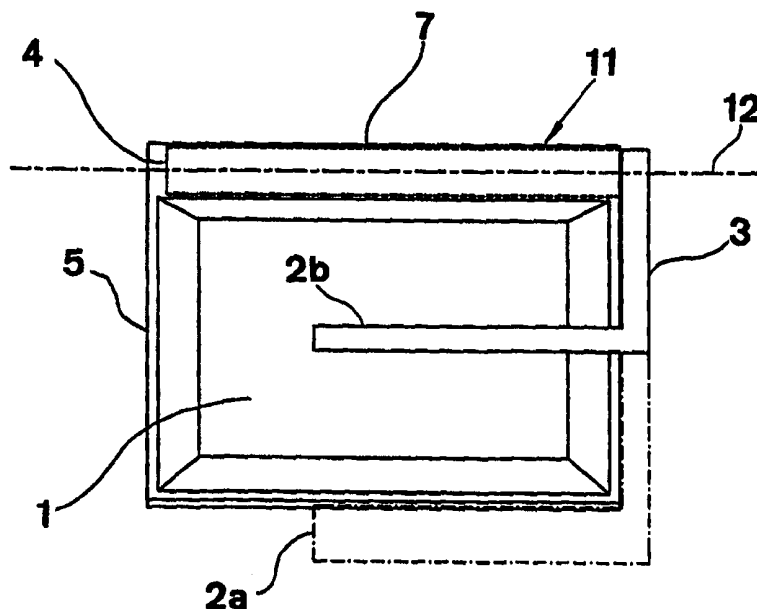




## INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

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(54) Title: DEVICE FOR A CONTAINER WITH A HANDLE



## (57) Abstract

The invention is related to a device in a container of the type basket for merchandise or customer's basket for providing a handle or grip, which is properly designed from an ergonomic point of view. The handle or grip design, which is common today, requires the lifting hand to have to be rotated into an unnatural angle. If the lifting hand would assume the natural angle at rest, a long side of the basket will be turned forwardly in the walking direction. The invention solves this by orientating the grip or handle (2) with its longitudinal direction substantially parallel to a long side of the basket whereas at the same time the attachment (3, 4) of the handle to the basket along one long side provides for a maximum amount of availability for handling merchandise present in the basket.

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## DEVICE FOR A CONTAINER WITH A HANDLE

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10 The invention is related to a device according to the precharacterising part of claim 1. Although the invention generally speaking is applicable to a wide variety of different types of containers for providing ergonomically advantageous lifts and displacements thereof via the handle of the container, it is particularly preferred to apply the invention to such containers which  
15 have the character of carriers for merchandise, in particular in the form of baskets for merchandise. These are intended to be stackable in each other to reduce the space requirement. Such containers or carriers for merchandise have as a rule an elongated shape in horizontal sections.

20

It is well known that an ergonomic design of handles or grips is most important to provide convenient and comfortable lifts also of relatively modest weights. This is particularly important when the weight in question also should be displaced. An example of  
25 such a situation is picking and displacement of everyday commodities in a basket for merchandise or customer's basket.

The baskets presently available are provided with a handle in the form of a bail arranged transversely to the longitudinal direction of the basket. The upper horizontal part of this bail functions as a handle. This formation of the grip means that the lifting hand must be rotated, from a position generally parallel to the walking direction in a relaxed situation, to a direction where the back of the hand either will be rotated to be turned forwardly  
30 in the walking direction (pronated position) or conversely with the back of the hand turned backwards (supinated position).  
35

This involves a load in the form of a tension build up in the muscles and ligaments of the arm as well as the shoulder portion. If then the load caused by the weight of the basket with its content discussed in the example is added, it is easily understandable that the handling becomes inconvenient as well as laborious.

The object of the invention is to reduce this problem by providing a container having a handle designed to increase the ergonomic comfort.

The solution to the problem appears from the enclosed claims, and then in particular claim 1.

The invention will be explained more closely hereinafter with reference to the drawings.

Fig 1 illustrates diagrammatically in a sideview a basket for merchandise having a carrying handle according to a first embodiment of the invention.

Fig 2 is a view along the line II-II in fig 1.

Fig 3 is a view along the line III-III in fig 1.

Fig 4 is a section along the line IV-IV in fig 1.

Fig 5 is a view similar to the one in fig 2 but illustrating a different embodiment for restricting the freedom of pivoting of the handle.

Fig 6 illustrates diagrammatically in a sideview a basket for merchandise having a carrying handle according to a second embodiment of the invention.

Fig 7 is a view along the line VII-VII in fig 6.

Fig 8 illustrates diagrammatically baskets for merchandise in a stacked state, said baskets having handles according to any of the embodiments of the invention.

5 Fig 9 illustrates a further embodiment of the invention from above.

Fig 10 illustrates a section along the line X-X in fig 9.

10 The drawings illustrate diagrammatically a design and connection of a handle to a basket for merchandise or a customer's basket. The invention is not only restricted to this purpose but is intended to be generally applicable also to other types of containers movable by handpower. The device comprises a

15 handle 2 connected to at least one arm 3, which in turn is connected to the container via a hinge 11 forming a pivot axis 12 for the handle 2. This pivot axis 12 is substantially parallel to the handle 2. The hinge proper is in fig 1-4 formed by a first part 4 and a second part 7, which engage hingedly with each other.

20 The part 4 connected to the arm 3 forms together with the part 7, which is provided on the container 1 and formed by or connected to the rim 5, said hinge 11. This hinge provides for movability of the unit formed by the handle 2, the arm or arms 3 and the part 4 in relation to the container 1. The motion in the

25 hinge thus formed occurs around the pivot axis 12 comprised in the part 4. The movement is restricted so that the handle may assume two extreme positions, on one hand a downwardly pivoted position, wherein the handle 2 and arm/arms 3 will assume an almost horizontal position, and on the other hand a

30 raised position in connection with a lift. In this latter position the handle 2 is present, as seen in the plane of rotation of the hinge, in a point substantially within a conceived vertical line through the centre of the basket.

35 A first embodiment is illustrated in fig 1, where the handle 2 is designed with a connection to the container 1 consisting of an

arm 3 and a part 4. The handle is in this embodiment shorter than the total length of the basket.

5 Fig 2 illustrates the same embodiment viewed from a short side of the basket. The two extreme positions the handle 2 with the arm 3 may assume appear from fig 2. In this projection the handle will, in its raised position 2b, be present in a conceived vertical plan  $L_p$  through the centre of the basket.

10 Fig 3 illustrates again the first embodiment, this time viewed from above according to the line III-III in fig 1. The downwardly pivoted position 2a of the handle and the upwardly pivoted position 2b thereof appear in the figure.

15 Fig 4 illustrates an example on how it is possible to restrict the range of movement within the hinge, which is comprised of the part 4 and the part 7 formed by the rim 5 or connected to the rim. The stationary part 7, which belongs to the basket, of the hinge 11 has a bulb 8 protruding into the space for the part 4.  
20 This bulb interferes with the possibility of movement of the part 4 in a rotating direction and restricts, accordingly, the range of movement of the arm 3 and the handle 2 in the intended manner.

25 Fig 5 illustrates another way of restricting pivoting of the handle 2. Holes 9 are provided in the arm 3 and in the rim 5. Between these holes there is a connection in the form of a band 10 or string to delimit movement of the handle in the upper position thereof.

30

Fig 6 illustrates another embodiment of the handle 2'. The handle is here extended and comprises basically the same length as the container 1'. Besides, the handle is provided with an arm 3' connected in each end to the part 4'. The mechanism for restricting the movement in the plane of rotation is the same as  
35 illustrated in fig 4 or 5.

Fig 7 illustrates the same embodiment of the handle as in fig 6 seen from above according to the line VII-VII in fig 6.

5 Fig 8 illustrates a stack of identical baskets.

Fig 9 illustrates a modified embodiment, where the basket has a narrowed waist, in the area of which the hinge 11" is provided. The parts 4" and 7" forming the hinge 11" are here substantially shorter than the longitudinally extent of the basket. For the rest  
10 the arm 3" has here a more complex shape adapted to the external contour of the basket. The position of the handle 2" for carrying appears with dashed lines.

## Claims:

1. A device in a container (1) having a handle (2), which is connected to the container by means of a hinge (11) and which extends substantially parallel to a pivot axis (12) formed by the hinge (11) at a distance from said pivot axis, **characterized** in that the pivot axis (12) is sidewardly displaced from a centre of the container towards a side of the container.
2. A device according to claim 1, **characterized** in that the hinge (11) is arranged at a side of the container.
3. A device according to any of claims 1-2, **characterized** in that the container (1) has an elongated shape and that the handle extends in the longitudinal direction of the container.
4. A device according to claim 3, **characterized** in that the hinge (11) is arranged at a long side of the container.
5. A device according to any of claims 3 and 4, **characterized** in that the extent of the handle in the longitudinal direction thereof is smaller than the extent of the container along the handle (2).
6. A device according to any preceding claim, **characterized** in that the handle (2) is connected to a first part (4) comprised in the hinge via an arm (3).
7. A device according to claim 6, **characterized** in that the first part (4), which extends substantially parallel to the handle (2), forms the hinge (11) between the container (1) and the handle (2) together with a second part (7), which is formed in or connected to a rim (5) on one side of the container (1).
8. A device according to any preceding claim, **characterized** by means for making the handle restrictedly pivotably movable



5 between a downwardly pivoted position (2a) and a maximally upwardly pivoted position (2b), which substantially corresponds to such positioning of the handle that it intersects or is located close to a vertical line through the centre of the bottom of the container.

9. A device according to claim 8, **characterized** in said restricting means being formed by the first and second parts (4, 7).

10

10. A device according to claim 8, **characterized** by said restricting means comprising a band or a string or similar anchored in the arm (3) and in the container (1).

15

11. A device according to any of claims 1-4 and 6-10, **characterized** in that the handle (2') has substantially the same extent as the container (1') and is connected to the container via an arm (3') in each end of the handle.

20

12. A device according to any preceding claim, **characterized** in that the handle (2), including an arm or arms (3), together with the container (1) has such a design that a plurality of identical units handle/container are stackable.

25

13. A device according to any preceding claim, **characterized** in that the container is a stackable carrier for merchandise, in particular a basket for merchandise.

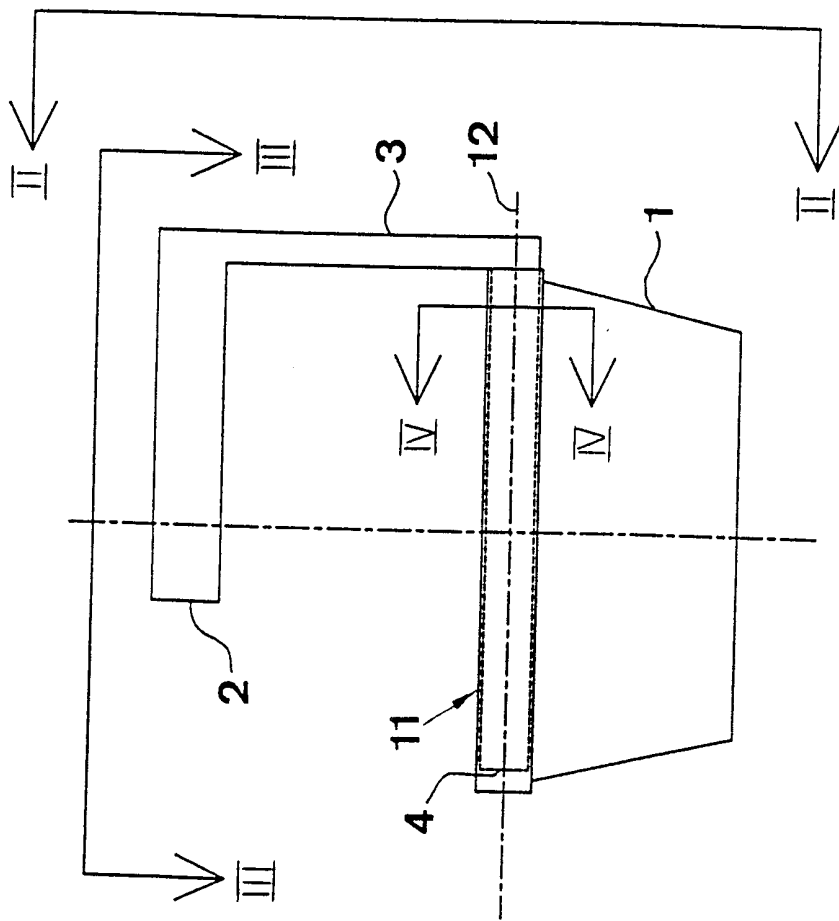


FIG 1

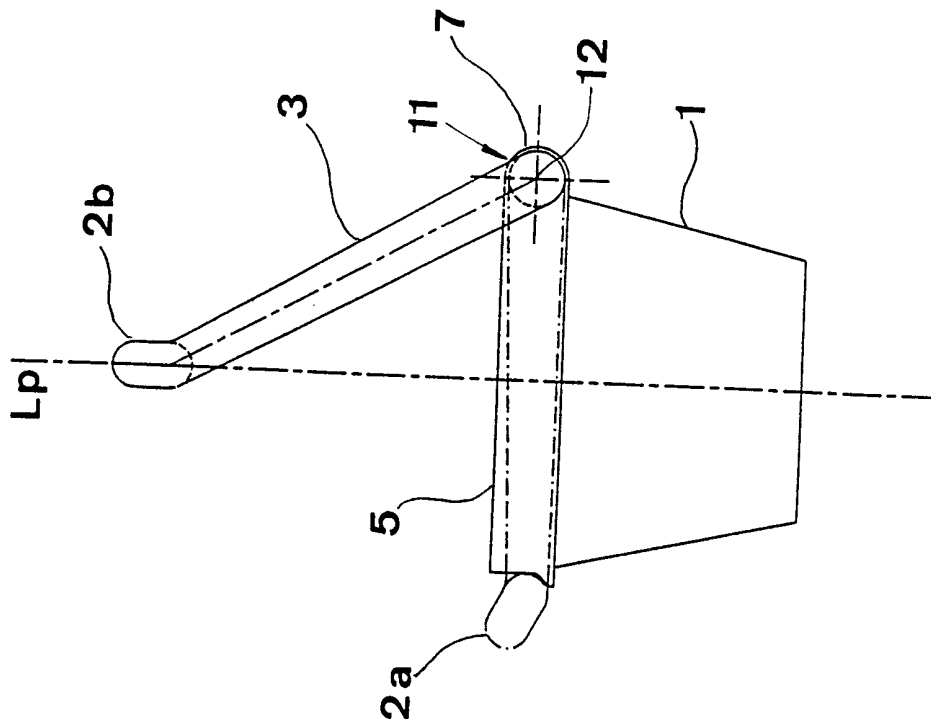


FIG. 2

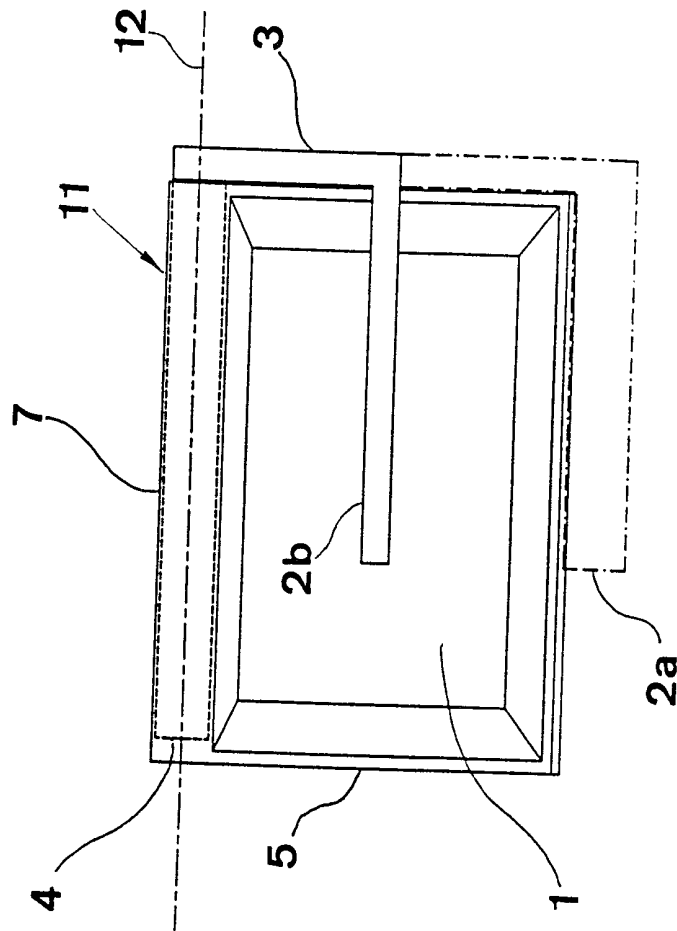


FIG 3

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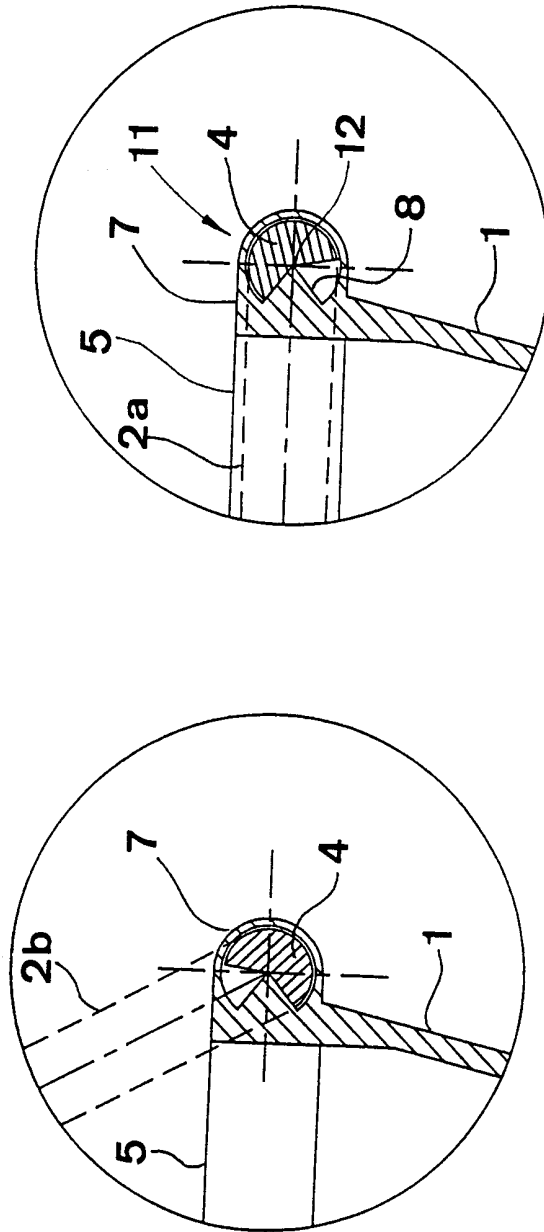


FIG 4

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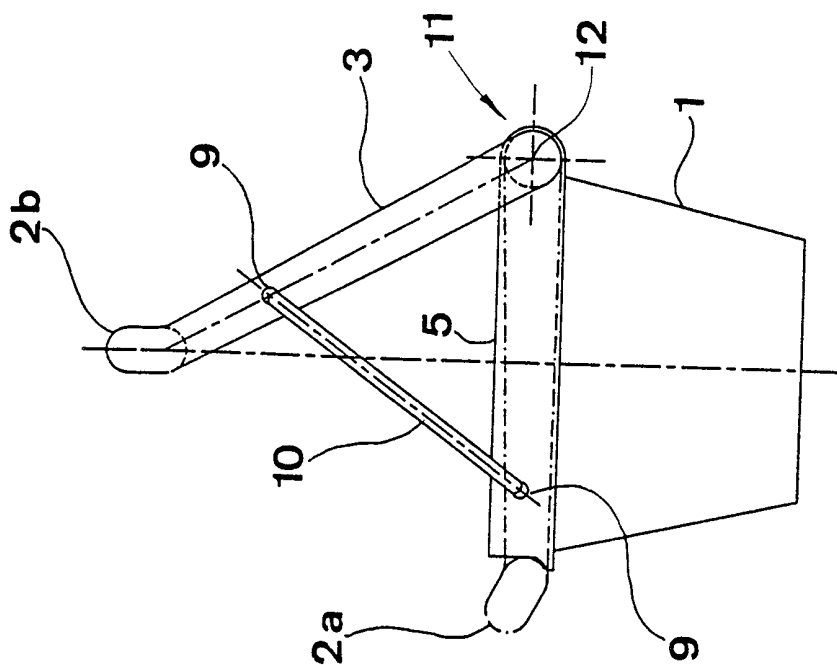


FIG 5

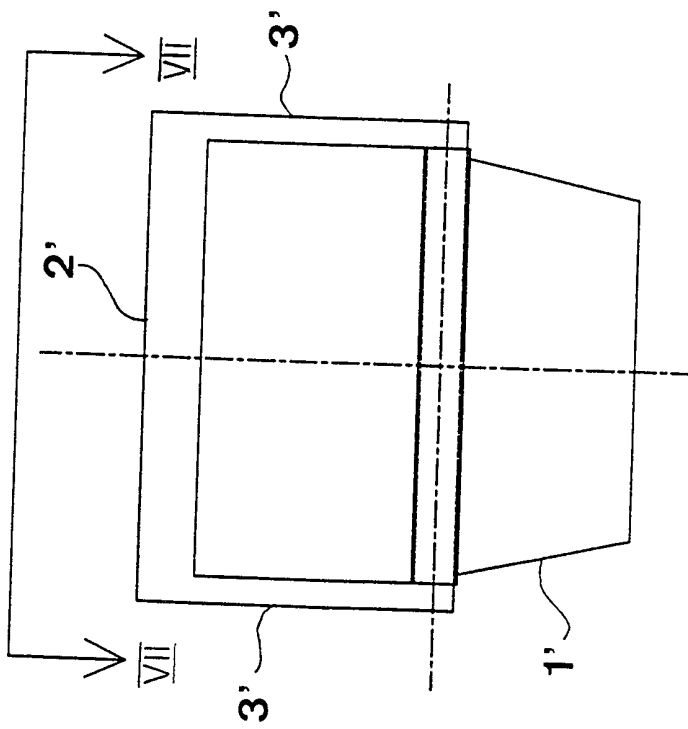


FIG 6

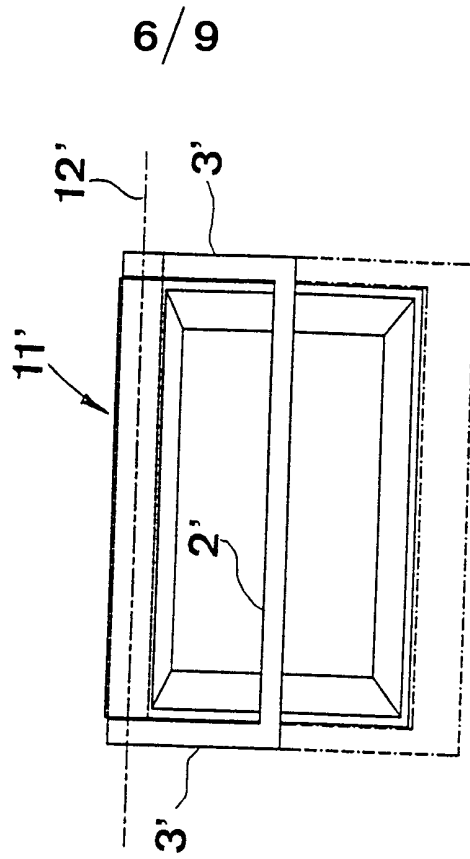


FIG 7

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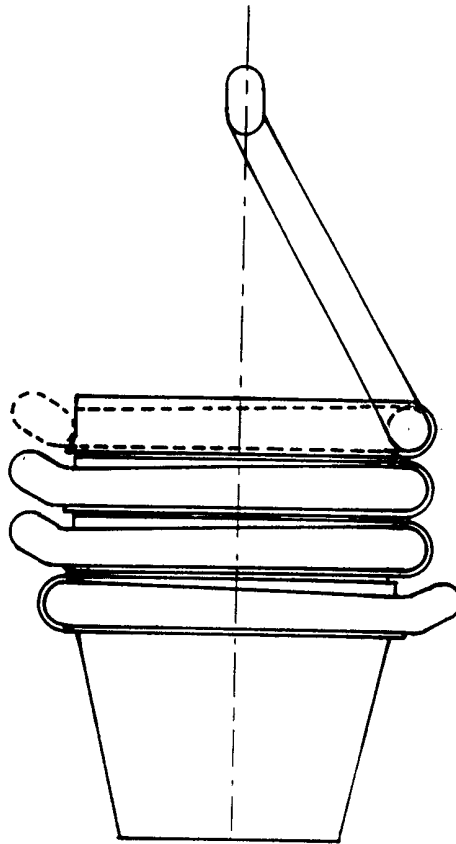


Fig 8



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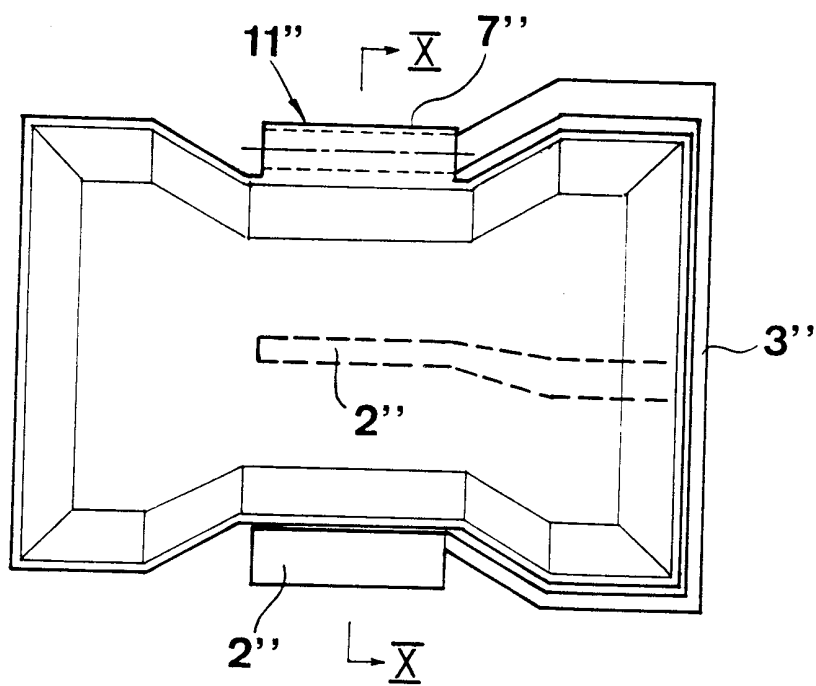


Fig 9

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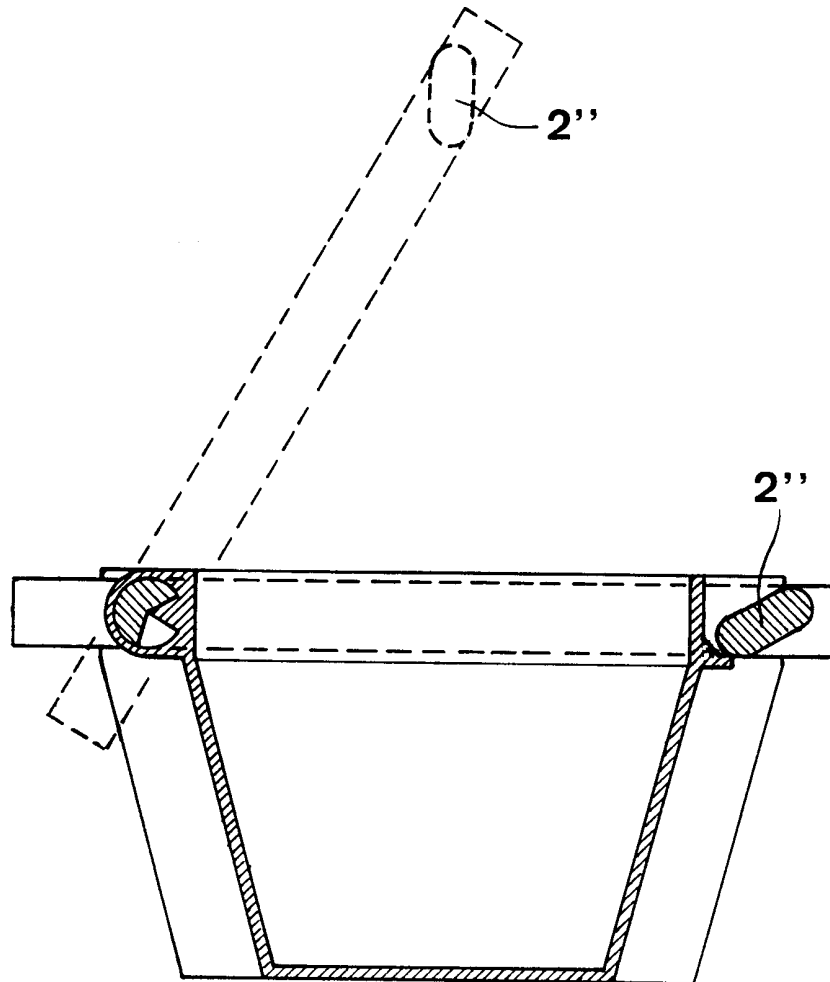


Fig 10

## INTERNATIONAL SEARCH REPORT

International application No.

PCT/SE 99/00188

## A. CLASSIFICATION OF SUBJECT MATTER

IPC6: B65D 25/28, B65D 1/28, B65D 25/22  
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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	GB 2179027 A (BLUE BOAR MARKETING AND MANUFACTURING LIMITED), 25 February 1987 (25.02.87), page 1, line 94 - line 96, figures 1,6 --	1-7,11
X	US 5715968 A (STACEY M. FINK ETAL), 10 February 1998 (10.02.98), figures 2,5,6 --	1-3,5,6,8, 11-13
X	EP 0600323 A (DART INDUSTRIES INC.), 8 June 1994 (08.06.94), figures 1,2,5 --	1,2,6,7,11
X	US 2983402 A (R.B. GOTTSEGEN), 9 May 1961 (09.05.61), figures 1,4 --	1,2,6,7,11

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C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	DE 4236484 A1 (BEROLINA KUNSTSTOFF GESELLSCHAFT MBH & CO), 5 May 1994 (05.05.94), figure 1  -- -----	1-3,11

**INTERNATIONAL SEARCH REPORT**

Information on patent family members

01/06/99

International application No.

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