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**B8C CM**

(56) Documents Cited:  
**GB 2200035 A** **GB 0303978 A**  
**WO 1999/049941 A1** **DE 029920321 U1**

(58) Field of Search:  
INT CL **B65B**  
Other: **EPODOC, WPI**

(54) Abstract Title: **Supporting device for bag or sack**

(57) A temporary support for a bag or sack of the type used for transporting smaller quantities of bulk materials such as sand consists of four frame members 1 and 2 which can be detachably secured together, for example by clips. Upright members 3 extend from the corners of the enclosure formed by the frame members, each carrying a hook 5 for receiving and holding one of the lifting loops on the bag. The uprights may be vertically adjustable. The support can be readily assembled from the component frame members and uprights when required to hold a bag for filling or to provide access to the contents, and disassembled for storage or transport. Each hook may be provided on an outwardly-extending member at the top of an upright member 3. Each upright member may be removably secured in a socket of a frame member.

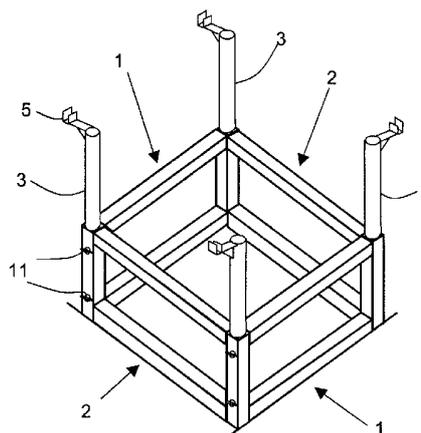


Fig 2

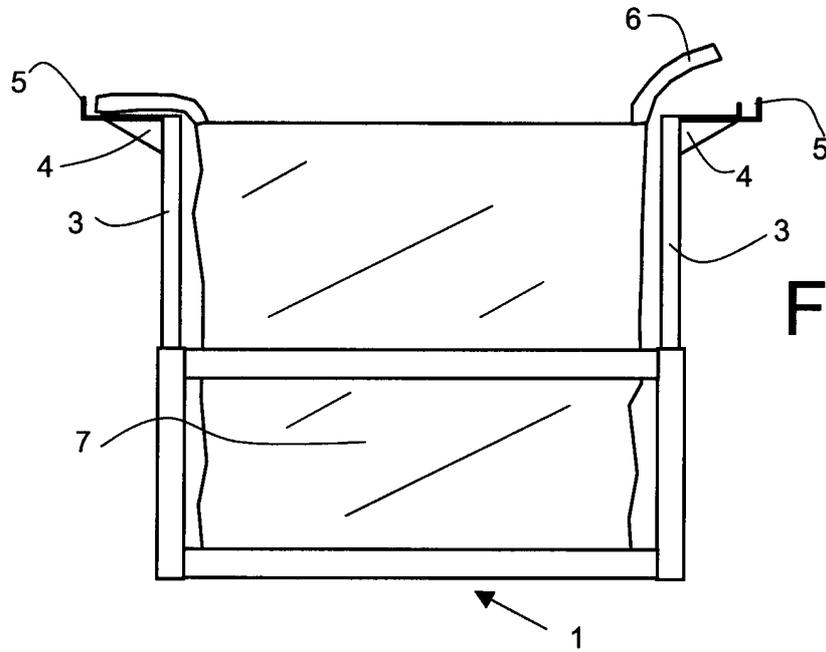


Fig 1

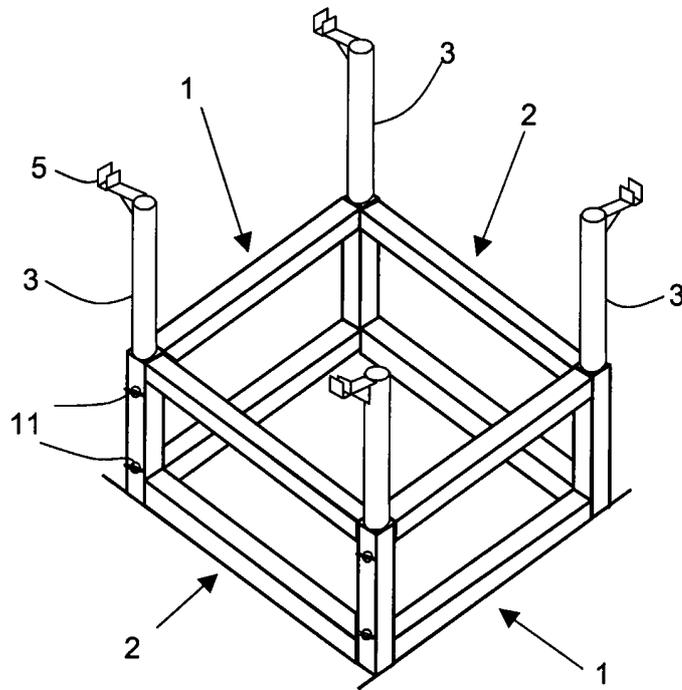


Fig 2

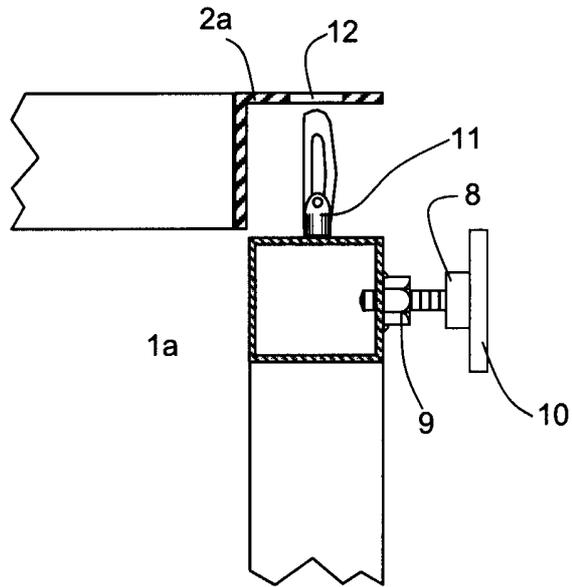


Fig 3

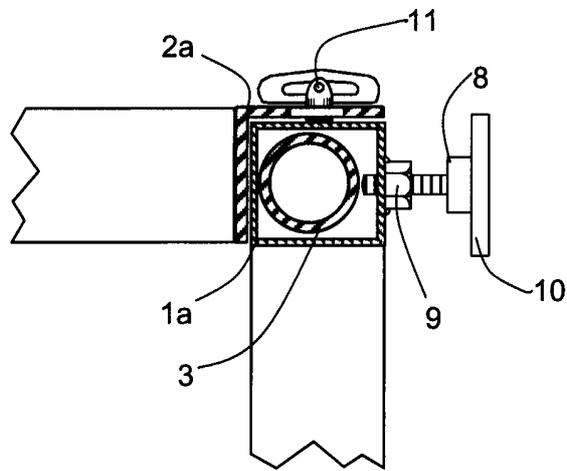


Fig 4

## **SUPPORTING DEVICE FOR BAG OR SACK**

### **Field of the Invention**

This invention relates to a supporting device for a bag or sack of the type used for transporting small quantities of bulk materials such as sand and aggregates, or transport and disposal of waste materials.

### **Background to the Invention**

Typically, bags for transporting materials are formed of a strong material such as canvas or a synthetic fibre fabric and are provided with supporting loops around the open upper side thereof by which the bag may be lifted, for example by a hoist on the back of a delivery vehicle, when being transported. When the bag is being filled, or in use on site, for example a building site, it is desirable to hold the mouth of the bag open fully to provide access.

### **Summary of the Invention**

According to the invention, there is provided a support for bag or sack of the type having lifting loops spaced around the open mouth thereof, the support comprising a plurality of vertical frame members detachably connected together side by side to form an enclosure, each corner of the enclosure having an upright member extending therefrom and having at the upper end thereof a hook for receiving and holding a respective one of the loops.

Preferably, the support has four sides thereto defining a rectangular shape, more preferably a square.

The upright members may be vertical in use, the hook on each upright member extending outwardly. Alternatively, the upright members may each have an uppermost portion extending outwardly of the enclosure. Each upright member may be removably securable in a socket in the upper side of a frame member.

The frame members may be connected together by any readily-separable fastening means, for example clips passing through aligned holes in the adjacent frame members. The separability of the frame members means that the support may be readily dismantled for transport or storage purposes, taking up very little room. The bag may be readily lifted into and out of the support, for example by a suitable hoist or crane in conventional manner, the

loops being engaged in the hooks to hold the bag fully open and extended, and disengaged from the hooks to permit lifting. It may be convenient when lifting the filled bag to detach and disassemble the support first so as not to impede the lifting operation.

5           The frame may be formed from any suitable material, such as metal tube or bar, for example of mild steel, but extruded aluminium tubing may be particularly suitable, as it is light in weight and relatively strong – the support is not required to be load-bearing to any significant extent as the bag is lifted and lowered independently of the support.

#### 10   **Brief Description of the Drawings**

In the drawings, which illustrate an exemplary embodiment of the invention:

Figure 1 is a side elevation of the support with a bag located therein;

Figure 2 is a perspective view of the support with the bag removed;

15           Figure 3 is an enlarged sectional view of one corner of the support, prior to joining together of the two adjacent frames; and

Figure 4 is a view corresponding to that of Figure 3, but showing the two frames joined, and with the associated upright member inserted therein.

#### **Detailed Description of the Illustrated Embodiment**

20           The support consists of two pairs of rectangular frame members, the first pair 1 being formed of metal square tubing welded together, while the second pair 2 each comprise two lengths of tubing welded at the ends to two lengths of “angle iron” (it will be appreciated that the material is not limited to any particular metal). The frames 1 are formed so that the end tubing opens  
25           upwardly, each receiving therein a respective upright member 3 having secured to the upper end thereof an outwardly extending bracket 4 carrying a hook member 5 formed of two upwardly-extending spaced-apart tabs. In use, each hook member 5 receives therein a respective flexible lifting loop 6 extending from the rim of a square bag or sack 7. The upright members are secured by a  
30           spaced pair of clamping bolts 8 (Figures 3 and 4) passing through the uprights and through retained nuts 9 welded to the uprights. Each bolt has a cross-bar 10 welded to it to facilitate the manual clamping and release action. The height

of the hook members 5 may be adjusted to accommodate variations in the size of the bag or sack 7, so as to ensure that its full capacity can be exploited. The upright members, being circular in cross-section, can be turned within their respective sockets so as to position the hook members 5 at a convenient angle  
5 to receive the loops. Although in Figure 2 the hooks are shown as extending generally parallel to sides of the support, typically the support will be configured with each hook member extending outwardly of the support generally on a diagonal through the centre thereof.

The frame members of the first pair 1 are detachably secured to the  
10 angle iron portions of the second pair by means of clips 11, for example of the simple twist lock type as may be seen more clearly in Figures 3 and 4. The angle-iron members 2a are each provided with a spaced pair of holes 12 through the free flange thereof. The corresponding end tubing 1a in the first pair of frames 1 is provided with a pair of the clips 11 which align with the  
15 respective holes 12. The clips 11 have securing members 11a which can slide and rotate relative to the remainder of the clip so as first to project in line to pass through the respective hole 12, as shown in Figure 3, and then to rotate and slide to a locking position as shown in Figure 4.

It will therefore be seen that the support can be readily assembled, from  
20 two pairs of frame members and four upright members, when required for use, and readily dismantled for storage or transporting.

## CLAIMS

1. A support for bag or sack of the type having lifting loops spaced around the open mouth thereof, the support comprising a plurality of vertical frame members detachably connected together side by side to form an enclosure, each corner of the enclosure having an upright member extending therefrom and having at the upper end thereof a hook for receiving and holding a respective one of the loops.

2. A support according to Claim 1, having four sides defining a rectangular shape, in use.

3. A support according to Claim 1 or 2, wherein the upright members extend vertically in use.

4. A support according to Claim 1, 2 or 3, wherein the hook on each upright member extends outwardly of the enclosure.

5. A support according to Claim 1, 2 or 3, wherein each upright member has an uppermost portion extending outwardly of the enclosure.

6. A support according to any preceding claim, wherein the upright members are removably secured in a socket in the upper side of the respective frame member.

7. A support according to any preceding claim, wherein the frame members are separably connected together by clips.

8. A support for bag or sack of the type having lifting loops spaced around the open mouth thereof, substantially as described with reference to, and/or as shown in, the drawings.

**Application No:** GB0524748.1

**Examiner:** Stephen Smith

**Claims searched:** 1-8

**Date of search:** 21 February 2006

**Patents Act 1977: Search Report under Section 17**

**Documents considered to be relevant:**

Category	Relevant to claims	Identity of document and passage or figure of particular relevance
X	1-4, 6	GB 303978 A (GAY) lines 42-51 & 91-96 of page 2; lines 8-17 of page 3
X	1, 3, 4	GB 2200035 A (CHAN) lines 2-12 of page 2
X	1-3	DE 29920321 U1 (BECKER) line 17 of page 11 to line 24 of page 12
X	1, 2, 6	WO 99/49941 A1 (ROSKY) lines 14-28 of page 2

**Categories:**

X Document indicating lack of novelty or inventive step	A Document indicating technological background and/or state of the art
Y Document indicating lack of inventive step if combined with one or more other documents of same category.	P Document published on or after the declared priority date but before the filing date of this invention.
& Member of the same patent family	E Patent document published on or after, but with priority date earlier than, the filing date of this application.

**Field of Search:**

Search of GB, EP, WO & US patent documents classified in the following areas of the UKC<sup>X</sup> :

Worldwide search of patent documents classified in the following areas of the IPC

B65B

The following online and other databases have been used in the preparation of this search report

EPODOC, WPI