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(11) **EP 1 484 253 A1**

(12) **EUROPEAN PATENT APPLICATION**

(43) Date of publication:
08.12.2004 Bulletin 2004/50

(51) Int Cl.7: **B65D 19/44**

(21) Application number: **04252949.5**

(22) Date of filing: **20.05.2004**

(84) Designated Contracting States:
**AT BE BG CH CY CZ DE DK EE ES FI FR GB GR
HU IE IT LI LU MC NL PL PT RO SE SI SK TR**
Designated Extension States:
AL HR LT LV MK

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(30) Priority: **23.05.2003 GB 0311887**

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(54) **Storage assembly**

(57) A storage assembly 10 comprising a container 12 and a support arrangement 28 removably locatable therein. The support arrangement 28 includes a frame 30 which removably supports a textile divider arrangement 32 providing a plurality of open ended compartments.

A plurality of sleeves 46 are provided on the outside of the divider arrangement 32 which sleeves 46 removably receive bars 36 which are removably locatable on the frame 30 to hang the divider arrangement 32 thereon.

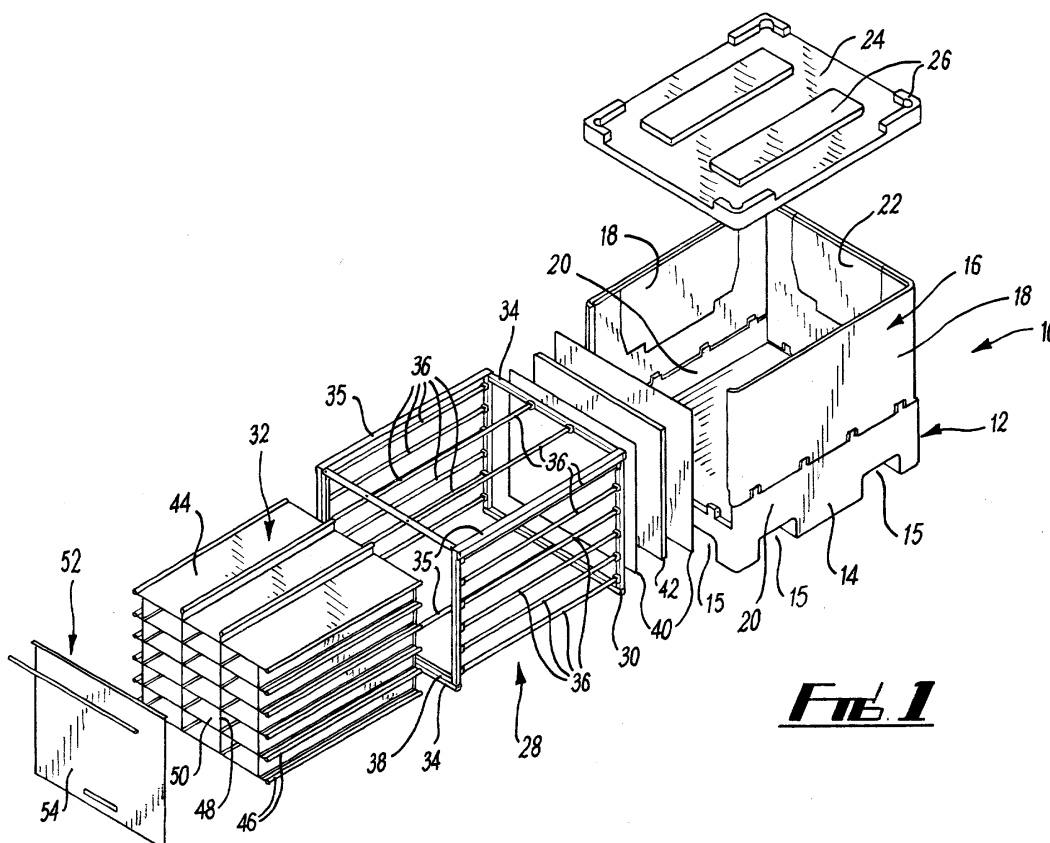


Fig. 1

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Description

[0001] This invention concerns improvements in or relating to storage assemblies.

[0002] It is often required to transport and accessibly store a plurality of articles or components, for instance for use in motor manufacturing. A number of systems available for this do not provide a particularly flexible approach, and they may also occupy a significant space even when empty.

[0003] According to the present invention there is provided a storage assembly, the assembly comprising a container and a support arrangement removably locatable in the container, the support arrangement including a frame, and a divider arrangement supported by the frame, the divider arrangement providing a number of compartments for storage of articles.

[0004] The divider arrangement may be removably supported by the frame.

[0005] The frame preferably comprises spaced end frames with bars therebetween. Normally at least some of the bars are permanently fixed to form a base frame. Typically, removable bars augment the base frame to selectively support the divider arrangement to provide the compartments. Generally, the divider arrangement is supported between the bars. Advantageously, the divider arrangement is presented under tension between the bars.

[0006] The compartments are preferably accessible when the support arrangement is located in the container.

[0007] The container may be a transportable container and may include a base and side walls upstanding therefrom. The side walls may comprise a pair of opposite first side walls and a second side wall interconnecting the first side walls at one end thereof. The compartments may be accessible from a side opposite to the second side wall. The base may include spaced passages suitable for lifting and transportation by a fork lift truck.

[0008] The container may be collapsible, and the side walls may be selectively movable between an upstanding erect condition and a collapsed condition lying on each other or on the base.

[0009] A lid may be provided for the container which may be selectively removable. The container may be stackable with other similar containers.

[0010] An openable closure member may be provided for closing off access to the compartments. The closure member may be in the form of a blind or curtain.

[0011] The divider arrangement may be made of textile or other suitable sheet material. The divider arrangement may hang from the frame. A plurality of sleeves may be provided on the divider arrangement which locate respective bars on the frame, and desirably removable bars, to hang the arrangement on the frame.

[0012] The divider arrangement may be arranged to define a plurality of open ended compartments which

extend substantially horizontally in normal use. The compartments may be formed by horizontal and vertical webs. The position of the horizontal and/or vertical webs may correspond with the position of the sleeves. The divider arrangement may be arranged so that the horizontal webs are in tension.

[0013] The assembly may be configured such that the open ended compartments extend from the second side wall. Means may be provided for closing the ends of the open ended compartments adjacent the second side wall.

[0014] Securing means may be provided for retaining the frame in the container. The securing means may include fastening means engageable between the frame and container, and may include screws which extend through holes in the frame.

[0015] Further according to the present invention, there is provided a support arrangement for removable location in a storage container, the support arrangement being according to any of the preceding twelve paragraphs.

[0016] An embodiment of the present invention will now be described by way of example only and with reference to the accompanying drawings, in which:-

Fig. 1 is a diagrammatic exploded view of a storage assembly according to the invention;

Fig. 2 is a diagrammatic perspective assembled view of the assembly of Fig. 1, but with some of the components omitted; and

Fig. 3 is a diagrammatic perspective view of a frame of the assembly.

[0017] The drawings show a storage assembly 10 including a transport container 12. The container 12 comprises a base 14 and three side walls 16. The side walls 16 comprise an opposite pair of first side walls 18 pivotally mounted to an upstanding stub wall 20 on the base 14. The side walls 16 also include a second side wall 22 which extends at one end of the base 14 between the first walls 18. The second side wall 22 is pivotally mounted to the base 14. The container 12 can be collapsed by folding the second side wall 22 onto the base 14 and folding the first side walls 18 there onto. The base 14 includes spaced passages 15 to allow the container 12 to be lifted and transported, for instance, by a fork lift truck.

[0018] A lid 24 is also provided for the container 12. The lid 24 is mountable on the top ends of the side walls 16 when erected, but can also be mounted on the folded side walls in a collapsed condition. Projections 26 are provided on the lid 24 which permit stacking of similar such containers.

[0019] The assembly 10 also comprises a support arrangement 28 in the form of a base frame 30 and a divider arrangement 32 mounted thereon. Fig. 3 shows

the base frame 30. The base frame 30 comprises two rectangular end frames 34 which are interconnected by a plurality of fixed bars 35. A fixed bar 35 extends between each of the respective top corners of the end frames 24 and the respective mid points of the lower parts of the end frames 34. The fixed bars 35 may be secured by screws or lock mechanisms to allow disassembly if required but generally the fixed bars 35 define a stable base frame 30 to allow convenient receipt of the divider arrangement 32 as described below.

[0020] One of the end frames 34 is provided with mountings 37 which project inwardly, each mounting 37 including an aperture in which the end of a removable bar 36 is receivable. The other end frame 34 is provided with corresponding inwardly projecting U-shaped mountings 39 in which the other ends of the respective removable bars 36 are receivable. The removable bars 36 augment an already relatively rigid base frame 30 formed by the end frames 34 and fixed bars 35. The base frame 30 can be mounted in the container 12 by screws passing through mounting holes 38. In some instances it may be sufficient for the base frame 30 to simply be located in the container 12.

[0021] The end frame 34 adjacent the second wall 20 is closed by a sandwich structure of two sheets of plastics material 40 and an inner foam layer 42. The sandwich structure may be mounted to the rigid frame 30 for instance by riveting.

[0022] The divider arrangement 32 is normally made of textile material but other flexible sheet materials such as plastics may be used. The arrangement 32 comprises a rectangular cross-section enclosure 44 with elongate sleeves 46 on the outside thereof corresponding to the location of the removable bars 36. The divider arrangement 32 is mounted on the frame 30 by location of the removable bars 36 in the respective sleeves 46. The removable bars 36 are inserted through the sleeves 46, and an end of each bar 36 is inserted into the apertures of the mountings 37. The other ends of the removable bars 36 are then positioned within the U-shaped mountings 39 on the other end frame 34. The enclosure 44 is internally divided into fifteen horizontally extending compartments by two vertical webs 48, and four equispaced horizontal webs 50. The position of the webs 48, 50 corresponds with the position of the sleeves 48, and in each instance a single piece of material can provide the respective web 48, 50 and sleeve 46.

[0023] The divider arrangement is arranged so that when supported on the removable bars 36, the horizontal webs 50 are in tension. The arrangement of the mountings 37 and the U-shaped mountings 39 facilitates assembly, since once the removable bar 36 at one end of the web 50 has been located in the mountings 37, 39, the removable bar 36 at the other end of the web 50 has to be located by pulling against the tension of the web 50. One end of the removable bar 36 at the other end of the web 50 is first located in the aperture of the mounting 37, and the other end of the said bar 36 pulled

over against the web tension and positioned in the U-shaped mounting 39.

[0024] A selectively openable closure 52 is provided for the end of the enclosure 44 away from the second wall 22. The closure 52 is in the form of a curtain 54 mounted to the top of the respective end frame 34, so as to close the compartments defined in the enclosure 44.

[0025] In use, the divider arrangement 32 can be loaded with items such as components of a motor vehicle. The arrangement 32 could be loaded in the container 12 or prior to location therein. The assembly 10 can be transported as required with the lid 24 on the container 12 and the curtain 54 closed. When it is required to access the components the curtain 54 can be opened and the components removed. Once all the components have been removed the assembly 10 could be sent back in its existing state, or the frame 30 could be removed from the container 12, and the container 12 collapsed as outlined above. The divider arrangement 32 and removable bars 36 can be removed from the frame 30 for storage or replacement. On removal from the container, the frame 30 can be reused with another, similar container. On removal, the divider arrangement 32 can be collapsed for ease of storage. Similarly, the frame 30 can be disassembled for ease of storage.

[0026] Various modifications may be made without departing from the scope of the invention. For example the divider arrangement could provide a different number of compartments. The divider arrangement could take a different form, and/or could be mounted to the frame in a different manner. The container may take a different form and it could for instance be that a further second wall is provided for transportation, which can then be removed to permit items to be accessed. It could be that a lid is not required. The container may be provided with bracing means to strengthen the container in the erect condition. The bracing means may be removable. The container may not be collapsible.

[0027] Whilst endeavouring in the foregoing specification to draw attention to those features of the invention believed to be of particular importance it should be understood that the Applicant claims protection in respect of any patentable feature or combination of features hereinbefore referred to and/or shown in the drawings whether or not particular emphasis has been placed thereon.

Claims

1. A storage assembly, the assembly comprising a container and a support arrangement removably locatable in the container, the support arrangement including a frame, and a divider arrangement supported by the frame, the divider arrangement providing a number of compartments for storage of articles.

2. An assembly according to claim 1, **characterised in that** the divider arrangement is removably supported by the frame.
3. An assembly according to claims 1 or 2, **characterised in that** the frame comprises spaced end frames with bars therebetween, and at least some of the bars are permanently fixed to form a base frame.
4. An assembly according to claim 3, **characterised in that**, removable bars augment the base frame to selectively support the divider arrangement to provide the compartments.
5. An assembly according to claims 3 or 4, **characterised in that** the divider arrangement is supported between the bars, and the divider arrangement may be presented under tension between the bars.
6. An assembly according to any of the preceding claims **characterised in that**, the compartments are accessible when the support arrangement is located in the container.
7. An assembly according to any of the preceding claims **characterised in that**, the container is a transportable container and includes a base and side walls upstanding therefrom, and the base may include spaced passages suitable for lifting and transportation by a fork lift truck.
8. An assembly according to claim 7, **characterised in that** the side walls comprise a pair of opposite first side walls and a second side wall interconnecting the first side walls at one end thereof, and the compartments may be accessible from a side opposite to the second side wall.
9. An assembly according to any of the preceding claims, **characterised in that** the container is collapsible, and the side walls of the container may be selectively movable between an upstanding erect condition and a collapsed condition lying on each other or on the base.
10. An assembly according to any of the preceding claims, **characterised in that** a lid is provided for the container which is selectively removable.
11. An assembly according to any of the preceding claims, **characterised in that** the container is stackable with other similar containers.
12. An assembly according to any of the preceding claims, **characterised in that** an openable closure member is provided for closing off access to the compartments, and the closure member may be in the form of a blind or curtain.
13. An assembly according to any of the preceding claims, **characterised in that** the divider arrangement is made of textile or other suitable sheet material.
14. An assembly according to any of the preceding claims, **characterised in that** the divider arrangement hangs from the frame.
15. An assembly according to claim 14, **characterised in that** a plurality of sleeves are provided on the divider arrangement which locate respective bars, and preferably removable bars, on the frame to hang the arrangement on the frame.
16. An assembly according to any of the preceding claims, **characterised in that** the divider arrangement is arranged to define a plurality of open ended compartments which extend substantially horizontally in normal use, and the compartments are preferably formed by horizontal and vertical webs, and the position of the horizontal and/or vertical webs preferably correspond with the position of the sleeves.
17. An assembly according to claim 16, **characterised in that** the divider arrangement is arranged so that the horizontal webs are in tension.
18. An assembly according to claims 16 or 17 when dependent on claim 8, **characterised in that** the assembly is configured such that the open ended compartments extend from the second side wall.
19. An assembly according to claim 18, **characterised in that** means are provided for closing the ends of the open ended compartments adjacent the second side wall.
20. An assembly according to any of the preceding claims, **characterised in that** securing means are provided for retaining the frame in the container, and the securing means may comprise screws which extend through holes in the frame to engage between the frame and container.
21. A support arrangement for removable location in a storage container, **characterised in that** the arrangement is according to any of the preceding claims.

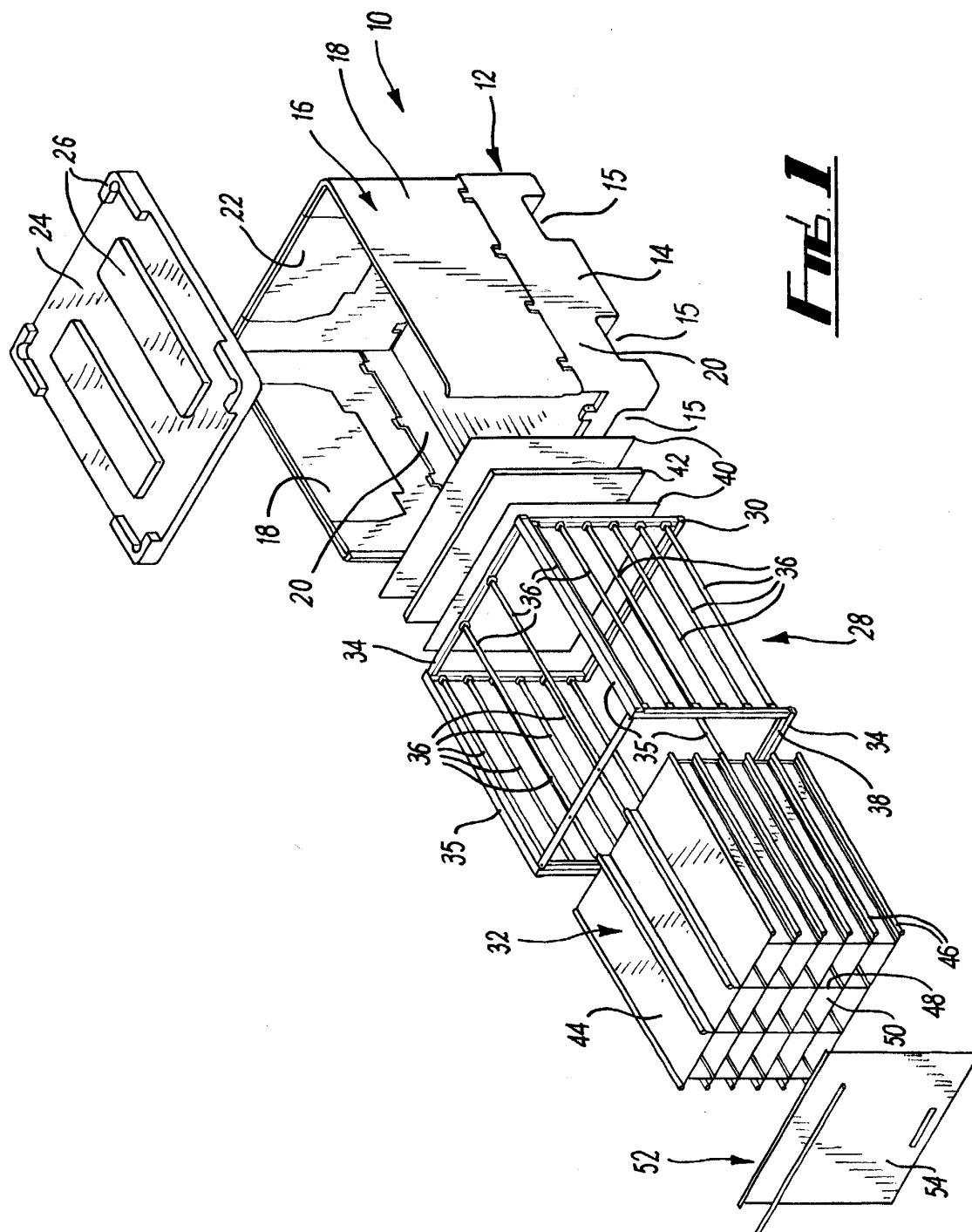


Fig. 1

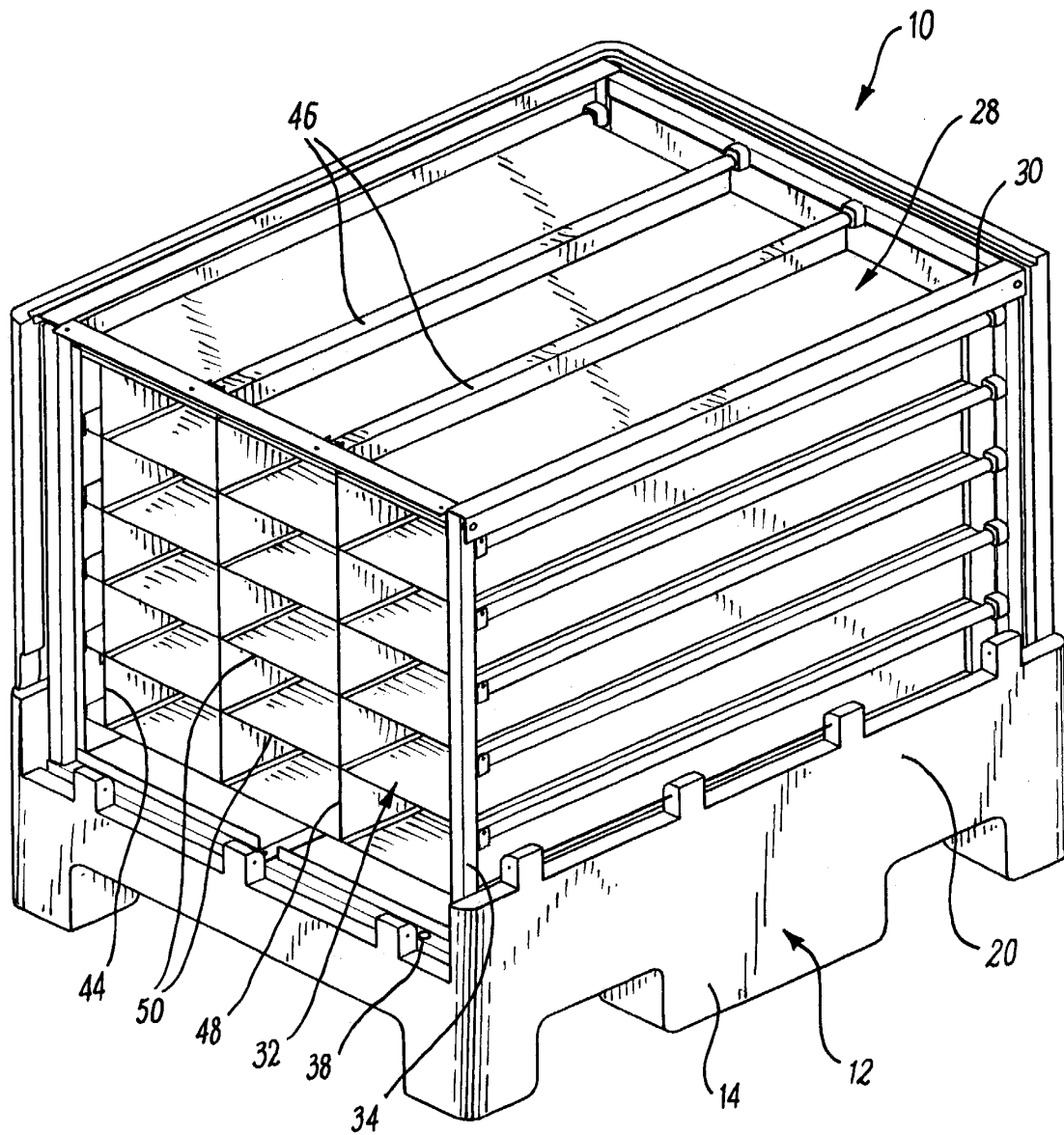


FIG. 2

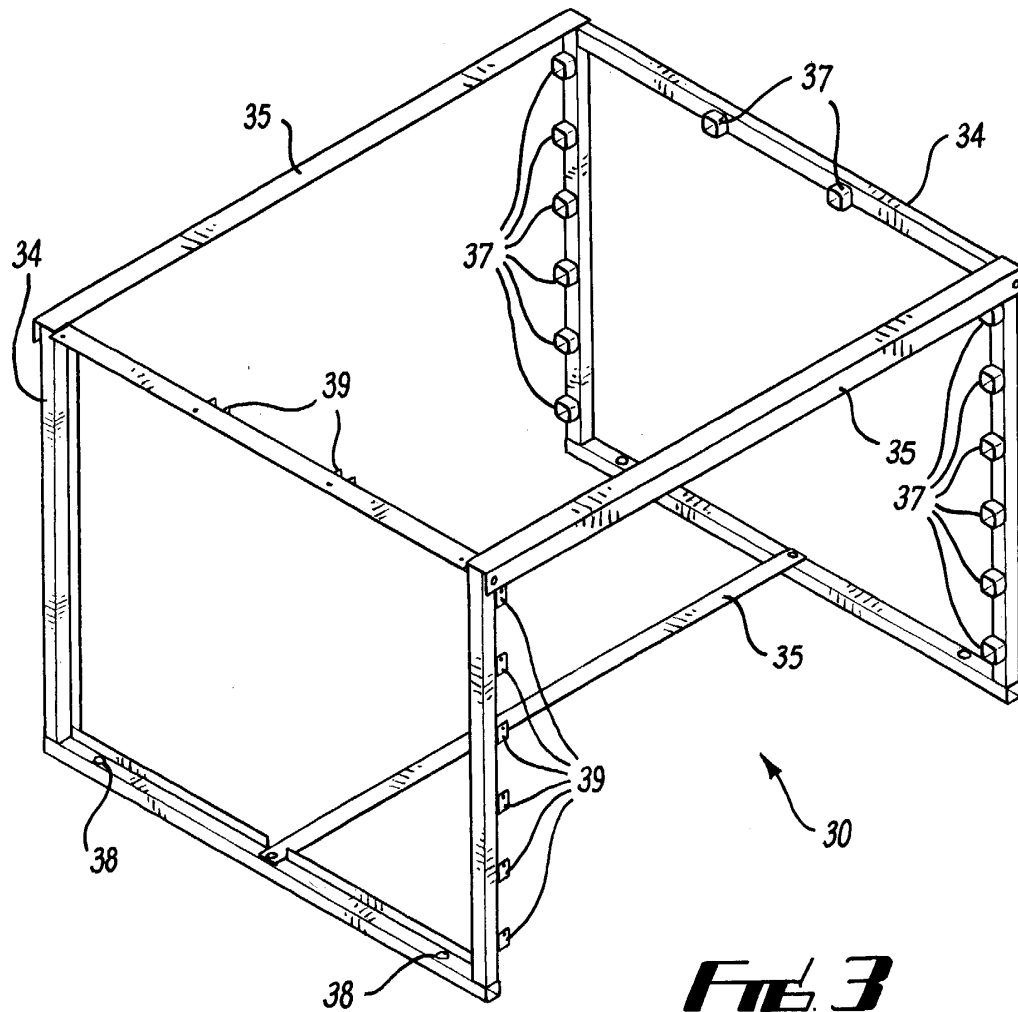


FIG. 3



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EUROPEAN SEARCH REPORT

Application Number
EP 04 25 2949

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Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.7)
A	US 5 725 118 A (SLAGER) 10 March 1998 (1998-03-10) * column 4, line 32 - column 7, line 10; figures 1-3 *	1,21	B65D19/44
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Place of search The Hague		Date of completion of the search 17 August 2004	Examiner Martens, L
CATEGORY OF CITED DOCUMENTS 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		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	

EPO FORM 1503 03 82 (P04001)

**ANNEX TO THE EUROPEAN SEARCH REPORT
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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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