(19) Europäisches Patentamt
European Patent Office
Office européen des brevets

(11) **EP 4 119 479 A1**

(12) **EUROPEAN PATENT APPLICATION**

(43) Date of publication:
18.01.2023 Bulletin 2023/03

(21) Application number: **21186066.3**

(22) Date of filing: **16.07.2021**

(51) International Patent Classification (IPC):
B65H 75/40 *(2006.01)* ***B65H 75/44*** *(2006.01)*

(52) Cooperative Patent Classification (CPC):
B65H 75/403; B65H 75/4463; B65H 75/4471; B65H 75/4478; B65H 2701/33

(84) Designated Contracting States:
AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO RS SE SI SK SM TR
Designated Extension States:
BA ME
Designated Validation States:
KH MA MD TN

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(54) **MOBILE HOSE REEL ASSEMBLY**

(57) A hose reel assembly **(100)** includes a frame **(110)** rotatable along a central axis **(X-X')** of the hose reel assembly **(100).** The hose reel assembly **(100)** includes a reel rotatably arranged within the frame **(110)** such that the rotational axis of the reel is substantially parallel to the central axis **(X-X').** The hose reel assembly **(100)** includes one or more ground supports **(122)** rotatably coupled with the frame **(110).** The one or more ground supports **(122)** allow mounting of the hose reel assembly **(100)** on a level surface. The hose reel assembly **(100)** further includes one or more wheels **(160).** The hose reel assembly **(100)** is characterized in that the one or more wheels **(160)** are coupled with the frame **(110).**

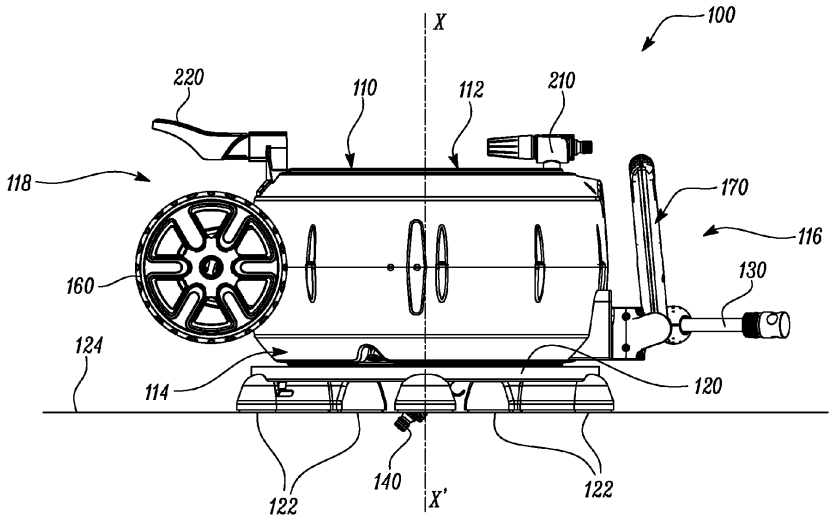

FIG. 1

EP 4 119 479 A1

Description

TECHNICAL FIELD

[0001] The present disclosure relates to a hose reel assembly. More particularly, the present disclosure pertains to a mobile hose reel assembly, which allows efficient and user-friendly operation.

BACKGROUND

[0002] A hose reel assembly is used to provide a flow of fluid, such as water, in spaces, such as lawns, parks, and the like. Generally, the hose reel assembly is fixedly mounted on a wall, or a ground, or may also be moved to different locations on the ground using a trolley. The hose reel assembly may have a freestanding arrangement on the ground such that it is not fixedly mounted on the ground. The freestanding hose reel assembly is known to have a rotatable frame that may rotate along an axis perpendicular to the ground.

[0003] However, there are implementation challenges with conventional hose reel assembly due to inability to access the hose from different positions and angles with respect to the hose reel assembly. Further, such hose reel assembly are cumbersome and non-ergonomic due to limitations to the accessibility of the hose by the trolley or other ground engaging means.

[0004] An example of a hose reel assembly is provided in European patent 3,403,963 (hereinafter referred to as **'963** reference). The **'963** reference provides a hose reel with a ground support for supporting the hose reel from a base. The ground support is attached to a lower part of a frame by a ring-shaped plate and screws. With such an attachment the ground support is rotatably clamped between the lower part of the frame and the ring-shaped plate. This allows the frame of the hose reel to rotate in relation to the ground support. However, the **'963** reference seems short of disclosing a hose reel assembly (or hose reel), which may be portable and movable to different locations for watering, storage or any other application.

[0005] Thus, there is a need of an improved hose reel assembly which allows easy, portable, and ergonomic operation.

SUMMARY

[0006] In view of the above, it is an objective of the present invention to solve or at least reduce the drawbacks discussed above. The objective is at least partially achieved by a hose reel assembly. The hose reel assembly includes a frame rotatable along a central axis of the hose reel assembly. A reel is rotatably arranged within the frame such that the rotational axis of the reel is substantially parallel to the central axis. The hose reel assembly includes one or more ground supports rotatably coupled with the frame. The one or more ground supports allow mounting of the hose reel assembly on a level surface. The hose reel assembly further includes one or more wheels. The hose reel assembly is characterized in that the one or more wheels are coupled with the frame.

[0007] Thus, the present disclosure provides a hose reel assembly that includes one or more wheels to ease the movement of the hose reel assembly from one location to the other. This obviates a need for a trolley, which in general is used for the movement of a conventional hose reel assembly. Further, the one or more wheels are coupled with the rotatable frame of the hose reel assembly. Further, as the frame rotate, consequently, the one or more wheels also rotates with the frame. This ensures that the one or more wheels do not pose any obstruction in the movement of a hose when the frame rotates, and the hose unwinding is simultaneously taking place. Consequently, the one or more wheels may be of any size to facilitate easy and convenient movement of the hose reel assembly on any type of ground.

[0008] According to an embodiment of the present disclosure, the frame is rotatable by 360 degrees. The frame is thus rotatable into a position where the hose is directed towards a user when accessing the hose from the hose reel.

[0009] According to an embodiment of the present disclosure, the frame further includes a handle. The handle is rotatable with the frame and avoids any obstruction during working with the hose. Further, the handle makes it easier to hold and move the hose reel assembly from one location to the other.

[0010] According to an embodiment of the present disclosure, the handle is pivotable to a pivotable position with respect to the frame. The pivotable handle makes it easier to put down and pick up the hose reel assembly, such as from the ground. The pivotable handle may be turned up while the hose reel assembly is in the parked position, leading to convenient access for different individuals. The pivotable handle also makes the hose reel assembly more compact for packaging, storage, and travel.

[0011] According to an embodiment of the present disclosure, the handle includes a locking mechanism to lock the handle in the pivotable position. The locking mechanism provides a safe and trouble-free operation by disallowing any accidental movement of the pivotable handle.

[0012] According to an embodiment of the present disclosure, the one or more wheels are removably coupled with the frame. The one or more wheels may be removable to allow easy servicing, or even replacement, of the one or more wheels. Further, the removable feature of the one or more wheels makes the hose reel assembly more compact for packaging.

[0013] According to an embodiment of the present disclosure, the frame further includes a central water connection along the central axis. The central water connection may be provided anywhere on the hose reel assembly as per the application. In the position along the central

axis, the central water connection allows to avoid any obstruction or hindrance with the handle, the one or more wheels and the one or more ground supports.

[0014] According to an embodiment of the present disclosure, the frame further includes one or more integrated or attachable irrigation sprinklers. This provision of retrofitting of the one or more irrigation sprinklers in the frame allows to use different types of sprinklers such as, but not limited to, circular sprinklers, oscillating sprinklers, contour sprinklers and the like.

[0015] According to an embodiment of the present disclosure, the frame further includes a plurality of water plugs. The plurality of water plugs may allow to connect different water products/accessories to the frame leading to a universal applicability of the hose reel assembly.

[0016] According to an embodiment of the present disclosure, the frame further includes a stand. Further, the stand allows parking of the hose reel assembly on the level surface substantially perpendicular to the central axis thereof. The stand may allow vertical storage or parking and also prevent accidental fall or movement of the hose reel assembly on the ground.

[0017] Other features and aspects of this invention will be apparent from the following description and the accompanying drawings.

BRIEF DESCRIPTION OF THE DRAWINGS

[0018] The invention will be described in more detail with reference to the enclosed drawings, wherein:

FIG. 1 shows a perspective side view of a hose reel assembly, in accordance with an aspect of the present disclosure;

FIG. 2 shows a perspective view from back of the hose reel assembly, in accordance with an aspect of the present disclosure;

FIG. 3 shows a perspective view from front of the hose reel assembly, in accordance with an aspect of the present disclosure;

FIG. 4 shows a perspective view from side of the hose reel assembly, in accordance with an aspect of the present disclosure;

FIG. 5 shows a perspective view from side of the hose reel assembly with an integrated or attached irrigation sprinkler, in accordance with an aspect of the present disclosure;

FIG. 6 shows a perspective view from front of the hose reel assembly, in accordance with an aspect of the present disclosure;

FIG. 7 shows a perspective side view of a hose reel assembly with multiple water plugs, in accordance with an aspect of the present disclosure;

FIG. 8 shows another perspective side view of a hose reel assembly with multiple water plugs, in accordance with an aspect of the present disclosure; and

FIG. 9 shows a perspective side view of a hose reel assembly in a parked position, in accordance with an aspect of the present disclosure.

DESCRIPTION OF EMBODIMENTS

[0019] The present invention will be described more fully hereinafter with reference to the accompanying drawings, in which example embodiments of the invention incorporating one or more aspects of the present invention are shown. This invention may, however, be embodied in many different forms and should not be construed as limited to the embodiments set forth herein; rather, these embodiments are provided so that this disclosure will be thorough and complete, and will fully convey the scope of the invention to those skilled in the art. For example, one or more aspects of the present invention may be utilized in other embodiments and even other types of structures and/or methods. In the drawings, like numbers refer to like elements.

[0020] Certain terminology is used herein for convenience only and is not to be taken as a limitation on the invention. For example, "upper", "lower", "front", "rear", "side", "longitudinal", "lateral", "transverse", "upwards", "downwards", "forward", "backward", "sideward", "left," "right," "horizontal," "vertical," "upward", "inner", "outer", "inward", "outward", "top", "bottom", "higher", "above", "below", "central", "middle", "intermediate", "between", "end", "adjacent", "proximate", "near", "distal", "remote", "radial", "circumferential", or the like, merely describe the configuration shown in the Figures. Indeed, the components may be oriented in any direction and the terminology, therefore, should be understood as encompassing such variations unless specified otherwise.

[0021] **FIGS. 1** and **2** illustrate a hose reel assembly **100.** The hose reel assembly **100** of the present disclosure may find application in various technical fields such as those belonging to firefighting, gardening, surface cleaning and the like. The hose reel assembly **100** includes a frame **110.** The frame **110** is rotatable along a central axis **X-X'** (shown in **FIG. 1**) of the hose reel assembly **100.** The frame **110** may have a circular, a rectangular or any other shape without limiting the scope of the disclosure. The frame **110** may be made from metal, fiberglass, or plastic. The frame **110** includes a front part **112** and a back part **114.** The front part **112** and the back part **114** may be temporarily or permanently attached to each other, such as by fasteners, screws, any suitable means as used or known in the art. The front part **112** of the frame **110** may be used to attach accessories such as, but not limited to, irrigation sprinklers **190** (shown in **FIG. 5**), water plugs **200** (shown in **FIGS. 7** and **8**) onto

the hose reel assembly **100.** The back part **114** of the frame **110** includes one or more ground supports **122** rotatably coupled with the frame **110.** The one or more ground supports **122** allow mounting of the hose reel assembly **100** on a level surface **124,** such as and alternatively referred to as a ground surface **124.**

[0022] The one or more ground supports **122** are coupled with the frame **110** via a turntable **120.** The one or more ground supports **122** are coupled with the turntable **120** which is further coupled with the back part **114** of the frame **110.** The coupling between the turntable **120** and the frame **110** is such that the frame **110** is rotatable (by 360 degrees in some embodiments) on the turntable **120.** The frame **110** is thus rotatable into a position (or angle with respect to the turntable **120**) where a hose **130** may be readily directed towards a user when accessing the hose **130** from a reel (not shown) of the hose reel assembly **100.** The reel is rotatably arranged within the frame **110** such that the rotational axis of the reel is substantially parallel to the central axis **X-X'.** The one or more ground supports **122** may be geometrically or symmetrically arranged on the turntable **120,** for desired support, orientation, balance, and rotation among other considerations. The geometry of the ground supports **122** may be triangular, quadrilateral, pentagonal, hexagonal or any other geometry to stabilize the frame **110** on the ground surface **124.** The one or more ground supports **122** may be formed from a material selected from a polymer (rubber), plastic, metal, or any other material for desired stability, rigidity, and the like.

[0023] The one or more ground supports **122** further include one or more clips **150** (shown in **FIG. 2**) attached to them. The one or more clips **150** may be used to hold and store another hose **140** (connected to any external water source) around the back part **114** of the frame **110** post usage or for any other purposes. The hose **140** is connected to a central water connection **180** along the central axis **X-X'.** The hose reel assembly **100** further includes one or more wheels **160** and a handle **170.** The present disclosure illustrates a pair of wheels **160.** The one or more wheels **160** and the handle **170** are both coupled with the rotatable frame **110** of the hose reel assembly **100.** The frame **110** defines a top end **116** and a bottom end **118.** The one or more wheels **160** are provided around the bottom end **118** of the frame **110** whereas the top end **116** of the frame **110** includes the handle **170.**

[0024] In some embodiments, the central water connection **180** may be provided anywhere on the hose reel assembly **100** as per the application. In the position along the central axis **X-X',** the central water connection **180** may allow to avoid any obstruction or hindrance with the handle **170,** the one or more wheels **160** and the one or more ground supports **122.**

[0025] As illustrated in **FIG. 3,** the bottom end **118** of the frame **110** includes a couple of downwardly extending legs **162** separated by a distance **"D".** The distance **"D"** may be generally less than (or equal to in some embodiments) a width **"W"** of the frame **110.** The legs **162** may be a separate component attached to the bottom end **118** of the frame **110** or may be integrally formed with the frame **110.** In some embodiments, the legs **162** may be telescopic, or adjustable to change a height of the hose reel assembly **100.** Further, an axle **164** is rotatably coupled with the ends of the couple of legs **162.** The one or more wheels **160** are rotatably coupled with the axle **164.** The one or more wheels **160** ease support and movement of the hose reel assembly **100** on the ground surface **124** or improve portability between different locations/installations.

[0026] The present disclosure provides the one or more wheels **160** which are coupled with the rotatable frame **110** of the hose reel assembly **100,** so that the one or more wheels **160** rotate with the frame **110.** This ensures that the one or more wheels **160** do not pose any obstruction in the movement of the hose **130** when the frame **110** rotates, and the hose unwinding may simultaneously take place. In some embodiments, the one or more wheels **160** may be of any size, shape, type to facilitate easy and convenient movement of the hose reel assembly **100** on the ground surface **124** or for any other application requirements.

[0027] In some embodiments, the one or more wheels **160** may be caster wheels. The caster wheels may help to easily manipulate the hose reel assembly **100** on the ground surface **124.** In some embodiments, the one or more wheels **160** and the axle **164** assembly may be provided with dampers (not shown) to avoid shocks incurred due to movement on any uneven surfaces, among other considerations. In some embodiments, the one or more wheels **160** may be powered by an electric motor (not shown), or any other powering means.

[0028] In some embodiments, the one or more wheels **160** may be removably coupled with the frame **110.** The one or more wheels **160** may be removable to allow easy servicing, or even replacement, of the one or more wheels **160.** Further, the removable feature of the one or more wheels **160** may make the hose reel assembly **100** more compact for packaging.

[0029] **FIGS. 3** and **4** illustrate the handle **170** around the top end **116** of the frame **110.** As illustrated with reference to both the present figures, the handle **170** is rotatable with the frame **110.** This rotatable provision of the handle **170,** as illustrated in **FIG. 4,** allows ease of storage, and also may help avoid any obstruction during working with the hose **130.** Further, the handle **170** includes a grip portion **172.** The grasping of the grip portion **172** of the handle **170** may provide better hold and safe working, movability of the hose reel assembly **100** between locations. In some embodiments, the grip portion **172** may be defined as an inverted U-shaped portion of the handle **170.** The material used for the grip portion **172** may preferably be, but need not necessarily, PVC or nitrile rubber, or any other plastic or polymer to suit application needs.

[0030] As illustrated in **FIG. 4,** the handle **170** is pivot-

able to a pivotable position with respect to the frame **110.** The pivotable handle **170** may make it easier, safer to put down and pick up the hose reel assembly **100,** such as from the ground surface **124.** The pivotable handle **170** may be turned up while the hose reel assembly **100** is in a grounded position as illustrated in **FIGS. 1, 4,** leading to convenient access for different individuals. The pivotable handle **170** may also make the hose reel assembly **100** more compact for packaging, storage, and travel.

[0031] In some embodiments, the handle **170** may be a telescopic handle **170** to allow a change in length thereof, and to further improve the ergonomics while picking up the hose reel assembly **100.** In some embodiments, the handle **170** includes a locking mechanism **174** to lock the handle **170** in the pivotable position. The locking mechanism **174** provides a safe and trouble-free operation by disallowing any accidental movement of the pivotable handle **170.** The locking mechanism **174** may be lever such as a ring-shaped lever to allow easy locking/unlocking of the handle **170.**

[0032] In some embodiments, as illustrated in **FIG. 5,** the frame **110** includes one or more integrated or attachable irrigation sprinklers **190** on the front part **112.** This provision of retrofitting of the one or more irrigation sprinklers **190** with/in the frame **110** allows to use different types of sprinklers such as, but not limited to, circular sprinklers, oscillating sprinklers, contour sprinklers and the like.

[0033] In some embodiments, as illustrated in **FIG. 6,** the front part **112** of the frame **110** includes an angle adjustable holder **210.** The angle adjustable holder **210** may allow ease of storing of different watering accessories such as nozzles, which may be removably attached to the hose **130.**

[0034] In some embodiments, as illustrated in **FIGS.** 7 and **8,** the front part **112** of the frame **110** includes a plurality of water plugs **200.** The plurality of water plugs **200** may allow to connect different water products/accessories to the frame **110** leading to a universal applicability of the hose reel assembly **100.**

[0035] **FIG. 9** illustrates the hose reel assembly **100** in a parked position on the ground surface **124.** The hose reel assembly **100** includes a stand **220** attached to the front part **112** of the frame **110,** for storage in the parked position. In the parked position the hose reel assembly **100** is supported by the stand **220** as well as the wheels **160.** The stand **220** allows parking of the hose reel assembly **100** on the level surface **124** substantially perpendicular, or at any angle, to the central axis **X-X'.** The stand **220** may allow vertical storage or parking and prevent accidental fall or movement of the hose reel assembly **100** on the ground.

[0036] In some embodiments, each of the wheels **160** and the stand **220** may be pivotable with respect to the frame **110.** This may further free space around the frame **110,** for easy movement (winding/unwinding) of the hose **130** around the frame **130.** Further, the wheels **160** and the stand **220** may be provided with a locking mechanism (similar to the locking mechanism **174**) to ensure safe, user-based pivoting of the wheels **160** and the stand **220.**

[0037] The present disclosure provides the hose reel assembly **100** having the frame **110,** with the wheels **160** and the handle **170** provided with the frame **110.** The frame **110** is rotatable with respect to the turntable **120,** to allow ease of winding/unwinding of the hose **130** housed within the rotatable reel within the frame **110.** Further, the handle **170** is pivotable with respect to the frame **110** to avoid any obstruction with working of the hose **130.** This provides a convenient, trouble-free, and safe working of the hose **130** of the hose reel assembly **100.**

[0038] In the drawings and specification, there have been disclosed preferred embodiments and examples of the invention and, although specific terms are employed, they are used in a generic and descriptive sense only and not for the purpose of limitation of the scope of the invention being set forth in the following claims.

LIST OF ELEMENTS

[0039]

100	Hose Reel Assembly
110	Frame
112	Front Part
114	Back Part
116	Top End
118	Bottom End
120	Turntable
122	Ground Supports
124	Level surface/Ground surface
130	Hose
140	Hose
150	Clip
160	Wheels
162	Legs
164	Axle
170	Handle
172	Grip Portion
174	Locking Mechanism
180	Central Water Connection
190	Irrigation Sprinklers
200	Water Plugs
210	Angle Adjustable Holder
220	Stand
D	Distance
W	Width
X-X'	Central Axis

Claims

1. A hose reel assembly (**100**) comprising:

a frame (**110**) rotatable along a central axis (X-

X') of the hose reel assembly (**100**);
a reel rotatably arranged within the frame (**110**), wherein the rotational axis of the reel is substantially parallel to the central axis (X-X');
one or more ground supports (**122**) rotatably coupled with the frame (**110**), wherein the one or more ground supports (**122**) allow mounting of the hose reel assembly (**100**) on a level surface (**124**); and
one or more wheels (**160**);

characterized in that:
the one or more wheels (**160**) are coupled with the frame (**110**).

2. The hose reel assembly (**100**) of claim **1,** wherein the frame (**110**) is rotatable by **360** degrees.

3. The hose reel assembly **(100)** of any of the preceding claims, wherein the frame **(110)** further includes a handle **(170).**

4. The hose reel assembly **(100)** of the claim **3,** wherein the handle **(170)** is pivotable to a pivotable position with respect to the frame **(110).**

5. The hose reel assembly **(100)** of the claim **4,** wherein the handle **(170)** includes a locking mechanism **(174)** to lock the handle **(170)** in the pivotable position.

6. The hose reel assembly **(100)** of any of the preceding claims, wherein the one or more wheels **(160)** are removably coupled with the frame **(110).**

7. The hose reel assembly **(100)** of any of the preceding claims, wherein the frame **(110)** further includes a central water connection **(180)** along the central axis **(X-X').**

8. The hose reel assembly **(100)** of any of the preceding claims, wherein the frame **(110)** further includes one or more integrated or attachable irrigation sprinklers **(190).**

9. The hose reel assembly **(100)** of any of the preceding claims, wherein the frame **(110)** further includes a plurality of water plugs **(200).**

10. The hose reel assembly **(100)** of any of the preceding claims, wherein the frame **(110)** further includes a stand **(220),** wherein the stand **(220)** allows parking of the hose reel assembly **(100)** on the level surface **(124)** substantially perpendicular to the central axis (X-X') thereof.

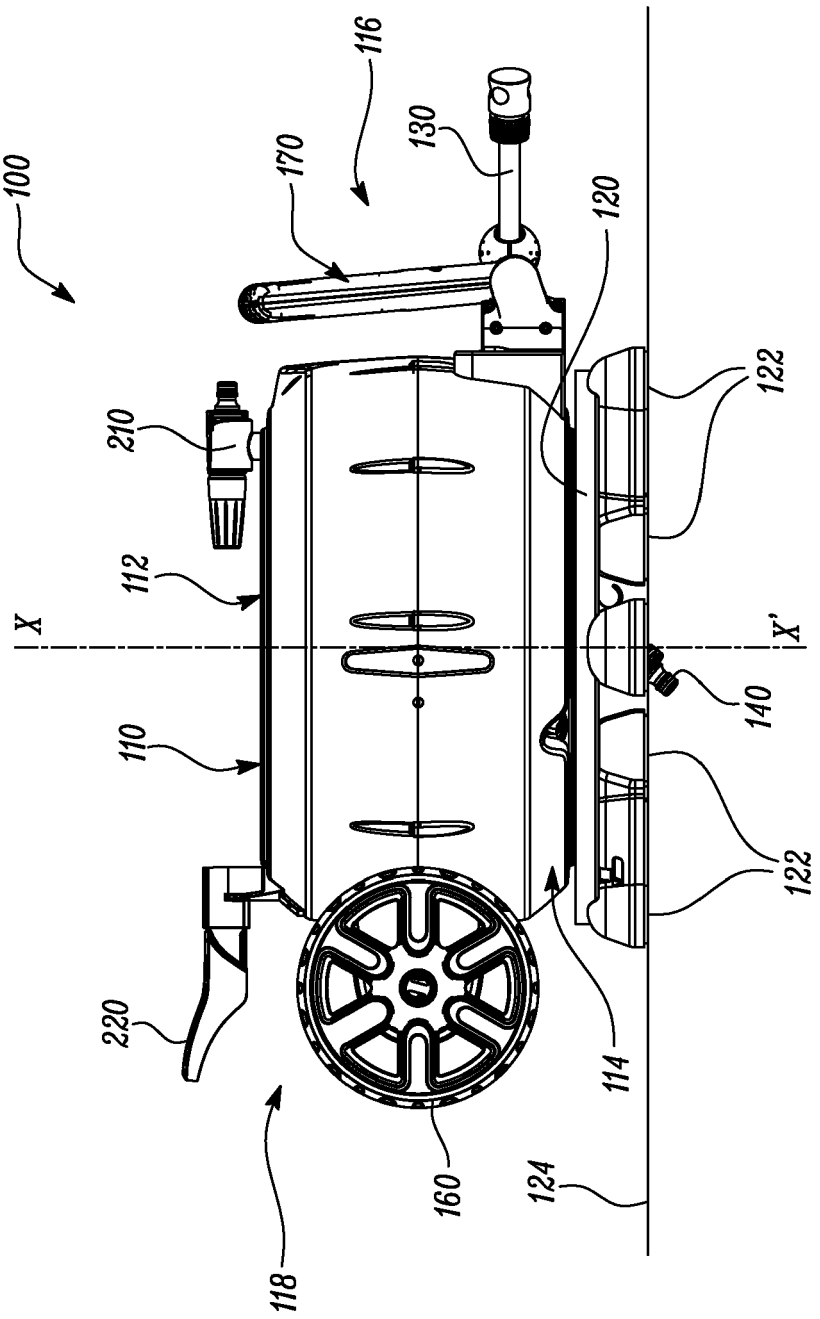
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FIG. 1

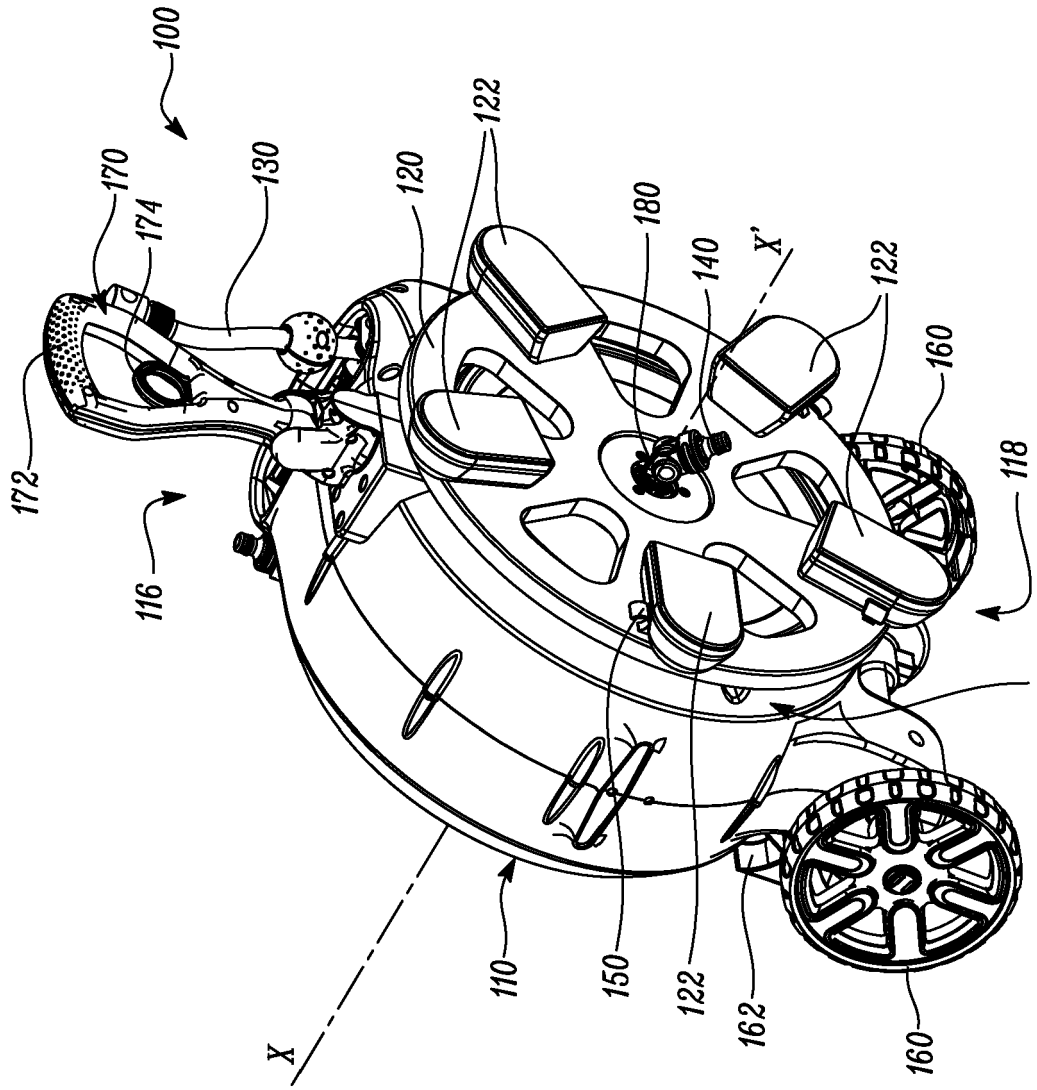
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FIG. 2

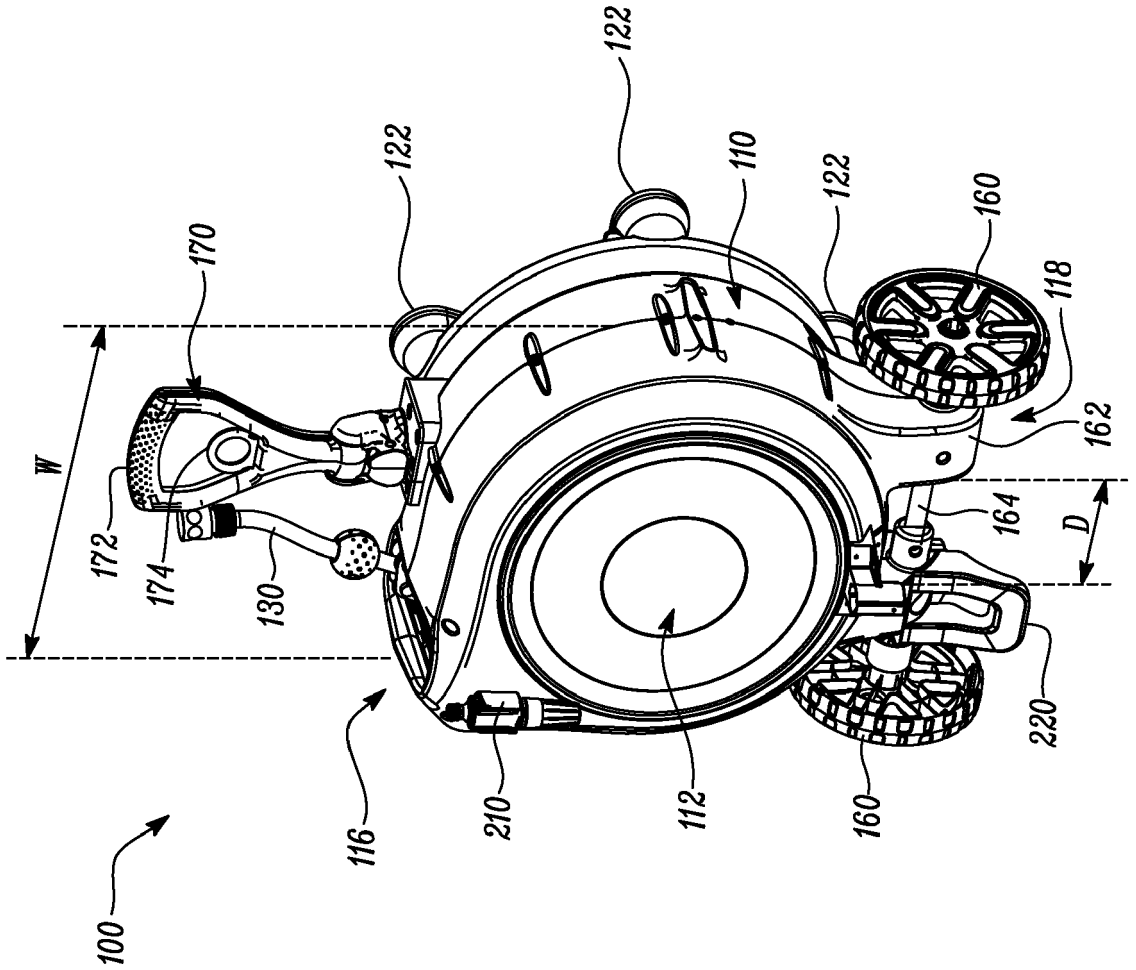
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FIG. 3

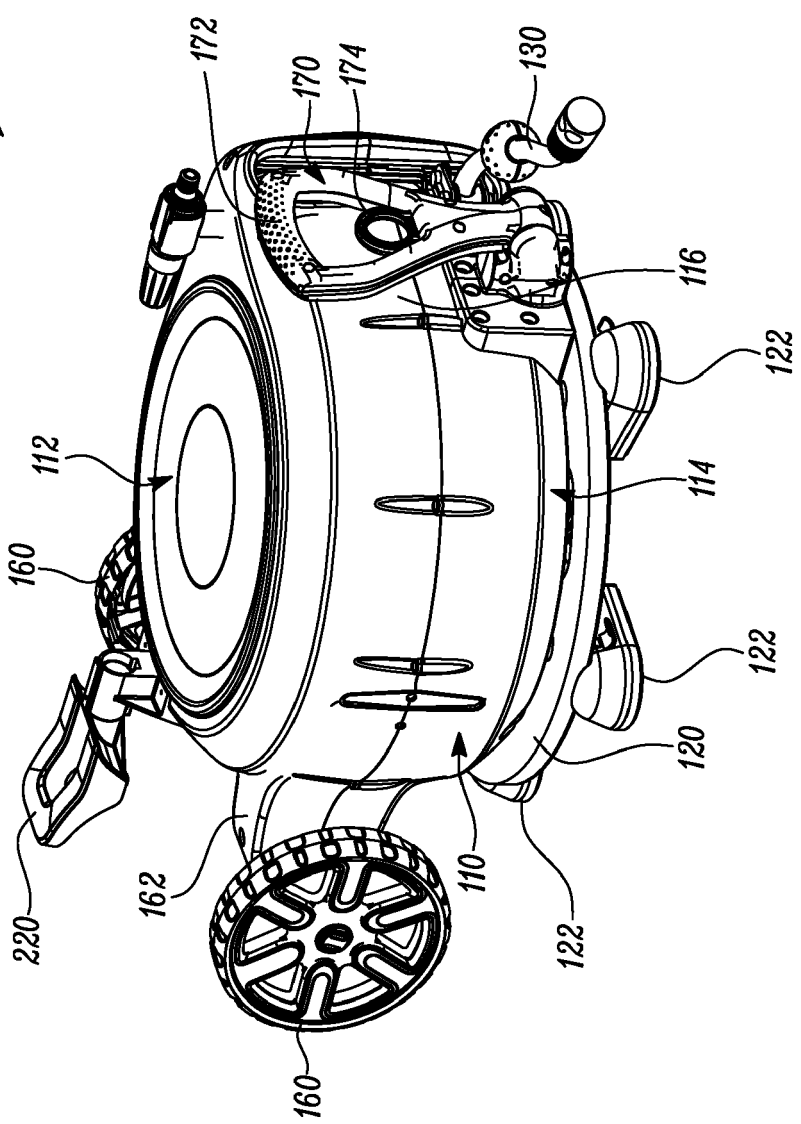
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FIG. 4

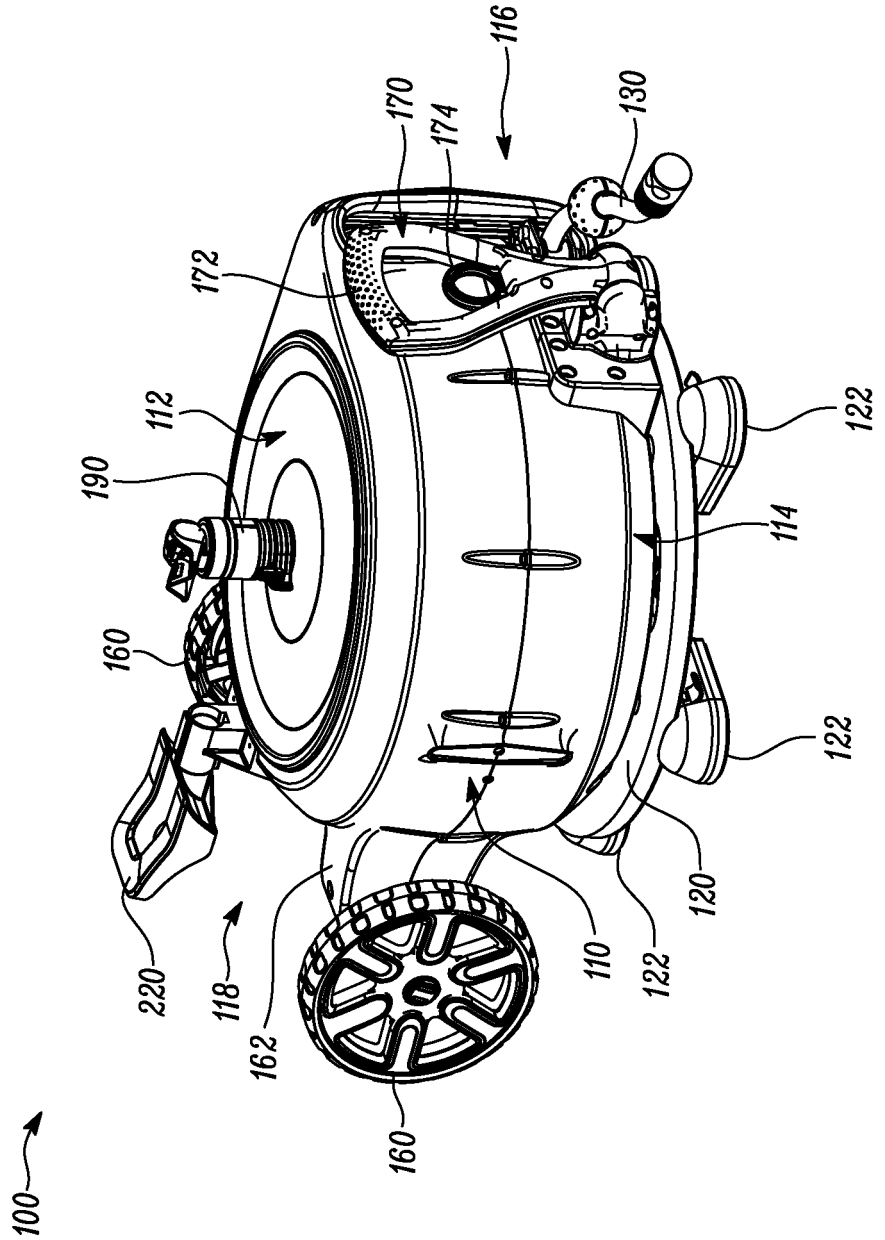
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FIG. 5

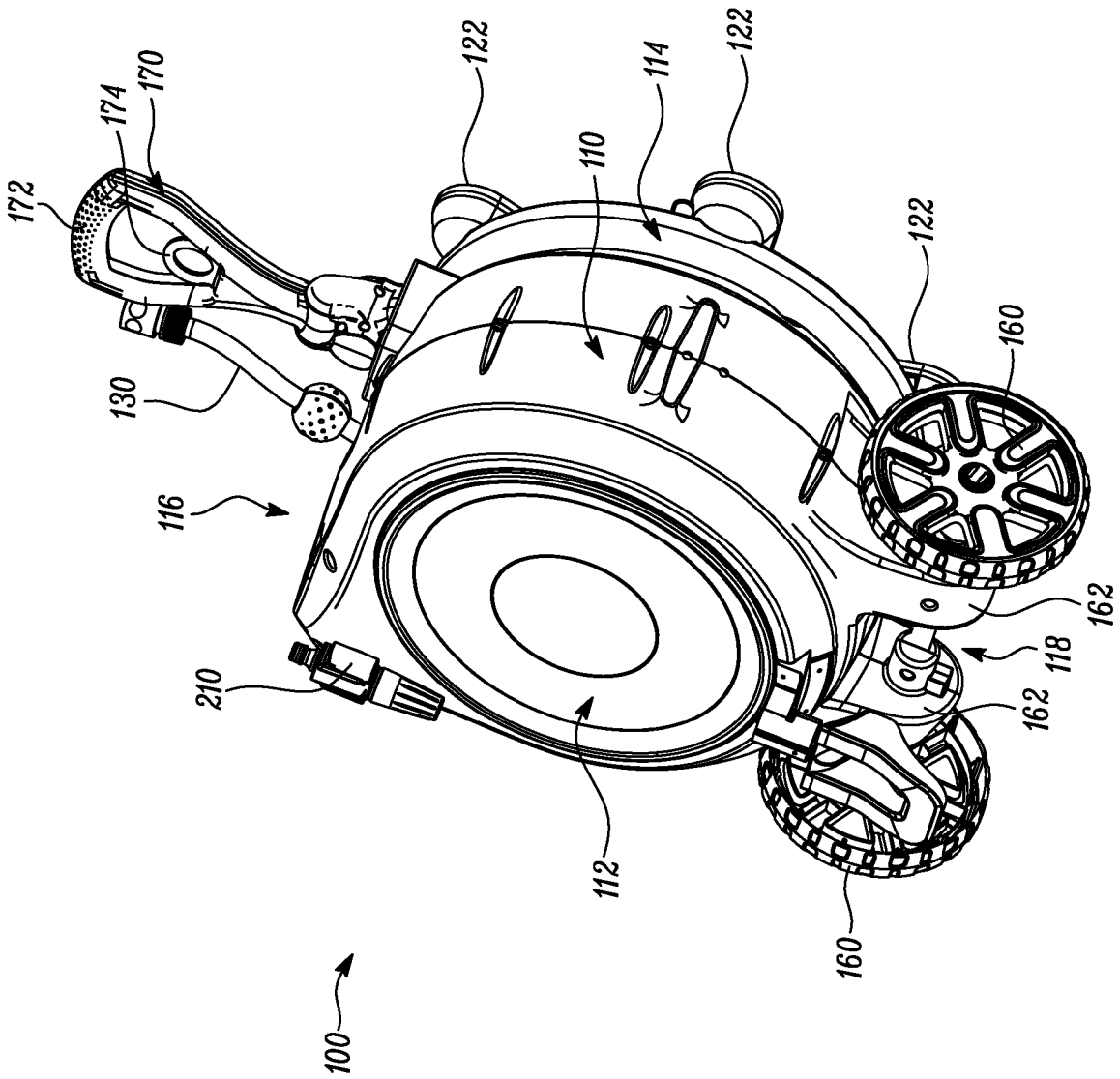
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FIG. 6

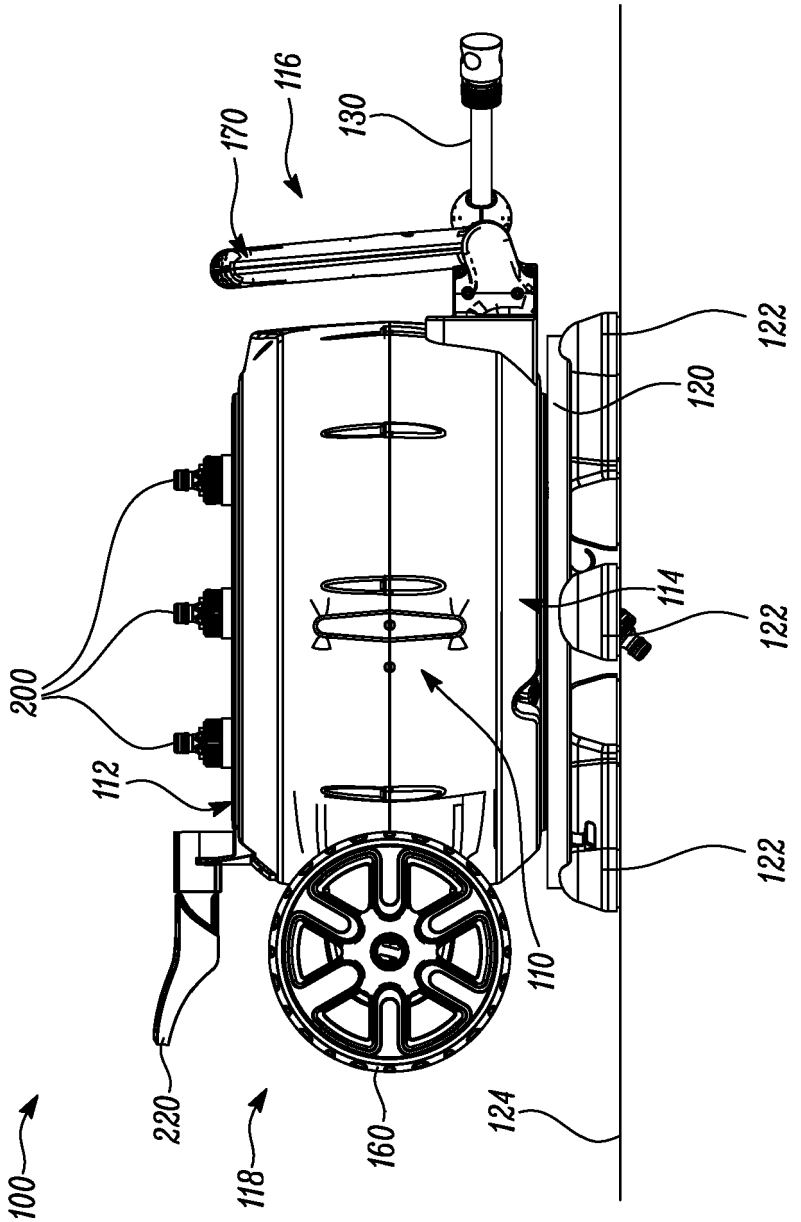

FIG. 7

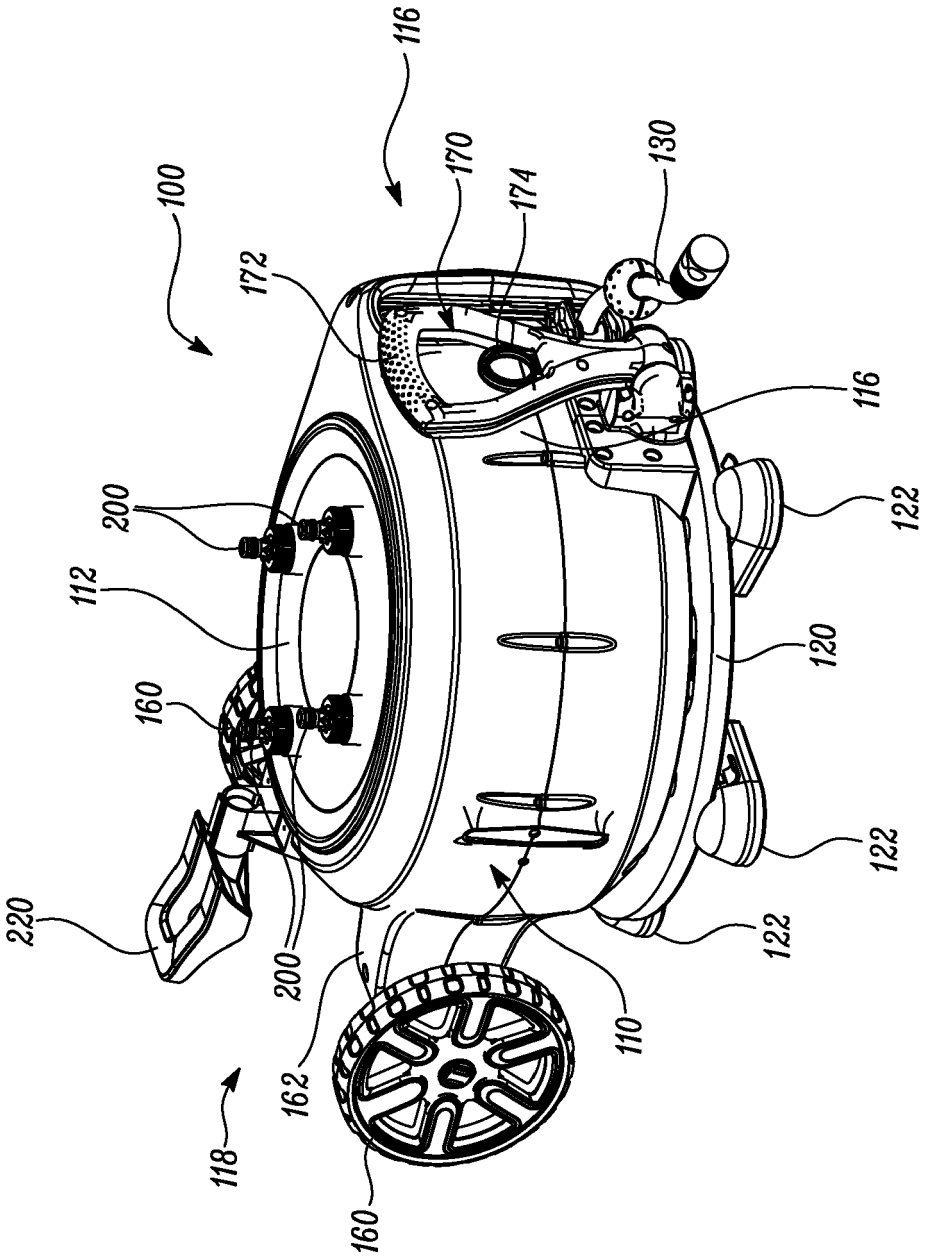
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FIG. 8

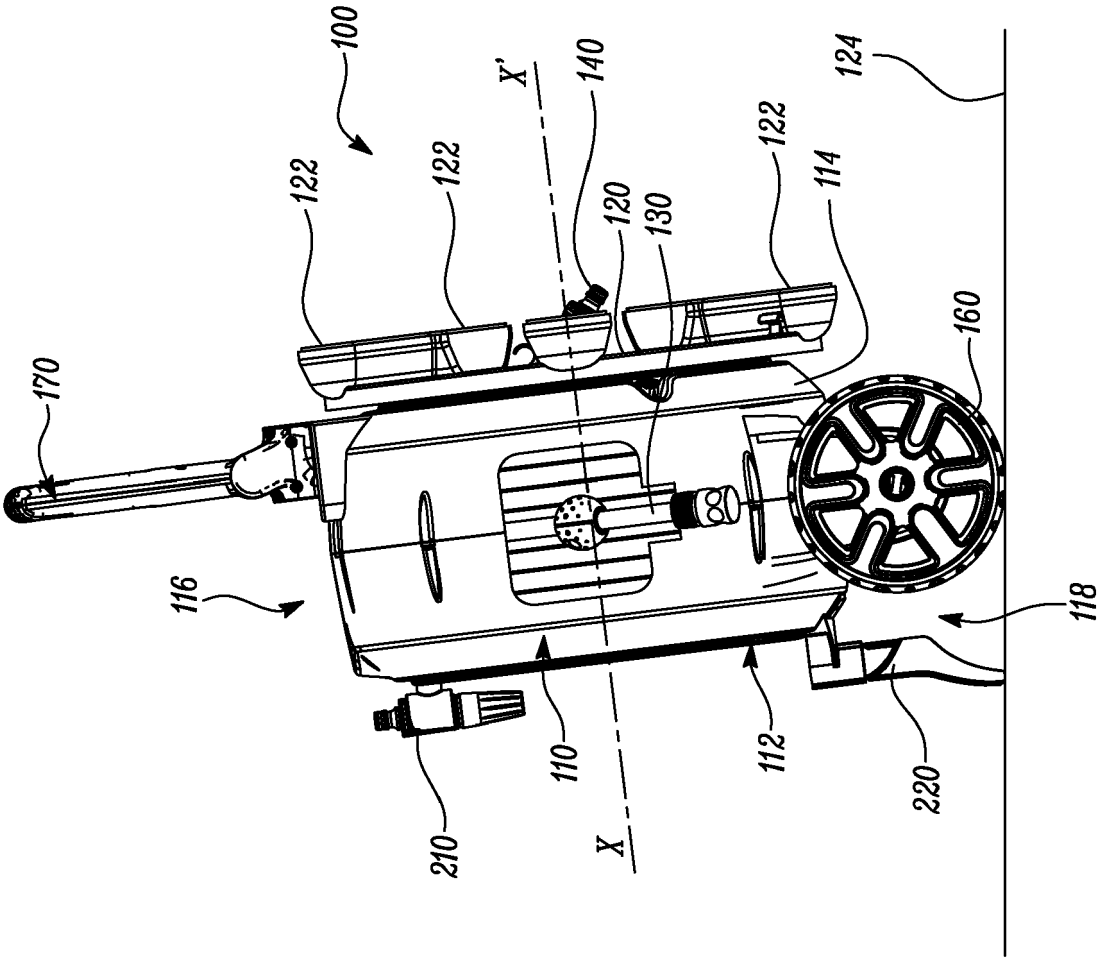
100
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FIG. 9

Europäisches Patentamt
European Patent Office
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EUROPEAN SEARCH REPORT

Application Number
EP 21 18 6066

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
X,D	EP 3 403 963 A1 (FISKARS FINLAND OY AB [FI]) 21 November 2018 (2018-11-21) * paragraphs [0015] - [0019]; figure 4 *	1-10	INV. B65H75/40 B65H75/44
A	US 2012/138167 A1 (ZUPPARDO JAY [US]) 7 June 2012 (2012-06-07) * paragraph [0041]; figure 3 *	1	

TECHNICAL FIELDS SEARCHED (IPC)

B65H

1 The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
The Hague	8 December 2021	Pussemier, Bart

CATEGORY OF CITED DOCUMENTS

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REFERENCES CITED IN THE DESCRIPTION

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