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ARTICLE POSITIONING AND CUSHIONING DEVICE FOR USE IN SHIPPING CONTAINERS

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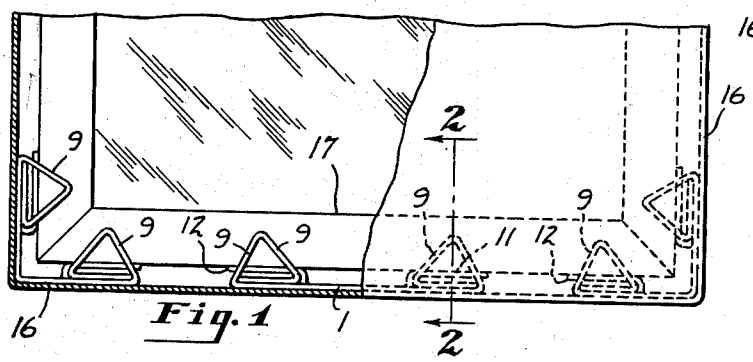

Fig. 1

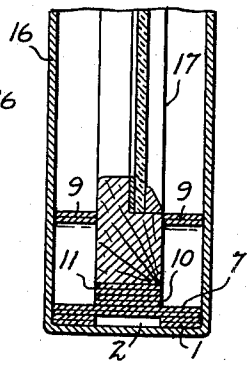

Fig. 2

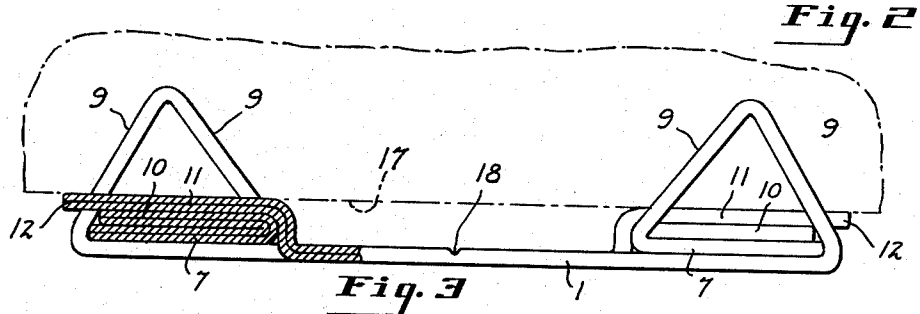

Fig. 3

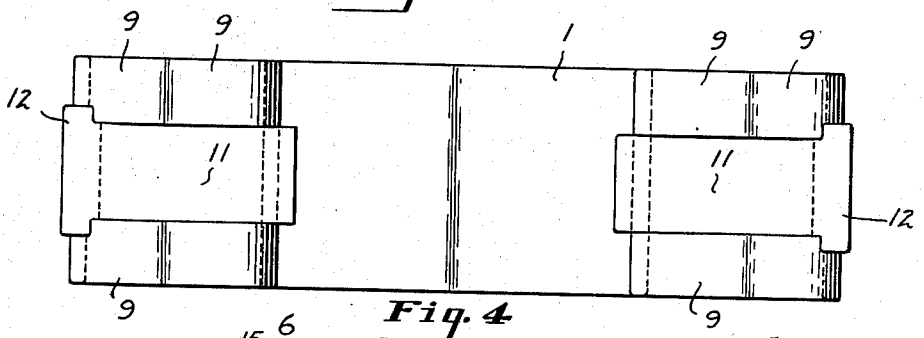

Fig. 4

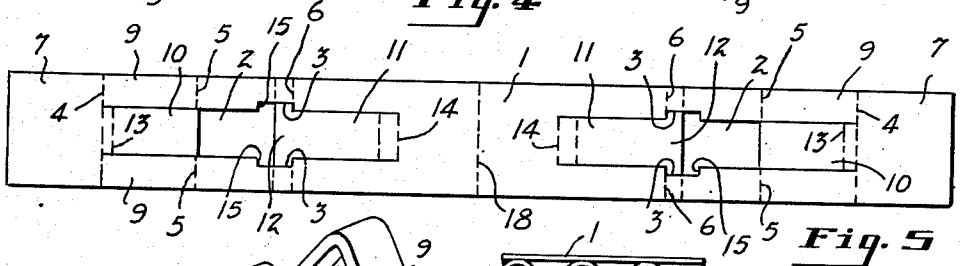

Fig. 5

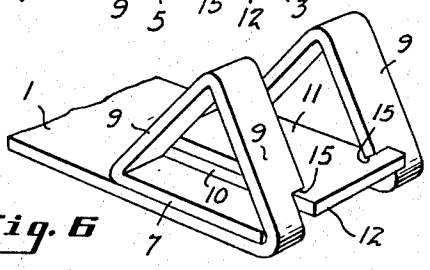

Fig. 6

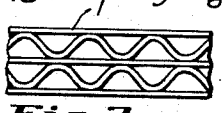

Fig. 7

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ARTICLE POSITIONING AND CUSHIONING DEVICE FOR USE IN SHIPPING CONTAINERS

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5 Claims. (Cl. 206—62)

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The present invention relates to a device for positioning and cushioning fragile panels such as plate glass, mirrors, table tops, window sash, framed pictures, signs and similar articles in a shipping container.

The device of the present invention is formed of sheet material such as paperboard folded to provide members adapted to position a panel in a shipping container having positioning portions holding the panel against lateral movements and cushioning portions interposed between the edges of the panel and the container wall. In order to provide effective cushioning, the device is preferably formed of a multiple ply corrugated paperboard.

An important object of the invention is to provide a device which is formed from a single piece of sheet material which can be stored and shipped flat, but which can be quickly and easily set up for use with parts thereof interlocking and holding the article receiving portions in proper position to receive the article.

A further object of the invention is to provide article positioning and cushioning devices in the form of units adapted to be positioned either at the corners of the panel or in engagement with the panel intermediate its ends.

Reference should be had to the accompanying drawings forming a part of this specification, in which:

Figure 1 is a side elevation of a container with a panel held in position therein by cushioning and positioning devices of the present invention;

Fig. 2 is a fragmentary section taken on the line indicated at 2—2 in Fig. 1;

Fig. 3 is a side elevation showing one of the positioning and cushioning members on an enlarged scale;

Fig. 4 is a top plan view of the positioning and cushioning member shown in Fig. 3;

Fig. 5 is a plan view of the flat blank from which the positioning and cushioning member is formed;

Fig. 6 is a perspective view of one end of the cushioning and positioning member; and

Fig. 7 is a fragmentary section showing the multiple ply corrugated paperboard preferably employed in the construction of the positioning and cushioning device of the present invention.

Referring to Fig. 5 of the drawings, the device of the present invention is formed from a flat elongated sheet 1 of suitable material such as paperboard. The sheet 1 is so formed that its opposite ends may be folded back to provide slotted projections at the ends thereof which are

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adapted to receive the article to be positioned. The sheet 1 is provided with longitudinal slots 2 which are spaced inwardly from opposite ends of the sheet and which, when the ends are folded, provide article receiving recesses. The slots 2 have central widened portions 3 and, to facilitate folding of the end portions, spaced transverse creases or fold lines 4, 5 and 6 are provided across each end portion of the sheet. The fold lines 4 are at the outer ends of the slots 2 and the fold lines 5 and 6 are formed in portions of the sheet 1 along opposite sides of the slots 2.

The opposite end portions of the holder are identically formed, the slots and fold lines being substantially the same at each end of the sheet 1. End panels 7 are provided outwardly of the fold lines 4 and the portions of the strip between the fold lines 4 and 6 provide spaced strips 9 which, when the ends are folded, project outwardly from the body of the strip and form article receiving recesses between them.

A tongue 10 is struck up from the outer end portion of each of the slots 2 and is integrally joined to the body of the sheet at the outer end of the slot, each tongue 10 extending inwardly substantially to the fold line 5. A tongue 11 is struck up from the inner portion of the slot 2 and this tongue is integral with the body of the sheet at the inner end of the slot. The outer end 12 of the tongue 11 is cut from the widened portion 3 of the slot and forms a T-head at the free end of the tongue.

In forming the holder of the present invention from the flat blank, the tongue 11 is lifted from the slot 2 and the end portions of the blank are folded about the fold lines 4, 5 and 6 to position the panel 7 against the face of the sheet 1 over the inner end portion of the slot 2 and to position the portions 9 over the body of the sheet 1 and projecting outwardly therefrom, the panel 7 and portions 9 forming hollow projections of triangular form in cross section. When the panel 7 is folded against the body of the sheet 1 as shown in Fig. 3, the tongue 10 is folded down against the face of the panel 7 and the tongue 11 is folded outwardly over the tongue 10.

Since the tongues 10 and 11 are struck from the slot 2, they will fit in the space between the projecting portions 9 and provide a cushion for a panel positioned between the portions 9. The tongue 10 may be provided with a crease or fold line 13 to facilitate its folding against the panel 7, and the tongue 11 may be provided with a crease or fold line 14 to facilitate its folding against the top of the tongue 10. The T-head

12 is adapted to slide down the outer inclined face of the triangular projection and snap into engagement with shoulders 15 which are formed at the outer ends of the widened portions 3 of the slots 2, so that the panel positioning projections are securely locked in position.

As shown in Figs. 1 and 2, the sheet 1 may be of a width to fit between the side walls of a shipping container 16 and slots 2 may be of a width to provide recesses between the projecting portions 9 of a width to receive an article 17 which is positioned in the container by means of the positioning and cushioning devices of the present invention.

As shown in Fig. 1, a positioning and cushioning unit may be placed at each corner of the container and one or more of the units may be engaged with the article to be positioned between the ends of the container. The sheet 1 may be provided with a central crease or fold line 18 to facilitate bending the sheet to accommodate the device to the corner of a shipping container.

It is to be understood that variations and modifications of the specific devices herein shown and described for purposes of illustration, may be made without departing from the spirit of the invention.

What we claim is:

1. An article positioning and cushioning member for use in shipping containers comprising an elongated sheet having at each end a transverse fold line spaced inwardly from the end of the sheet and a longitudinal slot extending inwardly from said fold line, tongues integral with the sheet at opposite ends of each slot, each slotted end portion of said sheet extending outwardly and back upon itself, the outer end of each slot being adjacent its inner end and the portions of the sheet beyond the outer ends of the slots being in a position overlying the inner ends of said slots, the slots in the projecting portions of the sheet providing alined article receiving recesses, said tongues being superposed one upon the other and overlying said outer end portions of the sheet and providing said recesses with article cushioning bottoms.

2. An article positioning and cushioning member for use in shipping containers comprising an elongated corrugated paperboard sheet having a wall engaging portion and longitudinally spaced article positioning portions that extend away from said wall engaging portion toward one another and back to said wall engaging portion and define spaced hollow projections, said sheet having end portions that lie upon said wall engaging portions within said projections, said sheet having alined longitudinal slots that extend through said article positioning portions and through the portions of the sheet that are beneath said end portions and that provide alined article positioning recesses in said article positioning portions, and a tongue integral with the sheet at each end of each slot, the tongues at the ends of each slot lying one upon the other and overlying the end of the sheet at the bottoms of the positioning recesses to provide a multilayer cushion at the bottom of each of the article positioning recesses.

3. An article positioning and cushioning member such as set forth in claim 2 in which said sheet is a multiple ply corrugated paperboard.

4. An article positioning and cushioning member such as set forth in claim 2, in which a transverse fold line is provided in the sheet intermediate said article positioning portion whereby said member may be bent to conform to a corner of a container and whereby said article positioning portions may be positioned to project inwardly from angularly disposed walls of a container.

5. A foldable knockdown article positioning and cushioning member comprising a corrugated paperboard sheet having an elongated slot that has a widened portion intermediate its ends and shoulders at the outer ends of the widened portions, said sheet having an inner fold line transversely intersecting said widened portion of the slot and an outer fold line parallel to the inner at the outer end of said slot, the latter fold line being spaced from the outer end of the sheet a distance substantially the same as the distance between the inner end of the slot and the inner fold line, said sheet having a tongue integral therewith at the inner end of said slot, said tongue conforming to said slot from the inner end thereof substantially to said inner fold line and having a head portion of a width corresponding to the width of the widened portion of the slot, the portion of the sheet inwardly of said inner fold line serving as a wall engaging portion and the portion of the sheet outwardly of said inner fold line being superimposed upon said wall engaging portion with the end portion of the sheet lying upon said wall engaging portion and overlying the inner end of said slot and the slotted portion of the sheet between said fold lines projecting outwardly to provide a hollow slotted article positioning portion, said tongue overlying said outer end portion of the sheet with its head engaged in the widened portion of said slot beneath said shoulders.

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