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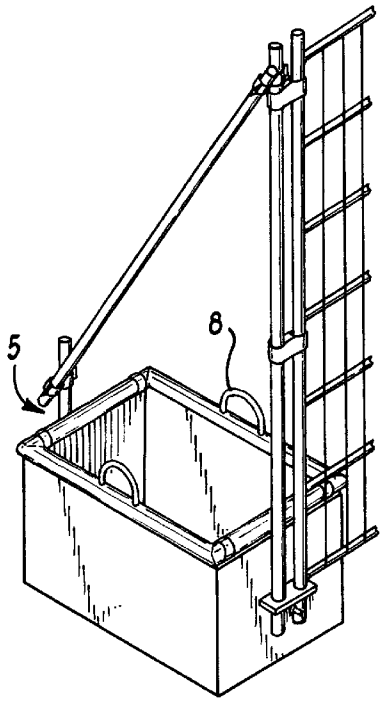
(54) **Title:** IMPROVEMENTS IN OR RELATING TO BALLAST BOXES




(57) **Abstract:** A ballast box comprising a frame and a flexible container; the container is made of a sheet material and the frame is collapsible.

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# Improvements in or relating to ballast boxes

The present invention relates to ballast boxes.

Temporary hoardings and fences are often erected around building sites, or other enclosures, to prevent intruders gaining access, and to protect passers by from building work.

A typical hoarding or fence construction comprises a series of ballast elements attached to fence supports, said fence supports in turn attached to the fence panels. The ballast elements are used to maintain the hoarding or fence in position and inhibit toppling of the hoarding in strong winds. The ballast elements may either be solid blocks of concrete or a moulded plastics material, with a typical mass, for example, of 32kg.

GB2406105 discloses a hoarding construction comprising a number of troughs (or boxes) that may be filled with aggregate. Such an arrangement might be described as a ballast box.

Ballast boxes are supplied empty and when in use are normally filled with a ballast material, normally an aggregate such as sand or gravel.

However, the ballast boxes of GB2406105, have several drawbacks. Firstly, on uneven ground the ballast boxes may themselves be unstable, leading to an unstable hoarding structure. Furthermore, ballast boxes can be both bulky and heavy, making their use cumbersome and transport expensive.

The present invention seeks to address these issues.

According to the present invention there is provided a ballast box comprising a frame and flexible container.

Said flexible container may be made of a foldable textile sheet material, such as sacking, so that the container is collapsible

Preferably said frame supports said flexible container.

Preferably said frame is collapsible.

Preferably said frame comprises a top part that comprises at least two substantially parallel sides. More preferably said top frame part is quadrilateral in shape. More preferably said top part is substantially rectangular in shape.

Preferably said frame comprises two side parts. Preferably a respective side part is attached to each of two substantially parallel sides of a top part. Preferably said side parts each comprise means of attachment to at least one fence support. Preferably said side parts each comprise means of attachment to two or more fence supports.

Preferably said side parts are flaps, pivotally attached to said parallel sides.

Preferably said flexible container is comprises means of attachment to the top part and/or side parts of said frame.

Preferably said flexible container comprises four sides and a bottom. Preferably when the ballast box is in use the flexible container surrounds said frame in a substantially box shaped arrangement.

Preferably said flexible container comprises openings through which the means of attachment to wall supports provided on the frame may protrude.

Specific embodiments of the invention will now be described by way of example with reference to the accompanying drawings, of which:

Figure 1 is a perspective view of a frame of a ballast box according to the present invention, with the flaps partially folded;
Figure 2 is a perspective view of the frame of Figure 1 with the flaps fully unfolded;
Figure 3 is a perspective view of the flexible container of a ballast box according to the present invention;

Figure 4 is a perspective view of an assembled ballast box according to the present invention, comprising a frame and flexible container.

Figure 5 is a front perspective view of another ballast box according to the present invention in use;

Figure 6 is a rear perspective view of the ballast box of Figure 5 in use;

Figure 7 is a rear perspective view of two of the ballast boxes according to the present invention supporting a fence panel;

Figure 8 is a rear perspective view of two ballast boxes according to the present invention supporting a rolled profile sheet; and

Figure 9 is a rear perspective view of two ballast boxes according to the present invention supporting a sign.

Referring to the drawings, the frame 1 of a ballast box according to the present invention comprises a substantially rectangular top part 2, and two side parts in the form of opposed pivotable flaps 3 attached to opposite short sides of said top part. The top part of the frame need not be rectangular in shape, but it may be preferable to have at least two parallel sides in order that pivotable flaps may be used. The frame may be made of a metal, plastics material, or any other suitable material. The flaps may be attached to the top frame by hinges or straps, or any other suitable means that allows the flaps to pivot.

Flaps 3 may be folded into the plane of top part 2 for storage and transportation. When in use, the flaps may be folded out such that they are substantially orthogonal to the plane of the top part of the frame.

Flaps 3 comprise fence attachment parts 4, which provide means for attaching the ballast box to fence supports 5. In the present embodiment said fence attachment parts are substantially rectangular plates extending substantially perpendicularly to the plane of the flap. Said plates comprise substantially circular holes through which fence supports may pass and may be clamped to. Said fence attachment parts may comprise a screw clamp, a hole or any other suitable means. In the present embodiment each flap comprises two fence attachment parts.

It will of course be recognised that the side parts of the frame need not be in the form of flaps; for example, an open framework may be used. The side parts may also be on three or four sides, not just two. The ballast box may of course be a different shape.

Flexible container generally corresponds to the shape of the frame part. In the present embodiment flexible container 6 is box-shaped and comprises openings 7 corresponding to attachment parts 4. In the embodiment of Figures 1 to 4 two opposing ends of the flexible container each comprise two openings to correspond with the two fence attachment parts on each flap. In the embodiment of Figures 5 to 7 a single opening is provided to correspond with a single fence attachment part.

It will of course be recognised that any number of fence attachment parts and corresponding openings may be used.

The flexible container may be made of a flexible plastic sheet material, a textile, a fabric, a building sack material, or any other suitable material.

The flexible container may optionally comprise attachment means (not shown) so as to attach the container to the top part 2 of frame 1. Such attachment means maintains the flexible container in position in relation to the frame. The container and/or the frame may also optionally comprise handles such that the ballast box may be moved easily. In Figures 5-7 handles 8 are illustrated. Said handles are attached to the flexible container and pass through slots (not shown) in the top frame.

In use, when the ballast box is assembled, the frame 1 sits inside the flexible container 6, with the fence attachment parts protruding through openings 7.

The ballast box is placed in the position where it is desired to be used and filled or part-filled with an aggregate such as sand or gravel to weigh the box down. The aggregate is held within the ballast box by flaps 3 and the sides of the container. The weight of the aggregate pushes flaps 3 outwards against the corresponding sides of the container.

When in place, fence supports 5 may then be attached to the fence attachment parts of the box and fence erected as shown in Figures 5, 6 and 7.

As can be seen in Figure 9, the use of the ballast box according to the present invention is not limited o fences; the ballast boxes may equally be used to support a sign 9, and a variety of other objects and structures.

The ballast box has several advantages over the prior art. The box is lightweight owing to being constructed of a framework and a flexible container. The surface upon which the box is placed need not be flat for the ballast box to be stable owing to the flexible nature of the base of the box. As the box is collapsible it may be stored and transported much more easily and cheaply than a rigid box.

The above embodiments are described by way of example only. Many variations are possible without departing from the invention.

Claims:

1. A ballast box comprising a frame and flexible container.

2. The ballast box of claim 1 wherein the flexible container is made of a foldable sheet material.

3. The ballast box of claim 2 wherein said foldable sheet material is scking.

4. The ballast box of any preceding claim wherein said frame supports said flexible container.

5. The ballast box of any preceding claim wherein said frame is collapsible.

6. The ballast box of any preceding claim wherein said frame comprises a top part that comprises at least two substantially parallel sides.

7. The ballast box of claim 6 wherein said top frame part is quadrilateral in shape.

8. The ballast box of claim 6 or 7 wherein said frame comprises two side parts.

9. The ballast box of claim 8 wherein a respective side part is attached to each of two substantially parallel sides of a top part.

10. The ballast box of claim 8 or 9 wherein said side parts each comprise means of attachment to at least one fence support.

11. The ballast box of claim 8 or 9 wherein said side parts each comprise means of attachment to two or more fence supports.

12. The ballast box of any of claims 8 to 10 wherein said side parts are flaps, pivotally attached to said parallel sides.

13. The ballast box of any of claims 8 to 12 wherein said flexible container comprises means of attachment to the top part and/or side parts of said frame.

14. The ballast box of any preceding claim wherein said flexible container comprises four sides and a bottom.

15. The ballast box of any preceding claim wherein when the ballast box is in use the flexible container surrounds said frame in a substantially box shaped arrangement.

16. The ballast box of any preceding claim wherein said flexible container comprises openings through which the means of attachment to wall supports provided on the frame may protrude.

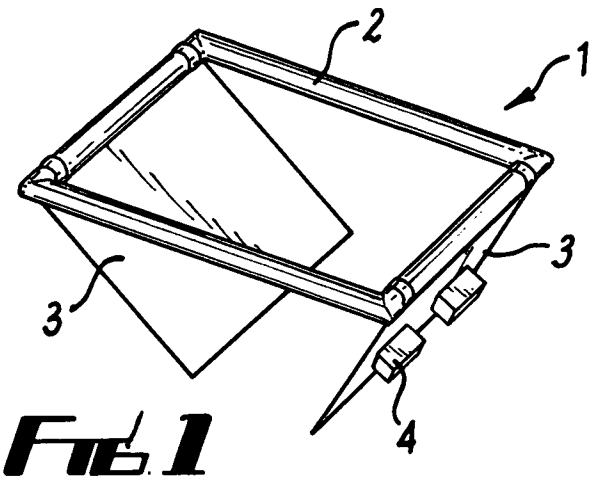


FIG. 1

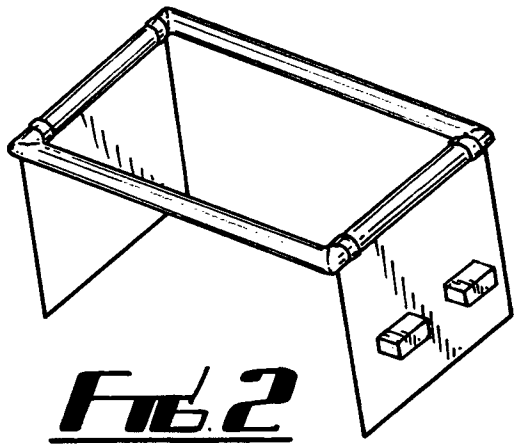

FIG. 2

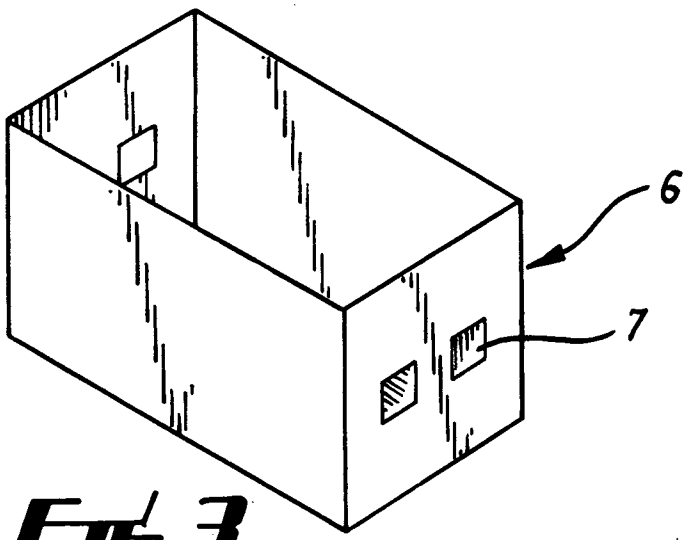


FIG. 3

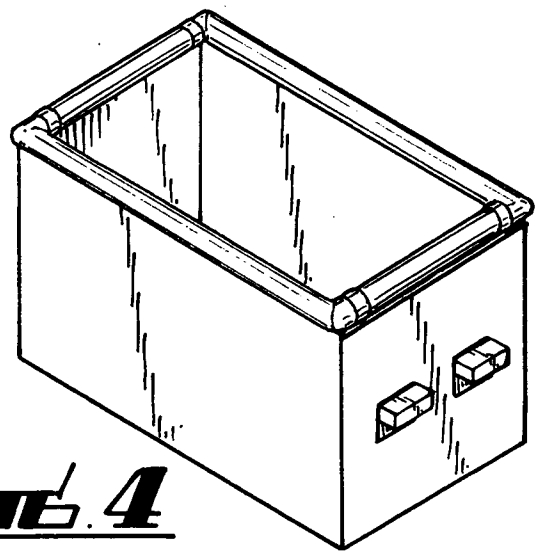

FIG. 4

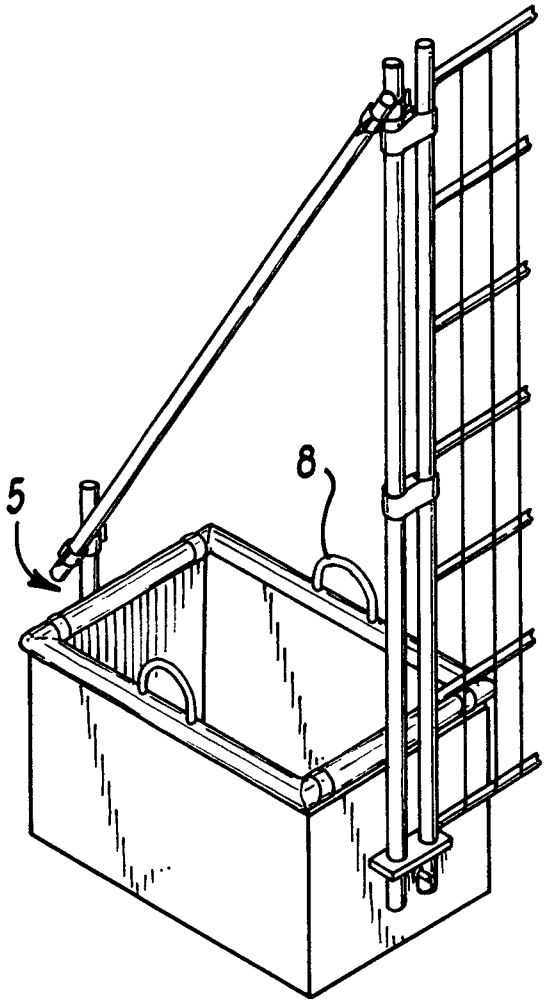


FIG. 5

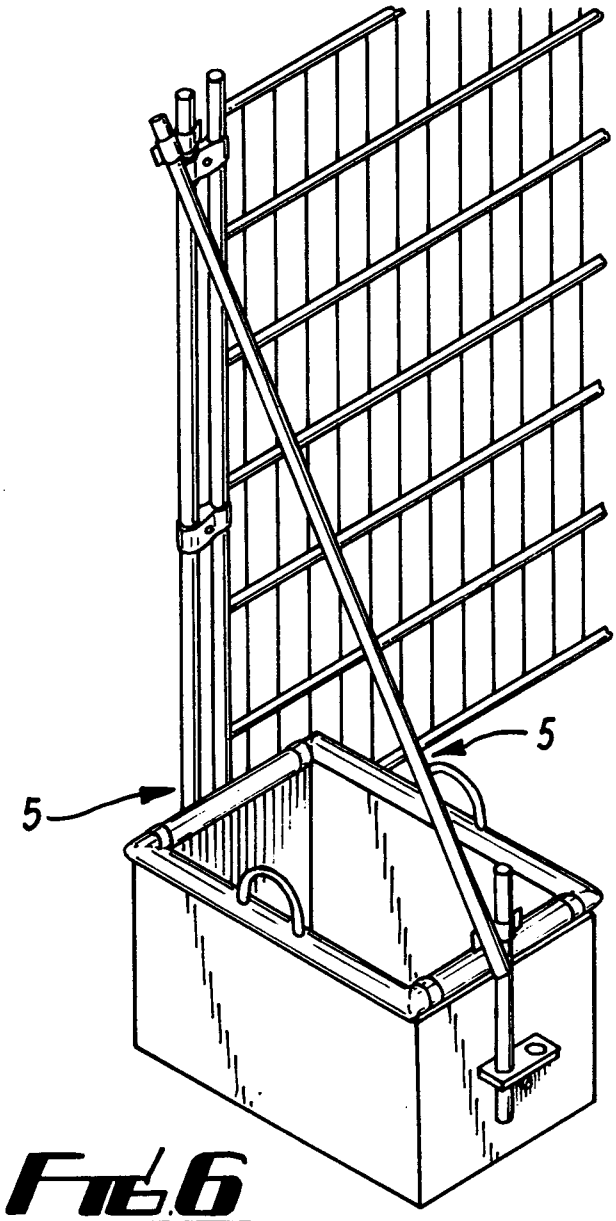


FIG. 6

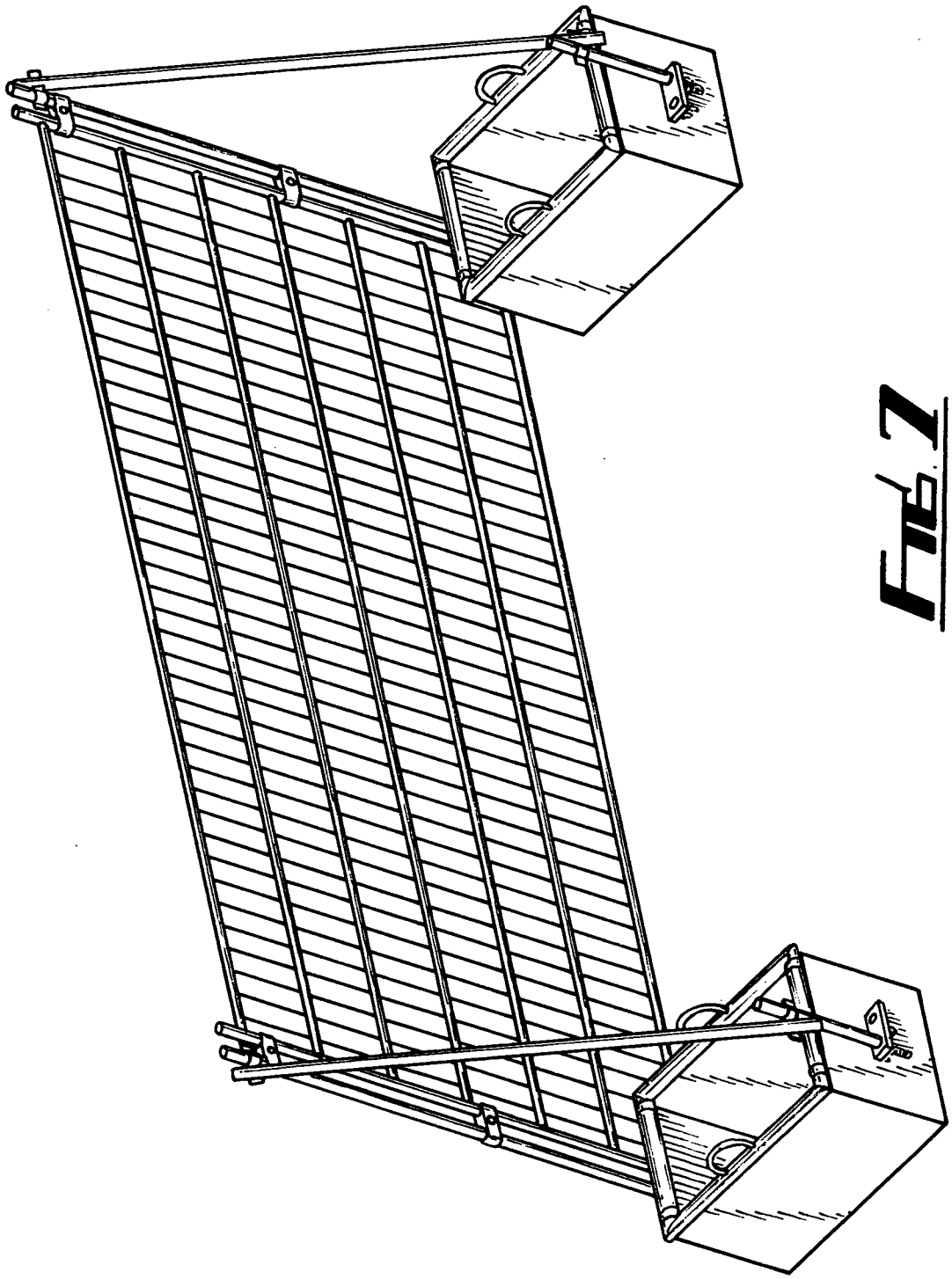

Fig.7

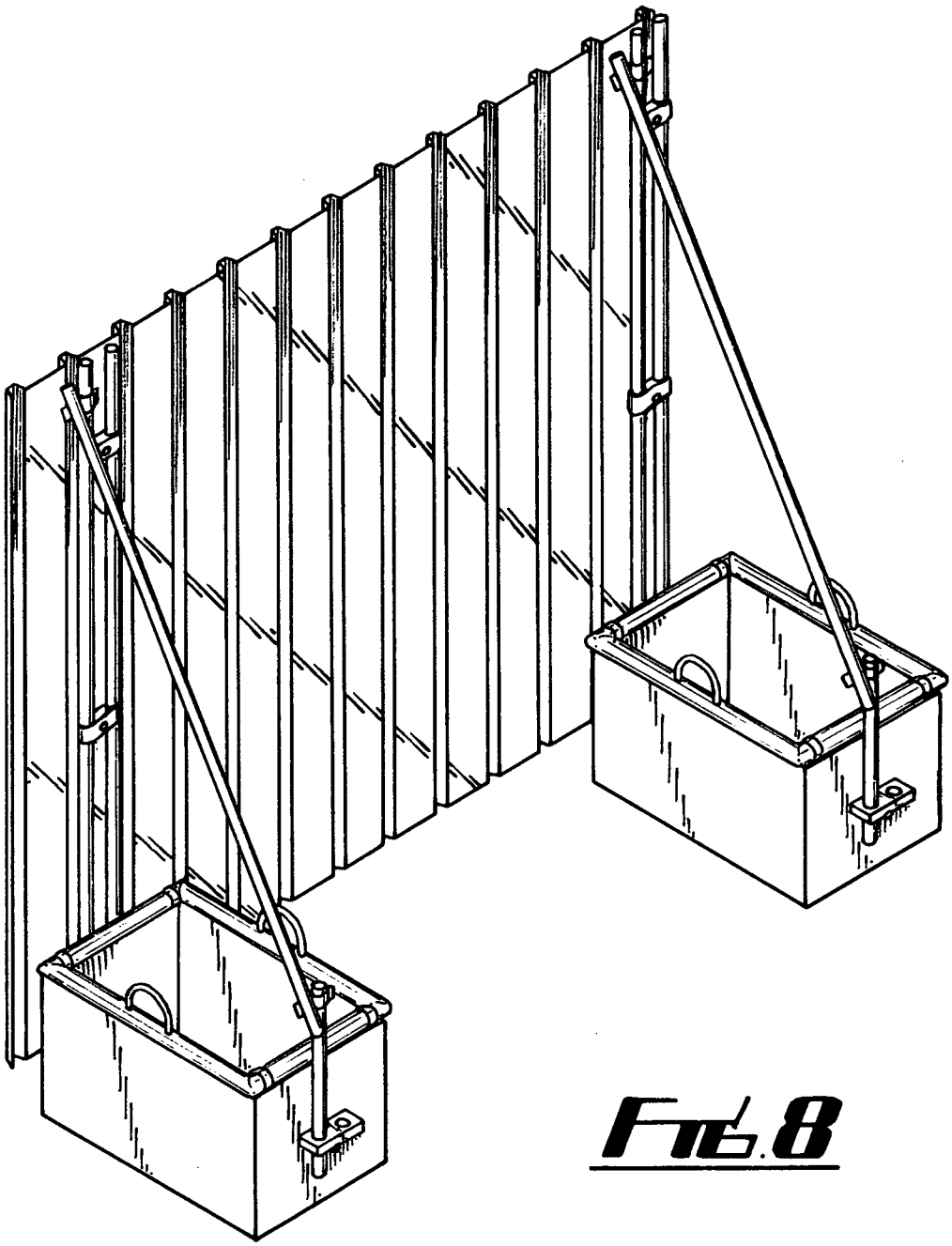

FIG. 8

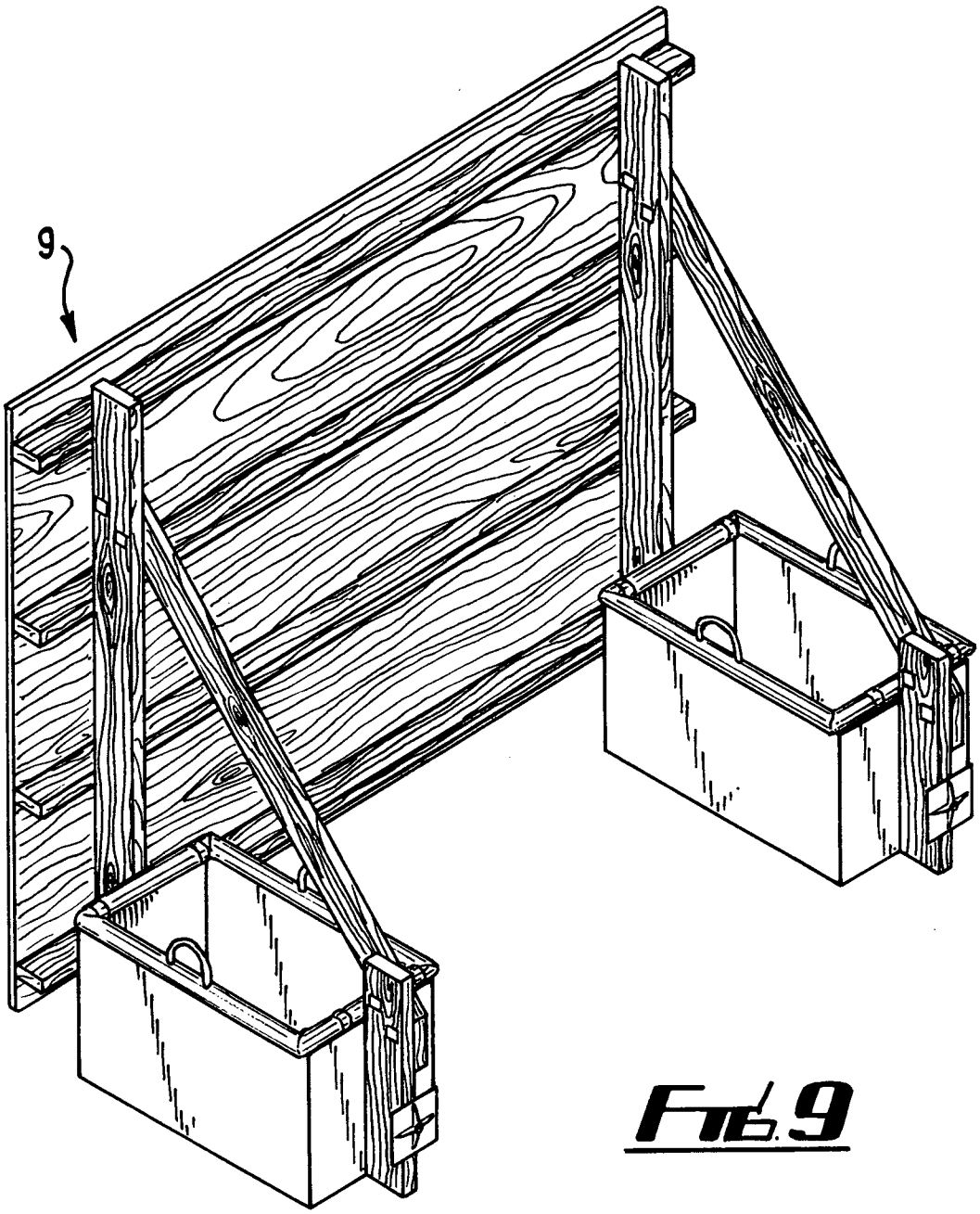


FIG. 9

# INTERNATIONAL SEARCH REPORT

International application No
PCT/GB2007/003008

A. CLASSIFICATION OF SUBJECT MATTER
INV. E01F13/02
ADD. E01F9/012

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)
E01F E04H

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)
EPO-Internal

C. DOCUMENTS CONSIDERED TO BE RELEVANT

| Category* | Citation of document, with indication, where appropriate, of the relevant passages | Relevant to claim No. |
|---|---|---|
| X | EP 1 418 276 A (QUICK DAMM GMBH [DE])<br>12 May 2004 (2004-05-12)<br>the whole document | 1-15 |
| A | WO 98/31899 A (GRANT DAVID THOMAS [AU])<br>23 July 1998 (1998-07-23)<br>abstract; figures 1-6 | 1 |
| A | GB 2 406 105 A (HALL RICHARD [GB])<br>23 March 2005 (2005-03-23)<br>cited in the application<br>page 4, lines 5-8; figures 1,2 | 1 |
| A | US 4 296 693 A (ARCHER RICHARD W)<br>27 October 1981 (1981-10-27)<br>abstract; figures 1,2 | 1 |

☐ Further documents are listed in the continuation of Box C.

☒ See patent family annex.

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| Date of the actual completion of the international search | Date of mailing of the international search report |
|---|---|
| 30 November 2007 | 12/12/2007 |

| Name and mailing address of the ISA/ | Authorized officer |
|---|---|
| European Patent Office, P.B. 5818 Patentlaan 2<br>NL – 2280 HV Rijswijk<br>Tel. (+31-70) 340-2040, Tx. 31 651 epo nl,<br>Fax: (+31-70) 340-3016 | FLORES HOKKANEN, P |

# INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No
PCT/GB2007/003008

| Patent document cited in search report | | Publication date | Patent family member(s) | | Publication date |
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| WO 9831899 | A | 23-07-1998 | NONE | | |
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