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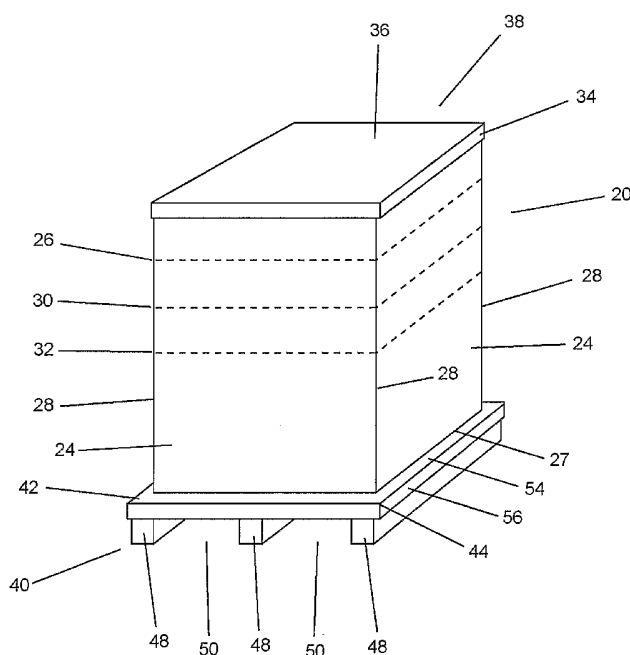
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(54) Title: CONTAINER FOR CONTAINMENT AND TRANSPORT OF OBJECTS



(57) Abstract: A container including at least three sidewalls with corners therebetween defining an internal space for storage of at least one item, the sidewalls having an open base and an open top. The sidewalls are foldable about the corners for ease of storage. There is also a cover for the internal space; and a pallet onto which the sidewalls can be placed. The sidewalls have at least one perforated line to enable the height of the sidewalls to be varied.



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## CONTAINER FOR CONTAINMENT AND TRANSPORT OF OBJECTS

### Field of Invention

- 5 This invention relates to a container for containing and transporting objects and refers particularly, though not exclusively, to a disposable container for storing, and transporting objects. The use of such a container is particularly relevant, though not exclusively so, for heavy loads that require the use of forklifts to be transported.

### 10 Background

- Boxes that transport or courier companies provide for their clients' use are usually in sizes conforming to industry standards. Boxes of different sizes are usually manufactured to meet the needs of different clients. It is essential that the  
15 companies keep track of the available stocks of a box of a particular size in order to not have a surplus or a shortage of a particular box size.

- The size of the boxes usually determines the load limit allowable in a particular box. Boxes with contents weighing greater than 50kg will generally be too heavy for  
20 package handlers to lift. As such, many of the larger boxes require the use of forklifts for movement from one place to another. Currently, the boxes need to be placed on pallets to be moved about. Generally, there are no matching of packages to pallets. Also, cardboard boxes are used as they can be stored in a folded condition. Cardboard boxes are generally not suitable for heavy loads. Furthermore,  
25 pallets are generally made of timber. Timber pallets cause problems when being moved across international borders due to possible pest migration.

### Summary of Invention

- 30 In accordance with a first aspect, there is provided a container comprising at least three sidewalls with corners therebetween and having an open base, and an open top. The sidewalls define an internal space for storage of at least one item. The sidewalls are foldable about the corners for ease of storage. A cover is provided to

cover the open top and the internal space. Also included is a pallet onto which the sidewalls can be placed. The sidewalls each have at least one perforated line to enable the height of the sidewalls to be varied.

- 5 The sidewalls may be made of a material selected from: cardboard, treated cardboard and a plastics material. Preferably, the material is weather-resistant.

The at least one perforated line may be parallel to an edge of the sidewalls for folding along the at least one perforated line, or for being sheared along the at least  
10 one perforated line, to vary the height of the sidewalls.

The pallet may have a top, the top being planar and solid, and being of length and width slightly greater than the corresponding dimensions of the open base. A gap may be formed between an outer edge of the at least three sidewalls and a  
15 peripheral edge of the top of the pallet. The open base may be for enabling of the at least one item to be placed directly on the pallet.

The cover may be shaped to conform with the storage space defined by the sidewalls and may comprise a cover top and cover sides, the cover being adapted  
20 to removably cover the open top, and to locate on an outer surface of each of the at least three sidewalls in the manner of a snug fit.

The pallet may be formed of a material selected from: cardboard, plastics and treated cardboard. The material may be weather-resistant.

25

The sidewalls and the pallet may combine to form an open-top box; and the top of the pallet may form a solid base for the sidewalls. The open-top box may be closed by the cover.

30 **Description of Drawings**

In order that the invention may be better understood and readily put into practical effect, there shall now be described by way of non-limitative example only preferred

embodiments of the present invention, the description being in reference to the accompanying illustrative drawings in which:

Figure 1 shows a perspective view of a preferred embodiment;

Figure 2 is a perspective view of the container of Figure 1;

5 Figure 3 is a perspective view of the pallet in Figure 1; and

Figure 4 shows various dimensions and load ratings of a preferred embodiment

### Description of Preferred Embodiments

10

Referring to Figure 1, there is shown a container 20. The container 20 may be made from a disposable or recyclable material such as, for example, cardboard or plastics. It may be a weather-resistant material such as, for example, treated cardboard. If biodegradability/disposability is required, it would be preferable if  
15 treated cardboard is used.

15

The container 20 has four integral and mutually perpendicular sidewalls 24. Figure 1 shows the container 20 with four sidewalls 24 such that a rectangular storage area is defined by the sidewalls 24. In other embodiments of the present invention,  
20 there may be different numbers of sidewalls 24, depending on a preferred shape of the storage area. For example, three sidewalls 24 may be used to define a triangular storage area, five sidewalls 24 may be used to define a pentagonal storage area, eight sidewalls 24 may be used to define an octagonal storage area, and so forth. The sidewalls 24 may be formed from a cardboard blank.

25

The container 20 may also have a cover 38 which is placed over open top 46 and around a top rim 44 of the sidewalls 24 and covers the contents placed in the storage area. The cover 38 has a top 36 of the same shape as the open top 46. The cover 38 also has sides 36. The cover 38 may be formed from a single cardboard  
30 blank and is preferably dimensioned so that sides 36 pass over the outer surface of each of the sidewalls 24 in the manner of a snug fit. The cover 38 is preferably a relatively tight fit over sidewalls 24 but is readily removed from and inserted onto sidewalls 24.

The sidewalls 24 have an open base 22. As there is no integral top or cover to container 20, the sidewalls 24 maybe easily folded for storage by being folded about corners 28.

5

Each sidewall 24 may have at least one perforated line 26 running parallel to an edge 27 at the base 22. In Figures 1 and 2, there are shown a first perforated line 26, a second perforated line 30, and a third perforated line 32. The number and placement of the perforated lines may be as desired or required. The heights of  
10 each perforated line above edge 22 may be set to conform with industry standards for freight/transportation boxes. For example, third line 32 may at half the height of the sidewalls 24 so that container 20 holds half the volume. Line 30 may be at 2/3rds the height; and line 26 may be at  $\frac{1}{4}$  of the height.

15 When a perforated line is sheared, cuts may be made down each of the corners 28 to a preferred line of perforation such as, for example the third perforated line 32, the sidewall 24 is then sheared along the perforated line 32 on each sidewall 24. The height of the container 20 is then lowered to that of the third perforated line 32. Alternatively, each sidewall 24 may be folded about the perpendicular line into the  
20 storage area defined by the sidewalls 24 to strengthen each sidewall 24.

Figure 4 shows different instances of identical containers 20 with sidewalls 24 of different heights after folding or shearing along the various perforated lines. The use of perforated lines along each sidewall 24 enables the use of a single standardised  
25 container that may be customised to meet the needs of different load and height requirements of objects to be stored and transported. There may no longer be a need for transport/courier companies to manufacture containers of different dimensions for objects of different load and height requirements.

30 The base 22 is open so that the sidewalls 24 may be placed on pallet 40 with the outer edge of sidewalls 24 (indicated by line 52 on Figure 3) being slightly inside the peripheral edge of top 42 of pallet 40. In this way a small gap 54 is created. The top 42 of pallet 40 is planar, and solid. It is of a length and width slightly greater than

the corresponding dimensions of sidewalls 24 to form the gap 54. Therefore, when sidewalls 24 are placed on pallet 40, the top 42 of the pallet 40 is the base of the sidewalls 24. The combination of sidewalls 24 and pallet thus form an open-top box able to be closed by the cover.

5

Top 42 is of the same shape as base 22. The pallet 40 has rails 48 with gaps 50 to allow the container 20 to be lifted by forklifts without being placed on a separate pallet. The pallet 40 may also be formed from cardboard and preferably is weather resistant.

10

In this way sidewalls 24 may be placed on top 42 of pallet 40, and product to be transported placed inside the sidewalls 24. The height of sidewalls 24 may then be varied using one of the perforated lines 26, 30, 32 (or none of them) and cover 38 placed over sidewalls 24. Straps or the like (not shown) may then be used to secure the assembly. Alternatively, the products to be transported may be placed on pallet 40, and sidewalls 24 placed over them. By having the product to be transported directly on top 42 of pallet 40, the risk of slippage during transport is reduced. Also, as sidewalls 24 have no base, there is no risk of container 20 being lifted and the heavy contents falling through its base and being damaged. By being having a pallet, there is a clear indication to workers that a forklift is to be used and manual handling is not to be performed. If sidewalls 24 had a base (thereby forming a box), there may be a tendency for workers to attempt manual lifting. This may be quite dangerous.

25 The container 20 may be able to carry varying loads depending on the height of sidewalls 24 and the load capacity of the pallet 40. The higher the sidewalls 24, the greater the possible load rating of the container 20.

30 Whilst there has been described in the foregoing description preferred embodiments of the present invention, it will be understood by those skilled in the technology concerned that many variations or modifications may be made to details of design or construction without departing from the present invention.

**List of Reference Numbers.**

|    |    |                          |
|----|----|--------------------------|
|    | 20 | container                |
| 5  | 22 | container open base      |
|    | 24 | container sidewalls      |
|    | 26 | first perforated line    |
|    | 27 | edge                     |
|    | 28 | corners of 24            |
| 10 | 30 | second perforated line   |
|    | 32 | third perforated line    |
|    | 34 | cover sides              |
|    | 36 | cover top                |
|    | 40 | pallet                   |
| 15 | 42 | pallet top               |
|    | 44 | top rim                  |
|    | 46 | open top                 |
|    | 48 | rails                    |
|    | 50 | openings                 |
| 20 | 52 | line of outer edge of 24 |
|    | 54 | gap                      |
|    | 56 | periphery of 42          |

**CLAIMS**

1. A container including:
  - 5 (a) at least three sidewalls with corners therebetween, the sidewalls defining an internal space for storage of at least one item;
  - (b) the sidewalls being foldable about the corners for ease of storage;
  - (c) the sidewalls having an open base and an open top;
  - 10 (d) a cover for the open top and the internal space; and
  - (e) a pallet onto which the sidewalls can be placed;
  - (f) the sidewalls of the container having at least one perforated line to enable the height of the sidewalls to be varied.
- 15 2. A container as claimed in claim 1, wherein the sidewalls are made of a material selected from the group consisting of: cardboard, treated cardboard and a plastics material.
3. A container as claimed in claim 2, wherein the material is weather-resistant.  
20
4. A container as claimed in any one of claims 1 to 3, wherein the at least one perforated line is parallel to an edge of the base for folding.
5. A container as claimed in any one of claims 1 to 4, wherein the sidewalls are  
25 foldable along the at least one perforated line to vary a height of the sidewalls.
6. A container as claimed in any one of claims 1 to 4, wherein the sidewalls are  
30 shearable along the at least one perforated line to vary the height of the sidewalls.

7. A container as claimed in any one of claims 1 to 6, wherein the pallet has a top, the top being planar and solid, and being of a length and width slightly greater than the corresponding dimensions of the sidewalls.
- 5 8. A container as claimed in claim 7, wherein a gap is formed between an outer edge of the at least three sidewalls and a peripheral edge of the top of the pallet.
9. A container as claimed in any one of claims 1 to 8, wherein the open base is  
10 for enabling the at least one item to be placed directly on the pallet.
10. A container as claimed in any one of claims 1 to 9, wherein the cover is shaped to conform with the internal space defined by the sidewalls and comprises a cover top, and cover sides, the cover being adapted to readily  
15 removable over the open top and locatable on an outer surface of the at least three sidewalls in the manner of a snug fit.
11. A container as claimed in any one of claims 1 to 10, wherein the pallet is formed of a material selected from the group consisting of: cardboard,  
20 plastics and treated cardboard.
12. A container as claimed in claim 11, wherein the material is weather resistant.
- 25 13. A container as claimed in any one of claims 1 to 12, wherein the sidewalls and the pallet combine to form an open-top box.
14. A container as claimed in claim 13, wherein the open-top box is able to be closed by the cover.  
30
15. A container as claimed in claim 7 or claim 8, wherein the top of the pallet forms a solid base for the sidewalls.

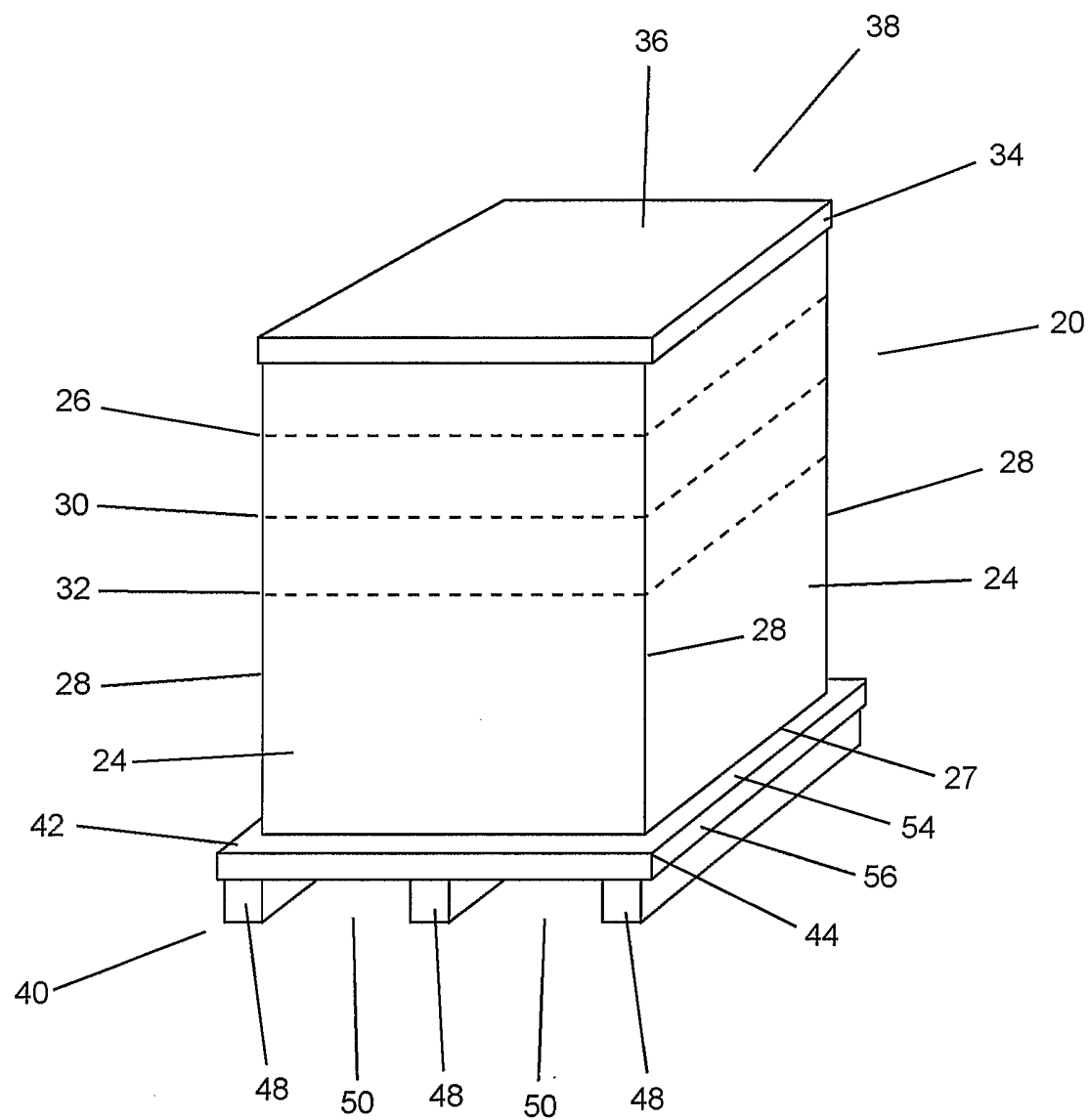


Figure 1

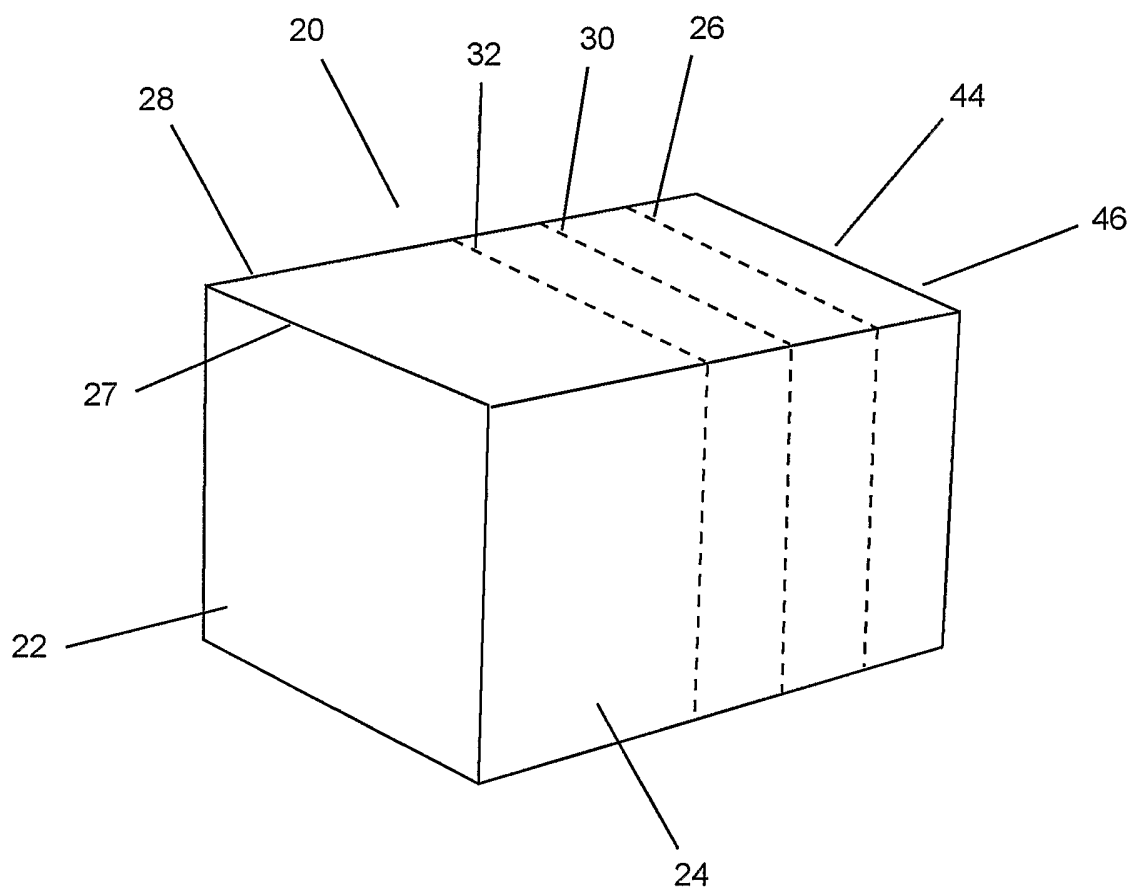


Figure 2

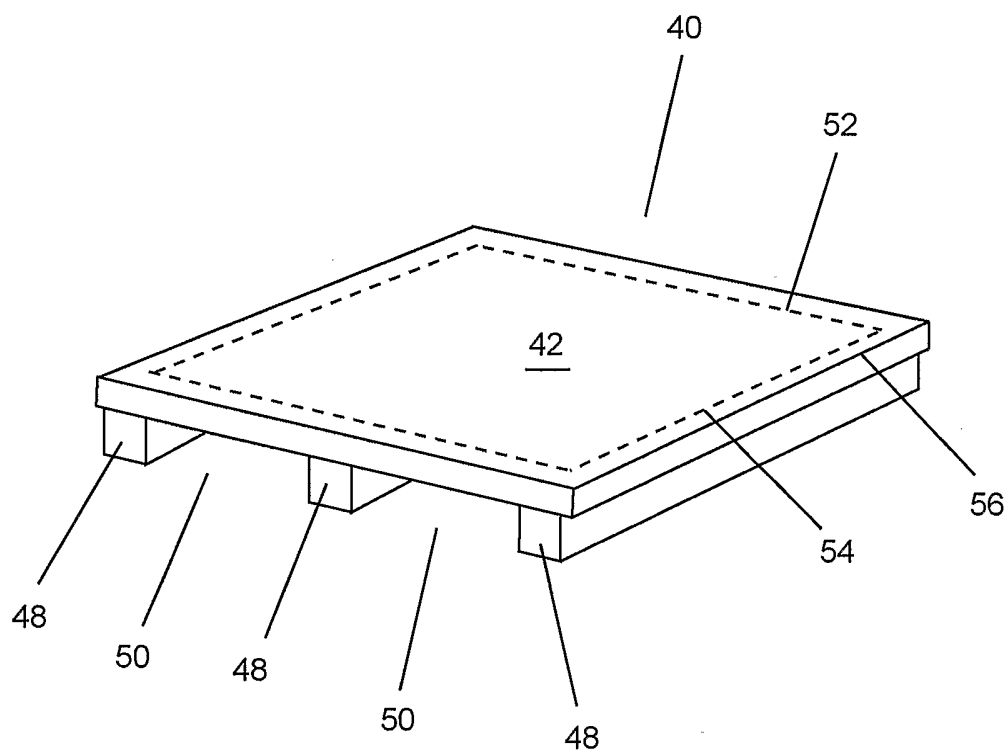
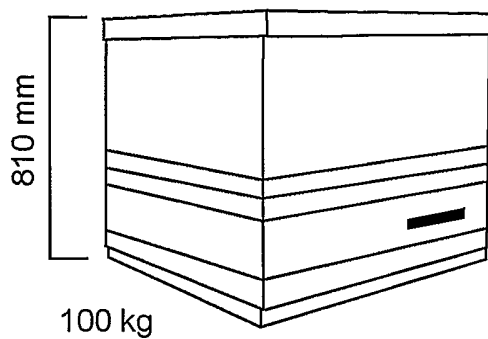
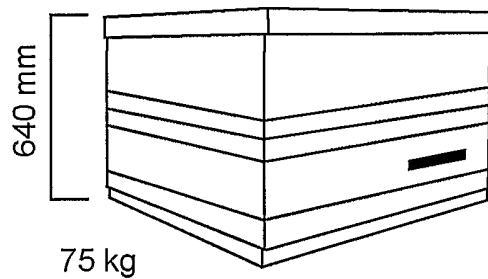


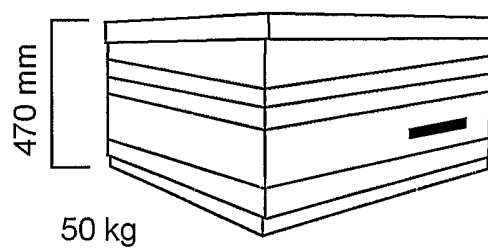
Figure 3



(a)



(b)



(c)

Figure 4

# INTERNATIONAL SEARCH REPORT

International Application No  
PCT/EP2004/003799

**A. CLASSIFICATION OF SUBJECT MATTER**  
IPC 7 B65D47/26 B65D77/28

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)  
IPC 7 B65D

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 practical, search terms used)

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## C. DOCUMENTS CONSIDERED TO BE RELEVANT

| Category ° | Citation of document, with indication, where appropriate, of the relevant passages   | Relevant to claim No. |
|------------|--|-----------------------|
| X          | FR 2 087 000 A (GENERALE SUCRIERE SA)<br>31 December 1971 (1971-12-31)<br>page 1, line 37 - page 3, line 19; figures 1-10  | 1-15                  |
| A          | GB M10584A (HARGROVES WALTER GEORGE)<br>13 February 1913 (1913-02-13)<br>page 1, line 19 - line 25; figure 1   | 1-15                  |
| A          | ANONYMOUS: "Knock down returnable corrugated palletainer"<br>RESEARCH DISCLOSURE, KENNETH MASON PUBLICATIONS, HAMPSHIRE, GB,<br>vol. 321, no. 26, January 1991 (1991-01),<br>XP007115913<br>ISSN: 0374-4353<br>figures 1-4 | 1-15                  |
|            | -----<br>-/-   |                       |

☒ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

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# INTERNATIONAL SEARCH REPORT

International Application No  
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## C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

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|------------|---|-----------------------|
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# INTERNATIONAL SEARCH REPORT

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PCT/EP2004/003799

| Patent document<br>cited in search report |   | Publication<br>date | Patent family<br>member(s) | Publication<br>date |
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