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(54) **HIGH PRESSURE AIR CONTAINER**

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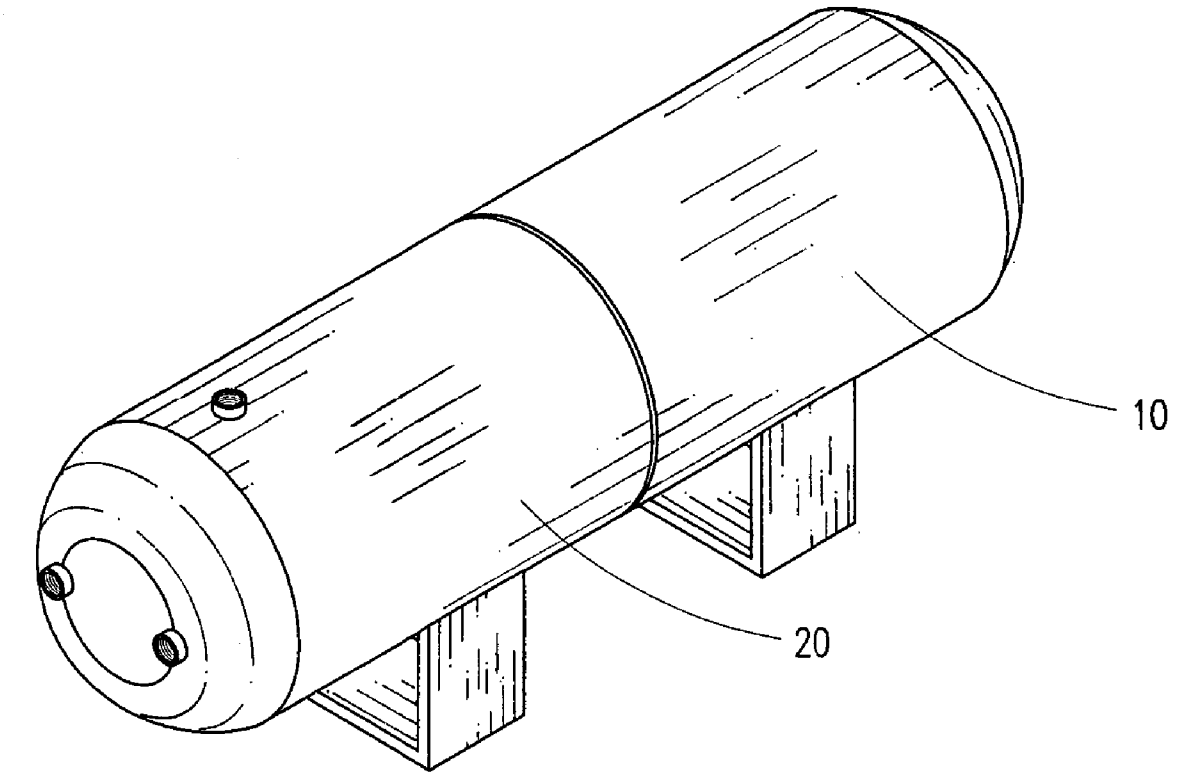
(57) **ABSTRACT**

A high pressure air container includes a first housing and a second housing connected to each other to form a receiving space between the first housing and the second housing. Some connecting material is provided to fully fill the gap between the first housing and the second housing to form an airtight condition between the first housing and the second housing.



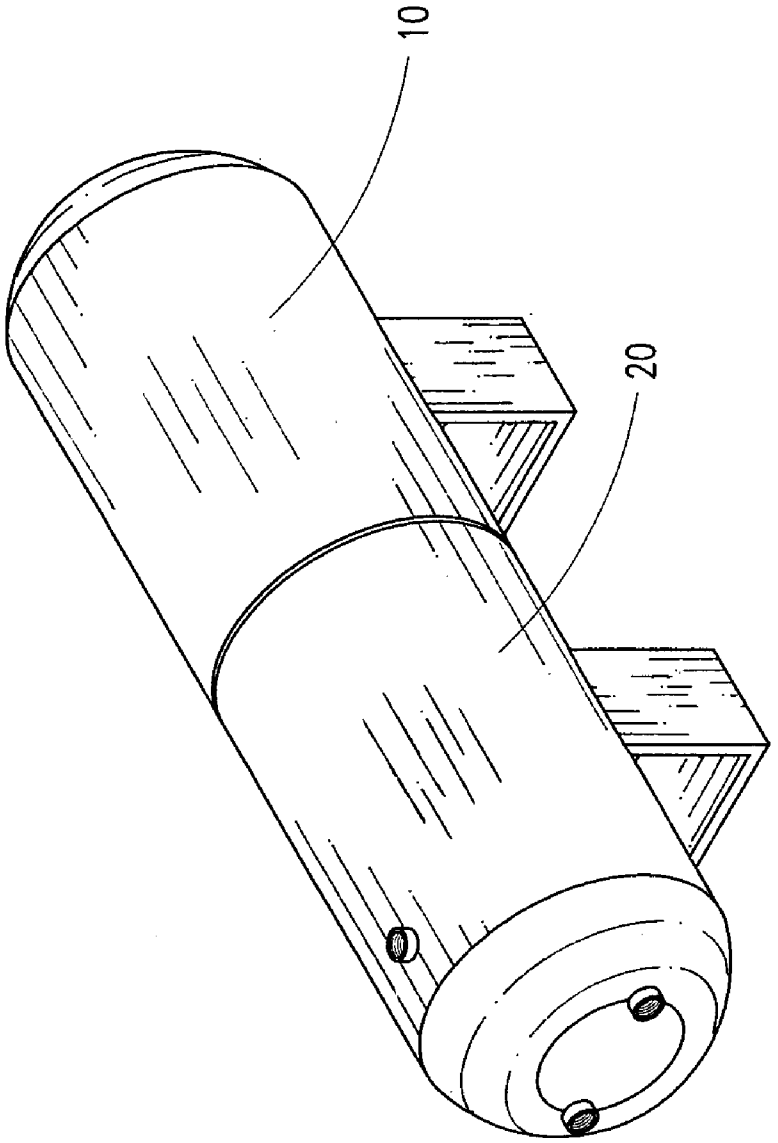


FIG. 1

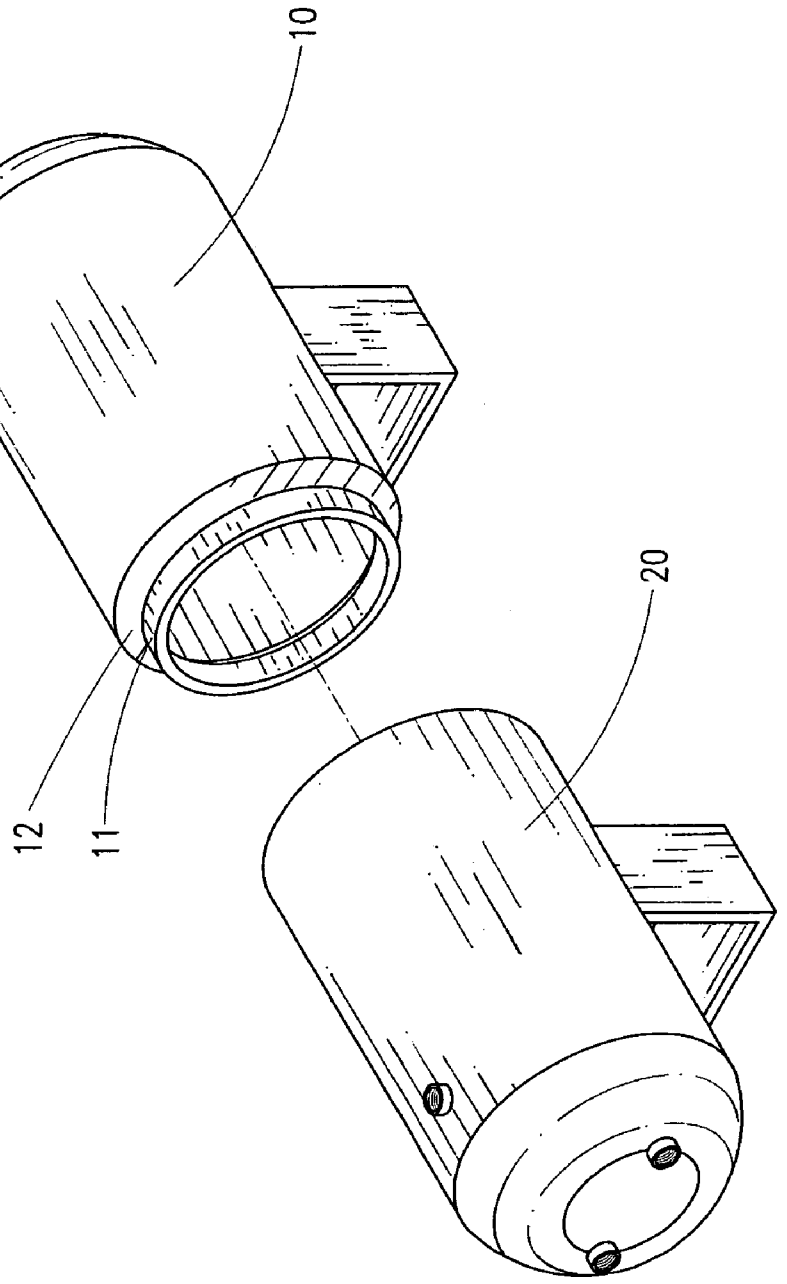


FIG. 2

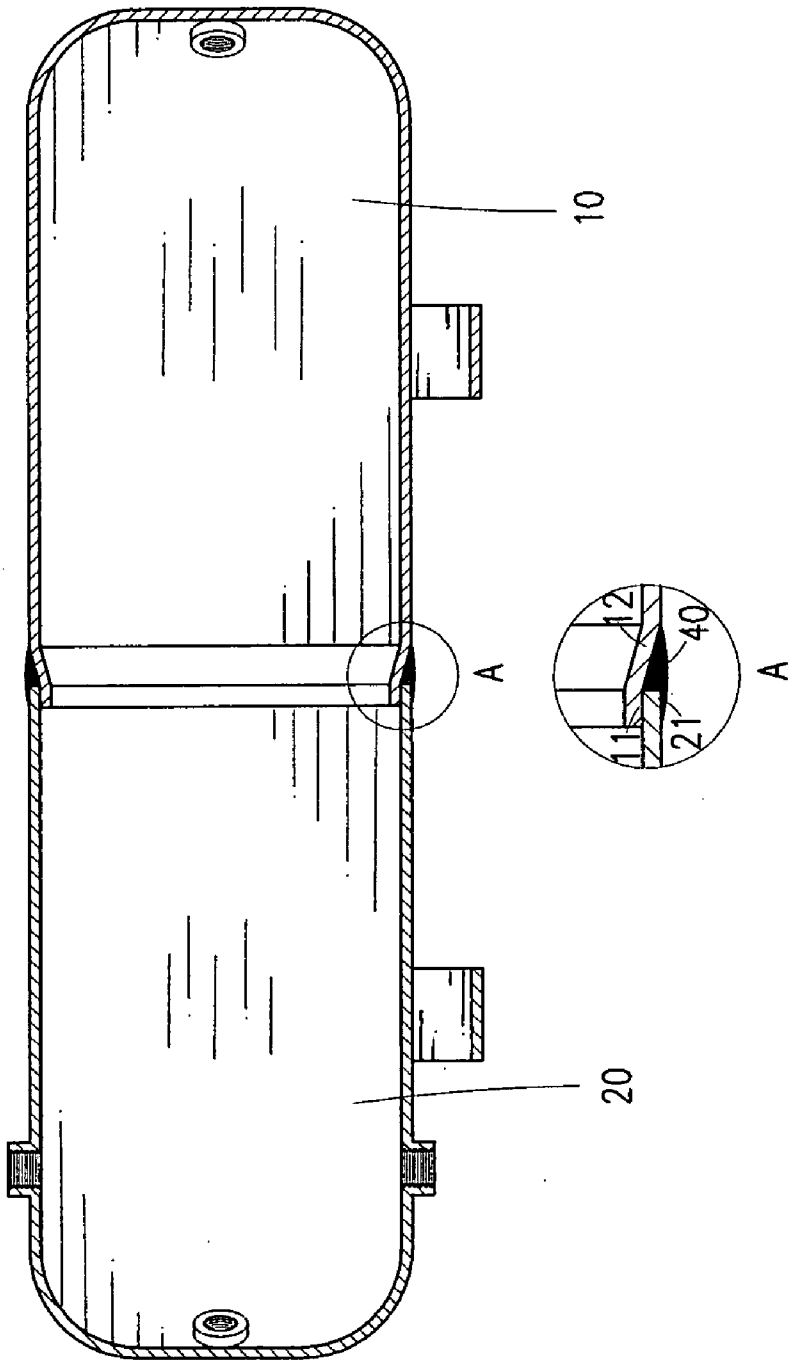


FIG. 3

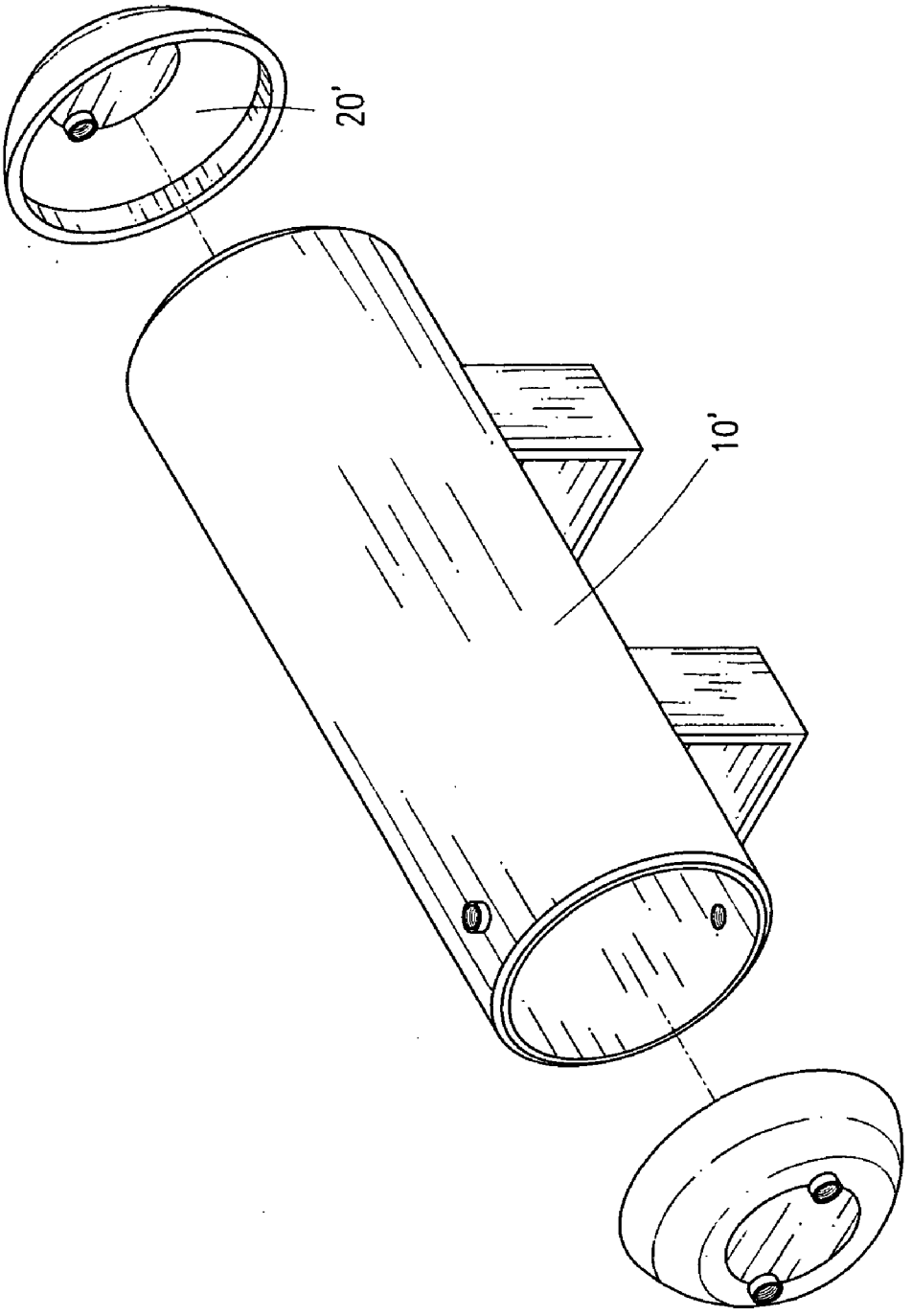


FIG. 4 Prior Art

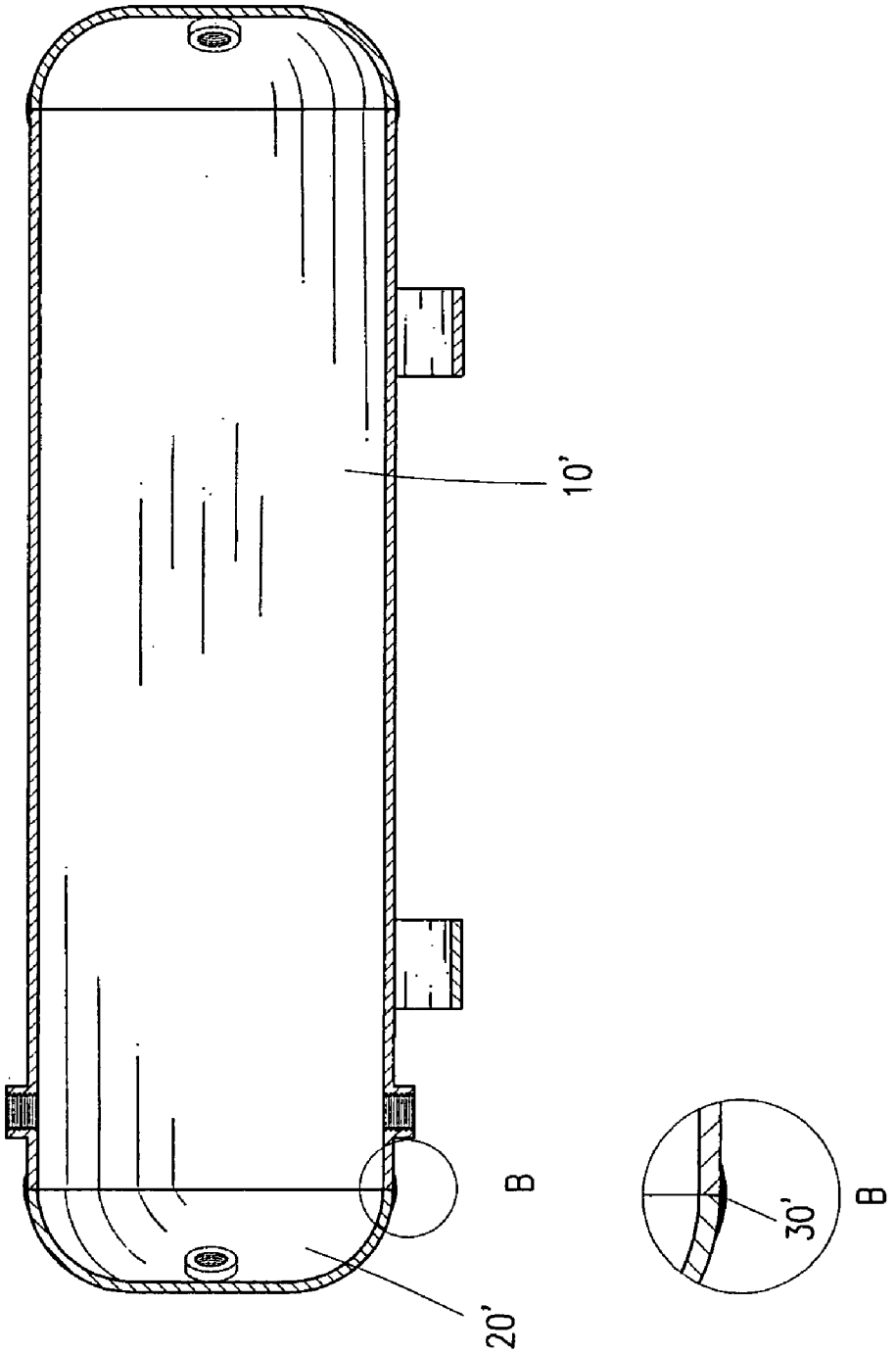


FIG.5 Prior Art

HIGH PRESSURE AIR CONTAINER

BACKGROUND OF THE INVENTION

[0001] 1. Field of the Invention

[0002] The present invention relates to a container, and more particularly to a high pressure air container.

[0003] 2. Description of Related Art

[0004] A conventional high pressure air container in accordance with the prior art shown in **FIGS. 4 and 5** comprises a cylinder (**10'**) and two vaults (**20'**) respectively welded to two opposite ends of the cylinder (**10'**) for airtightly closing the cylinder (**10'**) due to the weld material (**30'**). There is no connecting structure disposed among the cylinder (**10'**) and the two vaults (**20'**). The cylinder (**10'**) and the two vaults (**20'**) directly connected to one another only by the weld material (**30'**).

[0005] However, the structure of the conventional high pressure air container has several disadvantages as follow.

[0006] 1. The conventional high pressure air container can not bear a really high pressure because there is no connecting structure disposed among the cylinder (**10'**) and the two vaults (**20'**).

[0007] 2. The connection among the cylinder (**10'**) and the two vaults (**20'**) does not enough for containing high pressure in a safe condition. As a result, it is very dangerous when the convention high pressure air container is operated in a high temperature because the high temperature of the working environment will raise the pressure in the container. The raised pressure in the conventional air container may cause a explosion that's the two vaults (**20'**) detached from the cylinder (**10'**) in a moment.

[0008] The present invention has arisen to mitigate and/or obviate the disadvantages of the conventional high pressure air container.

SUMMARY OF THE INVENTION

[0009] The main objective of the present invention is to provide an improved high pressure air container that promotes the safety of the container.

[0010] To achieve the objective, a high pressure air container in accordance with the present invention comprises a first housing having a buckling portion formed on an open end thereof. A second housing is connected to the first housing to form a receiving space between the first housing and the second housing. The second housing has a connecting portion formed on an open end thereof for mounting to the buckling portion of the first housing. Some connecting material fully fills a gap between the buckling portion and the connecting portion to form an airtight condition between the first housing and the second housing.

[0011] Further benefits and advantages of the present invention will become apparent after a careful reading of the detailed description with appropriate reference to the accompanying drawings.

BRIEF DESCRIPTION OF THE DRAWINGS

[0012] **FIG. 1** is a perspective view of a high pressure air container in accordance with the present invention;

[0013] **FIG. 2** is an exploded perspective view of the high pressure air container in **FIG. 1**;

[0014] **FIG. 3** is a cross-sectional view of the high pressure air container in **FIG. 1**;

[0015] **FIG. 4** is an exploded perspective view of a conventional high pressure air container in accordance with the prior art; and

[0016] **FIG. 5** is a cross-sectional view of the conventional high pressure air container in accordance with the prior art.

DETAILED DESCRIPTION OF THE INVENTION

[0017] Referring to the drawings and initially to **FIGS. 1-3**, a high pressure air container in accordance with the present invention comprises a first housing (**10**) and a second housing (**20**) connected to each other to form a receiving space therebetween. Some connecting material (**40**) is provided to fully fill the gap between the first housing (**10**) and the second housing (**20**) to form an airtight condition between the first housing (**10**) and the second housing (**20**).

[0018] The first housing (**10**) has an open end that is inward shrunk to formed a buckling portion (**11**) and a shoulder (**12**) on the first housing (**10**). The second housing (**20**) has an opening forming a connecting portion (**21**). The connecting portion (**21**) of the second housing (**20**) has an inner diameter slightly greater than an outer diameter of the buckling portion (**11**) of the first housing (**10**). Consequently, the buckling portion (**11**) of the first housing (**10**) is received in the connecting portion (**21**) of the second housing (**20**) and the distal end of the second housing (**20**) abuts against the shoulder (**12**) of the first housing (**10**). The buckling portion (**11**) of the first housing (**10**) tightly abuts against an inner periphery of the connecting portion (**21**) of the second housing (**20**) for providing a first safety when the pressure in the high pressure air container of the present invention is raised.

[0019] In addition, a gap between the shoulder (**12**) of the first housing (**10**) and the connecting portion (**21**) of the second housing (**20**) is fully filled with connecting material (**40**) to form an airtight condition between the first housing (**10**) and the second housing (**20**) and provide a second safety. As a result, the high pressure air container of the present invention can bear a high pressure even the pressure between in the receiving space between the first housing (**10**) and the second housing (**20**) is raised.

[0020] In another embodiment of the present invention, the buckling portion (**11**) of the first housing (**10**) has an inner diameter slightly greater than an outer diameter of the connecting portion (**21**) of the second housing (**20**), thereby the connecting portion (**21**) is received in the buckling portion (**11**) of the first housing (**10**) and the gap between the buckling portion (**11**) and the connecting portion (**21**) is fully filled the material to form a airtight condition between the first housing (**10**) and the second housing (**20**), and provide the first safety and the second safety as described in the above paragraph.

[0021] As described above, the high pressure air container in accordance with the present invention has several advantages as follow.

[0022] 1. The high pressure air container of the present invention can bear a high pressure even the pressure between in the receiving space between the first housing (10) and the second housing (20) is raised due to the buckling portion (11) and the connecting portion (21) because the buckling portion (11) and the connecting portion (21) are complementarily disposed to each other.

[0023] 2. The high pressure air container of the present invention can bear a high pressure such that the first housing (10) and the second housing (20) is hardly detached from each other, thereby the safety of the present invention is promoted.

[0024] Although the invention has been explained in relation to its preferred embodiment, it is to be understood that many other possible modifications and variations can be made without departing from the spirit and scope of the invention as hereinafter claimed.

What is claimed is:

1. A high pressure air container comprising:

a first housing having a buckling portion formed on an open end thereof;

a second housing connected to the first housing to form a receiving space between the first housing and the second housing, the second housing having a connecting portion formed on an open end thereof for mounting to the buckling portion of the first housing; and

some connecting material fully filling a gap between the buckling portion and the connecting portion to form an airtight condition between the first housing and the second housing.

2. The air container as claimed in claim 1, wherein the connecting portion has an inner diameter slightly greater than an outer diameter of the buckling portion such that the buckling portion is received in the connecting portion.

3. The air container as claimed in claim 1, wherein the buckling portion has an inner diameter slightly greater than an outer diameter of the connecting portion such that the connecting portion is received in the buckling portion.

4. The air container as claimed in claim 1, wherein the buckling portion and the connecting portion are complementarily disposed to each other.

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