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(54) **Container with displaceable handle**

Behälter mit verschiebbarem Handgriff

Contenant à poignée déplaçable

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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] US 2056827 describes a container with a pivotable handle displaceable between a first and a second position.

[0004] 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.

[0005] 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.

[0006] 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.

[0007] 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.

[0008] 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.

[0009] 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.

[0010] 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.

[0011] A fourth aspect of the current invention is to provide a container as mentioned in the introductory paragraph where the container is stackable.

[0012] The new and unique feature whereby at least some of the above mentioned aspects are provided is according to the container described in the appended claim 1.

[0013] In this way, one or both ends of the handles 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.

[0014] In a preferred embodiment according to the invention, the at least one end of each of the two handles can be connected to said container body via at least one key and slot arrangement. This is a simple and inexpensive mechanism. The slot is formed in the container body and the at least one end of the at least one handle is 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.

[0015] The slot is 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.

[0016] 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, will 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.

[0017] 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.

[0018] 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.

[0019] In order to provide a container which is more stable, the container comprises two handles. The ends of the handles are 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.

[0020] 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.

[0021] 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.

[0022] 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.

[0023] 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.

[0024] 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.

[0025] 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.

[0026] 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.

[0027] 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.

[0028] 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.

[0029] 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 upwards and outwards 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.

[0030] 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.

[0031] 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. 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.

[0032] 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.

[0033] 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.

[0034] 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.

[0035] 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 as defined by the appended claims. are also possible.

Claims

1. A container (1) comprising:

- a container body (2),
- a lid (3),
- two handles (4)

- where the ends (5) of each of the two handles (4) are pivotably connected to opposite sides of said container body (2),

- where at least one end (5) of each of the two handles (4) is displaceable between a first position (8) and a second position (9), such that when said at least one displaceable end (5) of a handle (4) is in the first position (8), said handle (4) can be rested on the edge of the container (1) or the edge (10) of the lid (3), and that when said at least one displaceable end (5) of said handle (4) is in the second position (9), said handle (4) can be pivoted past the edge (10) of the lid (3) and past the edge (11) of the container (1) such that said handle (4) rests along the side of the container (1),

- where said at least one displaceable end (5) of each of the two handles (4) is connected to said container body (2) via at least one key (5) and slot (6) arrangement where said slots (6) are formed in the container body (2) and where said at least one displaceable end (5) of each of the two handles (4) forms a key (5) which is arranged in one of the slots (6) and

- where the slots (6) are mainly vertically arranged.

2. A container (1) according to claim 1 **characterized in that** the slots (6) are 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° .
3. A container according to any one of claims 1-2 **characterized in that** a spring biasing means is arranged in the slots, said spring biasing means biasing the end of the handle into one of its positions.
4. A container (1) according to any one of claims 1-3, **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).
5. A container (1) according to any one of claims 1-4, **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).

Patentansprüche

1. Behälter (1), umfassend:

- einen Behälterkörper (2),

- einen Deckel (3),
- zwei Handgriffe (4)
- wobei die Enden (5) von jedem der beiden Handgriffe (4) mit gegenüberliegenden Seiten des Behälterkörpers (2) schwenkbar verbunden sind,
- wobei mindestens ein Ende (5) von jedem der beiden Handgriffe (4) zwischen einer ersten Position (8) und einer zweiten Position (9) verschiebbar ist, so dass der Handgriff (4), wenn sich das mindestens eine verschiebbare Ende (5) eines Handgriffs (4) in der ersten Position (8) befindet, an die Kante des Behälters (1) oder die Kante (10) des Deckels (3) anlegbar ist, und dass der Handgriff (4), wenn sich das mindestens eine verschiebbare Ende (5) des Handgriffs (4) in der zweiten Position (9) befindet, an der Kante (10) des Deckels (3) und an der Kante (11) des Behälters (1) vorbeiswenkbar ist, so dass der Handgriff (4) entlang der Seite des Behälters (1) anliegt,
- wobei das mindestens eine verschiebbare Ende (5) von jedem der beiden Handgriffe (4) durch mindestens eine Schlüssel- (5) und Schlitz- (6) Anordnung mit dem Behälterkörper (2) verbunden ist, wobei die Schlitz- (6) in dem Behälterkörper (2) geformt sind, und wobei das mindestens eine verschiebbare Ende (5) von jedem der beiden Handgriffe (4) einen in einem der Schlitz- (6) angebrachten Schlüssel (5) bildet, und
- wobei die Schlitz- (6) hauptsächlich vertikal angebracht sind.
2. Behälter (1) nach Anspruch 1, **dadurch gekennzeichnet, dass** die Schlitz- (6) in einem Winkel (α) zu einer vertikalen Mittellinie (7) des Behälterkörpers (2) angeordnet sind, wobei sich der Winkel (α) innerhalb des Bereiches von 80° bis 0° , bevorzugt zwischen 60° und 10° , und am meisten bevorzugt zwischen 50° und 20° , befindet.
3. Behälter nach irgendeinem der Ansprüche 1 bis 2, **dadurch gekennzeichnet, dass** ein Federvorspannmittel in den Schlitz- (6) angebracht ist, welches Federvorspannmittel das Ende des Handgriffs in einer seiner Positionen vorspannt.
4. Behälter (1) nach irgendeinem der Ansprüche 1 bis 3, **dadurch gekennzeichnet, dass** die Enden (5) der Handgriffe (4) durch im Behälterkörper (2) geformte Schlitz- (6) mit dem Behälterkörper (2) verbunden sind, und dass die Schlitz- (6) versetzt zur Mittellinie (7) des Behälterkörpers (2) im Behälterkörper (2) angeordnet sind.
5. Behälter (1) nach irgendeinem der Ansprüche 1 bis 4, **dadurch gekennzeichnet, dass** die Schlitz- (6) in Bezug auf die Mittellinie (7) des Behälterkörpers (2) in einer solchen Weise abgewinkelt sind, dass sich die Oberteile (9) der Schlitz- (6) weiter weg von der Mittellinie (7) des Behälterkörpers (2) befinden als die Unterteile (8) der Schlitz- (6).
- ### Revendications
1. Contenant (1) comprenant:
- un corps-contenant (2);
 - un couvercle (3);
 - deux poignées (4)
- dans lequel les extrémités (5) de chacune des deux poignées (4) sont accouplées de manière pivotante aux cotés opposés dudit corps-contenant (2) ;
- dans lequel l'une au moins des extrémités de chacune des deux poignées (4) est déplaçable entre une première position (8) et une deuxième position (9) de manière à ce que, quand l'au moins une extrémité déplaçable (5) d'une poignée (4) est dans sa première position (8), ladite poignée (4) est capable de prendre appui sur le bord dudit contenant (1) ou le bord (10) dudit couvercle (3) ; et que, quand l'au moins une extrémité déplaçable (5) de ladite poignée (4) est dans sa deuxième position (9), ladite poignée peut se faire pivoter au delà du bord (10) du couvercle (3) et au-delà du bord (11) dudit contenant (1), de sorte que ladite poignée prenne appui le long du côté du contenant (1) ;
- dans lequel l'au moins une extrémité déplaçable (5) de chacune des deux poignées (4) est accouplée audit corps-contenant (2) par voie d'au moins un arrangement arête et rainure dont les rainures (6) sont aménagées dans le corps-contenant (2) et dont l'une au moins des extrémités déplaçables (5) de chacune des deux poignées (4) forme une rainure (5) qui est aménagée dans un des arêtes (6) ; et
- dans lequel les rainures (6) sont aménagées de manière principalement verticale.
2. Contenant (1) selon la revendication 1, **caractérisé en ce que** les rainures (6) sont aménagées à un angle (α) par rapport à un axe central (7) dudit corps-contenant (2), ledit angle (α) allant de 80° à 0° , étant

préférentiellement entre 60° et 10°, et plus préférentiellement entre 50° et 20°.

3. Contenant selon l'une quelconque des revendications 1 à 2, **caractérisé en ce qu'**un moyen de tension par ressort est aménagé dans les rainures, lesdits moyens de tension par ressort tensionnant l'extrémité de la poignée dans l'une de ses positions. 5
4. Contenant (1) selon l'une quelconque des revendications 1 à 3, **caractérisé en ce que** les extrémités (5) des poignées (4) sont accouplées au corps-contenant (2) par voie des rainures (6) configurées dans le corps-contenant (2), et **en ce que** les rainures (6) sont aménagées dans le corps-contenant (2) de manière déplacée par rapport à l'axe central (7) dudit corps-contenant (2). 10
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5. Contenant (1) selon l'une quelconque des revendications 1 à 4, **caractérisé en ce que** les rainures (6) sont positionnées à un angle par rapport à l'axe central (7) du corps-contenant (2) de manière à ce que les portions supérieures (9) desdites rainures (6) sont plus éloignées de l'axe central (7) du corps-contenant (2) que les parties inférieures (8) desdites rainures (6). 20
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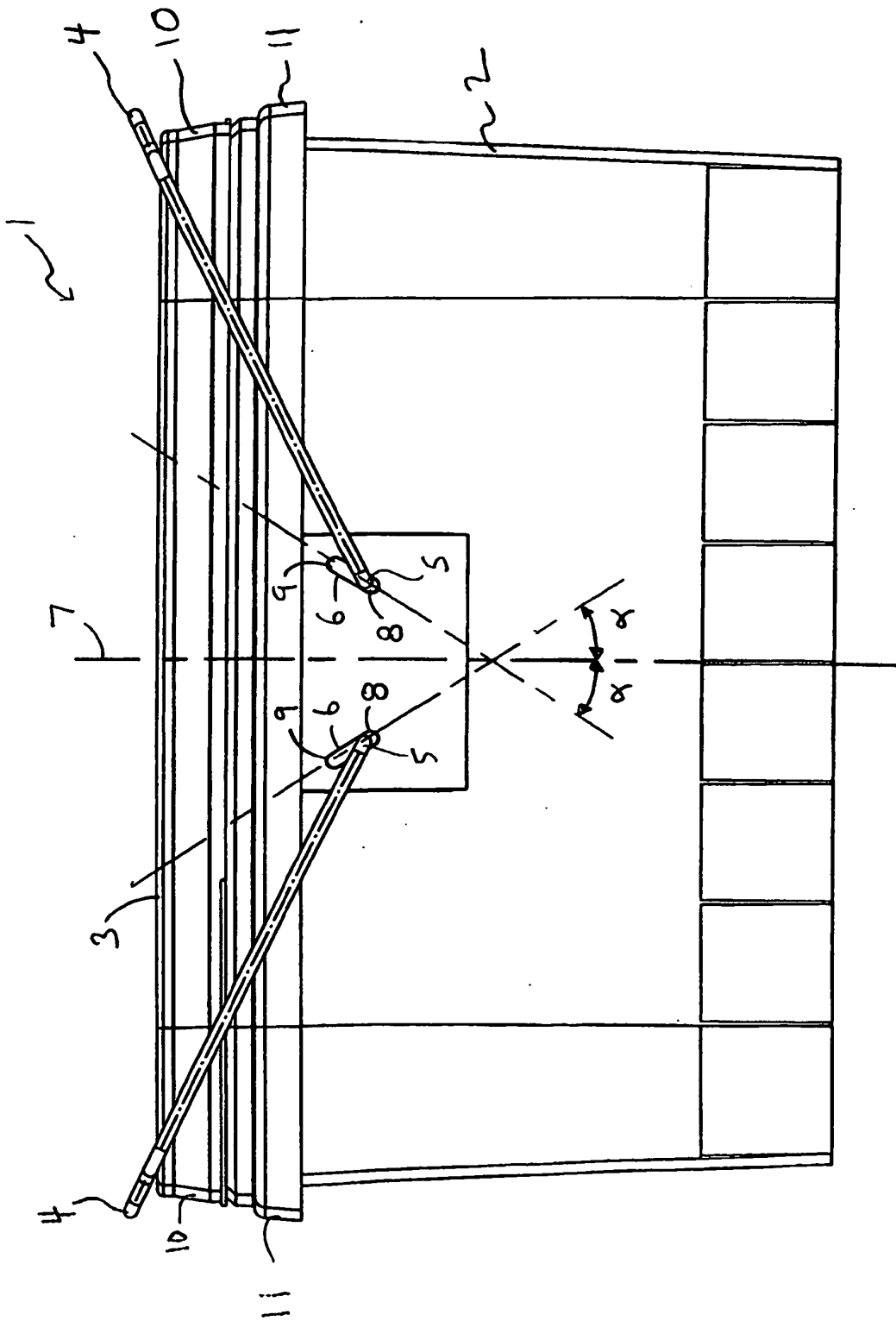


Fig. 1

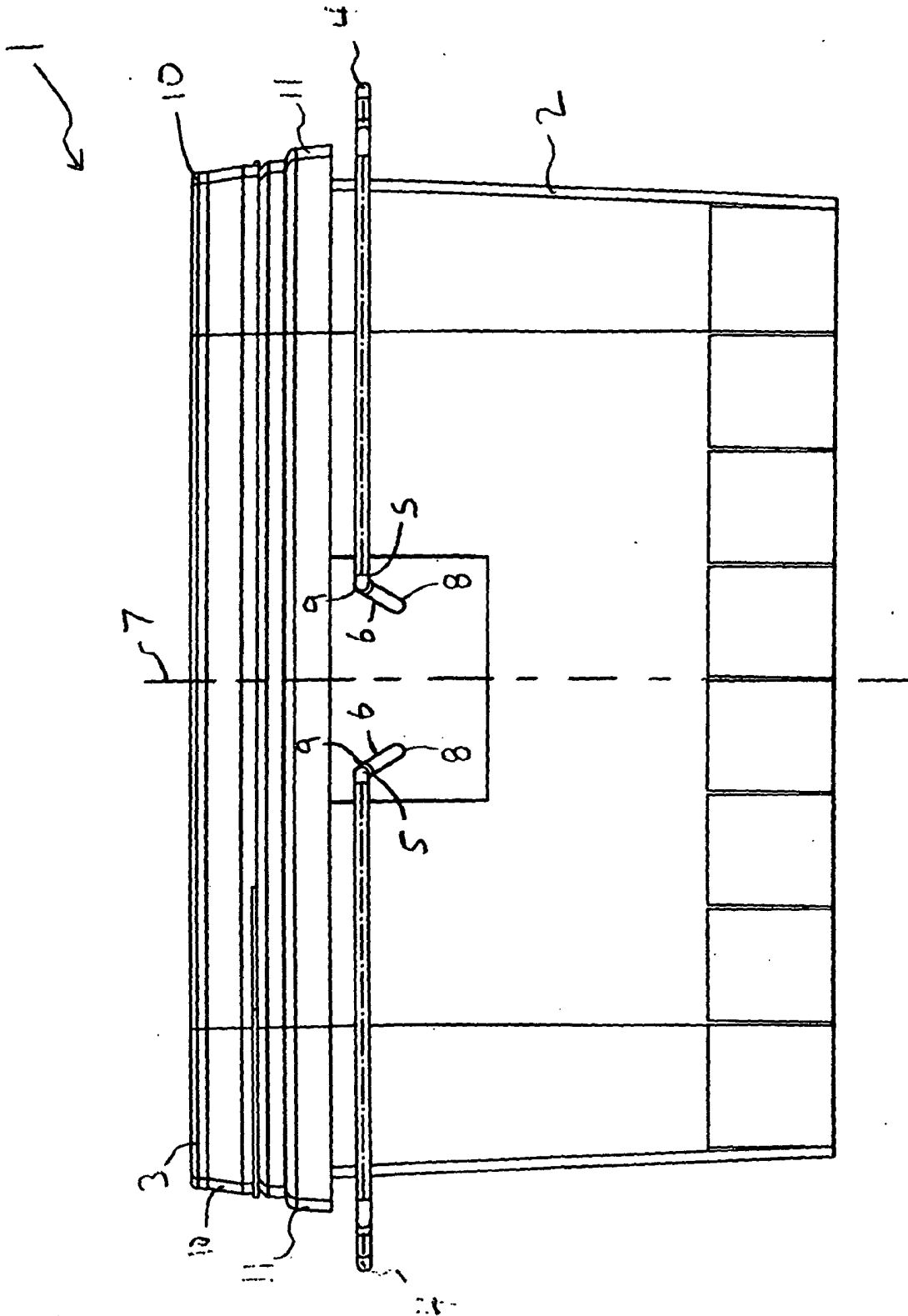
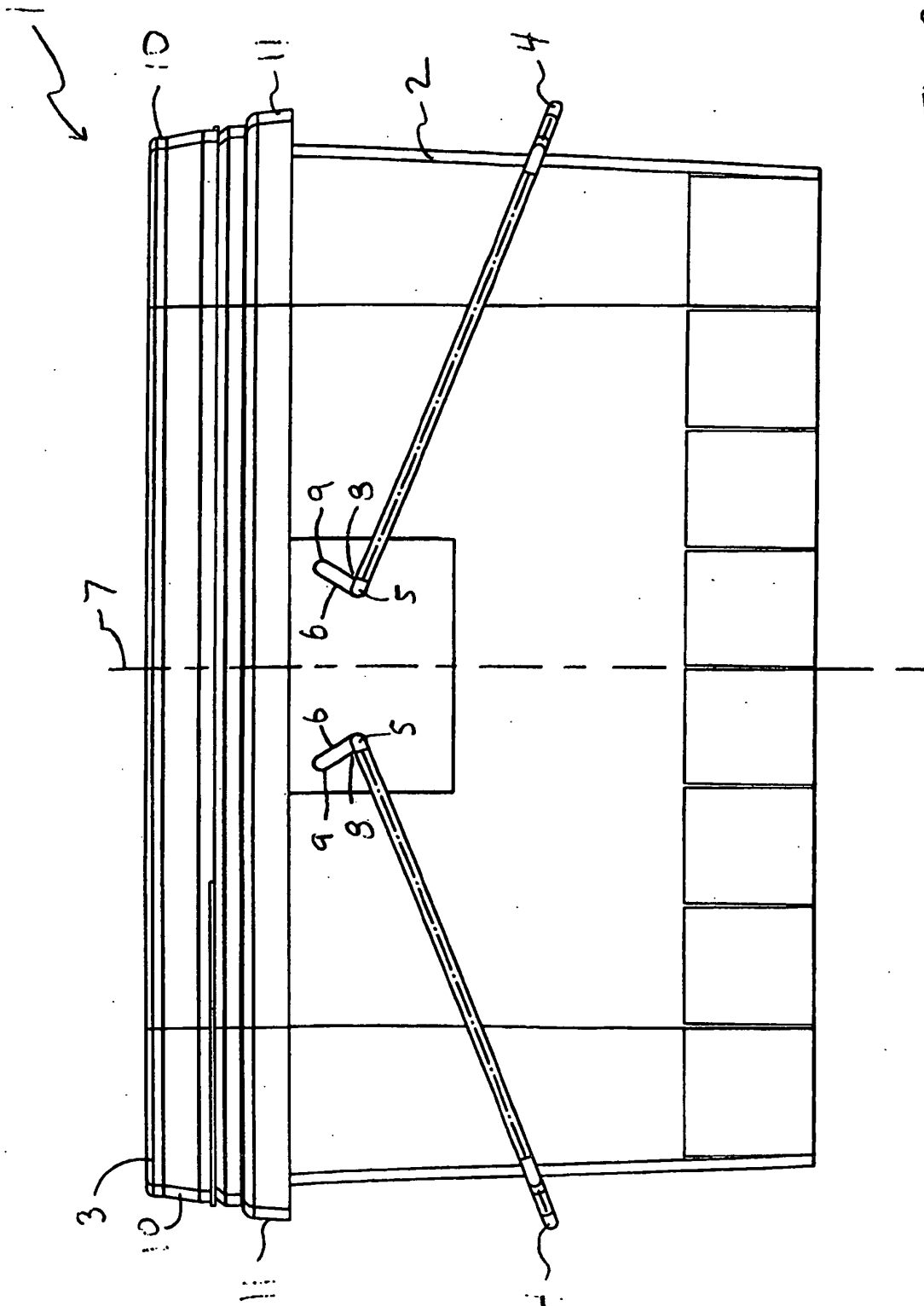


Fig. 2



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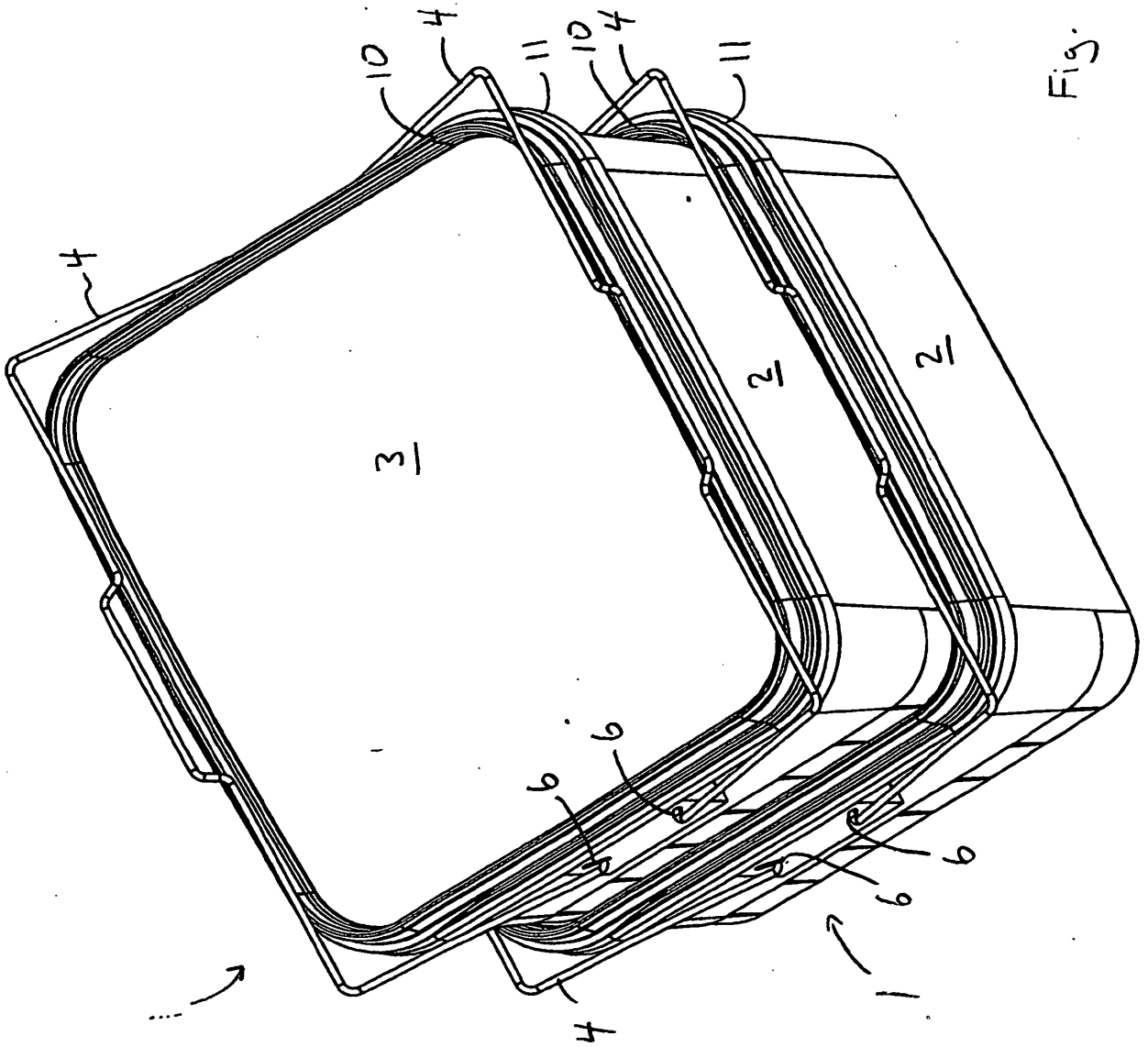


Fig. 4

REFERENCES CITED IN THE DESCRIPTION

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