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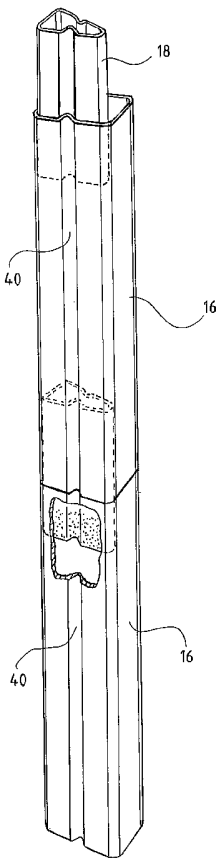
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(54) Title: POST IN POST PRODUCT PACKAGING AND DISPLAY STRUCTURE



(57) Abstract: A post in post structure formed from a short inner post segment (18) and a pair of hollow outer posts (16) slipped over either end of the inner post segment (18) and affixed to the inner post segment (18). The post in post structure is particularly suitable for use with a product packaging and display system (10) of the kind having vertically spaced trays (12) supported by the hollow outer posts (16) which are located over openings (24) in each tray (12) and inner posts (18) inserted inside the outer support posts (16) and through the tray openings (24) to lock the system (10) together.

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POST IN POST PRODUCT PACKAGING AND DISPLAY STRUCTURE

BACKGROUND

Field Of The Invention

This patent relates to the packaging arts. More particularly, this patent relates to a post in post type packaging and display system wherein outer posts are attached to each other by short inner post segments.

Description of the Related Art

Retailers such as mass merchandisers sometimes display their products in the same packaging that the products were shipped in from the vendors. One form of such packaging comprises vertically arranged trays held apart by support posts.

Sonoco Development, Inc., the assignee of the present invention, has developed a proprietary post in post system for the packaging, shipping and displaying of products in a mass merchandising or general retail environment. The system, described in co-pending United States Patent Application No. 10/605,814, comprises a plurality of vertically spaced corrugated trays for holding the products, tubular outer support posts that support the trays and space them apart, and inner guide posts that key inside the support posts (thus "post in post") to lock the system together and provide axial compression strength. The tray and post structure may be carried on a standard pallet and wrapped in an outer wrap to protect the products from dust

and damage during shipment.

Each corrugated tray has die-cut openings large enough to accommodate the inner guide posts but smaller than the outer support posts. To assemble the system, the inner guide posts may be inserted through the tray openings and the outer support posts slipped over the inner guide posts. The outer support posts evenly space apart the trays and provide a platform for the tray above.

In the original design, the sum of the lengths of the inner guide posts is substantially the same as the sum of the lengths of the outer support posts. In other words, both the inner guide posts and outer support posts extend substantially the entire height of the system, providing a double post support frame. This configuration can be an unnecessary use of post material if the outer support posts themselves are strong enough to support the system.

It is therefore an object of the present invention to provide a post in post packaging and display system in which the inner guide posts are substantially shorter then the outer guide posts.

Another object of the invention is to provide a post in post packaging and display system in which the inner guide posts are attached to the insides of the outer guide posts.

Further and additional objects will appear from the description, accompanying drawings, and appended claims.

SUMMARY OF THE INVENTION

The present invention is a post in post structure for shipping products and displaying them in a retail environment. The structure comprises a pair of vertically aligned outer posts having hollow interiors and a short inner post segment inserted within the hollow interiors of the outer posts and affixed to both outer posts. Preferably the outer posts are in end to end contact. The inner posts need only be long enough to enable each pair of adjacent outer posts to be adequately secured to each other.

In a further embodiment, the post in post structure also comprises a tray having at least one opening therein, wherein an inner post segment is inserted partway through the opening and two outer support posts are attached to either end of the inner post segment.

The invention is particularly suitable for use with the post in post packaging and display system described in pending United States Patent Application No. 10/605,814. That system comprises vertically spaced apart trays, inner posts inserted through openings in the trays, and hollow outer posts slipped over the inner posts. The posts space the trays apart and lock them together in vertical alignment.

THE DRAWINGS

Figure 1 is a perspective view of the post in post structure of the present invention.

Figure 2 is an exploded view of the post in post structure of Figure 1.

Figure 3 is a perspective view of a packaging and display assembly incorporating the post in post structure of Figure 1.

Figure 4 is an exploded view of the packaging and display assembly Figure 3.

Figure 5 is a perspective view of two corrugated blanks used to make a corrugated inner post segment and a corrugated outer post.

Figure 6 is a perspective view of the corrugated blanks of Figure 5 shown partially assembled.

Figure 7 is a perspective view of a corrugated inner post segment and a corrugated outer post.

Figure 8 is a top view of a corrugated inner post segment and a corrugated outer post.

Figure 9 is an exploded view of an alternative embodiment of a post in post structure according to the invention.

DETAILED DESCRIPTION OF THE INVENTION

As shown in Figures 1 and 2, the present invention is a post in post structure comprising a pair of vertically aligned outer posts 16 having hollow interiors and a short inner post segment 18 inserted within the hollow interiors of the outer posts 16, the inner post segment 18 being affixed both outer posts 16. The inner post segment 18 may be affixed to the outer posts 16 by glue, adhesive, staples, friction fit or any other suitable means. The posts may also be connected by mechanical means. For example, as shown in Figure 9, D-shaped tabs 26 formed in the inner post segment 18 can be inserted into slots 28 formed in the outer posts 16 to connect the posts together. Preferably the outer posts 16 are in end to end contact.

In a further embodiment, the structure also comprises at least one tray 12 having at least one opening 24 in the bottom 36 of the tray 12, wherein one of the outer posts 16 is aligned over the opening 24 and the other outer post 16 is aligned under the opening 24 such that their hollow interiors communicate with the opening 24. The inner post segment 18 is inserted inside the outer posts 16 and through the tray opening 24 and is affixed to the outer posts 18 as before.

The invention is particularly suitable for use with the post in post packaging, shipping and display assembly described in pending United States Patent Application No. 10/605,814 and incorporated herein by reference. As shown in Figures 3 and 4, the packaging and display assembly 10

comprises vertically spaced trays 12 for holding products (e.g. snack food containers), hollow outer posts 16 arranged over openings 24 die-cut into the bottom 36 of each product tray 12, and inner post segments 18 keyed (inserted) inside the outer posts 16 and through the tray openings 24 to lock the system together. The outer posts 16 provide a platform for each tray 12 and evenly space the trays 12 apart.

Unlike the post in post system described in United States Patent Application No. 10/605,814, the inner post segments 18 are not at least as long as the outer posts 16 and they are not placed end to end. Rather, the inner post segments 18 are substantially shorter than the outer posts 18 and they are spaced apart. The inner posts segments 18 need only be long enough to enable each pair of adjacent outer posts 16 to be adequately secured to each other.

The product trays 12 preferably are formed from corrugated board, although any suitable material may be used. Each tray 12 comprises a bottom panel 36 and short sidewalls 38 extending upward from the periphery of the bottom panel 36. The bottom panel 36 and/or side panels 38 may be printed or otherwise decorated in any desirable fashion to increase the aesthetic appeal of the display.

The bottom panel 36 has die-cut openings 24 disposed in void spaces around the product containers 14. These openings 24 are large enough to accommodate the inner post segments 18 but smaller than the outer posts 16 or at least configured such that the outer posts 16 cannot fit within the openings 24. The number of openings 24 required in each

tray 12 is a function of the number of post columns. As shown in Figures 3 and 4, a typical assembly 10 will have four columns of posts and thus four openings 24 in each tray 12. The die-cut openings 24 may be arranged on the trays 12 in any suitable fashion, although it is preferred that there be an opening 24 near each corner of the trays 12.

The height of the outer posts 16 is determined by the height of the product containers or, more particularly, the desired spacing between trays 12. The outer posts 16 may be attached to the trays 12 in some fashion or simply held in place by the inner post segments 18.

Preferably, the outer posts 16 are hollow paper tubes formed into a desired shape, such as those manufactured by Sonoco Products Company of Hartsville, South Carolina and described in U.S. Patent Nos. 4,482,054; 5,593,039; 6,059,104 and 6,186,329, incorporated herein by reference. In the embodiment illustrated in the figures, the outer posts 16 have a substantially rectangular cross-sectional profile with beads or grooves 40 running longitudinally along two opposing walls, although any suitable cross-sectional shape may be used, including but not limited to circular and triangular. Since the outer posts 16 are visible to the consumer, they too may be printed or otherwise decorated in any desirable fashion to increase the aesthetic appeal of the display.

The inner post segments 18 must be small enough in cross-section to be inserted through the openings 24 in the trays 12 and inside the ends of the outer posts 16. Like

the outer posts 16, the inner post segments 18 may be wound paper tubes such as those manufactured by Sonoco Products Company. The inner post segments 18 may have any suitable cross-sectional shape, including but not limited to triangular, and should fit snugly inside the outer posts 16.

Thus there has been described a post in post structure for use in the packaging, shipping and displaying of products. The structure features a pair of outer posts 16 connected together by a short inner post segment 18. The inner post segment 18 is affixed to the outer posts 18 and need only be long enough to enable the outer posts 18 to be adequately secured to each other.

In one alternative embodiment of the invention, the outer posts and inner post segments are made from folded corrugated rather than wound paper tubes. As shown in Figures 5-8, each post is formed from a corrugated blank 42, 44 that is folded into a cylinder having a polygonal cross section. The corrugated inner post segments 44 are sized to fit snugly within the corrugated outer posts 42 and, as in the preferred embodiment, need only be long enough to secure two outer posts 42 placed end to end.

Other modifications and alternative embodiments of the invention are contemplated that do not depart from the scope of the invention as defined by the foregoing teachings and appended claims. It is intended that the claims cover all such modifications that fall within their scope.

WE CLAIM AS OUR INVENTION:

1. A structure comprising:

an inner post segment (18) having opposing ends; and

a pair of hollow outer posts (16) slipped over either end of the inner post segment (16) and affixed thereto.

2. The structure of claim 1 wherein the inner post segment (18) is shorter than the outer posts (16).

3. The structure of claim 2 wherein the inner post segment (18) is affixed to the outer posts (16) by a friction fit.

4. The structure of claim 2 wherein the inner post segment (18) is affixed to the outer posts (16) by adhesive.

5. The structure of claim 2 wherein the inner post segment (18) is affixed to the outer posts (16) by staples.

6. The structure of claim 2 wherein the inner post segment (18) comprises die cut tab portions (26) that insert into slots (28) disposed in the outer posts (16).

7. The structure of claim 6 wherein the number of cut tab portions (26) is two and the two cut tab portions are oriented in opposite directions.

8. The structure of claim 2 further comprising a tray (12) having an opening (24) therein, the inner post segment (18) being inserted partway through the opening (24) and the outer posts (16) being located above and below the tray (12).

9. The structure of claim 8 wherein the outer posts (16) do not fit through the tray opening (24).

10. The structure of claim 2 wherein the inner post segment (18) and outer posts (16) are formed from wound paper.

11. The structure of claim 2 wherein the inner post segment (18) and outer posts (16) are formed from folded corrugated.

12. The structure of claim 11 wherein the inner post segment (18) and the outer posts (16) have polygonal cross sections.

FIG. 1

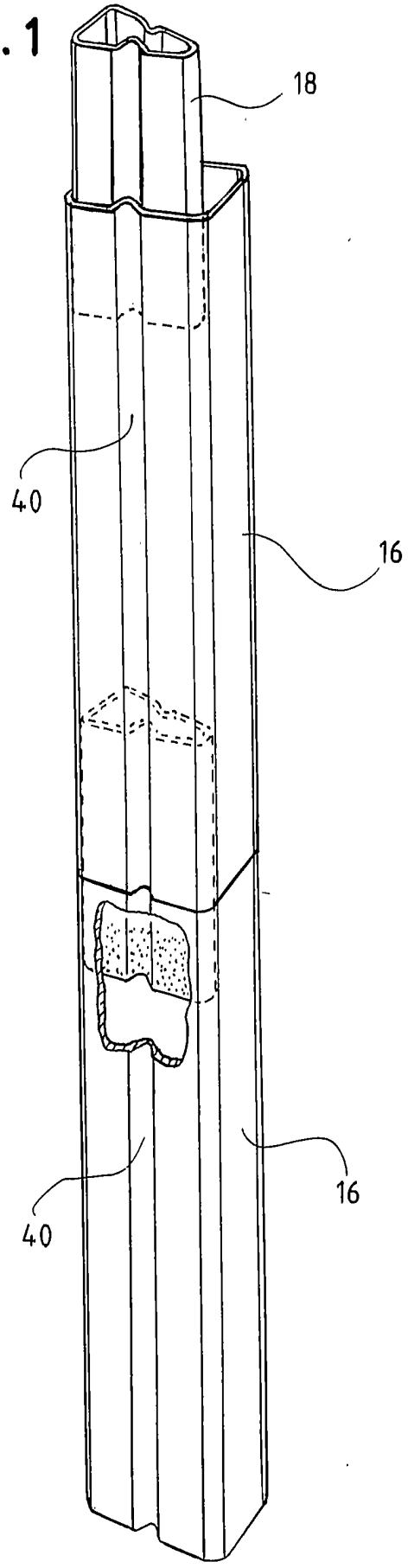


FIG. 2

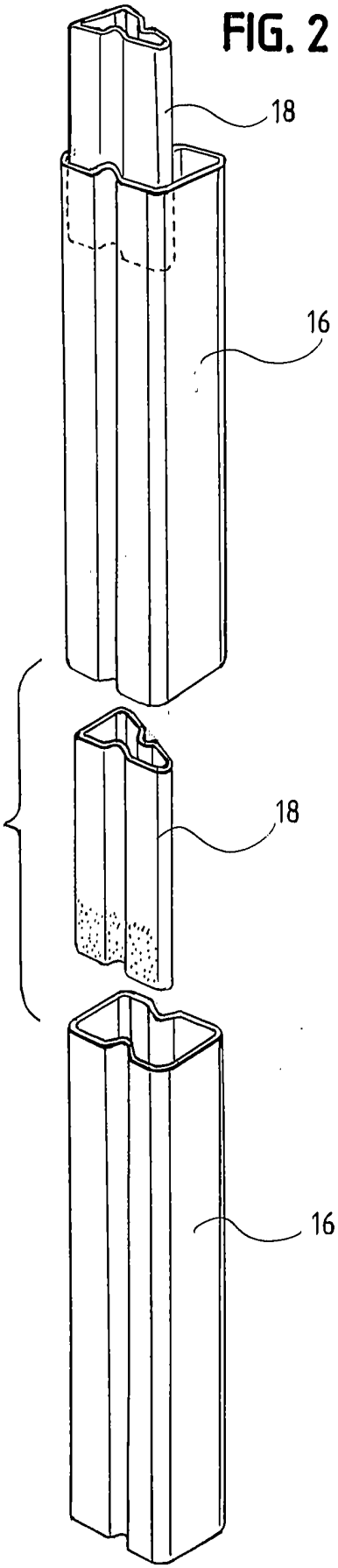


FIG. 3

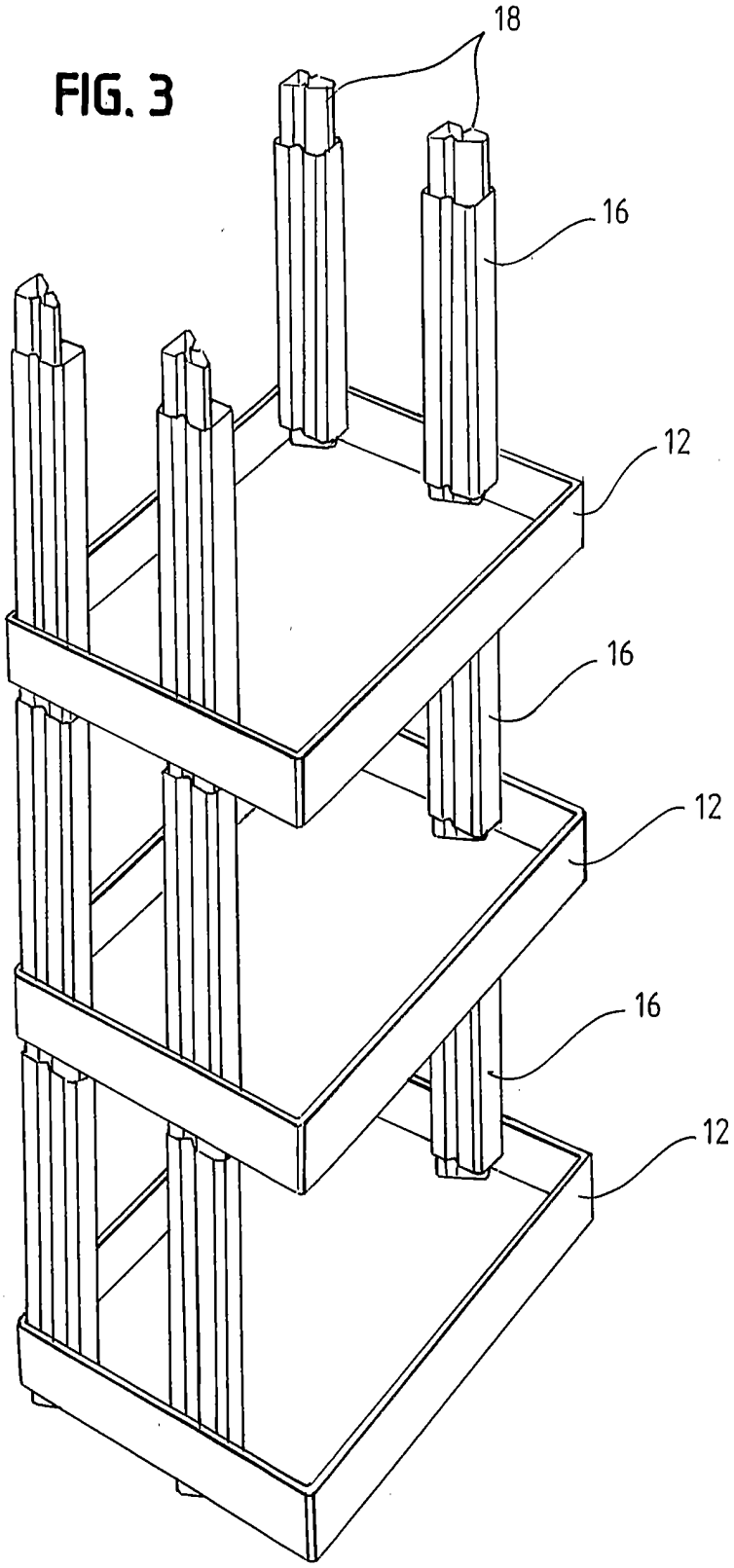


FIG. 4

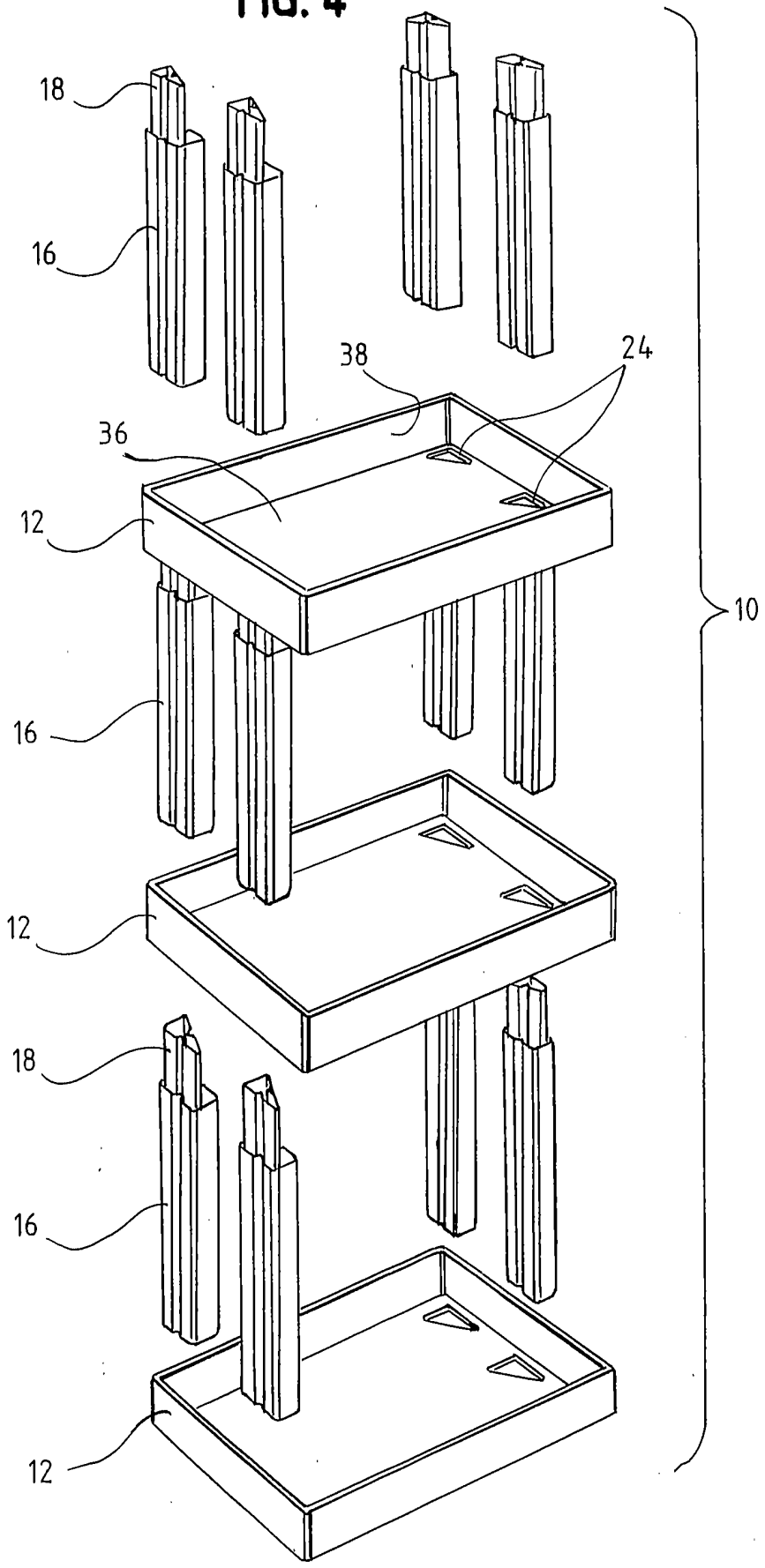


FIG. 5

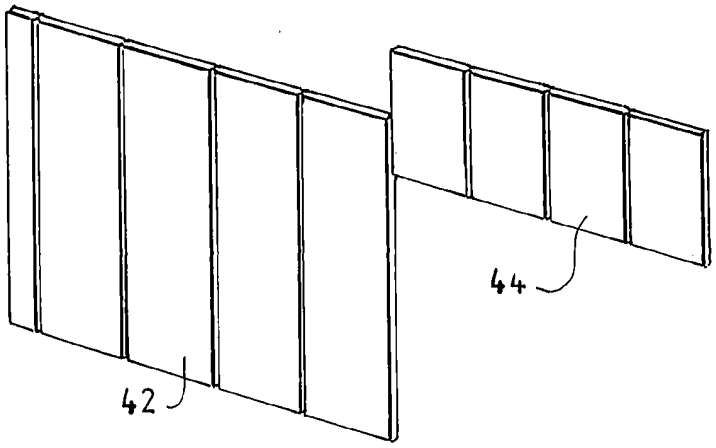


FIG. 6

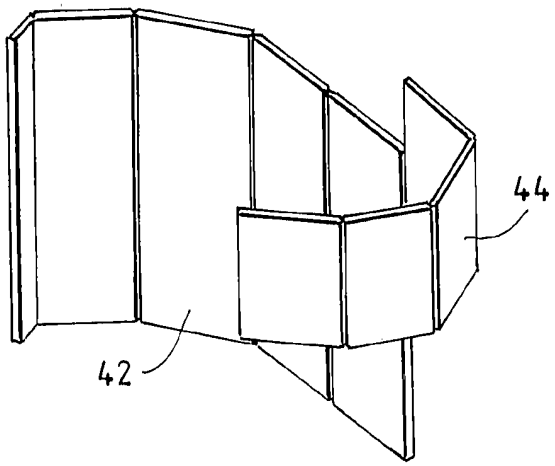


FIG. 7

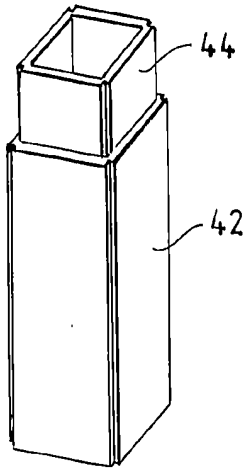


FIG. 8

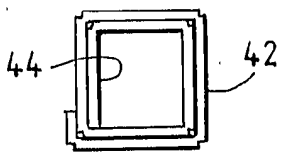
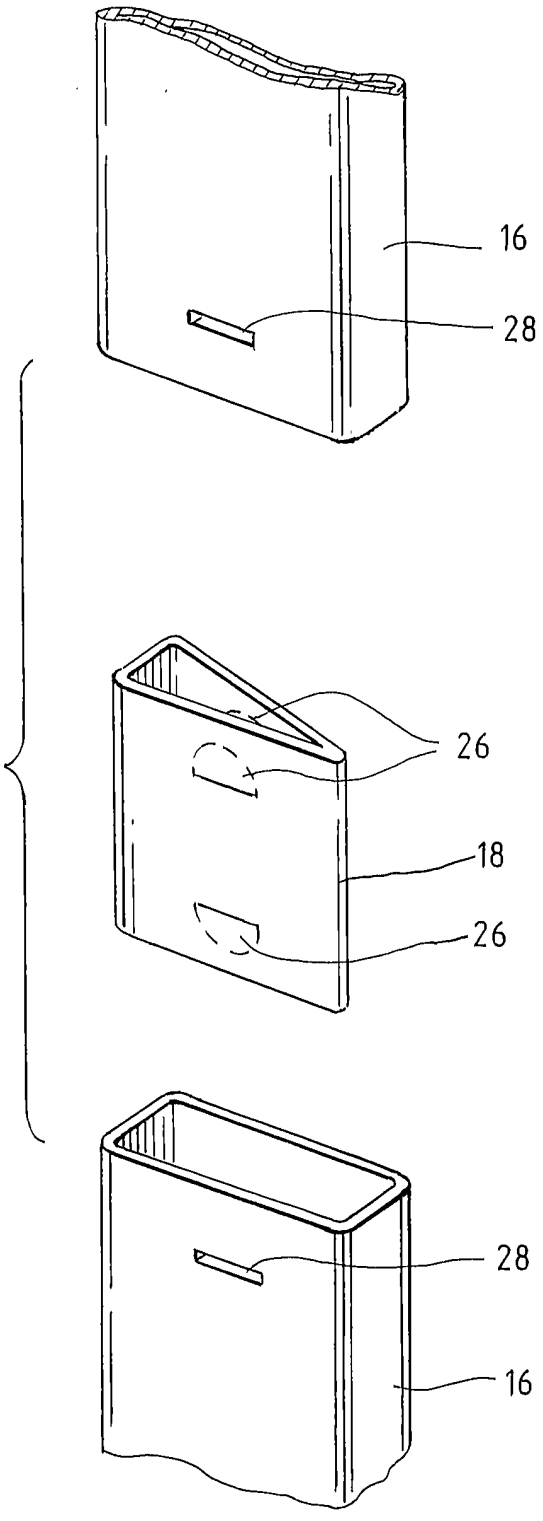


FIG. 9



INTERNATIONAL SEARCH REPORT

International application No.
PCT/US06/00543

A. CLASSIFICATION OF SUBJECT MATTER
IPC: **B65D 81/02**(2006.01),**19/38**(2006.01),**5/42**(2006.01)

USPC: 206/586;108/53.5;220/8;229/199
According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
U.S. : 206/586;108/53.5;220/8;229/199

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	JP 11-59733 B (KEIJI et al) 03 February 1999 (03.02.1999), Figures 1 and 5.	1
X	US 4,673,092 A (LAMSON et al) 16 June 1987 (16.06.1987), the entire document.	1-3, 8-9
X	US 3,709,163 A (SMEDLEY et al) 09 January 1973 (09.01.1973), Figure 5.	1-3
X --- Y	US 2,070,231 A (KATONA) 09 February 1937 (09.02.1937), Figures 2-4.	1-4, 10-12 --- 5-7
Y	US 3,072,313 A (SVENDSEN) 08 January 1963 (08.01.1963), Column 6, lines 45-52.	5
Y	US 4,248,350 A (GILBERT) 03 February 1981 (03.02.1981), Column 3, lines 26-57.	6-7

☒ Further documents are listed in the continuation of Box C. ☐ See patent family annex.

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