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(54) **Vacuum having assist handles**

(57) A vacuum including a tank, a suction device in fluid communication with the tank, and at least one assist handle disposed on the tank. A lid may be removably

mounted to the tank, and the at least one assist handle is adapted to facilitate lifting the tank to empty waste matter deposited in the tank via the suction device.

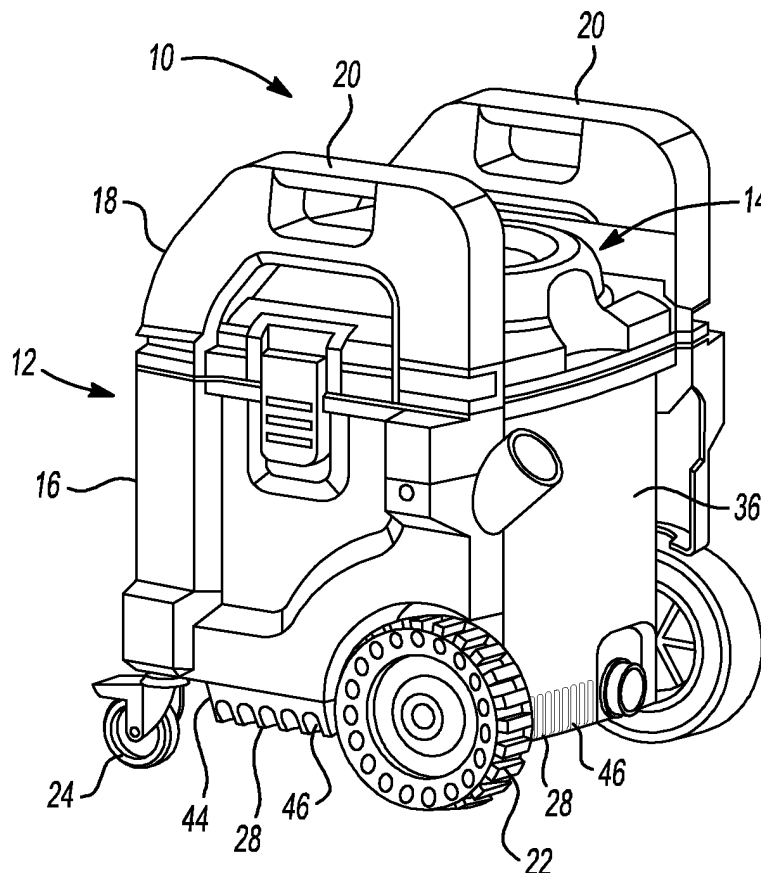


Fig-1

Description

[0001] The present disclosure relates to vacuums, and in particular, to a vacuum with assist handles.

[0002] The statements in this section merely provide background information related to the present disclosure and may not constitute prior art.

[0003] Many vacuums, especially shop vacuums, are able to collect a relatively large amount of dirt, debris, and other wet or dry waste matter. Operating the vacuum causes it to fill with waste matter. Typically, an operator must lift the vacuum to empty the waste matter into a garbage receptacle.

[0004] A vacuum that has become substantially filled with waste matter after prolonged operation may be heavy and difficult to handle. Typically, vacuums do not include satisfactory means of enabling an operator to grip and lift the vacuum for disposal of the accumulated waste matter.

[0005] According to the first aspect of the present invention, there is provided a vacuum comprising a housing including a tank portion; and a suction device disposed within said housing; wherein said tank portion is adapted to receive waste matter via said suction device, and said tank portion includes at least one assist handle adapted to facilitate gripping and lifting the vacuum to empty waste matter accumulated in said tank portion.

[0006] A vacuum including a tank, a suction device in fluid communication with the tank, and at least one assist handle disposed on the tank. A lid may be removably mounted to the tank, and the at least one assist handle is adapted to facilitate lifting the tank to empty waste matter deposited in the tank via the suction device.

[0007] Where a vacuum comprises all of these features, there is provided a second aspect of the present invention which is a vacuum comprising:

- a tank;
- a suction device in fluid communication with said tank; and
- at least one assist handle disposed on said tank,

wherein said at least one assist handle is adapted to facilitate lifting said tank to empty waste matter deposited in said tank via said suction device.

[0008] The at least one assist handle can be at least partially defined by a bottom face of said tank. Alternatively the at least one assist handle can be defined by at least one of a side face of said tank, a rear face of said tank, or a suspension cross-member.

[0009] The at least one assist handle can include an ergonomic feature.

[0010] The at least one assist handle can include a plurality of grooves adapted to facilitate gripping.

[0011] The at least one assist handle can include a tapered portion to further facilitate gripping.

[0012] The vacuum can further comprise a lid disposed on said tank, wherein said lid includes at least one upper

handle.

[0013] The vacuum can further comprise a lid disposed on said tank, wherein a pivotable handle is disposed on said lid.

5 **[0014]** The at least one assist handle of the vacuum can be integrally formed with said tank.

[0015] The at least one assist handle can be mounted to said tank via an interference fit.

10 **[0016]** The at least one assist handle can be threadably fastened to said tank.

[0017] The at least one assist handle can be bonded to said tank.

15 **[0018]** Further areas of applicability will become apparent from the description provided herein. It should be understood that the description and specific examples are intended for purposes of illustration only and are not intended to limit the scope of the present disclosure.

20 **[0019]** The drawings described herein are for illustration purposes only and are not intended to limit the scope of the present disclosure in any way.

Figure 1 is a rear perspective view of a vacuum according to the principles of the present disclosure; Figure 2 is a front perspective view of a vacuum according to the principles of the present disclosure; Figure 3 is a right side view of a vacuum according to the principles of the present disclosure; Figure 4 is a left side view of a vacuum according to the principles of the present disclosure; Figure 5 is a cross-sectional view of an assist handle mounted to a tank according to the principles of the present disclosure; Figure 6 is a cross-sectional view of an assist handle mounted to a tank according to an alternative embodiment of the present disclosure; Figure 7 is a cross-sectional view of an assist handle mounted to a tank according to yet another embodiment of the present disclosure; and Figure 8 is a perspective view of the vacuum illustrating an additional pivoting handle disposed on a center portion of the lid.

45 **[0020]** The following description is merely exemplary in nature and is not intended to limit the present disclosure, application, or uses. It should be understood that throughout the drawings, corresponding reference numerals indicate like or corresponding parts and features.

50 **[0021]** Referring to Figures 1-4, a vacuum with at least one assist handle is shown, and is generally referred to as vacuum 10. Vacuum 10 includes a housing 12 that encloses a suction device. The suction device is generally located within housing 12 at 14, and includes a mechanism that creates a suction force operable to collect dirt, debris, and other dry or wet waste matter, as known in the art. For example, suction device 14 may include an electric motor driving a suction impeller (not shown).

55 **[0022]** Housing 12 may have a tank portion 16 and a lid portion 18. Tank 16 may be in fluid communication

with suction device 14, and may be adapted to receive and store waste matter 19 collected via suction device 14. Lid portion 18 may be removably mounted to tank 16. Lid 18 may include at least one upper handle 20 to facilitate removal of lid 18, and/or to facilitate mobility of vacuum 10 during operation. In an alternative embodiment, lid 18 may be pivotable about hinges (not shown) disposed on tank 16 and lid 18, enabling access to the inside of tank 16.

[0023] Vacuum 10 may include wheels 22 and/or caster wheels 24 to further facilitate maneuverability of vacuum 10. Wheels 22 and/or caster wheels 24 may be mounted to tank 16 via a suspension cross-member 26 in the form of a tube mounted to tank 16.

[0024] Tank 16 may include at least one assist handle 28 to facilitate gripping and lifting tank 16. Assist handle 28 may be integrally formed with tank 16 and at least partially defined by a bottom face 30 of tank 16 and at least one of a side face 32, 34 (shown in Figures 3 and 4) of tank 16, a rear face 36 (shown in Figure 1) of tank 16, a front face 38 (shown in Figure 2) of tank 16, or suspension cross-member 26 (shown in Figure 2).

[0025] In another embodiment, assist handle 28 may be disposed on tank 16 substantially near bottom face 30 on any of side face 32, 34, rear face 36, and front face 38. Assist handle 28 may be mounted to tank 16 via an interference or snap fit, at least one threaded bolt 40 or other fastener, or other methods known in the art. Alternatively, assist handle 28 may be bonded to tank 16 via adhesive 42.

[0026] In an exemplary embodiment, vacuum 10 may include a plurality of assist handles 28. Assist handles 28 may be disposed on any or all of side face 32, 34, rear face 36, front face 38, and suspension cross-member 26.

[0027] Assist handles 28 may be ergonomically contoured to facilitate gripping and lifting vacuum 10 to dump waste matter 19 accumulated within tank 16 during operation of vacuum 10. The ergonomic features of assist handles 28 may include a tapered portion 44, grooves 46, and/or other contours adapted to facilitate comfortable gripping. Wheels 22 and/or caster wheels 24 provide sufficient clearance between assist handles 28 and the floor or ground to enable an operator to at least partially grip bottom face 30 of tank 16.

[0028] The lid portion 18 may also include a pivoting handle 50, as shown in Figure 8. Pivoting handle 50 includes a hinge 52, about which pivoting handle 50 is pivotable. Pivoting handle 50 may be pivoted substantially flush to lid 18 for convenience when not in use, and may be pivoted back to an upright position as desired. The pivoting handle 50 may be utilized to push, pull or lift vacuum 10 to facilitate mobility. Pivoting handle 50 can also be utilized to lift the lid portion 18 off of the tank portion 16. Pivoting handle 50 may be used alone or in combination with wheels 18, 20, assist handles 28 and/or upper handles 24 to transport vacuum 10.

[0029] The description of the present disclosure is merely exemplary in nature and, thus, variations that do

not depart from the gist of the disclosure are intended to be within the scope of the disclosure. Such variations are not to be regarded as a departure from the spirit and scope of the disclosure.

Claims

1. A vacuum comprising:

a housing including a tank portion; and
a suction device disposed within said housing;

wherein said tank portion is adapted to receive waste matter via said suction device, and said tank portion includes at least one assist handle adapted to facilitate gripping and lifting the vacuum to empty waste matter accumulated in said tank portion.

2. The vacuum according to claim 1, wherein said at least one assist handle is at least partially defined by a bottom face of said tank portion.

3. The vacuum according to claim 1, wherein said at least one assist handle is at least partially defined by one of a suspension cross-member, a rear face of said tank portion, or a side face of said tank portion.

4. The vacuum according to claim 1, wherein said at least one assist handle is ergonomically contoured.

5. The vacuum according to claim 1, wherein said at least one assist handle includes a tapered portion to facilitate gripping.

6. The vacuum according to claim 1, wherein said at least one assist handle includes a plurality of grooves.

7. The vacuum according to claim 1, further comprising a plurality of assist handles disposed on different sides of said tank portion.

8. The vacuum according to claim 7, wherein said plurality of assist handles are at least partially defined by a bottom face of said tank portion.

9. The vacuum according to claim 7, wherein said plurality of assist handles are at least partially defined by at least one of a suspension cross-member, a rear face of said tank portion, and a side face of said tank portion.

10. The vacuum according to claim 7, wherein said plurality of assist handles are ergonomically contoured.

11. The vacuum according to claim 1, wherein said at least one assist handle is integrally formed with said

tank portion.

- 12.** The vacuum according to claim 1, wherein said at least one assist handle is mounted to said tank portion.

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- 13.** The vacuum according to claim 1, further comprising a lid portion removably mounted to said tank portion to facilitate waste matter disposal.

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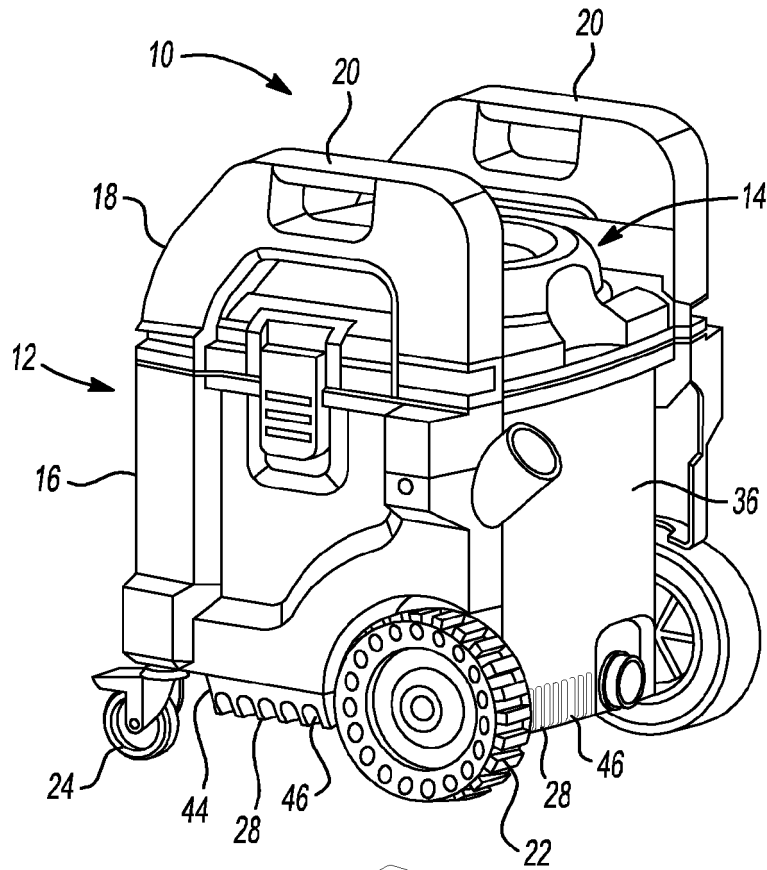


Fig-1

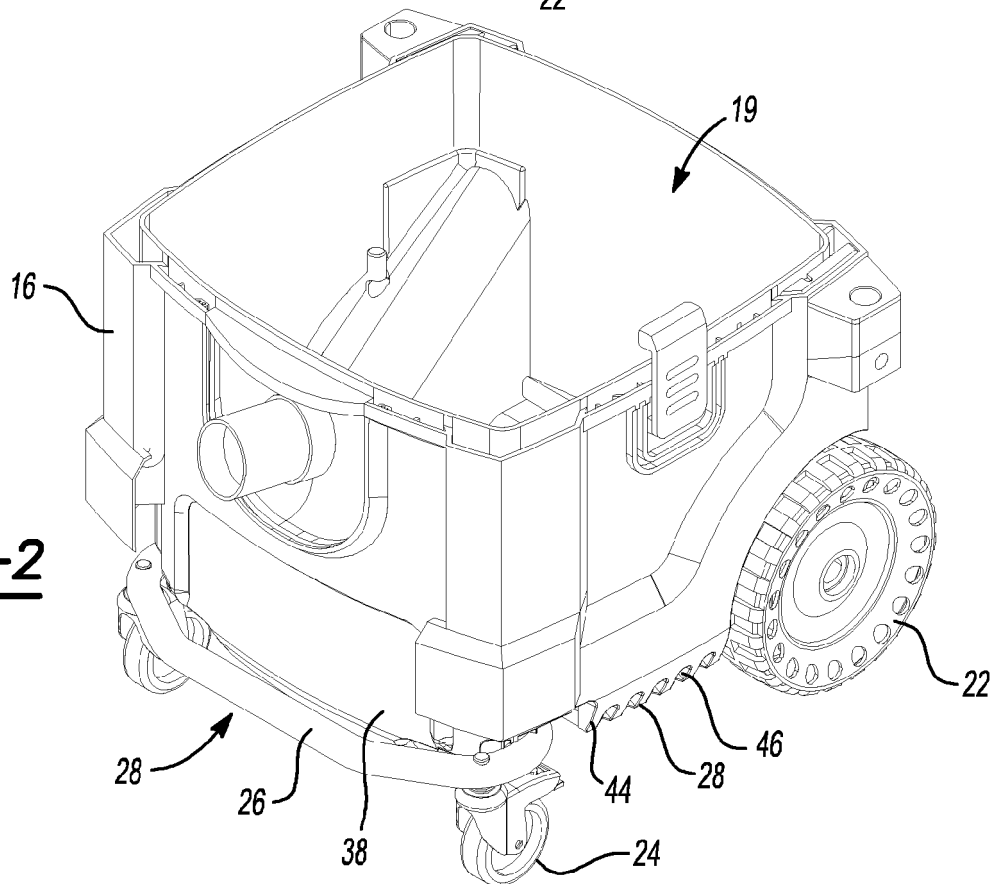


Fig-2

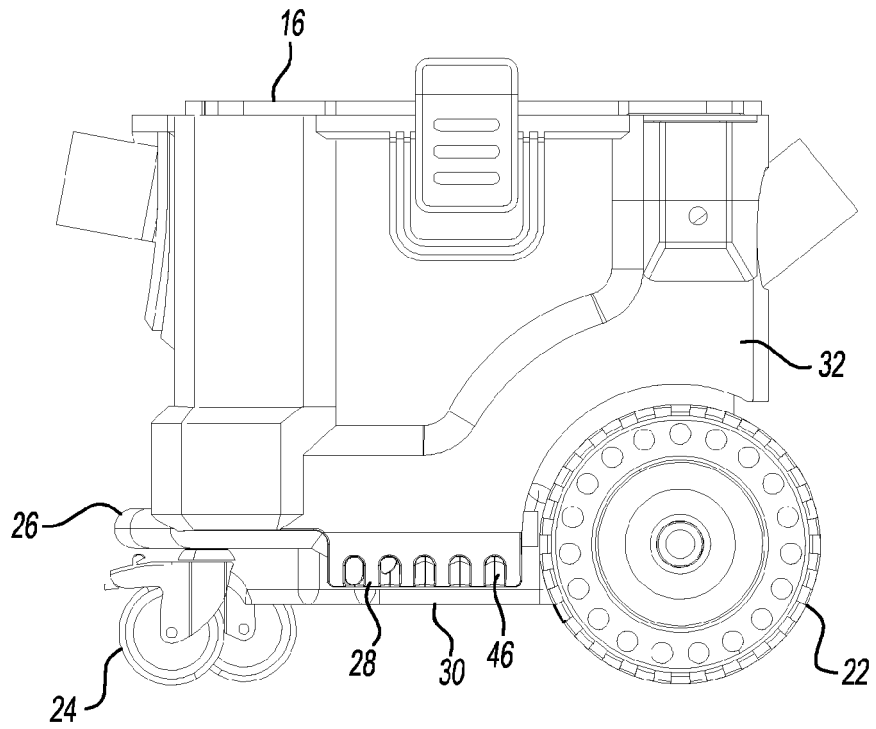


Fig-3

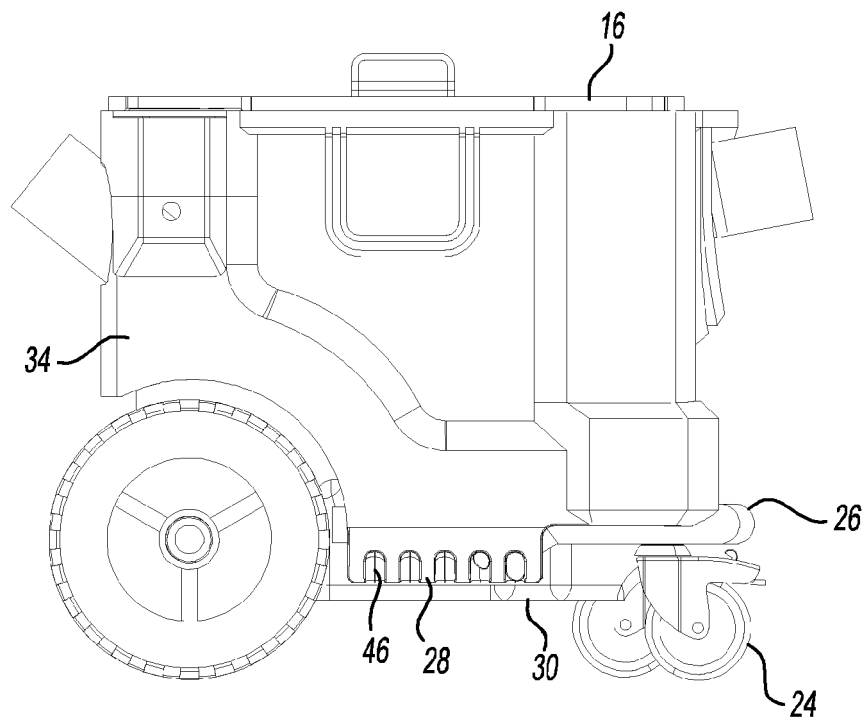


Fig-4

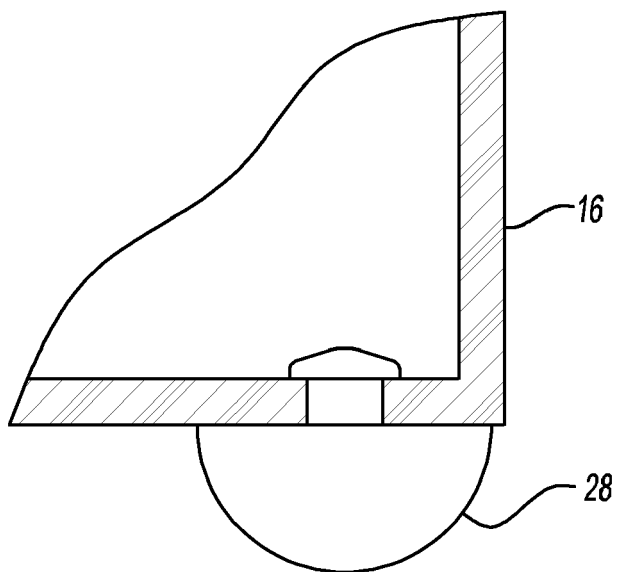


Fig-5

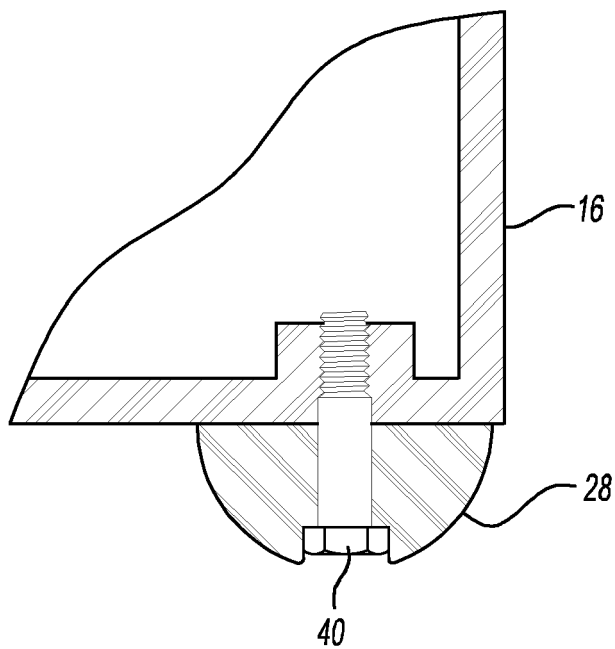


Fig-6

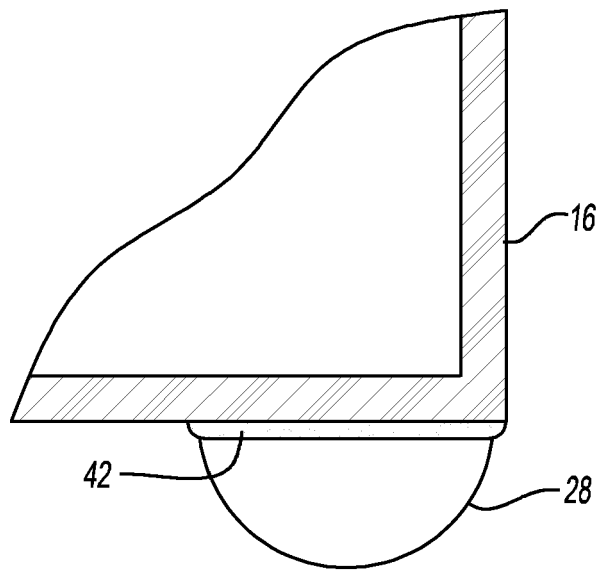


Fig-7

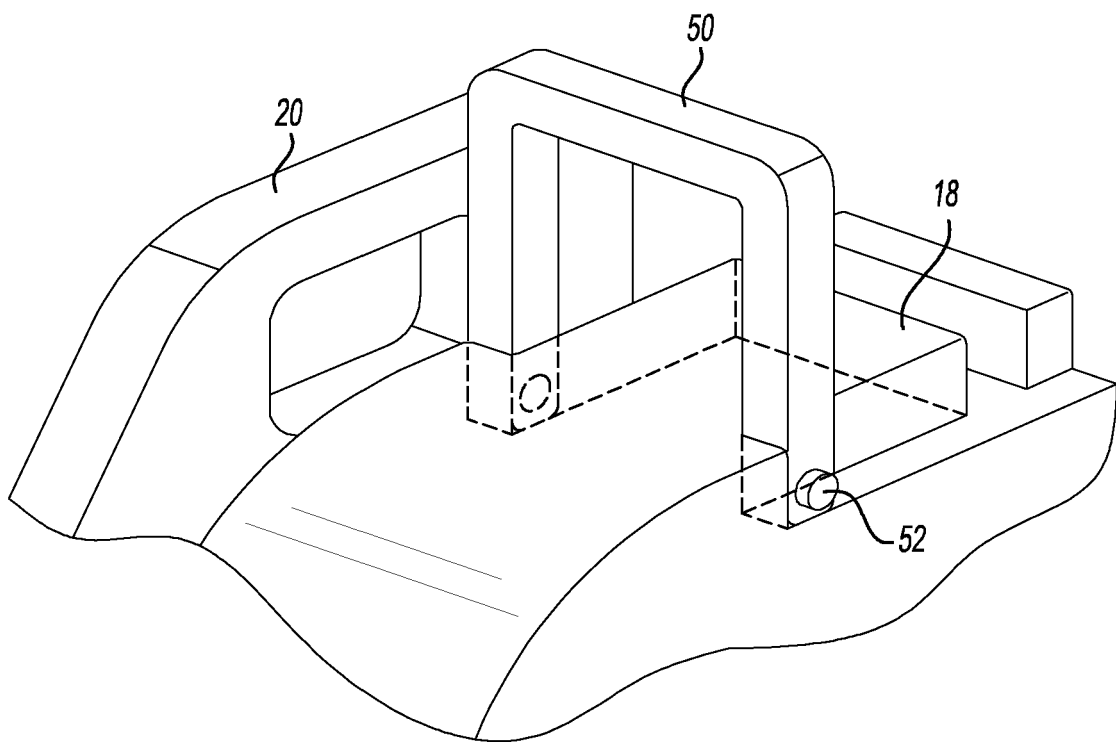


Fig-8