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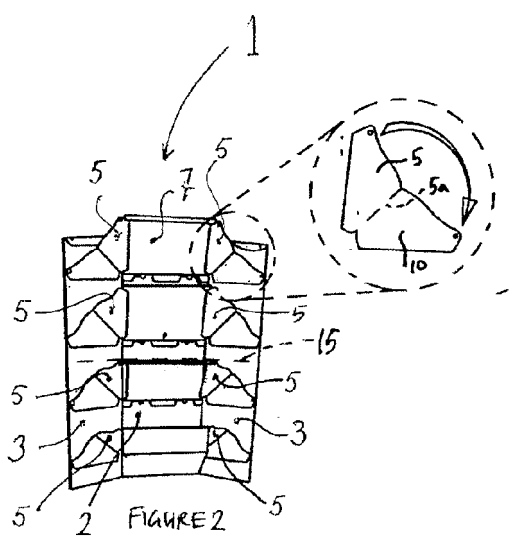
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(54) **Collapsible shelving unit**

(57) A collapsible shelving unit (1) comprising a back wall (2) and two side walls (3), the side walls hingeably connected to the back wall, and the shelves (7) hingeably connected to the back wall, for each shelf there is provided two hinged gussets (5), each gusset connect to an

opposite side portion of each respective shelf, and each gusset hingeably connected to a respective side wall, and the shelves arranged to adopt a stowed folded condition and be capable of adopting a deployed condition in which they are substantially perpendicular to the back wall and the side walls.



Description

Technical Field

[0001] The present invention relates to a collapsible shelving unit.

Background

[0002] Shelving units exist in various forms. Often those which come in flatpack form as multiple components are time-consuming and cumbersome to assemble. We have realised that it would be advantageous to design an improved shelving unit.

Summary

[0003] According to the invention there is provided a collapsible shelving unit comprising a back wall and two side walls, the side walls hingeably connected to the back wall, and the shelves hingeably connected to the back wall, for each shelf there is provided two hinged gussets, each gusset connect to an opposite side portion of each respective shelf, and each gusset hingeably connected to a respective side wall, and the shelves arranged to adopt a stowed folded condition and be capable of adopting a deployed condition in which they are substantially perpendicular to the back wall and the side walls.

[0004] In the stowed condition, the back wall, the side walls and the shelves may be substantially flat.

[0005] The side walls may be connected to the back wall at side margins of the back wall.

[0006] Each gusset, in an unfolded condition, may be of overall generally triangular shape.

[0007] The gussets may be arranged to support the side portions of each shelf in the deployed condition.

[0008] In the deployed condition, the gussets may be arranged to lie substantially flat against a respective side wall.

[0009] At least some of the gussets may comprise fasteners arranged to maintain the gussets against a respective side wall. The fasteners may comprise a male to female type clip. The fasteners may be manually engageable and manually disengageable.

[0010] The fasteners may comprise magnets.

[0011] The side walls may comprise recessed regions which allow the gussets to be received therein when in the deployed condition. The recessed regions preferably allow the gussets to be received within a spatial envelope of the respective side wall.

[0012] The unit is preferably arranged to allow assembly into an erect condition from a stowed/folded condition by way of lifting the unit upwardly and so allowing the unit to open out. The unit preferably comprises a handle to allow the unit to be so lifted. Preferably assembly into the erect condition is achieved solely by lifting the folded assembly upwardly. Preferably, magnetic attraction between fasteners maintains the unit in an erect condition.

Preferably, the magnetic fasteners automatically come into attractive engagement by virtue of the folded unit being lifted upwardly.

[0013] The collapsible shelving unit may comprise one or more features of the embodiments described in the detailed description and/or shown in the drawings.

Brief Description of the Drawings

[0014] One embodiment of the invention will now be described, by way of example only, with reference to the following drawings in which:

Figure 1 is a perspective view of a collapsible shelving unit in a first folded condition;

Figure 2 is a perspective view of the collapsible shelving unit of Figure 1 in a second folded condition;

Figure 3 is a perspective view of the shelving unit of Figure 1 in a deployed condition;

Figure 4 is a detailed perspective view of the shelving unit of Figure 1 being urged into a deployed condition;

Figure 5 is a perspective view of the shelving unit of Figure 1 in a deployed condition with a header board in a first position;

Figure 6 is a perspective view of the shelving unit of Figure 1 with a header board in a second position, and

Figures 7 to 10 show various views of a second embodiment of the invention.

Detailed Description

[0015] There is now described a collapsible shelving unit 1 which is advantageously arranged to permit adoption of a stowed condition or an erect condition. In the stowed condition the unit 1 is a substantially flat entity and occupies a smaller spatial envelope as compared to when in the erect deployed condition.

[0016] With reference initially to Figure 3, the unit 1 comprises a back wall 2 and two side walls 3. Each side wall 3 is hingeably connected to the back wall at a junction between a side margin of a side wall and a side margin of the back wall, such that the side walls 3 flank the back wall 2. Each of the side walls 3 and the back wall 2 is of overall oblong shape.

[0017] The unit 1 further comprises shelves 7 which are spaced along the height of the back wall 2. A rearward edge portion of each shelf is hingeably connected to the back wall 2. This connection may be realised by way of one or more flaps/extensions integral with the rearward edge portion, being receivable within respective slots of

the back wall 2. Each shelf 7 is of overall oblong-rectangular shape and is arranged to support a load thereon. At the opposing side margins of each shelf 7 there is provided a gusset 5, which is hingeably connected to the shelf and is overall generally triangular shape. The shelf 7 is connected to the gusset 5 by way of a flap portion of the gusset which underlies the shelf 7, and is adhered thereto. Each gusset 5 is also hingeably connected to the side wall 3 at junction 5a. The junction 5a allows the gusset to have a range of pivotable movement to adopt a folded condition and a deployed condition.

[0018] The side wall 3 is provided with a plurality of recesses 10 which are dimensioned to receive a respective gusset 5 therein. Each recess 10 is formed by a cut-away part which extends into a proportion of the depth of the side wall 10. When the gussets 5 are in the deployed condition (ie when the unit 1 is erect), each gusset is received in a respective recess 10, and thereby enhances the appearance since the gusset 5 is flush with the side wall 3.

[0019] Each gusset 5, at a corner region thereof, comprises a fastener component 12a which is arranged to mate with a complementary fastener component 12b which is provided in the recess region 10. The fastener components 12a and 12b are preferably of male-to-female type, and are manually engageable and disengageable by way of a snap-fit connection. When in the connected condition, the fastener components ensure that the gusset is retained in the recess 10, and in the required position to support the respective shelf 7.

[0020] A fold line 15 extends along the side walls 3 and the back wall 2. The fold line 15 allows the unit, when in a first folded condition (as shown in Figure 2) to be folded into a second folded condition in which the unit 1 is folded in half across its height (as shown in Figure 1). The fold line 15 is located approximately midway at the height of the unit.

[0021] In the second folded condition, the unit 1 is much more conveniently transportable and packageable. In an alternative embodiment the fold line 15 is not provided.

[0022] Uppermost regions of each of the side walls 3 are provided with slots 16, arranged to receive a header board 20, thus allowing the header board 20 to be positioned towards the front or the back of the uppermost region of the unit 1.

[0023] An uppermost region of the back wall 2 is provided with a handle 17. The handle 17 conveniently allows the unit 1, in the erect condition, to be repositioned.

[0024] The unit 1 may advantageously be made from lightweight sheet material such as cardboard or plastic, so allowing the unit, in particular in a folded condition, to be easily transported, and the rapidly unfolded into a lightweight, yet sturdy, shelving unit.

[0025] In an alternative embodiment, that component 12a of each fastener pair which is attached to each gusset 5 is provided in the depth of the gusset such that it protrudes from just one external surface of the gusset. Specifically, the fastener component 12a protrudes only from

that surface which opposes the respective side wall 3 to which the gusset is attached. This means that the fastener component is not visible when each gusset is secured to the side wall, thus resulting in a more aesthetically pleasing appearance.

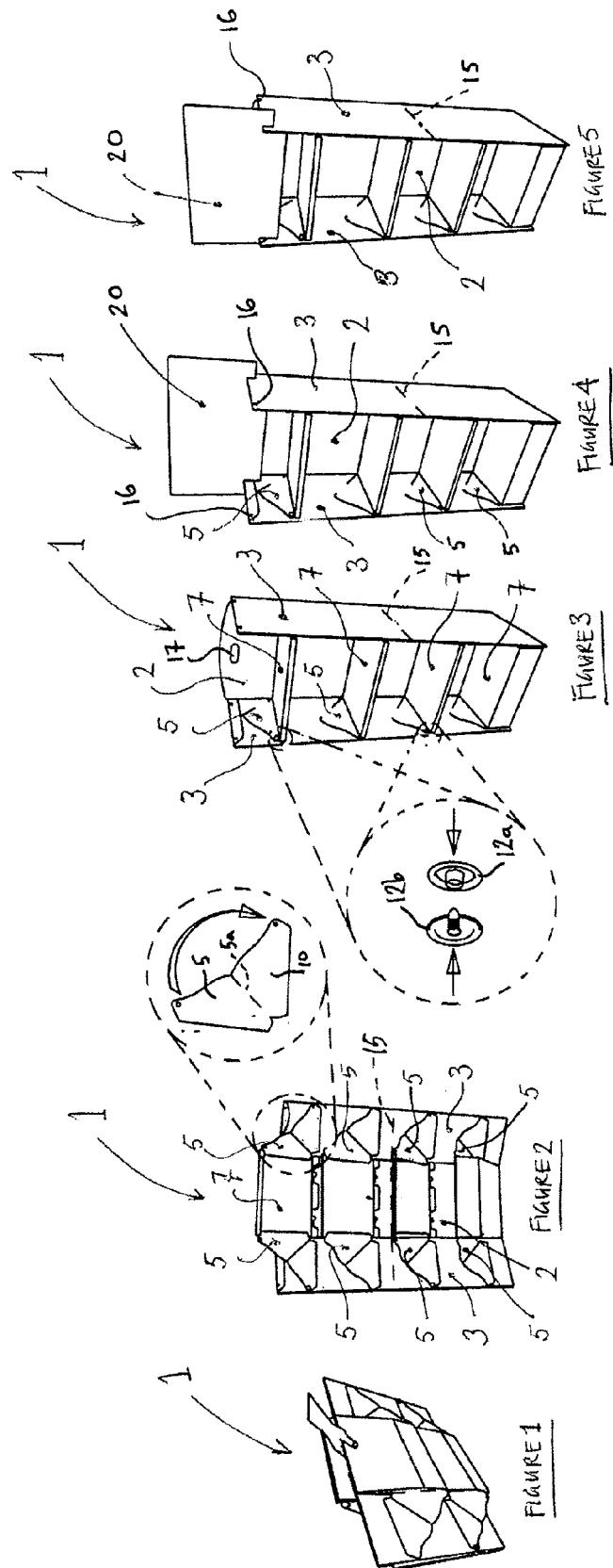
[0026] Reference is now made to figures 7 to 10 which show a second embodiment of the invention. The second embodiment is of very similar design and construction to the first embodiment save that the fastener components 12a and 12b are replaced by magnetic components 112a and 112b which are incorporated into the gussets 105 and the complimentary side wall portions 110. The shelving unit 100 comprises a back wall 102, and two side walls 103. Each side wall 103 is hingeably connected to the back wall at a junction between a side margin of the back wall, such that the side walls flank the back wall 102. Each of the side walls and the back wall 102 is of overall oblong shape.

[0027] The unit 100 further comprises shelves 107 which are spaced along the height of the back wall 102. A rearward edge portion of each shelf is hingeably connected to the back wall 102. Each shelf is of overall oblong-rectangular shape and is arranged to support a load thereon. At the opposing side margins of each shelf there is provided a gusset 105, which is hingeably connected to the shelf and is of overall generally triangular shape. The shelf 107 is connected to the gusset 105 by way of a flap portion of the gusset which underlies the shelf 107, and is adhered thereto. Each gusset 105 is also hingeably connected to the side wall 103 at junction 105a. Each junction 105a allows the gusset to have a range of pivotable movement to adopt a folded condition and a deployed condition.

[0028] The side wall 103 is provided with a plurality of recesses 110 which are dimensioned to receive a respective gusset 105 therein. Each recess 110 is formed by a cut-away part which extends into a proportion of the depth of the side wall 110. When the gussets 105 are in the deployed condition (i.e. when the unit 100 is erect), each gusset is received in a respective recess 110, and thereby enhances the appearance since the gusset is flush with the side wall 3. With reference in particular to Figure 7, the unit 100 is shown in a folded condition. With a user's hand placed through a handle aperture 117, the user lifts the folded unit upwardly with a sharp movement. In so doing, the folded unit is caused to open. The lowermost portion pivots about the fold 115 (as best shown in Figure 8). With continued upward movement, the lower part becomes aligned with the upper part. The side walls 103 then tend to pivot inwardly. In so doing, the gussets 105 are received in the recesses 110. As a result, the magnetic attraction between the magnets in each of the gusset 105 and the recess 110, the gusset 105 is held within the recess. This magnetic attraction advantageously serves to maintain the assembly in an erect condition, as shown in Figure 4. With this single, simple, procedure, a user can very straightforwardly and quickly assemble the unit.

Claims

1. A collapsible shelving unit comprising a back wall and two side walls, the side walls hingeably connected to the back wall, and the shelves hingeably connected to the back wall, for each shelf there is provided two hinged gussets, each gusset connect to an opposite side portion of each respective shelf, and each gusset hingeably connected to a respective side wall, and the shelves arranged to adopt a stowed folded condition and be capable of adopting a deployed condition in which they are substantially perpendicular to the back wall and the side walls. 5
2. A collapsible shelving unit as claimed in claim 1 in which in the stowed condition, the back wall, the side walls and the shelves are substantially flat. 10
3. A collapsible shelving unit as claimed in claim 1 or claim 2 in which the side walls are connected to the back wall at side margins of the back wall. 15
4. A collapsible shelving unit as claimed in any preceding claim in which each gusset, in an unfolded condition, may be of overall generally triangular shape. 20
5. A collapsible shelving unit as claimed in any preceding claim in which the gussets are arranged to support the side portions of each shelf in the deployed condition. 25
6. A collapsible shelving unit as claimed in any preceding claim in which, in the deployed condition, the gussets may be arranged to lie substantially flat against a respective side wall. 30
7. A collapsible shelving unit as claimed in any preceding claim in which at least some of the gussets comprise fasteners arranged to maintain the gussets against a respective side wall. 35
8. A collapsible shelving unit as claimed in claim 7 in which the fasteners comprise a male to female type clip. 40
9. A collapsible shelving unit as claimed in claim 7 in which the fasteners are manually engageable and manually disengageable. 45
10. A collapsible shelving unit as claimed in claim 7 in which the fasteners comprise magnets. 50
11. A collapsible shelving unit as claimed in any preceding claim in which the side walls comprise recessed regions which allow the gussets to be received therein when in the deployed condition. 55
12. A collapsible shelving unit as claimed in any preceding claim in which the unit is arranged to allow assembly into an erect condition from a stowed/folded condition by way of lifting the unit upwardly and so allowing the unit to open out.
13. A collapsible shelving unit as claimed in claim 12 in which the unit comprises a handle to allow the unit to be so lifted.
14. A collapsible shelving unit as claimed in any preceding claim in which assembly into the erect condition is achieved solely by lifting the folded assembly upwardly.
15. A collapsible shelving unit as claimed in any preceding claim in which magnetic attraction between fasteners maintains the unit in an erect condition.
16. A collapsible shelving unit as claimed in claim 15 in which the magnetic fasteners automatically come into attractive engagement by virtue of the folded unit being lifted upwardly.



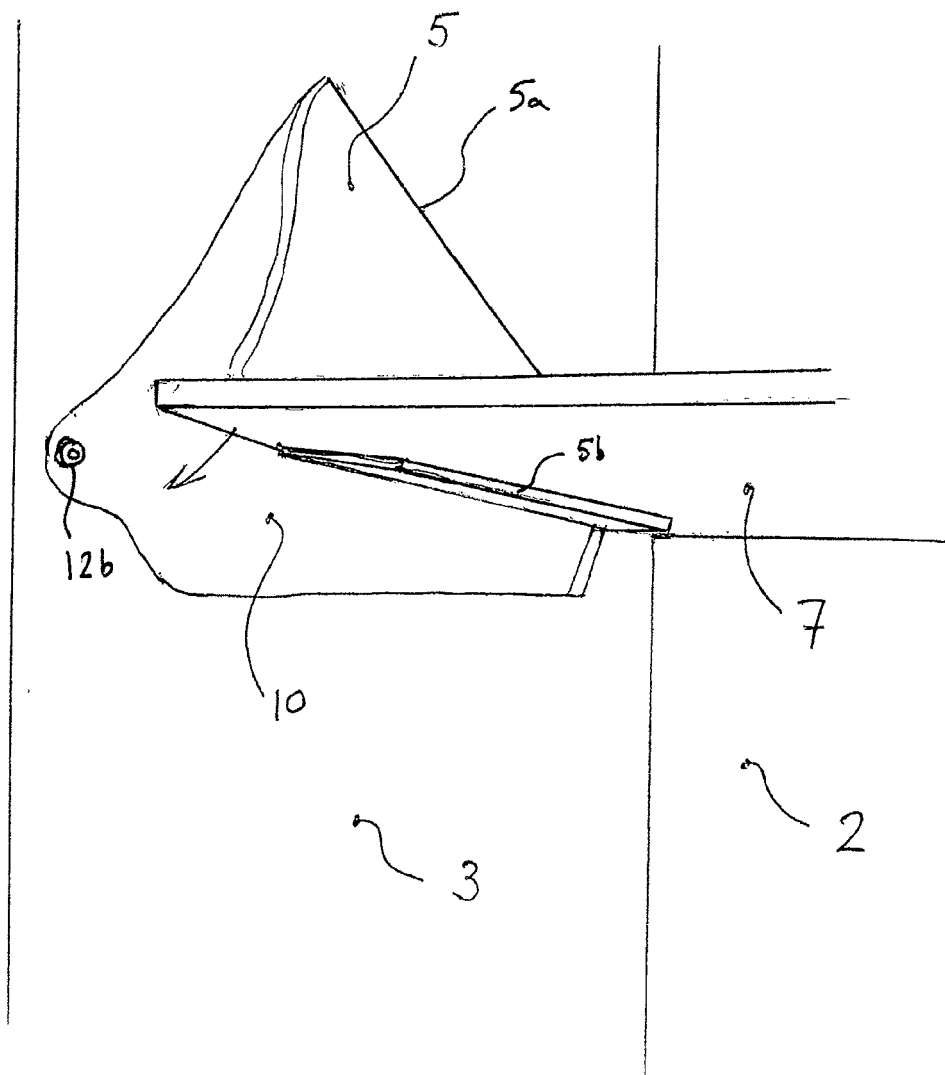
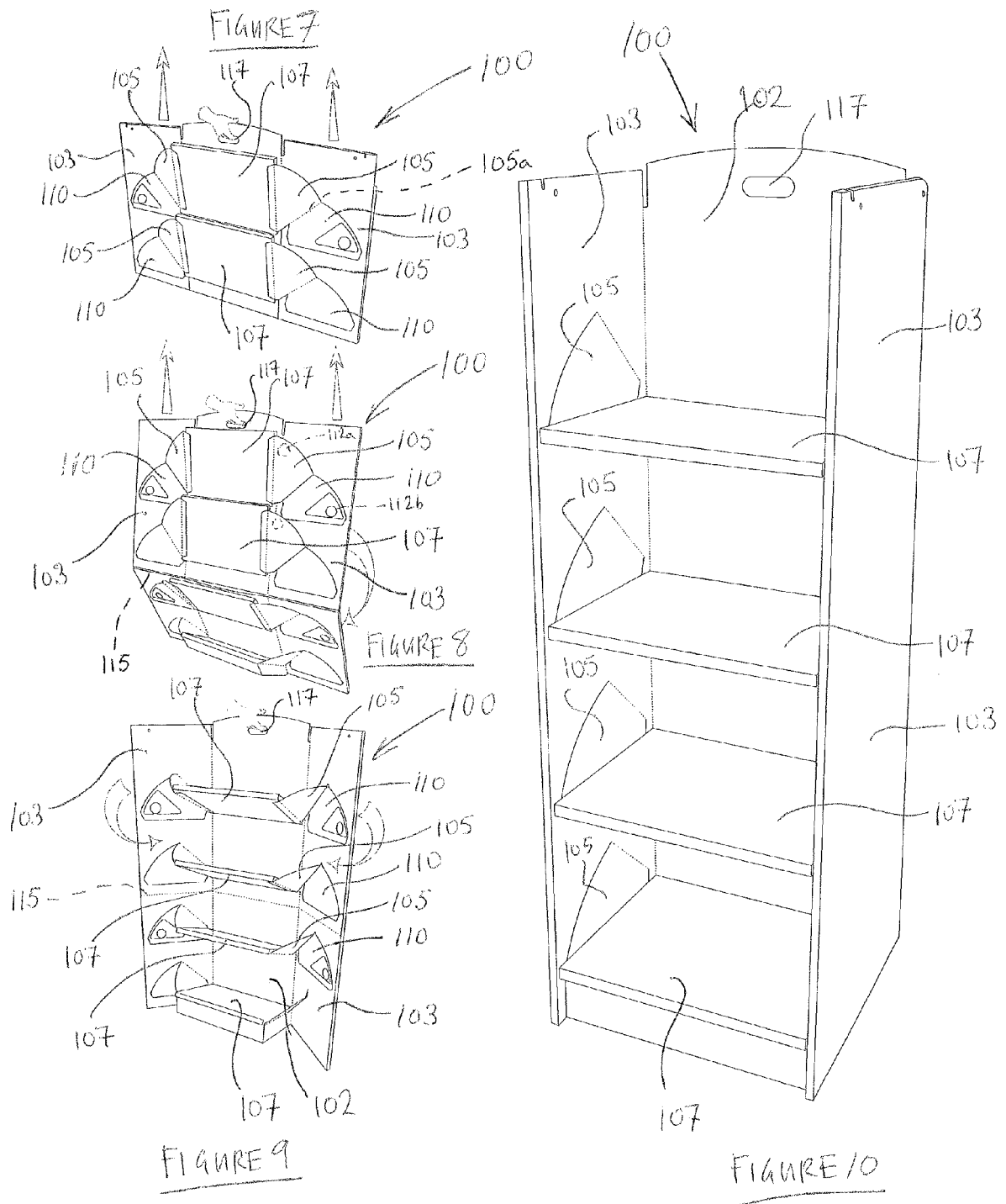


Figure 6





EUROPEAN SEARCH REPORT

Application Number
EP 13 18 3822

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
X	WO 2007/148963 A2 (SMURFIT KAPPA ZEDEK B V [NL]; DOBIE KIRK GLEN [NL]) 27 December 2007 (2007-12-27) * the whole document *	1-7, 11-13	INV. A47F5/11 A47B43/02
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The present search report has been drawn up for all claims			
Place of search The Hague		Date of completion of the search 21 October 2013	Examiner van Hoogstraten, S
<p>CATEGORY OF CITED DOCUMENTS</p> <p>X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document</p> <p>T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document</p>			

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**ANNEX TO THE EUROPEAN SEARCH REPORT
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EP 13 18 3822

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report.
The members are as contained in the European Patent Office EDP file on
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For more details about this annex : see Official Journal of the European Patent Office, No. 12/82