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(11)

EP 1 702 855 A2

(12)

EUROPEAN PATENT APPLICATION

(43) Date of publication:
20.09.2006 Bulletin 2006/38

(51) Int Cl.:
B65D 25/32 (2006.01)

(21) Application number: **06388020.7**

(22) Date of filing: **17.03.2006**

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

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(30) Priority: **18.03.2005 DK 200500398**

(54) Container with displaceable handle

(57) A container (1) comprising: a container body (2), a lid (3), and at least one handle (4) where the ends (5) of the at least one handle (4) are pivotally connected to opposite sides of said container body (2). At least one end (5) of the at least one handle (4) is displaceable between a first position (8) and a second position (9). In this way, a container is provided where the effective length of the handle can be increased or decreased. Therefore, the handle can be made to assume different positions. In a first position, the handle is resting on the edge of the container whereby the handle is easily visible and accessible to the user. In another position, the handle is resting along the sides of the container allowing a user to access the contents of the container.

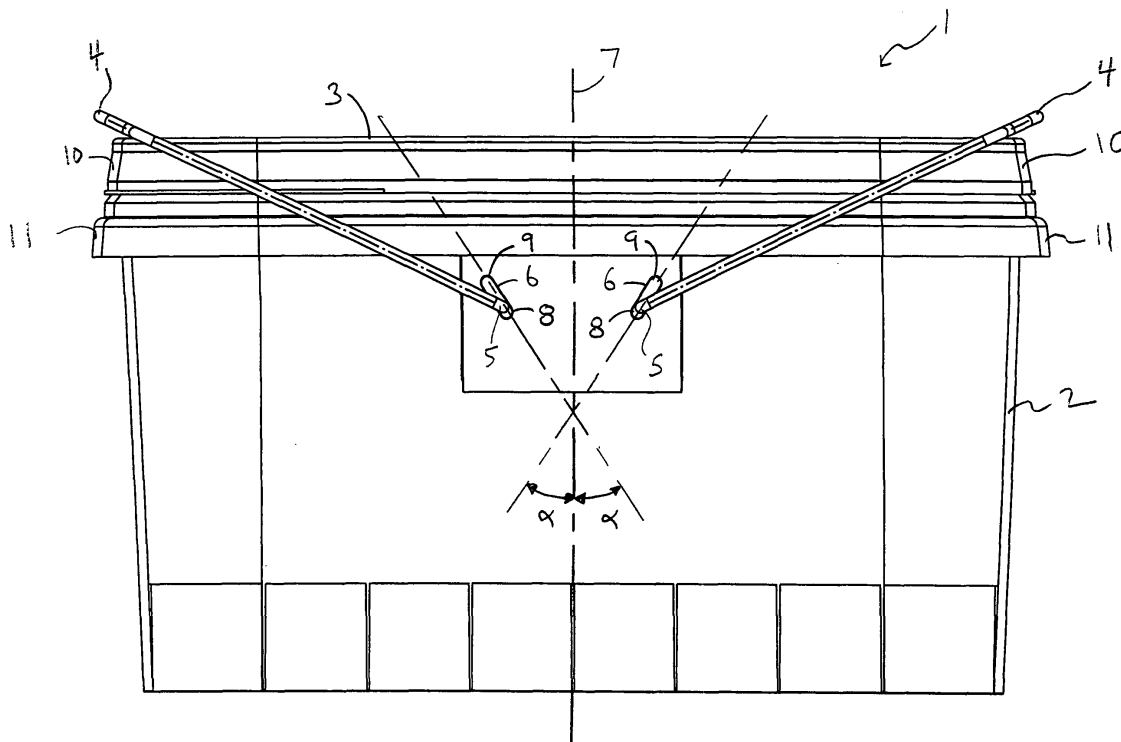


Fig. 1

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Description

[0001] The current invention relates to a container with a container body, a lid, and at least one handle where the ends of the at least one handle are pivotably connected to opposite sides of said container body.

[0002] Many containers of this type have a single pivotable handle made from a bent wire, connected to opposite sides of the container and at the container's centre line. A common example of this type of container is a can of paint. The two ends of a bent wire handle are pivotably attached to the sides of the body of the paint can, close to its top edge. When the container is being carried, the handle is pivoted up for the user to hold on to. When the handle is released, the handle pivots down and rests on the side the paint can. This allows easy access to the contents of the paint can.

[0003] Other containers, such as the one provided by WO 2004/065227, have two pivotable handles. As with a traditional paint can, when the container is not in use, the handles pivot down and rest, one on each side of the container. This provides easy access to the lid area.

[0004] However, containers of this type suffer from a number of disadvantages. A first disadvantage is that when the handle(s) is pivoted down along the side of the container, the handle(s) partially covers the labelling on the side of the container. This can prevent the user from recognising the contents of the container.

[0005] Another disadvantage is that when the handle is pivoted down along the side of the container, it is difficult for the user to access the handle. If the user wishes to transport the container, the user must first identify on which side of the container the handle is, and then reach down along the side of the container and pivot the handle up into its carrying position.

[0006] Furthermore, if the container has two handles the user must first recognize that the container has two handles and then reach down along each side of the container to gather the handles and then pivot them up into their carrying positions. If the user fails to see the second handle and lifts the container by one handle only, the container will tip over instead of being lifted.

[0007] It is therefore a first aspect of the current invention to provide a container as mentioned in the introductory paragraph where the handle(s) is easily accessible to the user while still allowing the user easy access to the contents of the container.

[0008] A second aspect is to provide a container as mentioned in the introductory paragraph where the location of the handle(s) is easily recognizable and accessible for correct use while still allowing the user easy access to the contents of the container.

[0009] A third aspect of the current invention is to provide a container as mentioned in the introductory paragraph where the handle(s) does not cover the labelling on the side of the container.

[0010] A fourth aspect of the current invention is to provide a container as mentioned in the introductory paragraph where the container is stackable.

[0011] The new and unique feature whereby at least some of the above mentioned aspects are provided is that at least one end of the at least one handle is displaceable between a first position and a second position.

[0012] In this way, one or both ends of the at least one handle are allowed to be displaced with respect to the container, thereby effectively increasing or decreasing the length of the handle. When the length of the handle is short, the handle rests on the edge of the container body or the edge of the lid. In this way, the handle is very visible as well as being easily accessible. Since the handle rests on the edge of the container, the container is still stackable. When the effective length of the handle is increased, the handle can pivot past the edge of the lid and past the edge of the container allowing it to rest along the side of the container as is known in the state of the art. In this way, the user can easily open the container and gain access to the contents of the container.

[0013] In a preferred embodiment according to the invention, the at least one end of the at least one handle can be connected to said container body via at least one key and slot arrangement. This is a simple and inexpensive mechanism. The slot can furthermore be formed in the container body and the at least one end of the at least one handle can be formed with a key which is arranged in the slot. This embodiment, where the slot is formed in the container, is advantageous since the handle can be made quite simple. It is especially useful in the case where the handle is made from a bent metal wire, as is frequently the case in the prior art. In another embodiment, the slot can be formed in the handle and a key mounted on the container.

[0014] When the slot is arranged on the container, the slot can be mainly vertically arranged. In other words, the vertical vector component of the slot's direction is greater than the horizontal vector component of the slot's direction. In this way, gravity ensures that the handle will tend to fall down in the slot and assume the same position each time the handle is released.

[0015] In another embodiment, the slot can furthermore be placed at an angle to a vertical centre line of the container body. This increases the effect of displacing the ends of the handle, since the handles when moving in the slot, with move both in a direction along the vertical centre line of the container body as well as a direction perpendicular to the vertical centre line of the container body.

[0016] The angle of the slot could be within the range of 80° to 0°. Preferably, the angle is between 60° and 10°, most

preferably, the angle is between 50° and 20°. The steeper the angle, the easier it is for the handle to fall into its lower position when the handle is released. The lower the angle, the more the handle will be displaced outwardly when the handle is lifted. The choice of the angle can therefore be determined by the above mentioned considerations.

[0017] In another embodiment, spring biasing means could be arranged in the slot, in order to bias the end of the handle into one of its positions. This gives a very deterministic action of the handle since the handle will return to the biased position as soon as the user releases the handle.

[0018] In order to provide a container which is more stable, the container can comprise two handles. When there are two handles, the ends of the handles can be connected to the container body via slots formed in the container body and the slots can be placed in the container body offset from the centre line of the container body.

[0019] In a preferred embodiment, the slots can be angled with respect to the centre line of the container body in such a way that the top portions of the slots are further from the centre line of the container than the bottom portions of the slots. In this way, moving the handle from the first position to the second position effectively lengthens the handle more than if the slot were purely vertical.

[0020] The invention will be described in more detail in the following with reference to figures which show example embodiments according to the current invention, where

Figure 1 shows a first embodiment of the current invention seen from the side, where the handles are in a first position,

Figure 2 shows the same where the handles are in a second position,

Figure 3 shows the same where the handles are in a third position, and

Figure 4 shows, in perspective, two containers stacked on top of each other.

[0021] The containers 1 shown in figures 1-4 comprise a container body 2, a lid 3, and two handles 4. The container body 2 and the lid 3 in this case are plastic injection moulded. However, it should be obvious to the person skilled in the art that the container and the lid could be made from many other materials. The handles 4 in this embodiment are bent metal wires, but they could just as well also be plastic injection moulded or made from some other material.

[0022] In this particular embodiment, two handles are used to give more stability to the container when being carried. Due to the fact that the two handles are attached to the container at a distance from each other, the container is less likely to tip about the handle attachment point. This is important when the container has a relatively high centre of gravity.

[0023] As can be seen from figures 1-3, the ends 5 of the handles 4 are arranged in slots 6. The slots 6 are formed in the sides of the container. The ends 5 of the handles 4 are prevented from falling out of the slots 6, in that the ends 5 of the handles 4 are slightly larger than the width of the slots 6. The ends 5 of the handles 5 are inserted in the slots 6 in the manner which is commonly known from containers of the state of the art. The ends 5 of the handles 4 are furthermore arranged such that they are permitted to slide in the slot 6.

[0024] In the current embodiment, the slots are arranged such that they are placed at an angle α to the centre line 7 of the container. The bottom portion 8 of the slot 6 is closer to the centre line 7 than the top portion 9 of the slot 6. Furthermore, in the current embodiment, the slot is a linear slot. However in certain circumstances, a slot which is not linear could also be imagined. For example a slot which has a notch could be imagined. The notch could lock the ends of the handle in a certain position, requiring the user to perform a certain action, before the ends of the handle could be put into a different position.

[0025] By arranging the ends 5 of the handles 4 in slots, the effective length of the handles 4 can be increased or decreased. In the current example, when the ends of the handles are in the top part 9 of the slot 6, the handle 4 is effectively longer than when the ends 5 of the handles 4 are in the bottom part 8 of the slot 6. In this way, when the ends 5 of the handles 4 are in the bottom part 8 of the slot 6, the handle 4 is not long enough to go past the edge 10 of the lid 3. The handle 4 therefore rests on the edge 10 of the lid 3. This position is shown in figure 1. When the handle 4 is in this first position, the handle is easily visible and accessible to the user.

[0026] When the ends 5 of the handle 4 are moved to the top part 9 of the slot 6, the handle 4 is effectively lengthened. In this way, the handle 4 is long enough to pivot past the edge 10 of the lid 3 and the edge 11 of the container 1. This is shown in figure 2. The handle 4 can therefore be pivoted past the edge 10 of the lid 3 and past the edge 11 of the container 1, thereby allowing the handle 4 to pivot down and rest against the side of the container body 2. This third position is shown in figure 3. When the handle 4 is in this third position, the user has unobstructed access to the lid 3 of the container 1. The user can therefore easily remove the lid 3 of the container 1 and get access to the contents of the container 1.

[0027] The slots 6 are arranged in a mainly vertical manner in order to provide a deterministic manner of operation. When the user lifts the container with the handle, the ends of the handles will always go to the top part of the slot. When the user releases the handles, the ends of the handles will fall down to the bottom part of the slot.

[0028] In this case, the slots 6 are angled at an angle of approximately 30° with respect to the centre line 7 of the container 1. Due to the angle the effect of displacing the ends 5 of the handles 4 is increased. This is due to the fact that when the ends 5 of the handles 4 are in the top part of the slot 6, the handles are displaced both upwardly and outwardly and the effective length of the handles is therefore increased more than if the slots had been purely vertical.

By increasing the angle, the length of the handle will be further increased, however if the angle is increased too much, then the ends of the handle will not fall into position in the bottom of the slot as easily when the handle is released.

[0029] It should be mentioned that the container in the example above had a lid, however, it could easily be imagined that the current invention could also be used with containers which don't have a lid. In this case, the handle will rest on the edge of the container instead of on the lid.

[0030] Furthermore, the above embodiment has two handles. However, it should be obvious to the person skilled in the art that a container with a single handle (not shown) would also be possible according to the current invention. In this case, the container could furthermore be equipped with a mechanism, such as a tab, which ensures that the handle always pivots to the same side.

[0031] It could also be imagined that spring biasing means (not shown) could be arranged in the slots, in order to bias the handle into its first position. The user would then need to apply a force to the handle to counteract the spring force when it is desired to displace the handle from its first position to its second position. In this particular case, the slots could be arranged angled with respect to the centre line of the container in such a way, that the top portions of the slots were arranged closer to the centre line of the container than the bottom portions of the slots. In this way, the ends of the handle would always be in the top portion of the slots, unless the user deliberately forced the handle into its second position. This would prevent the handle from displacing each time the user picked up the container.

[0032] In another embodiment (not shown), the container could be arranged in the manner that only one end of the handle was displaceable. In this way, a lower cost container would be provided, since the displaceable mechanism would only need to be located on one side of the container.

[0033] Furthermore, it could be imagined that the handle itself was extendible. This could for example be implemented in that the handle was made from two independent parts which were displaceable with respect to each other. This could for example be a sort of telescoping mechanism.

[0034] Furthermore, it is noted that it should be obvious to the person skilled in the art that many other embodiments which are within the scope of the invention are also possible.

Claims

1. A container (1) comprising:

- a container body (2),
- a lid (3), and
- at least one handle (4) where the ends (5) of the at least one handle (4) are pivotably connected to opposite sides of said container body (2),

characterized in that

- at least one end (5) of the at least one handle (4) is displaceable between a first position (8) and a second position (9).

2. A container (1) according to claim 1, **characterized in that** when the at least one end (5) of the at least one handle (4) is in the first position (8), the handle (4) can be rested on the edge of the container (1) or the edge (10) of the lid (3), and that when the at least one end (5) of said at least one handle (4) is in the second position (9), the handle (4) can be pivoted past the edge (10) of the lid (3) and past the edge (11) of the container (1) such that the handle (4) rests along the side of the container (1).

3. A container (1) according to claim 1 or 2, **characterized in that** the at least one end (5) of the at least one handle (4) is connected to said container body (2) via at least one key (5) and slot (6) arrangement.

4. A container (1) according to claim 3, **characterized in that** said slot (6) is formed in the container body (2) and that the at least one end (5) of the at least one handle (4) forms a key (5) which is arranged in the slot (6).

5. A container (1) according to claim 4, **characterized in that** the slot (6) is mainly vertically arranged.

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6. A container (1) according to claim 1 or 2 **characterized in that** the slot (6) is placed at an angle (α) to a vertical centre line (7) of the container body (2), said angle (α) being within the range of 80° to 0°, preferably, between 60° and 10°, and most preferably, between 50° and 20°.

5 7. A container according to any one of claims 1-6, **characterized in that** a spring biasing means is arranged in the slot, said spring biasing means biasing the end of the handle into one of its positions.

10 8. A container (1) according to any one of claims 1 to 8, **characterized in that** the container (1) comprises two handles (4).

9. A container (1) according to claim 9, **characterized in that** the ends (5) of the handles (4) are connected to the container body (2) via slots (6) formed in the container body (2) and that the slots (6) are placed in the container body (2) offset from the centre line (7) of the container body (2).

15 10. A container (1) according to claim 10, **characterized in that** the slots (6) are angled with respect to the centre line (7) of the container body (2) in such a way that the top portions (9) of the slots (6) are further from the centre line (7) of the container body (2) than the bottom portions (8) of the slots (6).

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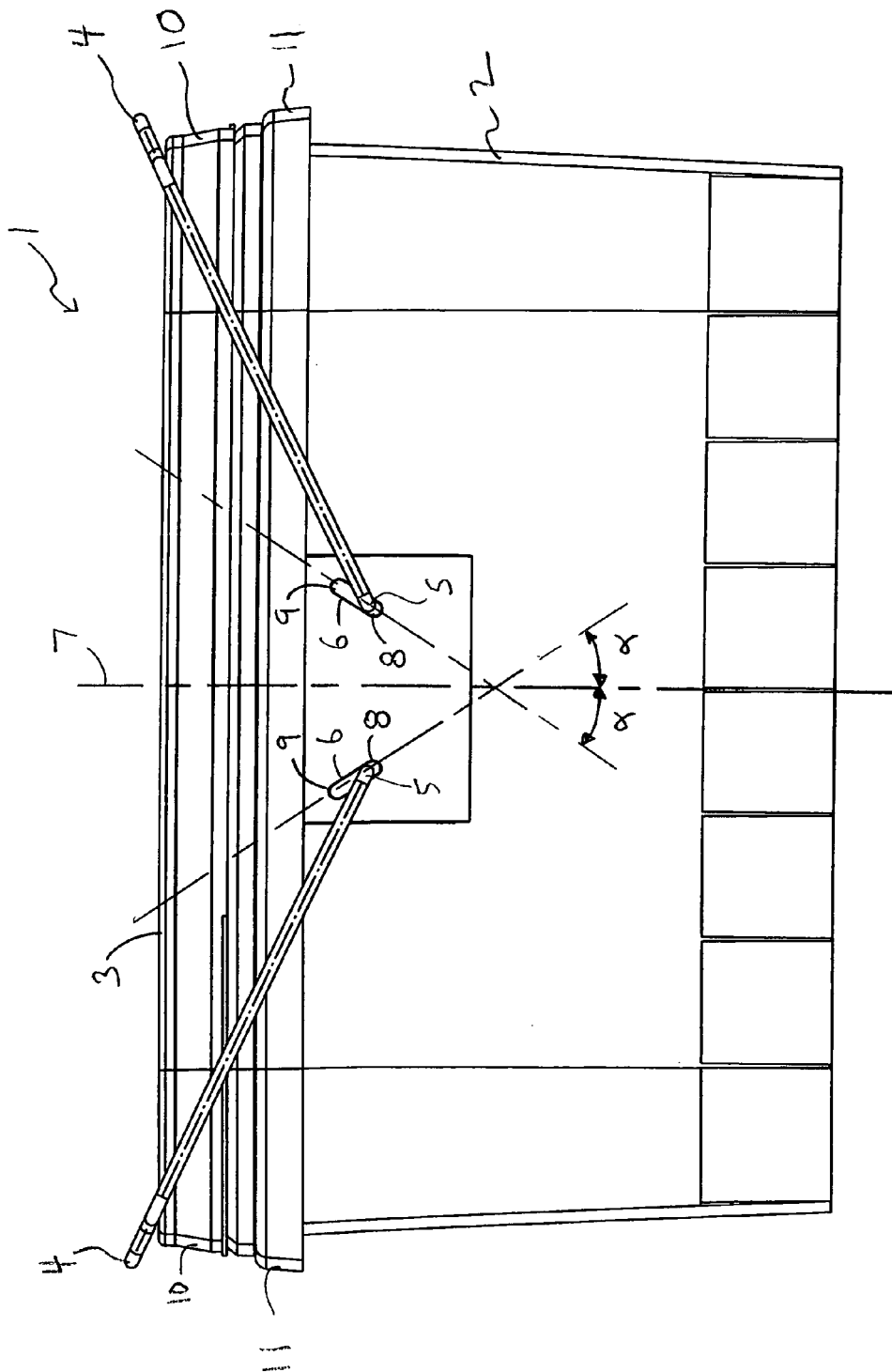
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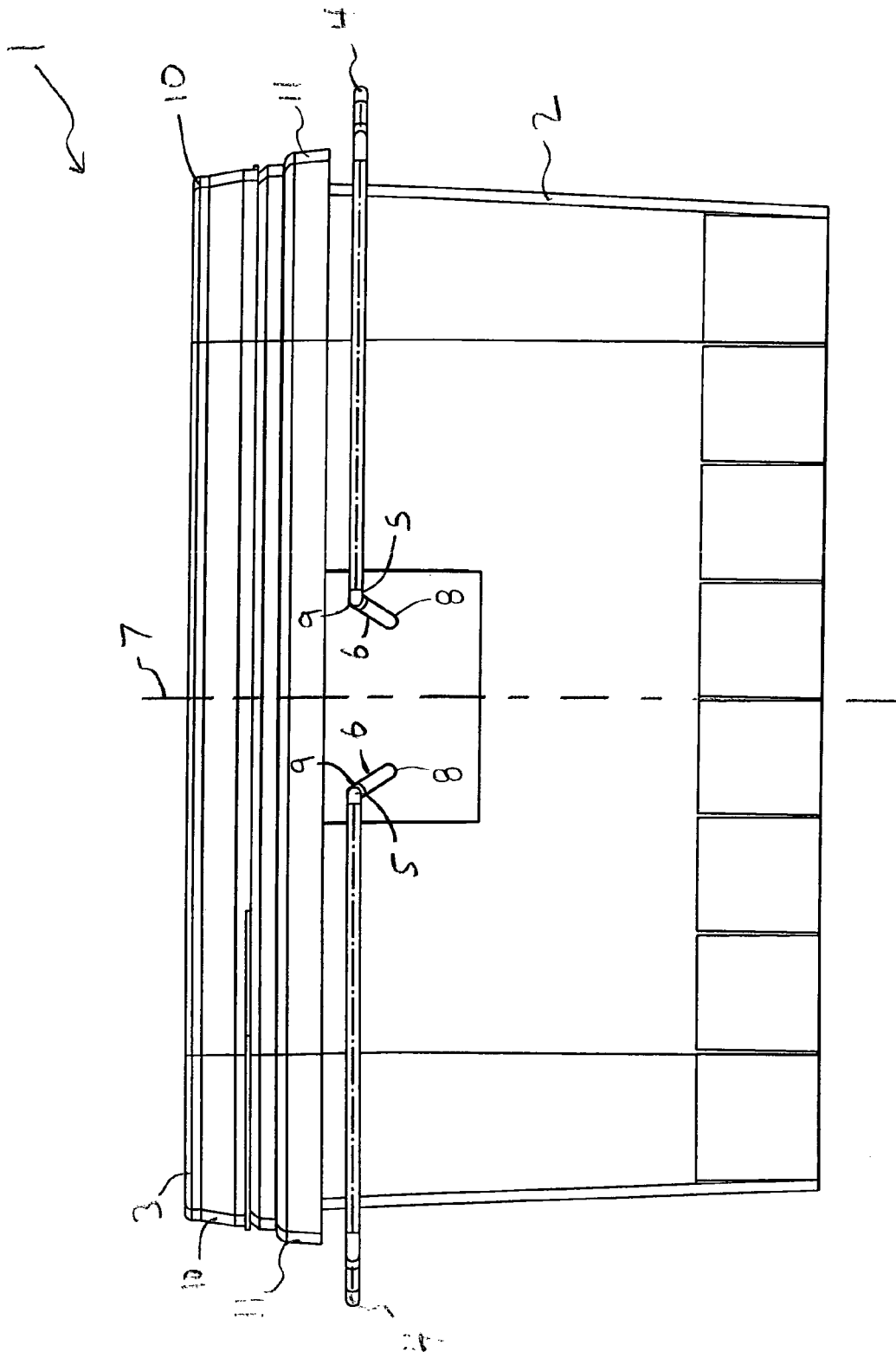
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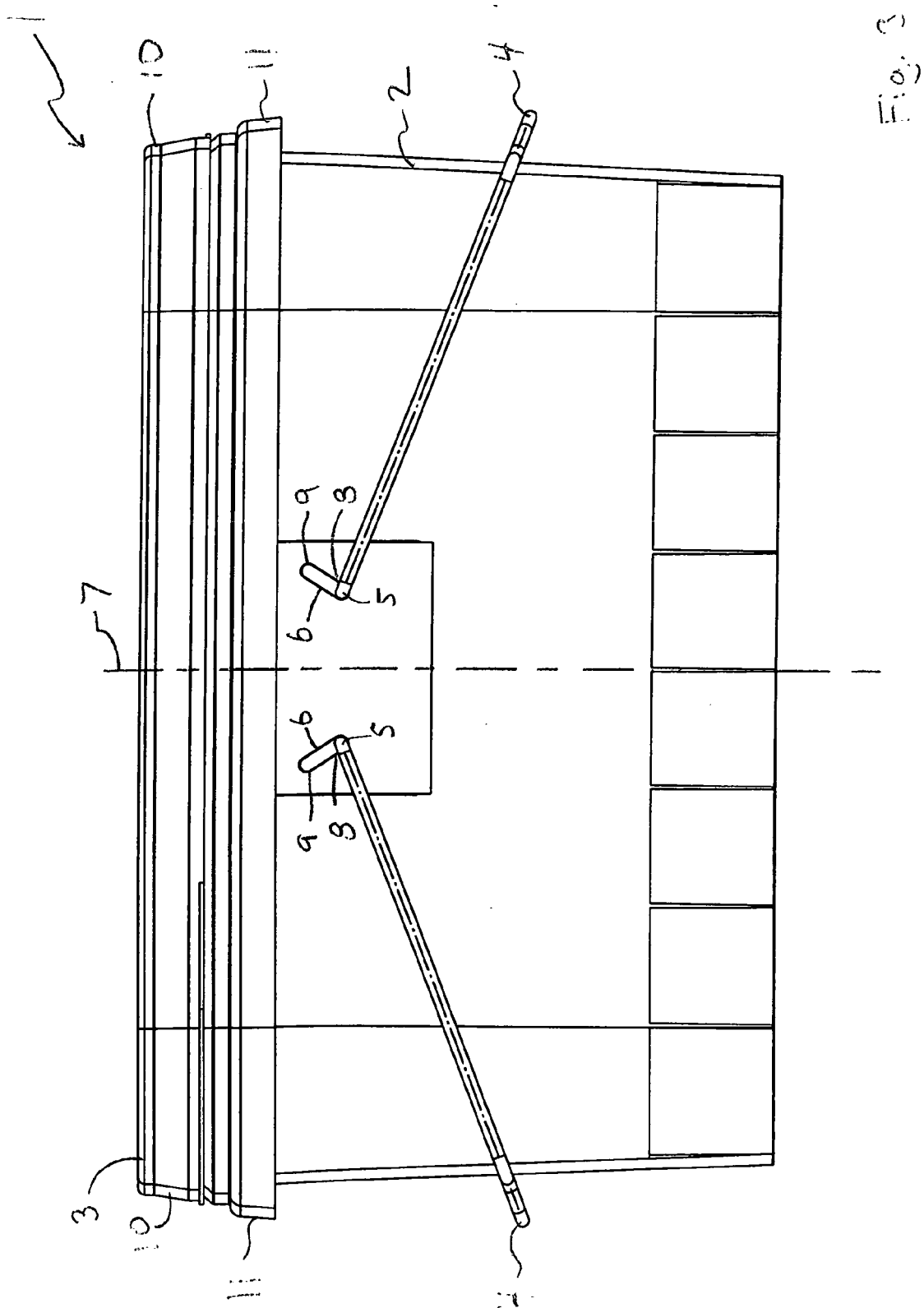
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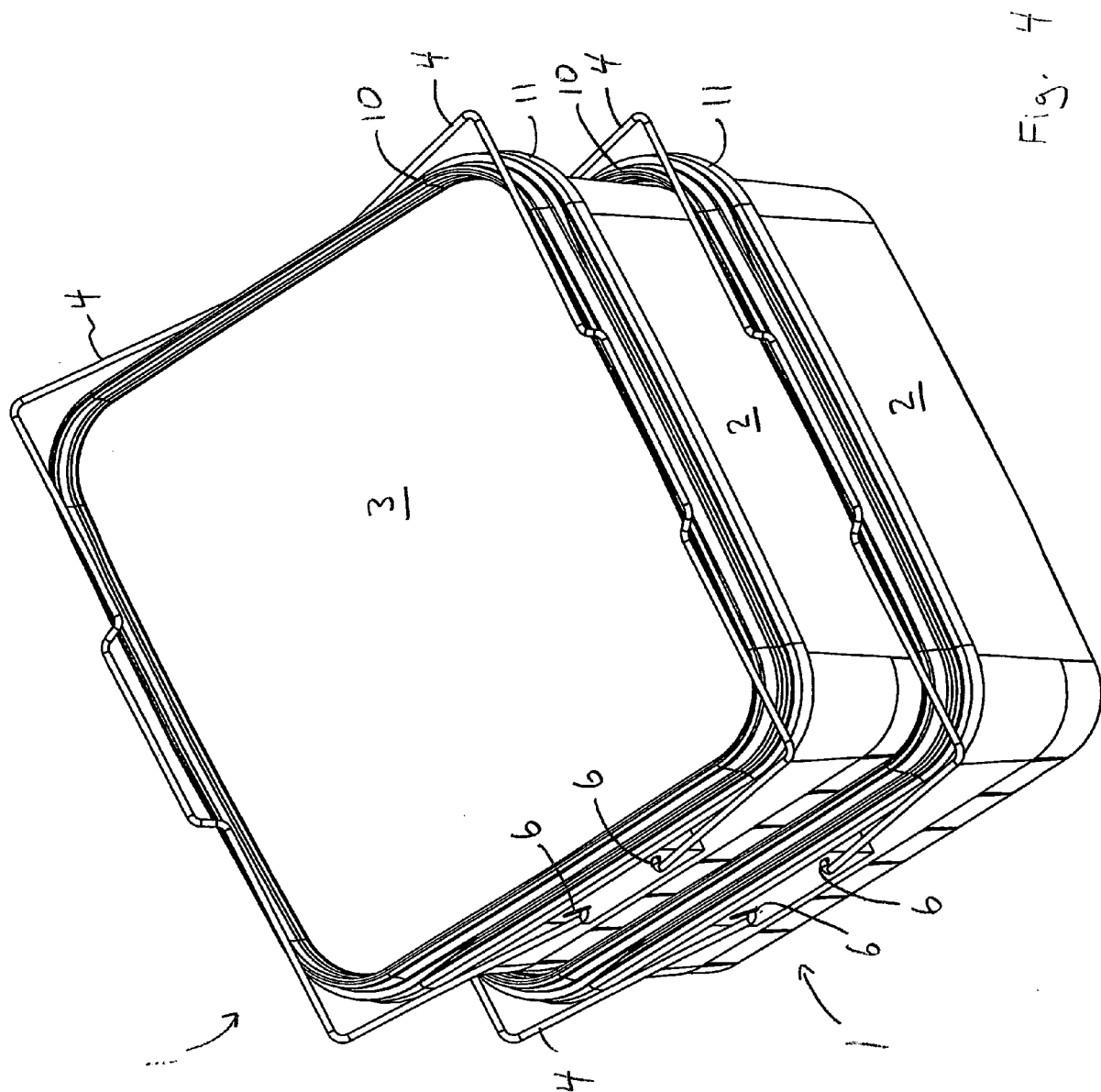
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REFERENCES CITED IN THE DESCRIPTION

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