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(54) **Collapsible container**

Zusammenlegbarer Behälter

Conteneur pliable

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(56) References cited:

EP-A- 0 443 327	WO-A-95/05319
CH-A- 316 588	DE-A- 19 512 823
DE-C- 824 179	FR-A- 2 327 150
FR-A- 2 527 167	FR-A- 2 545 061
US-A- 4 735 331	US-A- 5 642 830

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Description

[0001] This invention relates to a collapsible or folding container such as a suitcase, a packing case, a shipping crate or a freight container according to the preamble of appended claim 1.

[0002] Containers are required for a variety of purposes and, in many circumstances, such as moving possessions between houses or flats, it is necessary for the container to be sufficiently sturdy to protect the container contents from damage when it is moved or accidentally knocked. However, such a container is unlikely to be in constant use, and as a result it would be advantageous if it could be stored in a flat condition when it is not required.

[0003] French patent 2 327 150 (SZABO) describes a collapsible container for use on the roof of a car. The container has side panels pivotally mounted to a base panel and movable between a collapsed condition in which the side panels overlie the base panel, and an assembled condition in which the panels define a storage space, wherein the container is retained in the assembled condition by side support means.

[0004] The present container is a different product for the following reasons: though it uses more space when collapsed, it is not restricted to the height half the length or width of the base panel, whichever is shorter. The horizontal pivot axes of each pair of opposing side panels are on different horizontal plane, so the opposing side panel can be collapsed also if their height is greater than half that of the distance between them.

[0005] EP 04 433227 GRAF (1991) shows a similar container with inwardly folding panels. This container requires that panels must be assembled two at a time before being secured one to the other in their vertical position. The present product is different in respect also of this invention as panels can be erected one by one in their vertical position.

[0006] Henceforth the present invention is a different product and represent an improvement from what is shown in the previous art.

[0007] The present invention therefore provides a collapsible container according to the characterising part of appended claim 1. The container comprises side panels associated with a base panel and movable between a collapsed condition in which the major faces of the panels are substantially parallel with a common plane and an assembled condition in which the major faces of the side panels, together with a cover panel" define a closed storage space, wherein the container is releasably retained in the erected condition by side support means engaging adjacent side panels.

[0008] A cover panel is associated with one of the side panels and is adapted to lie parallel to the base panel in the collapsed condition, and to overlie the side panels in the assembled position.

[0009] The side support means comprise upright members demountably secured to the base panel. The

upright members are preferably received and retained in receptacle means secured and or adjacent to the corners of the base panel.

[0010] Upright edge portions of the base panel, which may be formed separately from the base panel and secured thereto, extend vertically upwards from the base panel along three of its lateral edges. Three of the side panels are hinged to the upper ends of the edge portions with the other side panel being hinged directly on the base panel.

[0011] The side panels may be so pivotally mounted to the upright edge portions of the base panel along horizontal pivot axes. Each of the pivot axes are located at a different horizontal plane to allow the major faces of the panels to lie parallel to the common plane when the container is in the collapsed condition.

[0012] In one construction the base panel, the upright edge portions, the side panels and the cover panel can be formed as one piece.

[0013] Detent means may be provided on the external faces of the side panels to receive fastening means for restraining movement of the side panels away from a vertical position. The detent means are preferably disposed near adjacent edges of the side panels.

[0014] A full understanding of the various aspects of the invention will be gained from the following detailed description of a preferred embodiment given by way of example only, with reference to the accompanying drawings, in which:

Figure 1 is a perspective view of the preferred embodiment in an assembled condition;

Figure 2 is an end view of the container shown in Figure 1;

Figure 3 is a plan view of a base panel of the container of Figures 1 and 2;

Figures 4 and 5 are plan and side views of an embodiment of a component of the container shown in Figures 1 and 2; and

Figures 6, 7 and 8 show illustrative sketches of the container during various stages of assembly or disassembly.

[0015] The assembled container illustrated in Figure 1, generally designated 1, has metallic or plastic horizontal base and cover panels or sheets 10, 12 and four metallic side panels or sheets 11 defining a generally cubical container. The depth of the panels 10, 11, 12 is exaggerated in the drawing for ease of illustration.

[0016] Cylindrical tubules 14 are mounted in square corner recesses of the generally rectangular base panel 10 by mechanical fasteners such as screws or nails. Open upper ends of the tubules 14 are shaped and dimensioned to receive elongate tubes or stanchions 16 in close fitting engagement.

[0017] Upright edge portions 22 extend vertically upwards from the base panel 10 along three of its lateral edges.

[0018] Pairs of abutments or tabs 18 project laterally from tubes 16. Each abutment 18 is orientated at right angles to its paired abutment. More than one pair of abutments 18 may be provided on each tube 16 provided the abutment pairs are mutually aligned. Preferably three pairs of abutments are provided on each tube. Catches or detents 20 are disposed on the external faces of the side panels 11 adjacent their lateral edges.

[0019] Castors or wheels 26 can be disposed in the region of the corner recesses of the base panel to facilitate movement of the container in its collapsed or assembled condition

[0020] With reference to Figures 6 to 8, the container is initially in its collapsed condition with the panels overlying one another. The tubes 16 are inserted into the tubules 14 adjacent the corners of the generally rectangular base panel 10. The tubes are received in close fitting engagement.

The tubes project vertically upwards from the base panel. One by one each side panel 11 is unfolded into a vertical position and secured to the cylindrical tubes 16. Movement of the side panels past the vertical is prevented by contact of the outer faces of the panels with the abutments 18 and or other detent means. The rectangular cover panel 12 is pivoted to rest upon side panel edges. A further lock or catch may be provided to secure the cover panel in position. The container is collapsed or folded by reversing the steps described above.

[0021] Of course, the skilled man will appreciate that many modifications to the described embodiment, that fall within the scope of the invention as set forth in the appended claims, are possible. Although the panels are preferably formed from metal, they could be formed of plastics or any other suitable material. Also, the tubules 14 could project above the horizontal level of the base edge portions and the recesses in which the tubules are housed could be shaped to match the profile of the abutting tubule to give the base a continuous external profile.

[0022] Alternatively, cylindrical tubes could be provided without abutments, and the panel hinges or other mechanisms could be configured to prevent movement of the panels past a vertical position.

Claims

1. A collapsible container (1) comprising side panels (11) pivotally mounted to a base panel (10) along horizontal pivot axes and movable between a collapsed or folded condition in which the side panels (11) overlie the base panel (10), and an assembled condition in which the side panels (11) define, together with a cover panel (12), a closed storage space, each of the horizontal pivot axes being on a different horizontal plane so that each of the side panels (11) lies parallel to the base panel (10) in the collapsed condition,
characterised by elongate tubes (16) demountably

secured to the base panel (10) to which each side panel (11) can be secured in the vertical position during assembling.

2. A collapsible container (1) as claimed in claim 1, in which a cover panel (12) is associated with one of the side panels (11) and is adapted to lie parallel to the base panel (10) in the collapsed condition, and to overlie the side panels (11) in the assembled position.
3. A collapsible container (1) as claimed in claim 2, wherein the elongate tubes (16) are demountably secured in cylindrical tubules (14) secured at or adjacent to the corner of the base panel (10).
4. A collapsible container (1) as claimed in claim 5, in which three side panels are pivotally connected to an upright edge portion (22), and the remaining side panel (11) is connected to the lateral edge of the base panel (10).
5. A collapsible container (1) as in claim 4, wherein the side panels (11) are connected to the upright edge portions and the edge of the base panel (10) by hinge means.
6. A collapsible container (1) as claimed in claim 5, in which the cover panel (12) is connected to one of the side panels (11) by hinge means.
7. A collapsible container (1) as claimed in claim 5 or 6, in which the base panel (10), the upright edge portions (22), the side panels (11) and the cover panel (12) are formed as one piece.
8. A collapsible container (1) as claimed in claim 7, in which detent means (20) are provided on the external faces of the side panels (11) to receive fastening means (24) allowing each panel to be unfolded and firmed in an erected position to the elongate tubes (16).
9. A collapsible container (1) as claimed in any of the preceding claims, in which the side panels (11) are formed from metal or plastics sheet material.

Patentansprüche

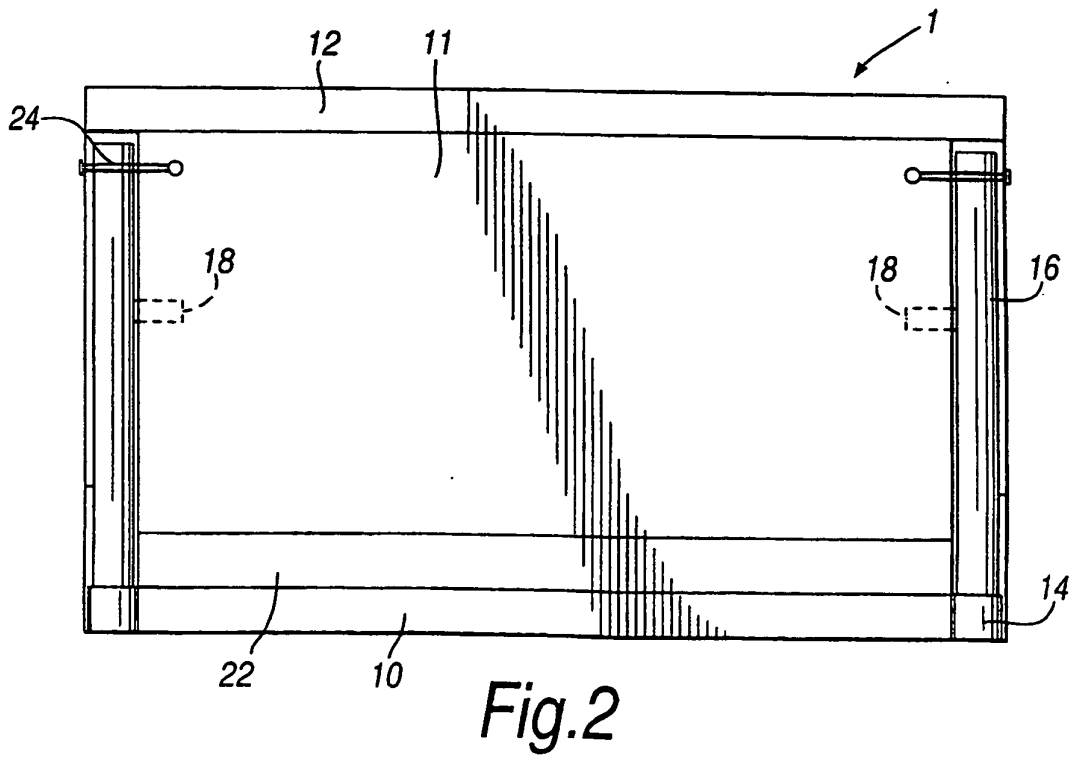
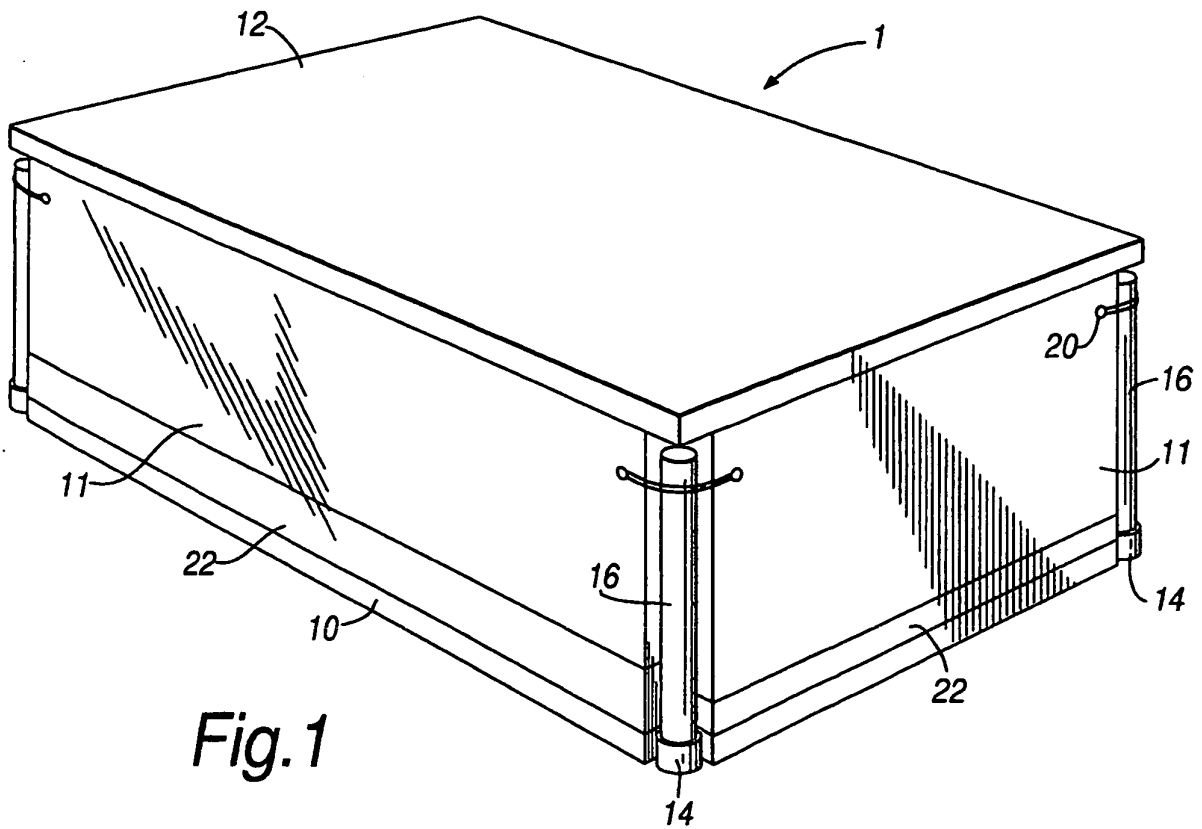
1. Ein zusammenklappbarer Container (1) mit Seitenwänden (11), die über Drehzapfen mit einer Grundplatte (10) entlang horizontalen Drehachsen verbunden sind und sich entweder in zusammengeklapptem oder gefaltetem Zustand befinden, bei dem die Seitenwände (11) über der Grundplatte (10) liegen, oder in aufgeklapptem Zustand, bei dem die Seitenwände (11) gemeinsam mit der Deckplatte (12) ei-

nen geschlossenen Lagerraum definieren; jede der horizontalen Drehachsen liegt auf einer anderen horizontalen Ebene, so dass jede Seitenwand (11) im zusammengeklappten Zustand parallel zur Grundplatte (10) liegen kann; diese verfügt über abnehmbare Längsrohre (16), die an der Grundplatte (10) befestigt sind und in denen die Seitenwände im aufgeklappten Zustand vertikal befestigt werden können.

2. Ein zusammenklappbarer Container (1) wie in Patentanspruch 1, bei dem eine Deckplatte (12) mit einer der Seitenwände (11) verbunden ist und im zusammengeklappten Zustand parallel zur Grundplatte (10) liegen kann und im aufgeklappten Zustand über den Seitenwänden (11) liegt.
3. Ein zusammenklappbarer Container (1) wie in Patentanspruch 2, bei dem abnehmbare Längsrohre in zylindrischen Rohrstützen (14) befestigt sind, die an oder neben der Ecke der Grundplatte (10) angebracht sind.
4. Ein zusammenklappbarer Container (1) wie in Patentanspruch 3, bei dem drei Seitenwände über einen Drehzapfen mit senkrechten Kantenteilen (12) verbunden sind, und die verbleibende Seitenwand ist mit der Seitenkante der Grundplatte (10) verbunden.
5. Ein Container wie in Patentanspruch 4, bei dem die Seitenwände (11) mit Hilfe von Scharnieren mit den senkrechten Kantenteilen (22) und der Kante der Grundplatte (10) verbunden sind.
6. Ein zusammenklappbarer Container (1) wie in Patentanspruch 5, bei dem die Deckplatte (12) mit Hilfe von Scharnieren mit einer der Seitenwände (11) verbunden ist.
7. Ein zusammenklappbarer Container (1) wie in Patentanspruch 6, bei dem die Grundplatte (10), die senkrechten Kantenteile (22), die Seitenwände und die Deckplatte aus einem einzigen Teil bestehen.
8. Ein zusammenklappbarer Container (1) wie in Patentanspruch 7, bei dem auf den Außenseiten der Seitenwände (11) Haltevorrichtungen (20) für Befestigungen (24) angebracht sind, so dass jede Wand aufgeklappt und senkrecht an den Längsrohren (16) befestigt werden kann.
9. Ein zusammenklappbarer Container (1) wie in den vorhergehenden Patentansprüchen, bei dem die Seitenwände (11) aus Metall oder Kunststoff gefertigt sind.

Revendications

1. Un conteneur pliable (1) comprenant des parois latérales (11) montées en pivot sur le plancher (10) le long d'axes de pivot horizontaux et pouvant passer d'une position rabattue ou pliée, dans laquelle les parois latérales (11) reposent sur le plancher (10), à une position dépliée dans laquelle les parois latérales (11) définissent, avec le couvercle (12), un espace de stockage fermé; les axes de pivot horizontaux sont sur des plans horizontaux différents de manière à ce que chacune des parois latérales (11) soit parallèle au plancher (10) en position repliée. Le plancher (10) est doté de poteaux démontables (16) sur lesquels chaque paroi latérale peut être installée en position verticale pendant le montage.
2. Un conteneur pliable (1) identique à celui de la Revendication 1 dans lequel le couvercle (12) est fixé à l'une des parois latérales (11) et conçu de manière à être parallèle au plancher (10) en position repliée et à reposer sur les parois latérales (11) en position dépliée.
3. Un conteneur pliable (1) identique à celui de la Revendication 2 dans lequel les poteaux démontables sont placés dans des tubulures cylindriques (14) situées dans les coins du plancher (10).
4. Un conteneur pliable (1) identique à celui de la Revendication 3 dans lequel trois des parois latérales sont fixées en pivot aux rebords (12) et la quatrième est fixée sur le côté du plancher (10).
5. Un conteneur pliable (1) identique à celui de la Revendication 4 dans lequel les parois latérales (11) sont reliées aux rebords (22) et sur le côté du plancher (10) par des charnières.
6. Un conteneur pliable (1) identique à celui de la Revendication 5 dans lequel le couvercle (12) est relié à l'une des parois latérales (11) par des charnières.
7. Un conteneur pliable (1) identique à celui de la Revendication 6 dans lequel le plancher (10), les rebords (22), les parois latérales et le couvercle sont en une seule pièce.
8. Un conteneur pliable (1) identique à celui de la Revendication 7 dans lequel les faces externes des parois latérales (11) sont dotées de dispositifs de butée (20) pour l'installation de fixations (24) permettant de déplier chaque panneau sur les poteaux (16).
9. Un conteneur pliable (1) identique à ceux des Revendications précédentes dans lequel les parois latérales (11) sont en tôle ou en plastique.



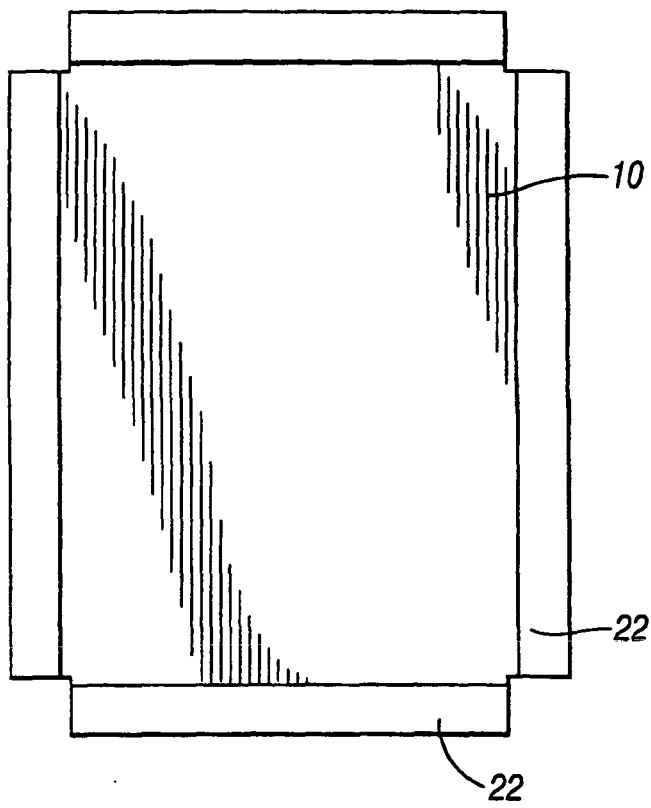


Fig. 3

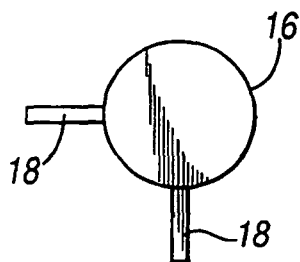


Fig. 4

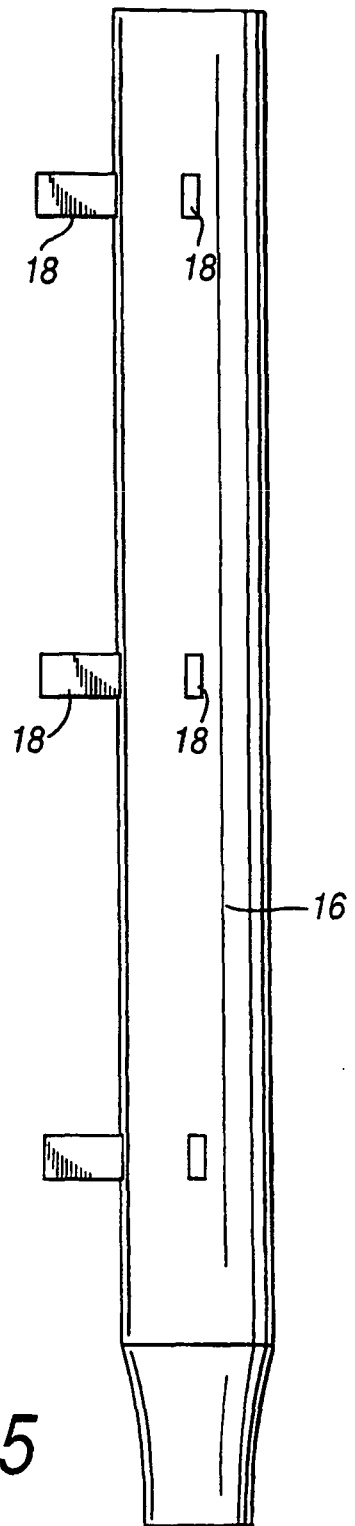
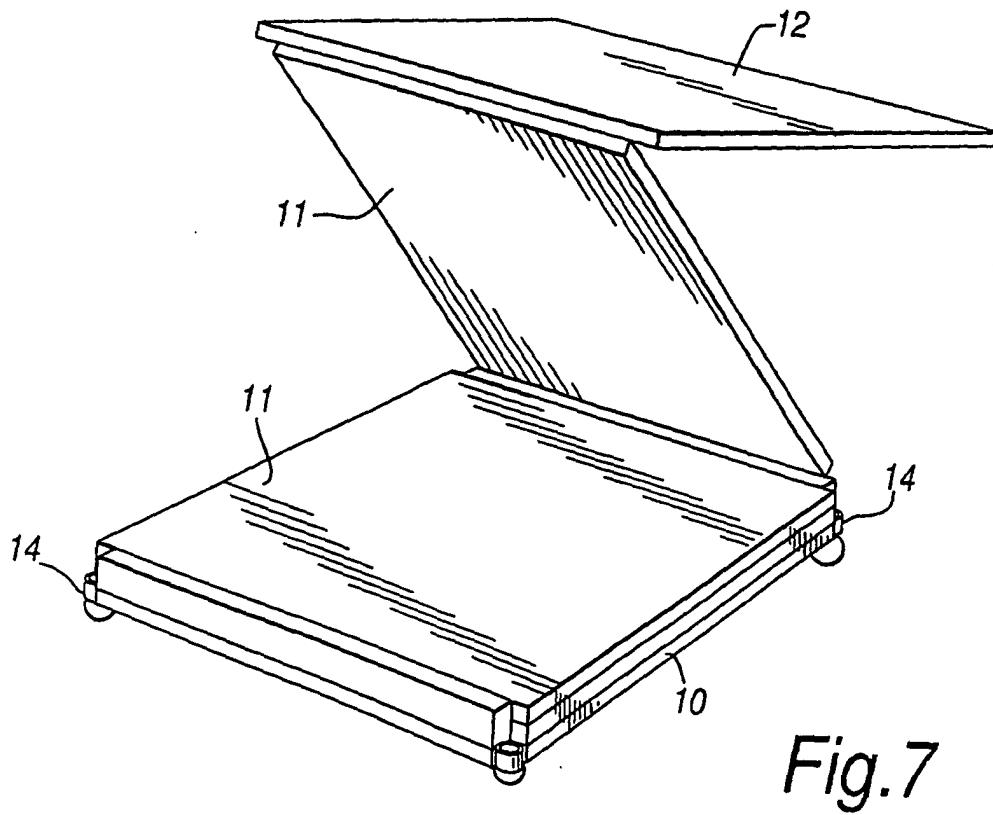
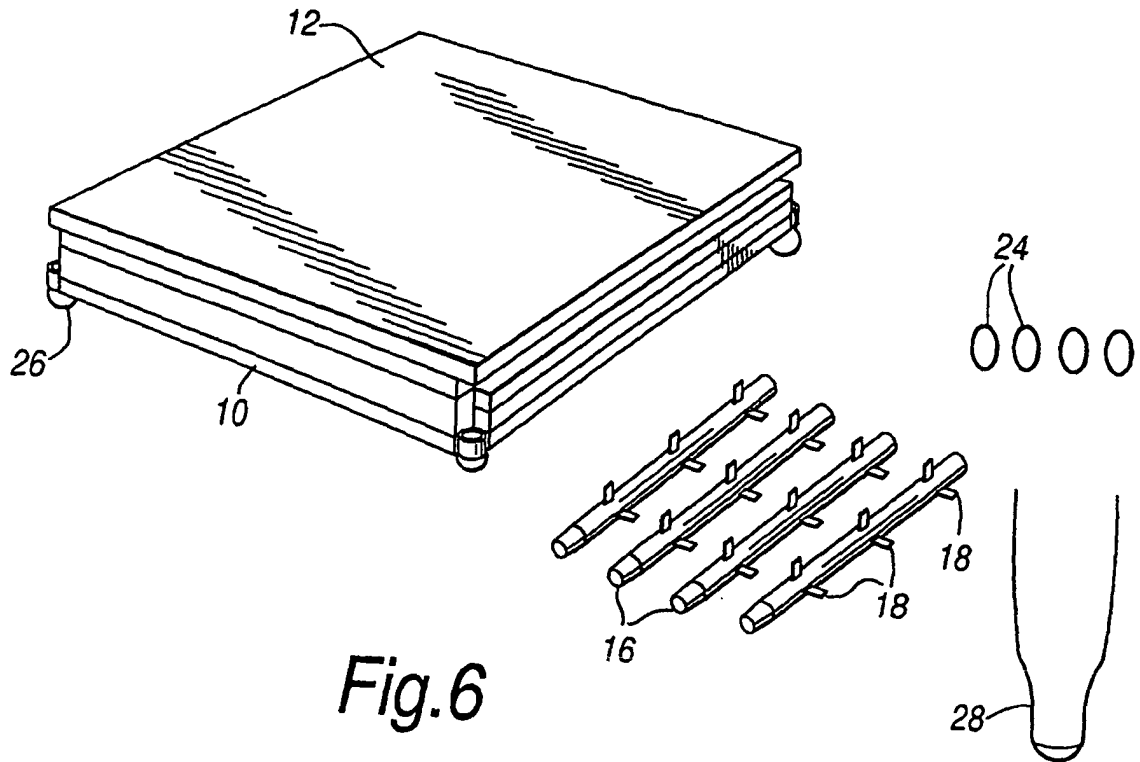


Fig. 5



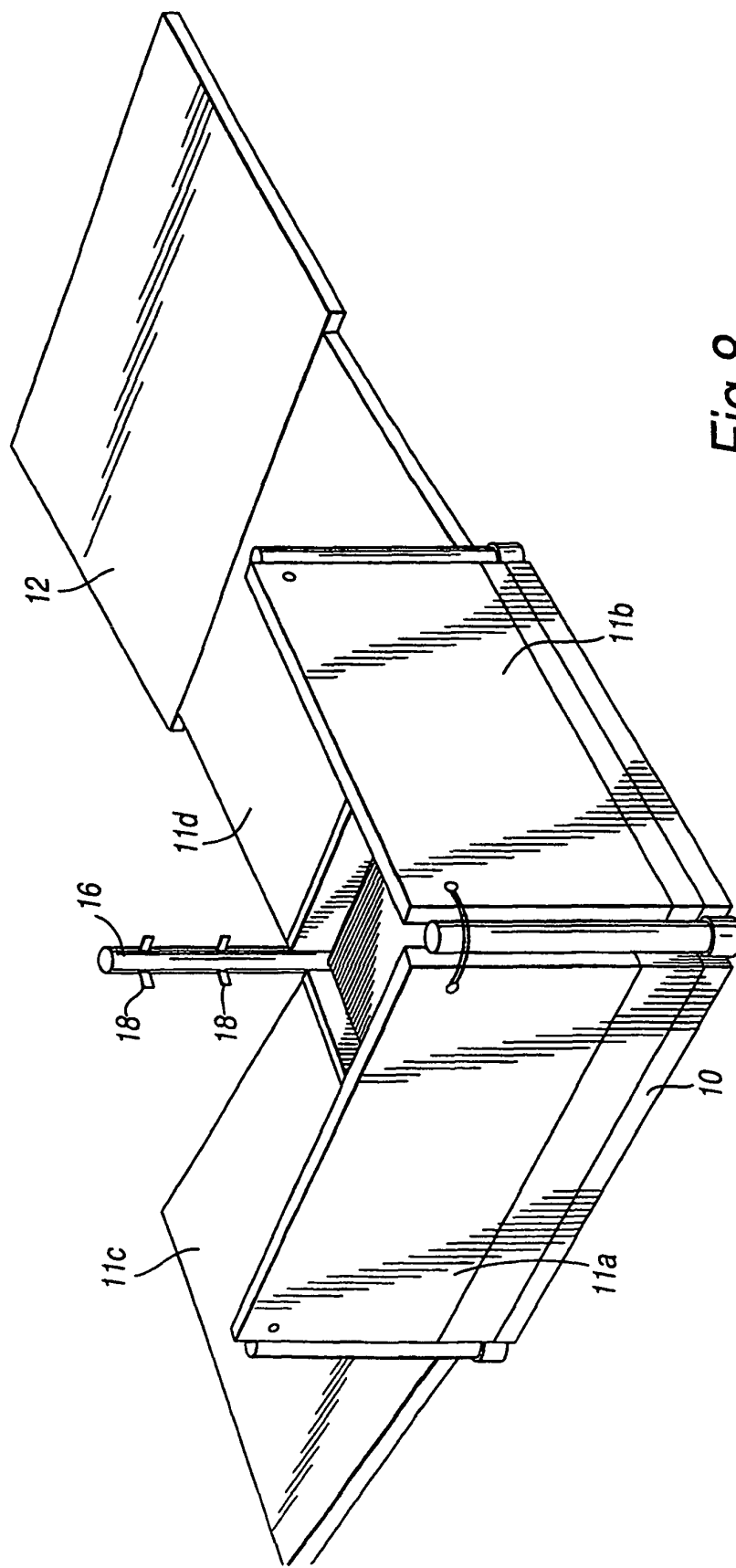


Fig. 8

REFERENCES CITED IN THE DESCRIPTION

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Patent documents cited in the description

- FR 2327150 [0003]
- EP 04433227 A [0005]