

July 29, 1958

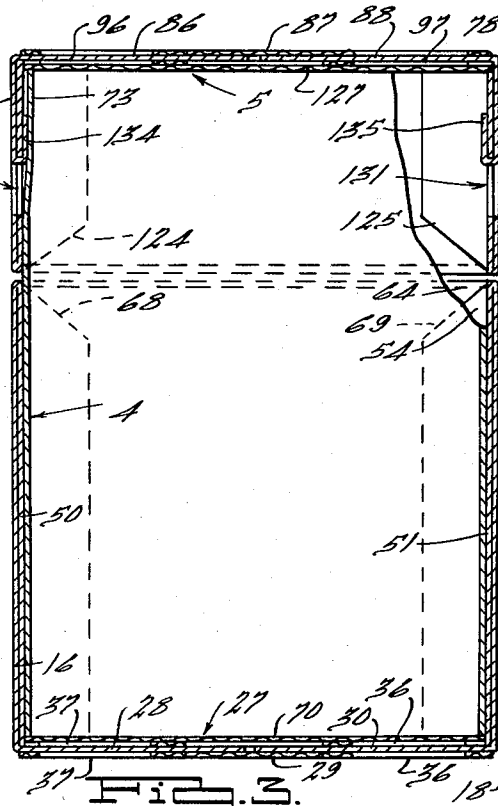
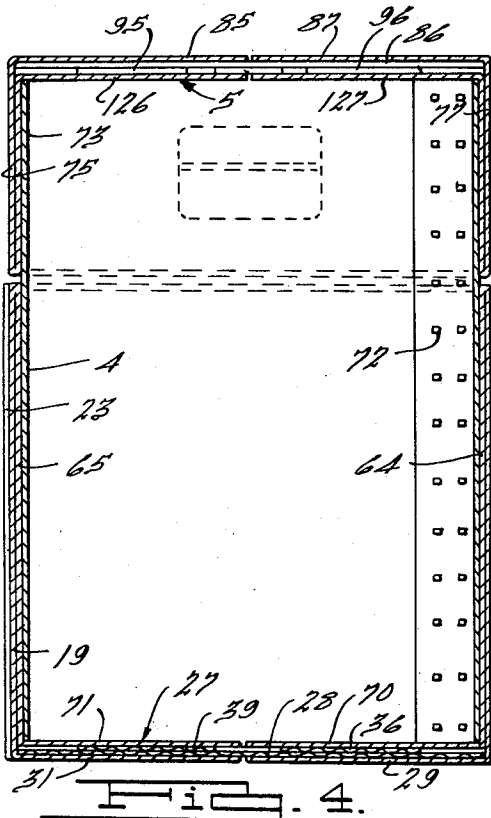
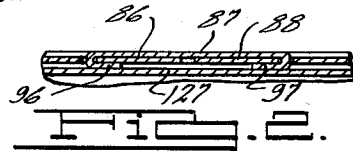
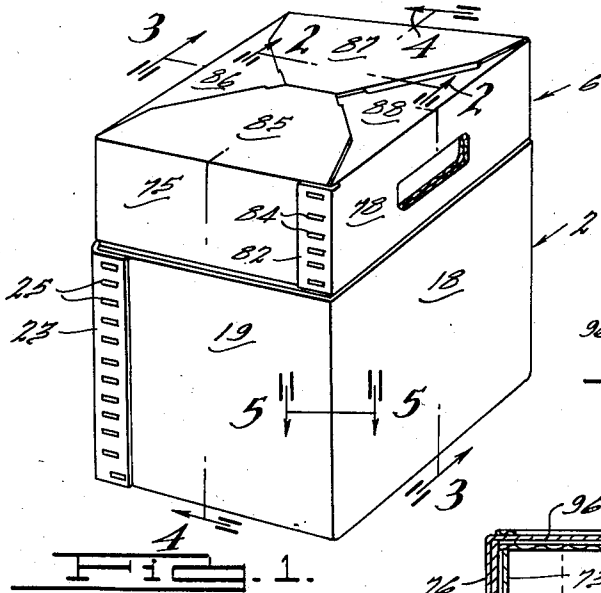
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2,845,210

CONTAINER FOR BULK PACKAGE PARTS

Filed May 22, 1953

2 Sheets-Sheet 1



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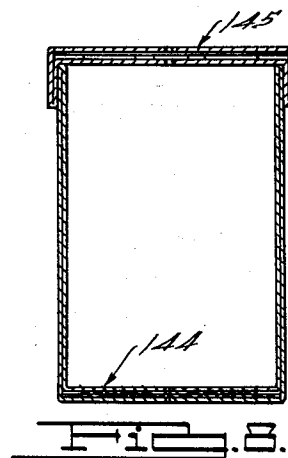
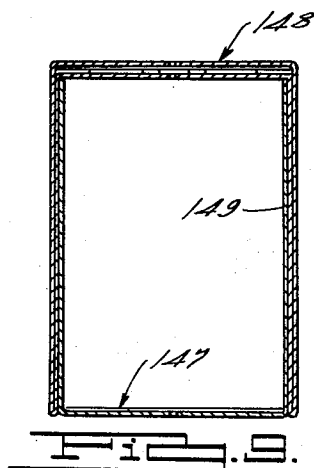
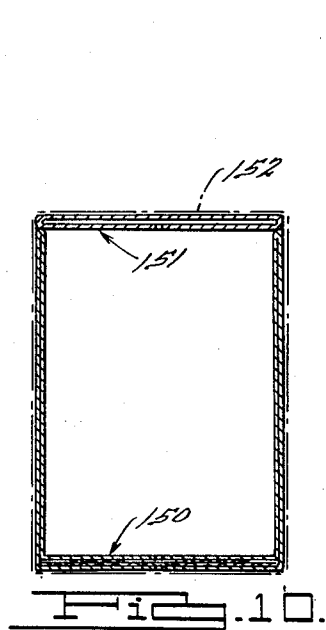
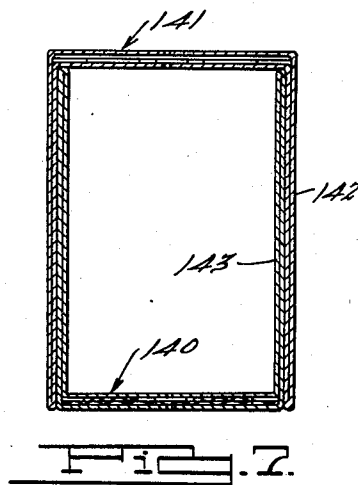
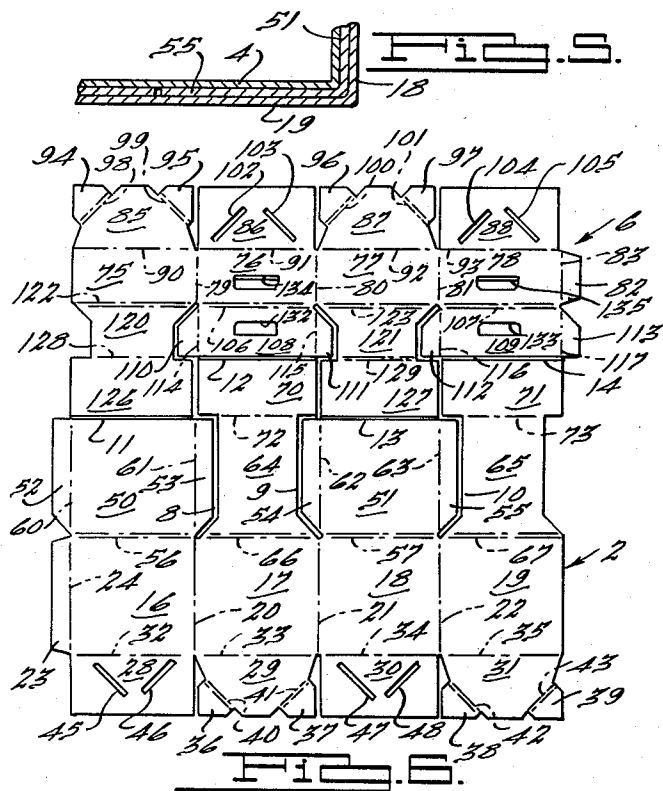
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CONTAINER FOR BULK PACKAGE PARTS

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2 Sheets-Sheet 2



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2,845,210

CONTAINER FOR BULK PACKAGE PARTS

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11 Claims. (Cl. 229—14)

This application relates to shipping containers and, more particularly, to a container for shipping bulk package parts such as nails, bolts, nuts, and the like.

In the usual container construction for shipping bulk package parts, it is customary to use a material having comparatively high strength characteristics such as wood, wood-reinforced cardboard, or a like material. Such materials are used in containers for this class of articles because of the weight and bulk of such articles and their tendency to shift while in transit, which characteristics would ordinarily spread and bulge a container not having a strong and rigid structure.

In accordance with this invention, a container construction is provided for packaging bulk parts which may be manufactured from a light-weight material such as cardboard, corrugated board or some similar material. Such construction eliminates the high cost and weight inherent in conventional-type containers. This novel container construction possesses excellent strength and rigidity characteristics which function to prevent any spreading and bulging of the container while it is in transit due to any tendency of the bulk parts to shift one way or the other.

It is, therefore, an object of this invention to provide a container for shipping bulk package parts which may be manufactured from light-weight materials, yet which possesses strength and rigidity comparable to the wood or the like containers now used for such purposes.

It is another object of this invention to provide a container for bulk package parts, of simple and rugged character, embodying a novel double-corner and double-wall construction, and an improved fastening means to lock the side and end walls of such a container securely together to prevent any spreading and bulging.

It is a further object of this invention to provide an improved shipping container for bulk package parts having the above-described characteristics, and which may be economically manufactured using conventional methods and materials.

Other objects, features, and advantages of the present invention will become apparent from the subsequent description taken in conjunction with the accompanying drawings.

In the drawings:

Figure 1 is a perspective view of an illustrative embodiment of the container is assembled condition.

Figure 2 is a fragmentary transverse sectional view taken along the line 2—2 of Figure 1 and showing the locking relation between the end wall tabs and end locking flaps.

Figure 3 is a transverse sectional view taken along the line 3—3 of Figure 1, showing the relation of the body, liner and cover members of this embodiment, and showing a fragmentary portion of the double-corner construction.

Figure 4 is a transverse sectional view taken along the line 4—4 of Figure 1, showing the relation of the body, liner and cover members of this embodiment.

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Figure 5 is a plan sectional view taken along the line 5—5 of Figure 1 and showing the novel double-corner construction of the invention.

Figure 6 is a plan view of a one-piece, single-wall cardboard blank of generally rectangular shape showing how a body and cover member for a container may be made from a single blank of material.

Figure 7 is a transverse sectional view of a second embodiment of the invention, showing a container of double construction having a cover member telescopically fitting over a body member.

Figure 8 is a transverse sectional view of a third embodiment of the invention showing a container of double construction similar to that shown in Figure 7 but with a modified cover member.

Figure 9 is a transverse view of a fourth embodiment showing a container having a body member of single construction and a telescoping cover member of double construction.

Figure 10 is a transverse view of a fifth embodiment of the invention showing a container having a body member of double construction with the flat cover member being secured to the body member by a baling wire or like means.

Referring now to the accompanying drawings, and particularly to Figures 1 through 6, the invention is shown as applied to a container for shipping bulk package parts, although it will be understood that the principles of construction embodied in the container are equally applicable to shipping containers for other articles of commerce.

The illustrative embodiment of Figure 1 comprises, in general, a body member 2 provided with a liner element 4 slidably mounted therein, and a cover member 6 adapted to be telescopically seated on the upper portion of the liner element 4. The body and cover members are similarly constructed, with each member having a novel double-wall and double-corner structure. The liner element 4 is shown as being preferably made with a single-wall construction; however, it may be made with any number of walls or of any thickness desired.

The novel double-corner construction of the body member 2 and cover member 6, which is explained in detail infra, is one of the most essential parts of the invention. The use of this double-corner construction plus a unique means for holding the side walls and end walls in place makes it possible to construct a container using a light-weight material to carry articles of great weight and bulk. A container so constructed has excellent strength and rigidity characteristics and may be used for shipping bulk package parts without fear of any rupture, spreading or bulging of the container.

The material used for fabricating the various members of the container may be any suitable light-weight material such as cardboard, corrugated board or the like, which possesses good strength, rigidity and workability characteristics. The body member 2, liner element 4 and cover member 6 may be made from the same thickness or size material with each part being fabricated from a one-piece blank. However, for economy in the use of material and for increased production, both the body and cover members may preferably be fabricated from a one-piece blank as shown in Figure 6.

The one-piece blank shown in Figure 6 may be formed by any conventional method as by stamping. This one-piece blank is cut on the double vertical lines 8, 9 and 10, and on the double horizontal lines 11, 12, 13 and 14 to form separate blanks for the body member 2, and the cover member 6.

The body member 2, comprises a plurality of side walls 16, 17, 18 and 19 integrally attached to each other along creased or scored folding lines 20, 21, 22. Attached to side wall 16 is a flap 23 and for assembly it is folded

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along line 24 and secured by suitable means, as by stapling 25, to side wall 19, the side walls being folded at right angles to each other along lines 20, 21, 22. The end wall 27 of body member 2 includes end flaps 28, 29, 30 and 31, integrally attached to the lower edges of side walls 16, 17, 18 and 19 respectively, and folded inwardly at right angles to said side walls along folding lines 32, 33, 34 and 35, with end flaps 29 and 31 overlying end flaps 28 and 30. End flaps 29 and 31 are formed with diagonally hinged tabs 36, 37, 38 and 39 which are folded inwardly along folding lines 40, 41, 42 and 43, respectively, and into engagement with mating diagonal apertures 45, 46, 47 and 48 provided in end flaps 28 and 30. The ends of tabs 36, 37, 38 and 39 extend inside the container and are folded over so as to lock the end flaps in place. It can be seen that the interlocking action of the diagonal tabs and mating apertures will be effective to prevent any spreading and bulging of the end and side walls of the body member 2.

Attached to the upper edges of the side walls 16 and 18 and folded inwardly along lines 56 and 57 are side flaps 50 and 51, respectively. Each side flap is provided with a pair of wing panels designated as 52, 53, 54 and 55, which are folded inwardly at right angles to the side flaps along lines 60, 61, 62 and 63 to form a double-corner construction. As is best seen in Figure 5, the side flaps 50 and 51 with their associated wing panels fold inwardly to provide a novel double-wall and double-corner construction which increases the strength and rigidity of the body member 2. To complete the double-wall construction, the side walls 17 and 19 are provided with attached side locking flaps 64 and 65, respectively, folded inwardly along lines 66 and 67 and engaging the wing panels 52, 53, 54 and 55. An interlocking effect between the side locking flaps 64, 65 and the wing panels is provided by a diagonal juncture between these members, as at 68 and 69. The end wall structure 27 is completed by the provision of a pair of end locking flaps 70 and 71 hingedly attached to the side locking flaps 64 and 65, respectively, and foldable inwardly along lines 72 and 73, at right angles to flaps 64 and 65, to form an upper surface for the end wall 27. The end locking flaps 70 and 71 also serve as a locking means for holding the folded ends of tabs 36, 37, 38, 39 and the side walls 16, 17, 18, 19 in place. Preferably the side flaps 50 and 51 are moved into place after the flaps 64, 65, 70 and 71 are in position so that the wing panels of the flaps 50 and 51 may move into the cutout spaces at the side of the side flaps 64 and 65 and the exposed edges secure the end locking flaps 70 and 71 to the end of the box.

The liner member 4 may be formed by folding a one-piece blank into a square, open-ended structure with the sides overlapping and secured together by some suitable means as by stapling 72. The outside dimension of liner member 4 is slightly less than the inside dimension of body member 2 to allow the liner to be slidably mounted inside the body member 2. The upper end of liner 4 extends above the body member 2, as designated by 73, and telescopically fits into the cover member 6.

The cover member 6 is constructed from a one-piece blank similar in shape and size to the blank for the body member 2, but in addition is provided with hand holes for manipulating the container. As is best seen in Figure 6, the side walls of the cover member 6 are made smaller in height than those of the body member 2 thus providing a shallower construction for the cover member.

The cover member 6 comprises a plurality of side walls 75, 76, 77 and 78 integrally attached in right angular arrangement to each other along folding lines 79, 80 and 81. In assembly the side walls are held together by a flap 82 folded along line 83 and secured to side wall 75 by some suitable means as by stapling 84. The top or end wall 5 of the cover member 6, includes end flaps 85, 86, 87 and 88, integrally attached to the upper edges of side walls 75, 76, 77 and 78, respectively, and folded inwardly at

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right angles to said walls along folding lines 90, 91, 92 and 93, with end flaps 85 and 87 overlying end flaps 86 and 88. End flaps 85 and 87 are formed with diagonally hinged tabs 94, 95, 96 and 97, which are folded inwardly along folding lines 98, 99, 100 and 101, respectively, and into engagement with mating diagonal apertures 102, 103, 104 and 105 provided in end flaps 86 and 88. The ends of tabs 94, 95, 96 and 97 extend inside the cover member and are folded over so as to lock the end flaps in place.

Attached to the lower edges of the side walls 76 and 78 and folded inwardly along the lines 106 and 107 are side flaps 108 and 109, respectively. Each side flap is provided with a pair of wing panels designated as 110, 111, 112, 113, which are folded inwardly at right angles to the side flaps along lines 114, 115, 116 and 117 to provide a novel double-corner construction. Hingedly attached to the lower edges of the side walls 75 and 77 are side locking flaps 120 and 121, respectively, which are folded inwardly along lines 122 and 123 and into engagement with wing panels 110, 111, 112 and 113. An interlocking effect between the side locking flaps 120, 121 and the wing panels is provided by a diagonal juncture between these members, as at 124 and 125. The end wall structure 5 is completed by the provision of a pair of end locking flaps 126 and 127 hingedly attached to the side locking flaps 120 and 121, respectively, and foldable inwardly, along lines 128 and 129, at right angles to flaps 120 and 121 to form an inner surface for the end wall. As is best seen in Figure 2, the end locking flaps 126 and 127 also serve as a locking means for holding the folded ends of tabs 94, 95, 96, 97 and the side walls 75, 76, 77, 78 in place.

Handholes 130 and 131 may be provided in the cover member 6, as by cutting holes 132 and 133 in side walls 108 and 109, respectively, and then making flaps 134 and 135 in side walls 76 and 78 which may be folded inwardly through holes 132 and 133 as best seen in Figure 3.

The end locking flaps 70, 71, 126 and 127 of the body and cover members may be omitted if desired, and a separate square piece of material equal in size to a pair of said end locking flaps may be used to hold down the end wall tabs and lock the side walls in place.

It will be seen that the illustrative embodiment of Figure 1 comprises two open-end containers 2 and 6, of similar shape and construction, joined by means of a liner member 4 to form a novel container. The principles of construction of the invention may be adapted to various modifications of the container of Figure 1, some of such modifications being shown in Figures 7, 8, 9 and 10.

In the modification of Figure 7, a closed container is shown embodying two open-end containers 140 and 141 constructed in accordance with the principles of the invention. The container 140 is used as a body member with the container 141 forming a cover member and being of such a size as to permit it to be telescopically seated on the container 140. The side walls 142 of the cover member 141 may be made of sufficient length to completely cover the side walls 143 of body member 140 to provide additional strength and rigidity.

Figure 8 is another modification of a closed container similar to that shown in Figure 7 and having a body member 144 and a telescopically mounted cover member 145, constructed in accordance with the principles of the invention. The cover member 145 extends only partially down the side walls of body member 144. If desirable, the cover member 145 may be of a single-wall construction instead of the illustrated double-wall construction.

Figure 9 shows a further embodiment of the invention wherein a closed container having a single-wall body member 147, is provided with a double-wall cover member 148 constructed in accordance with the principles of the invention. The cover member 148 is telescopically seated on the body member 147 and completely encases the side walls 149 of said body member.

The embodiment of Figure 10 comprises a closed con-

tainer having an open-end body member 150 constructed in accordance with the teachings of the invention with a flat double-wall cover member 151 seated thereon and secured thereto as by a baling wire or strap 152, or like means.

It will be appreciated from the foregoing description that the present invention comprises a novel and improved container construction for shipping bulk package parts which may be manufactured from a low-cost, lightweight material, yet which possesses superior strength and rigidity characteristics heretofore unachieved in a like container constructed of such material. Such superior characteristics are attributable to the novel double-wall and double-corner principles of construction of the invention in conjunction with the novel means for simultaneously fastening the end flaps and side walls of the container in place. The novel fastening means, which comprises a plurality of diagonally spaced tabs on one set of end flaps lockingly engaging a plurality of diagonally spaced apertures in another set of end flaps, functions to lock the end wall and side walls rigidly together and thus suppress any racking, straining, or wrenching caused by the tendency of the bulk package parts to shift.

While it will be apparent that the preferred embodiments of the invention herein disclosed are 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. An open-end container made from a single sheet of material comprising, four side walls forming a closed structure when the abutted edges are secured together, a first pair of opposite side walls being provided at one end with hinged side flaps folded inwardly against said walls, said folded side flaps having integrally connected hinge wing panels on the sides thereof extending inwardly and forming an inner corner structure at each corner of said container, a second pair of opposite side walls against which said wing panels abut having hinged side locking flaps at the same end as that from which the flaps on said first said side wall extend folded inwardly against the second said walls and of a reduced width to lie between said wing panels, an end wall provided by a first pair of end flaps hingedly attached to said first pair of side walls, a second pair of end flaps hingedly attached to said second pair of side walls and overlapping said first pair of end flaps, said end flaps extending from the side wall at the end opposite to that having the side flaps, means for detachably fastening said end flaps together, said fastening means comprising a plurality of apertures in one pair of said end flaps, a plurality of hinged tabs on the other pair of said end flaps arranged to fit into and extend through said apertures, and means for simultaneously locking said tabs in said apertures and said side flaps in place.

2. An open-end container as set forth in claim 1, wherein said locking means comprises a pair of end locking flaps hingedly attached to the side locking flaps on said second pair of side walls and adapted to be folded inwardly into a position to form a bottom for said side walls and to overlie the ends of said tabs extending inwardly from said aperture.

3. A container comprising a body member, a cover member adapted for engagement with said body member, at least one of said members constructed from a single

sheet of material and being a four-sided, open-end carton comprising, four side walls attached together at the end edges, a first pair of opposite side walls being provided with hinged side flaps folded inwardly against said walls, said folded side flaps having integrally connected hinged wing panels on the sides thereof extending inwardly and forming an inner corner structure at each corner of said carton, a second pair of opposite side walls against which said wing panels abut and having hinged side locking flaps at the same end from which the flaps on said first side walls extend folded inwardly against the second said wall and of reduced width to lie between said wing panels, an end wall provided by a first pair of end flaps hingedly attached to said first pair of side walls, a second pair of end flaps hingedly attached to said second pair of side walls and overlying said first pair of end flaps, said end flaps extending from the side wall at the end opposite to that having the side flaps, means for detachably fastening said end flaps together, said fastening means comprising a plurality of apertures in one pair of said end flaps, a plurality of hinged tabs on the other pair of said end flaps arranged to fit into and extend through said apertures, and means for simultaneously locking said tabs in said apertures and said side flaps in place.

4. A container as set forth in claim 3, wherein said locking means comprises a pair of end locking flaps hingedly attached to the side locking flaps on said second pair of side walls and adapted to be folded inwardly into a position to form a bottom for said side walls and overlying the ends of said tabs extending inwardly from said apertures.

5. A container as set forth in claim 4, wherein said cover member is telescopically seated on said body member.

6. A container as set forth in claim 4, wherein said cover member is a four-sided, open-end carton of the type set forth in said claim.

7. A container as set forth in claim 4, wherein the body member is a four-sided, open-end carton of the type set forth in said claim.

8. A container as set forth in claim 7, wherein said cover member is seated on said body member in right angular abutment thereto and is secured to said body member by a detachable fastening means.

9. A container as set forth in claim 4, wherein said cover and body members are of the four-sided, open-end carton type as set forth in said claim.

10. A container as set forth in claim 9, wherein said cover member is telescopically seated on said body member.

11. A container as set forth in claim 9, wherein said body member is provided with a liner element slidably mounted therein and said cover member is telescopically seated on said liner element.

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