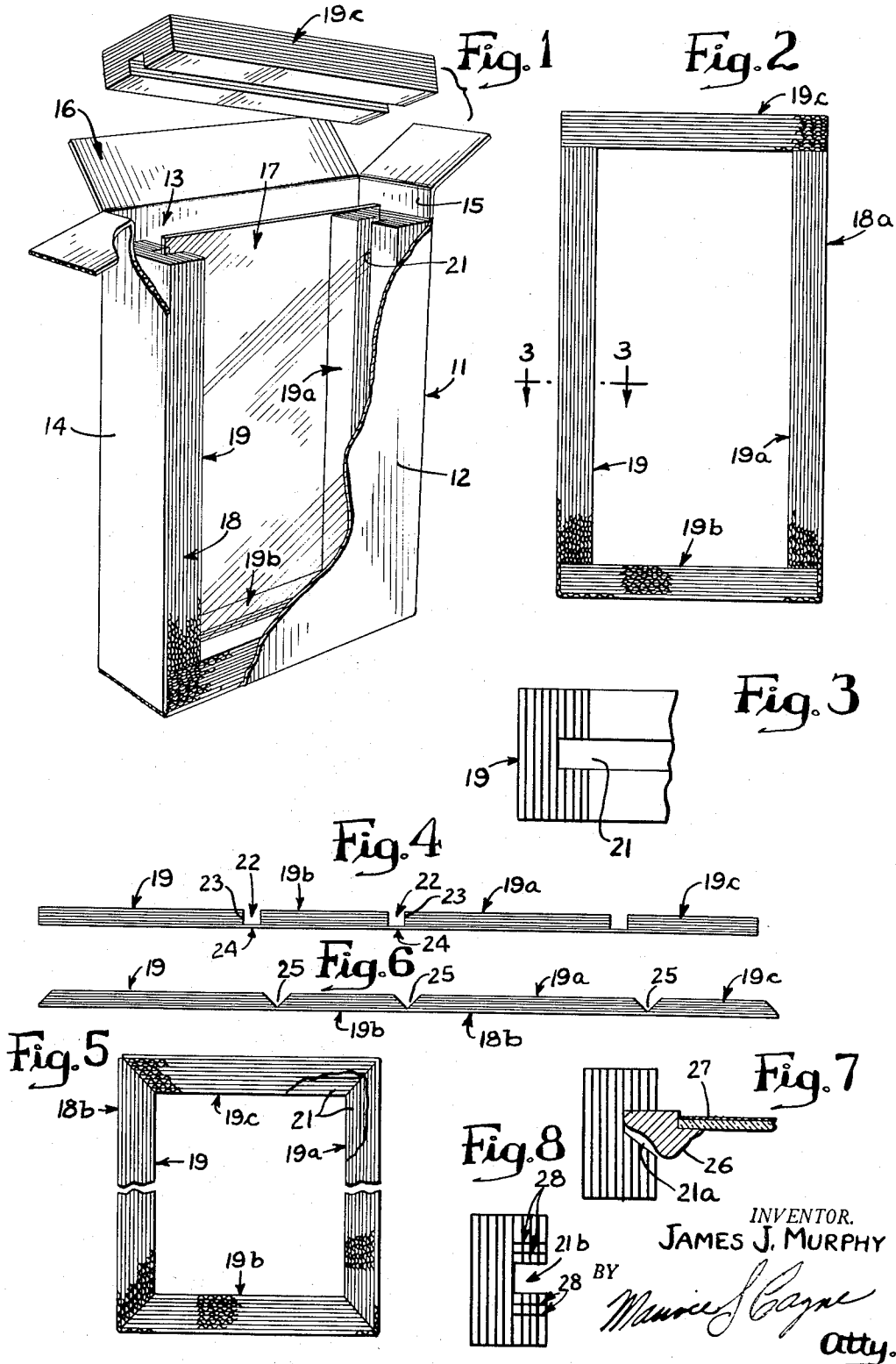
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SHIPPING CONTAINER WITH CUSHIONING LINER

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SHIPPING CONTAINER WITH CUSHIONING LINER

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3 Claims. (Cl. 229—14)

The invention relates to improvements in shipping containers and is more particularly concerned with a rugged, inexpensive paper-board container, useful for shipping glass plate or other fragile sheet-like articles, including mounted pictures, mirrors, etc.

Fragile sheet material, such as glass plate, mounted in a frame or unmounted, often is damaged while in transit. It has, therefore, become an accepted practice to pack such fragile articles in containers with shock-resistant packing, filling the container on all sides and edges of the plate. Another accepted practice, but one which is prohibitively expensive, is to enclose the article in a wooden crate with spacers on either side to hold the article spaced from the side walls of the crate.

The present invention makes it unnecessary to use these previously accepted types of packaging. This is accomplished by providing a cardboard-like container, preferably fabricated from corrugated paperboard, with novel sheet-material receiving means also fabricated from cardboard-like material, such as corrugated paperboard, so arranged therein as to maintain the fragile sheet material spaced from all of the container walls. The use of corrugated paperboard is particularly advantageous because it is compressively yieldable without being readily crushed and will, therefore, afford a cushion to absorb shocks and jars resulting from handling of the container.

It is, therefore, an object of the invention to provide a container embodying all of the advantages enumerated hereinabove.

Another object is to provide a novel laminated paper-board spacer for a container adapted to contain fragile sheets, or other plate-like objects.

Another object is to provide a spacer, or liner, for a container which incorporates novel means to adapt it readily to accommodate articles of various thicknesses.

Another object is to provide a container of the character referred to, which is not expensive to manufacture, is readily adaptable and is highly safe and efficient in use.

With the foregoing and other objects in view which will appear as the description proceeds, the invention consists of certain novel features of construction, arrangement and combination of parts hereinafter fully described, illustrated in the accompanying drawings, and particularly pointed out in the appended claims, it being understood that various changes in the form, proportion, size and minor details of the structure may be made without departing from the spirit or sacrificing any of the advantages of the invention.

For the purpose of facilitating an understanding of my invention, I have illustrated in the accompanying drawings a preferred embodiment thereof, from an inspection of which when considered in connection with the following description, my invention, its mode of construction, assembly and operation, and many of its advantages, should be readily understood and appreciated.

Referring to the drawings in which the same characters of reference are employed to indicate corresponding or

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similar parts throughout the several figures of the drawings:

Fig. 1 is a perspective view of a shipping container, showing one embodiment of the novel spacer or liner associated therewith, and illustrating a glass plate positioned therein.

Fig. 2 is a front elevational view of a liner substantially like that shown in Fig. 1, but embodying a slight modification in construction.

Fig. 3 is a fragmentary sectional view, taken substantially on line 3—3 of Fig. 2.

Fig. 4 is a view showing the liner of Fig. 2 in open, or unfolded, position.

Fig. 5 is a view somewhat similar to Fig. 2, but showing a modified form of construction.

Fig. 6 is a view similar to Fig. 4, showing the liner of Fig. 5 unfolded.

Fig. 7 is a sectional view similar to Fig. 3, showing a modified form of a liner and illustrating, in section, a fragmentary portion of a framed mirror, or the like, therein.

Fig. 8 is a sectional view similar to Fig. 3, but illustrating another modification of construction.

The shipping container selected for purposes of disclosure and illustrated generally at 11, may consist of front and back walls 12 and 13 respectively, and edge walls 14 and 15. The front and back walls and the edge walls have flaps 16 formed on their end edges, which flaps are adapted to be folded over inwardly one against the other to close the container. As illustrated, the bottom end of the container is closed, while the top end of the container is shown open. This container is fabricated from paperboard, preferably corrugated cardboard, which has the requisite strength to resist crushing and deformation under stress. The container is, as shown, adapted to receive therein a sheet of glass plate 17, or other fragile sheet material, for purposes of storage or shipment. Obviously, were the edges of the glass plate in contact with the side edges and ends of the container, any distorting force applied to the container would result in breakage of the glass plate. It should be observed further that adequate protection is afforded to the glass plate 17 only if it is held spaced from the front and back walls 12 and 13 of the container.

In order to properly position and retain the glass plate 17 within the container in a manner to afford adequate cushioning thereof, the container is provided with a liner, generally indicated at 18. The liner 18 is rectangular in shape so as to conform with the contour of the container 11, and is adapted to be inserted therein in the manner illustrated in Fig. 1. As there shown, it consists of a plurality of members which, for purposes of identification, may be best identified by numerals 19, 19a, 19b, and 19c. The member 19b is laid upon the inside bottom end of the container 11 and it extends the entire distance between the edge walls 14 and 15. The members 19 and 19a are arranged, respectively, on the inside faces of the edge walls 14 and 15, with their lower ends rested upon the upwardly disposed face of the member 19b. The members 19 and 19a terminate short of the top of the container so as to accommodate the member 19c which is positioned within the container beneath the flaps 16 after the glass plate 17 has been inserted into the container.

Means is provided in the members 19, 19a, 19b, and 19c to receive and embrace the margins of the glass plate 17 and hold the plate spaced from all walls of the container 11. This means preferably consists of the provision of slots or grooves 21 one formed on the inwardly disposed face of each of said members. These grooves have a width corresponding substantially to the thickness

of the glass plate, and they are centrally located with respect to the side edges of the members. Obviously, with a glass plate, or the like, mounted within the container and positioned within the grooves 21, said plate is adequately protected against any deformation inwardly of the container front and back walls 12 and 13, as well as against pressure applied on the ends or the side edges of said container.

In order to properly cushion the glass plate so as to resist shocks and jars which might result in its breakage, the members 19, 19a, 19b, and 19c are each fabricated from a plurality of strips of paperboard, preferably corrugated cardboard, adhesively secured one upon the other in such numbers as to give said members the desired thickness. The corrugations preferably extend laterally of each member. It will be observed that the grooves 21 are sufficiently shallow as to leave enough layers of corrugated cardboard outwardly of the grooves to absorb any shock applied to the glass plate edgewise.

In use, the container is fitted with the members 19, 19a and 19b, whereupon the glass plate 17 is inserted into place and the member 19c is then placed in position, and the flaps 16 then folded over inwardly one upon the other and suitably secured as by stapling, or by any other suitable securing means.

The cushioning frame 18a, illustrated in Fig. 2, corresponds in all respects to the cushioning frame shown in Fig. 1, except that the members 19, 19a and 19b are joined together to simplify manufacture and render it more simple to assemble the frame and insert it into a container. The frame shown in Fig. 2 is illustrated also in Fig. 4, where it is shown that at least the outermost layer of corrugated cardboard forming the plurality of layers making up the frame is continuous and bridges the laterally cut grooves 22, which grooves are of a width corresponding to their depth. To assemble, the members 19 and 19a are folded upwardly into a position perpendicular to the member 19b. This locates the side walls 23 of each of the grooves 22 in tight abutment with the end margin of the top or inner face of the member 19b. If desired, an adhesive may be applied to said side walls 23 and to the bridging portions 24 of the lowermost layer of cardboard so as to permanently retain the members in the position into which they are folded. The frame then is conditioned to be inserted into the container, whereupon the glass plate may be inserted in the groove 21 provided therein, and the top or covering member 19c may be placed thereover and the container slit.

Figs. 5 and 6 show a form of construction somewhat like that illustrated in Figs. 2 and 4, except that in this instance all four portions of frame 18b are connected one to the other. In place of the lateral grooves 22 employed in the structure shown in Figs. 2 and 4, the Figs. 5 and 6 construction utilizes a V-shaped groove 25 at the junctures of its members 19, 19b, 19a and 19c. When folded in the manner described hereinabove, the faces of the V-shaped grooves are brought into abutment one with the other, as illustrated in Fig. 5, and if desired, they may be adhesively secured to prevent displacement. In other respects the Figs. 5 and 6 construction corresponds to the structures described hereinabove, and like numbers are used to identify corresponding parts thereof.

The Fig. 7 disclosure is somewhat like that illustrated in Fig. 3, except that here the groove 21a is irregularly shaped to accommodate a frame 26 surrounding a fragile sheet 27. Obviously, the groove 21a may assume any other desired contour in cross-section to accommodate frames of various cross-sectional patterns.

Fig. 8 discloses a frame member having a groove 21b which may easily and quickly be widened to accommodate various thicknesses of fragile plate. This is accomplished by providing on either or both sides of the groove 21b, one or more slits 28 having a depth corresponding to the depth of the groove 21b. In order to widen the groove 21b, it is necessary only to remove the one or

more narrow strips of paperboard lying between a wall of the groove and an adjacent slit 28.

It is believed that my invention, its mode of construction and assembly, and many of its advantages, should be readily understood from the foregoing, without further description, and it should also be manifest that while a preferred embodiment of the invention has been shown and described for illustrative purposes, the structural details are, nevertheless, capable of wide variation within the purview of my invention, as defined in the appended claims.

What I claim and desire to secure by Letters Patent of the United States is:

1. A container for fragile sheet material and comprising a paperboard box having four side walls, a top wall and a bottom wall, a liner in said box, said liner comprising a plurality of superimposed longitudinal planar paperboard strips adhesively secured together in face-to-face relation to form a longitudinal laminated structure having in one surface thereof a recess extending longitudinally thereof and also a longitudinally spaced series of grooves extending transversely thereacross, said laminated structure being bent substantially perpendicularly at each of at least two of said transverse grooves to form a liner having at least three sides with said longitudinal recess extending around the interior of the liner, said liner being mounted in said box with one of the sides of the liner lying adjacent said bottom wall of the box and the other two sides of the liner lying adjacent respective side walls of the box, the respective portions of said longitudinal recess in each of the sides of the liner being in a common plane, said liner having the adjacent ends of its sides adhesively secured together, and a slit extending longitudinally in the recessed surface of said laminated liner structure, said slit extending parallel and adjacent to and being spaced from the longitudinal recess to form a longitudinal portion removable from the liner to widen said longitudinal recess.

2. A container for fragile sheet material and comprising a paperboard box having four side walls, a top wall and a bottom wall, a liner in said box, said liner comprising a plurality of superimposed longitudinal planar paperboard strips adhesively secured together in face-to-face relation to form a longitudinal laminated structure having in one surface thereof a recess extending longitudinally thereof and also a longitudinally spaced series of grooves extending transversely thereacross, said laminated structure being bent substantially perpendicularly at each of at least two of said transverse grooves to form a liner having at least three sides with said longitudinal recess extending around the interior of the liner, said liner being mounted in said box with one of the sides of the liner lying adjacent said bottom wall of the box and the other two sides of the liner lying adjacent respective side walls of the box, the respective portions of said longitudinal recess in each of the sides of the liner being in a common plane, and a slit extending longitudinally in the recessed surface of the laminated liner structure, said slit extending parallel and adjacent to and being spaced from said longitudinal recess to form a longitudinal portion removable from the liner to widen said longitudinal recess.

3. A liner for supporting a sheet of glass or the like within a box and comprising a plurality of superimposed longitudinal planar strips adhesively secured together in face-to-face relation to form a longitudinal laminated structure, said laminated structure having in one surface thereof a recess extending longitudinally thereof and also a longitudinally spaced series of grooves extending transversely thereacross, said laminated structure being bent substantially perpendicularly at each of at least two of said grooves to form a liner having at least three sides with said longitudinal recess extending around the interior of the liner, said longitudinal recess lying substantially in a single plane, and slits extending longitudinally

in the recessed surface of the laminated liner structure, said slits extending parallel and adjacent to and being spaced from said longitudinal recess and from each other to form longitudinal portions removable from the liner to widen said longitudinal recess.

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