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(54) Title: YARD WASTE BAG HOLDING APPARATUS

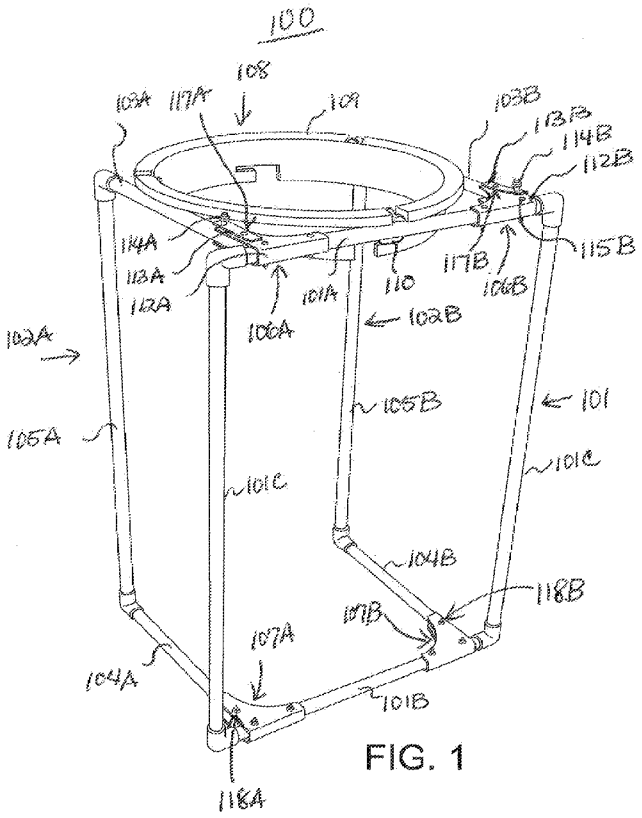

FIG. 1

(57) Abstract: A yard waste bag holding apparatus includes a rectangular-shaped frame, two foldable arm assemblies, and a ring with a flange for abutting the top of the arm assemblies. A bag may be attached to the ring, holding the bag open and upright and preventing it from collapsing, folding in on itself, or blowing or tipping over. The user may insert a greater volume of yard waste into the bag at one time, thus increasing efficiency. An insert for engaging a hose of a vacuum to the ring may be added. Further, a wheel attachment may be coupled to the frame to place the apparatus at a given angle. Placing the apparatus at an angle prevents the apparatus from tipping during use with a vacuum and reduces the stress at the joining of the hose and the apparatus.

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YARD WASTE BAG HOLDING APPARATUS

BACKGROUND OF THE INVENTION

[0001] Yard waste bags are well known in the art. Typically, the bags are opened and set on the ground without support while yard waste is placed inside the bags. However, the bags often collapse or tilt during use, which lowers the efficiency of yard waste gathering and raising the frustration level for the user.

BRIEF SUMMARY OF THE INVENTION

[0002] According to one embodiment of the present invention, a yard waste bag holding apparatus comprises: a frame, comprising: a first top bar; a first bottom bar; and a first side bars coupled to the first top bar and the first bottom bar to form a rectangular-shaped frame; a first arm assembly, comprising: a second top bar; a second bottom bar; and a second side bar coupled to the second top bar and the second bottom bar at an end of the second top and bottom bars distal to the frame; a second arm assembly, comprising: a third top bar; a third bottom bar; and a third side bar coupled to the third top bar and the third bottom bar at an end of the third top and bottom bars distal to the frame; and a ring, comprising: a flange for abutting the second top bar and the third top bar; a wall to reside within a yard waste bag; and a plurality of clips for securing the yard waste bag to the ring.

[0003] In one aspect of the present invention, the apparatus further comprises: a first top bracket assembly coupled to the second top bar at an end of the second top bar proximate to the frame, and coupled to a first end of the first top bar; a second top bracket assembly coupled to the third top bar at an end of the third top bar proximate to the frame, and coupled to a second end of the first top bar opposite to the first end of the first top bar; a first bottom bracket assembly coupled to the second bottom bar at an end of the second bottom bar proximate to the frame, and coupled to a first end of the first bottom bar; and a second bottom bracket assembly coupled to the third bottom bar at an end of the third bottom bar proximate to the frame, and coupled to a second end of the first bottom bar opposite to the first end of the first bottom bar.

[0004] In one aspect of the present invention, when the ring is engaged with the yard waste bag, the wall resides within a lip of the yard waste bag without the lip folding over the flange.

[0005] In one aspect of the present invention, the ring further comprises a plurality of notches residing in the wall and an insert detachably coupled to the wall, wherein the insert comprises: a plate comprising an opening for engaging a hose to a vacuum; one or more screened openings; and a plurality of tabs for engaging with the plurality of notches.

[0006] In one aspect of the present invention, the apparatus further comprises a wheel attachment coupled to the frame, wherein the wheel attachment comprises: a first wheel bar and a second wheel bar; a first wheel coupled to a first end of the first wheel bar; and a second wheel coupled to a first end of the second wheel bar, wherein a second end of the first wheel bar and a second end of the second wheel bar are each coupled to the frame.

[0007] In one aspect of the present invention, wherein the wheel attachment further comprises: a first cross bar coupled to the first wheel bar and the second wheel bar, wherein the first wheel bar and the second wheel bar are approximately parallel; a second cross bar coupled to the first wheel bar and the frame; a third cross bar coupled to the second wheel bar and the frame, wherein the second cross bar and the third cross bar place the first wheel bar and the second wheel bar at a given angle away from the frame.

[0008] In one aspect of the present invention, the first top bracket assembly further comprises a first bracket coupled to the first top bar and to the second top bar at the end of the second top bar proximate to the frame, and a first locking mechanism, and the second top bracket assembly further comprises a second bracket coupled to the first top bar and to the third top bar at the end of the third top bar proximate to the frame, and a second locking mechanism, wherein when the first locking mechanism is in a first unlocked position, the first arm assembly is capable of folding along a first pivot point of the first top bracket assembly and a second pivot point of the first bottom bracket assembly, wherein when the second locking mechanism is in a second unlocked position, the second arm assembly is capable of folding along a third pivot point of the second top bracket assembly and a fourth pivot point of the second bottom bracket assembly.

[0009] In one aspect of the present invention, the first locking mechanism comprises: a first flexible plate coupled to the first bracket at a first end of the first flexible plate; a first pin traversing the first flexible plate at a second end of the first flexible plate, wherein disengagement of the first pin from a first corresponding hole in the second top bar places the first locking mechanism in the first unlocked position; wherein the second locking

mechanism comprises: a second flexible plate coupled to the second bracket at a first end of the second flexible plate; a second pin traversing the second flexible plate at a second end of the second flexible plate, wherein disengagement of the second pin from a second corresponding hole in the third top bar places the second locking mechanism in the second unlocked position.

[0010] In one aspect of the present invention, the first and second pivot points are more distal from the frame than the third and fourth pivot points.

BRIEF DESCRIPTION OF THE SEVERAL VIEWS OF THE FIGURES

[0011] FIG. 1 illustrates a yard waste bag holding apparatus in an open position according to an embodiment of the present invention.

[0012] FIG. 2 illustrates the yard waste bag holding apparatus holding a paper yard waste bag according to an embodiment of the present invention.

[0013] FIG. 3 further illustrates the yard waste bag holding apparatus in an open position according to an embodiment of the present invention.

[0014] FIG. 4 illustrates in more detail the holding of a yard waste bag using the clips of the ring according to an embodiment of the present invention.

[0015] FIG. 5 illustrates in more detail the ring of the yard waste bag holding apparatus according to an embodiment of the present invention.

[0016] FIGS. 6A and 6B illustrate an optional insert to facilitate attachment of a vacuum according to an embodiment of the present invention.

[0017] FIG. 7 illustrates the engagement of the insert 121 with the ring 108 according to an embodiment of the present invention.

[0018] FIG. 8 illustrates the yard waste bag holding apparatus as it is being folded according to an embodiment of the present invention.

[0019] FIG. 9 illustrates the yard waste bag holding apparatus in a fully closed position according to an embodiment of the present invention.

[0020] FIG. 10 illustrates the yard waste bag holding apparatus with a wheels attachment according to an embodiment of the present invention.

[0021] . FIG. 11 illustrates the yard waste bag holding apparatus with the wheels attachment in the closed position according to an embodiment of the present invention.

DETAILED DESCRIPTION OF THE INVENTION

[0022] The present invention provides a yard waste bag holding apparatus. The following description is presented to enable one of ordinary skill in the art to make and use the present invention and is provided in the context of a patent application and its requirements. Various modifications to the embodiment will be readily apparent to those skilled in the art and the generic principles herein may be applied to other embodiments. Thus, the present invention is not intended to be limited to the embodiment shown but is to be accorded the widest scope consistent with the principles and features described herein.

[0023] The terminology used herein is for the purpose of describing particular embodiments only and is not intended to be limiting of the invention. As used herein, the singular forms "a", "an" and "the" are intended to include the plural forms as well, unless the context clearly indicates otherwise. It will be further understood that the terms "comprises" and/or "comprising," when used in this specification, specify the presence of stated features, operations, elements, and/or components, but do not preclude the presence or addition of one or more other features operations, elements, components, and/or groups thereof.

[0024] FIGS. 1 and 3 illustrate a yard waste bag holding apparatus in an open position according to an embodiment of the present invention. The yard waste bag holder 100 comprises a frame 101, a first arm assembly 102A and a second arm assembly 102B coupled to the frame 101, first and second top bracket assemblies 106A and 106B, first and second bottom bracket assemblies 107A and 107B, and a ring 108. The frame 101 comprises a top bar 101A, a bottom bar 101B, and side bars 101C coupled to the top and bottom bars 101A-101B to form a rectangular-shaped frame. The first arm assembly 102A comprises a top bar 103A, a bottom bar 104A, and a side bar 105A coupled to one end of the top and bottom bars 103A and 104A distal to the frame 101. The second arm assembly 102B comprises a top bar 103B, a bottom bar 104B, and a side bar 105B coupled to one end of the top and bottom bars 103B and 104B distal to the frame 101. The first top bracket assembly 106A couples to the top bar 103A at an end proximate to the frame 101 and to the top bar 101A at a first end of the top bar 101A. The second top bracket assembly 106B couples to the top bar 103B at an end proximate to the frame 101 and to the top bar 101A at a second end opposite the first end of the top bar 101A. The

first bottom bracket assembly 107A couples to the bottom bar 104A at an end proximate to the frame 101 and to the bottom bar 101B at a first end of the bottom bar 101B. The second bottom bracket assembly 107B couples to the bottom bar 104B at an end proximate to the frame 101 and to the bottom bar 101B at a second end opposite the first end of the bottom bar 101B. The ring 108 comprises a flange 109 capable of resting on the top bars 103A-103B and comprises a plurality of clips 110 for holding a yard waste bag. In this embodiment, the ring 108 rests on top of the top bars 103A-103B without being further coupled to the top bars 103A-103B. However, a coupling mechanism, such as clamps, may also be used to more securely couple the ring 108 to the top bars 103A-103B. In this embodiment, the holder 100 is open at a side opposite the frame 101. FIG. 2 illustrates the yard waste bag holding apparatus holding a paper yard waste bag according to an embodiment of the present invention. Other types of waste bags may also be used with the holder 100. The yard waste bag 111 is coupled to the ring 108 using the clips 110 and held upright and open for easier filling with leaves and other debris.

[0025] FIG. 5 illustrates in more detail the ring 108 of the yard waste bag holding apparatus according to an embodiment of the present invention. In this embodiment, the ring 108 comprises a flange 109 capable of abutting the top bars 103A and 103B, a plurality of clips 110 for holding a yard waste bag, a wall 119, and a plurality of notches 120 for engaging an optional insert. FIG. 4 illustrates in more detail the holding of a yard waste bag using the clips 110 of the ring 108 according to an embodiment of the present invention. Illustrated is a portion of the ring 108 comprising the flange 109 and one of the clips 110. The edge of the opening of the yard waste bag 111 is slipped over the wall 119 and secured in place using the clips 110, without the need to fold the lip of the yard waste bag 111 over the flange 109. The clips 110 facilitate quicker attachment and detachment from the ring 108 than other known methods, such as elastic bands. This holds the yard waste bag 111 open and upright. As illustrated in FIG. 2, the height of the holder 100 is such that the bottom of the yard waste bag 111 rests on the ground. Although in this embodiment, the clips 110 are illustrated as a separate component coupled to the wall 119, the clips 110 may alternatively be molded as part of the wall 119.

[0026] In this manner, the yard waste bag 111 is prevented from collapsing, folding in on itself, or blowing or tipping over. The weight of the yard waste inserted into the bag 111 is borne by the ground and not by the clips 110, which prevents the bag 111 from being

dislodged from the clips 110 when yard waste is inserted into the bag. Further, the user is allowed to insert a greater volume of yard waste into the bag 111 at one time, thus increasing efficiency by reducing the time it takes to fill each bag. Once the bag 111 is filled, it is easily removed from the open side of the holder 100.

[0027] FIGS. 6A and 6B illustrate an optional insert to facilitate attachment of a vacuum according to an embodiment of the present invention. The insert 121 is a plate comprising an opening 122 with a tube 125 for engaging a hose to a vacuum (not shown). FIG. 10 illustrates a hose 137 coupled to the tube 125. The coupling of the hose 137 to the tube 125 may be secured through a friction fit. Alternatively, the tube 125 may be sized to reside within the hose 137, with the hose 137 secured through a ring clamp. Optionally, various adapters (not shown) may be coupled to the tube 125 to engage different types of hoses. Returning to FIGS. 6A and 6B, the insert 121 further comprises one or more screened openings 123 for ventilation, so that during operation, the yard waste bag would not be inflated by the vacuum and yard waste inside the yard waste bag would not escape. The insert 121 also comprises a plurality of tabs 124 for engaging the notches 120 of the ring 108.

[0028] FIG. 7 illustrates the engagement of the insert 121 with the ring 108 according to an embodiment of the present invention. The insert 121 is placed within the ring 108 such that the tabs 124 reside within the notches 120. The insert 121 may then be rotated until the tabs 124 reside within slit portions 126 of the notches 120, locking the insert 121 within the ring 108. Other mechanisms for engaging the insert 121 with the ring 108 may be used without departing from the spirit and scope of the present invention. For example, the insert 121 and ring 108 may comprise threads for screwing the insert 121 into the ring 108. For another example, the insert 121 and ring 108 may comprise corresponding features such that the insert 121 may be snapped into the ring 108 with slight application of pressure.

[0029] Returning to FIGS. 1 and 3, the folding of the holder 100 to a closed position will now be described. In this embodiment, the first top bracket assembly 106A comprises: a bracket 112A coupled to the top bar 101A of the frame 101 and to the top bar 103A of the first arm assembly 102A; a flexible plate 113A coupled to the bracket 112A at one end of the flexible plate 113A; and a pin 114A traversing the flexible plate 113A at another end of the flexible plate 113A, such that when the pin 114A engages a corresponding hole

115A in the top bar 103A (hidden in FIG. 1 and 3; see FIG. 8), the first arm assembly 102A is locked in the illustrated open position. The second top bracket assembly 106B comprises: a bracket 112B coupled to the top bar 101A of the frame 101 and to the top bar 103B of the second arm assembly 102B; a flexible plate 113B coupled to the bracket 112B at one end of the flexible plate 113B; and a pin 114B traversing the flexible plate 113B at another end of the flexible plate 113B, such that when the pin 114B engages a corresponding hole 115B in the top bar 103B, the second arm assembly 102B is locked in the illustrated open position. Alternative mechanisms for locking and unlocking the first and second arm assemblies102A-102B may be used without departing from the spirit and scope of the present invention.

[0030] FIG. 8 illustrates the yard waste bag holding apparatus as it is being folded according to an embodiment of the present invention. Referring to FIGS. 1, 3, and 8, when the pins 114A-114B disengage from their corresponding holes 115A-115B, the arm assemblies 102A-102B are unlocked and may be folded along pivot points 117A-117B of the top bracket assemblies 106B-106B and pivot points 118A-118B of the bottom bracket assemblies. Note that the pivot points 117B and 118B are more distal from the frame 101 than the pivot pointes 117A and 118A. This allows the arm assembly 102A to fold flushed against the frame 101, and the arm assembly 102B to fold flushed against the arm assembly 102A, such that the holder 100 can be stored flat in the closed position.

[0031] FIG. 9 illustrates the yard waste bag holding apparatus in a fully closed position according to an embodiment of the present invention. Optionally, the ring 108, with or without the insert 121, may be stored nestled within the holder 100 in the closed position. Fasteners (not shown) can be used to secure the ring 108 within the holder 100. Optionally, a utility bag 127 may be used with the holder 100 to hold folded yard waste bags and other items (see also FIG. 10). The utility bag 127 may be attached to the frame 101 in a variety of ways, such as using fabric loop-and-hook strips 128.

[0032] FIG. 10 illustrates the yard waste bag holding apparatus with a wheels attachment according to an embodiment of the present invention. The wheels attachment places the holder 100 in an angled position, making the use of a vacuum more convenient. The wheels attachment comprises wheel bars 129A-129B coupled approximately in parallel by a cross bar 130. Wheels 131A-131B are coupled to one end of the wheel bars 129A-129B. On the other end, the wheel bars 129A-129B are coupled to the side bars 101C of

the frame 101 via screws 132A-132B (see also FIG. 11). Additional cross bars 135A-135B are coupled to the wheel bars 129A-129B and the frame 101 to hold the wheels attachment at the desired angle away from the frame 101 and in a locked position. Moving the cross bars 135A-135B to an unlocked position will allow the wheels attachment to fold toward the frame 101. FIG. 11 illustrates the yard waste bag holding apparatus with the wheels attachment in the closed position according to an embodiment of the present invention. Placing the holder 100 at an angle prevents the holder 100 from tipping during use with a vacuum. This also places the hose 137 attached to the vacuum at an angle, reducing the stress at the joining of the hose 137 and the tube 125. To prevent the ring 108 and the yard waste bag 111 from being pulled out of the holder 100 during use, clamps 137A-137B may be used to lock the ring 108 to the first and second arm assemblies 102A-102B.

[0033] The lock and unlock positions of the wheel attachment may be facilitated by slots (not shown) in the side bars 101C with screws (not shown) to tighten the cross bars 135A-135B in place. Alternatively, the cross bars 135A-135B may each be comprised of two smaller bars (not shown) coupled to form a pivot point. Additional wheels 136A-136B are coupled to the side bars 101C of the frame 101, such that the wheels 131A-131B and 136A-136B allow the yard waste bag holding apparatus to be moved more easily. The wheels 131A-131B may be rotatable wheels to facilitate ease of lateral movement of the holder 100. Further, a handle (not shown) may optionally be added to the holder 100. Here, the holder 100 is illustrated with the optional utility bag 126.

[0034] Although the present invention has been described in accordance with the embodiments shown, one of ordinary skill in the art will readily recognize that there could be variations to the embodiments and those variations would be within the spirit and scope of the present invention. Accordingly, many modifications may be made by one of ordinary skill in the art without departing from the spirit and scope of the appended claims.

CLAIMS

What is claimed is:

1. A yard waste bag holding apparatus comprising:

a frame, comprising: a first top bar; a first bottom bar; and a first side bars coupled to the first top bar and the first bottom bar to form a rectangular-shaped frame;

a first arm assembly, comprising: a second top bar; a second bottom bar; and a second side bar coupled to the second top bar and the second bottom bar at an end of the second top and bottom bars distal to the frame;

a second arm assembly, comprising: a third top bar; a third bottom bar; and a third side bar coupled to the third top bar and the third bottom bar at an end of the third top and bottom bars distal to the frame; and

a ring, comprising: a flange for abutting the second top bar and the third top bar; a wall to reside within a yard waste bag; and a plurality of clips for securing the yard waste bag to the ring.

2. The apparatus of claim 1, further comprising:

a first top bracket assembly coupled to the second top bar at an end of the second top bar proximate to the frame, and coupled to a first end of the first top bar;

a second top bracket assembly coupled to the third top bar at an end of the third top bar proximate to the frame, and coupled to a second end of the first top bar opposite to the first end of the first top bar;

a first bottom bracket assembly coupled to the second bottom bar at an end of the second bottom bar proximate to the frame, and coupled to a first end of the first bottom bar; and

a second bottom bracket assembly coupled to the third bottom bar at an end of the third bottom bar proximate to the frame, and coupled to a second end of the first bottom bar opposite to the first end of the first bottom bar.

3. The apparatus of claim 1, wherein when the ring is engaged with the yard waste bag, the wall resides within a lip of the yard waste bag without the lip folding over the flange.

4. The apparatus of claim 1, wherein the ring further comprises a plurality of notches residing in the wall and an insert detachably coupled to the wall, wherein the insert comprises:

a plate comprising an opening for engaging a hose to a vacuum;

one or more screened openings; and

a plurality of tabs for engaging with the plurality of notches.

5. The apparatus of claim 1, further comprising a wheel attachment coupled to the frame, wherein the wheel attachment comprises:

a first wheel bar and a second wheel bar;

a first wheel coupled to a first end of the first wheel bar; and

a second wheel coupled to a first end of the second wheel bar, wherein a second end of the first wheel bar and a second end of the second wheel bar are each coupled to the frame.

6. The apparatus of claim 5, wherein the wheel attachment further comprises:

a first cross bar coupled to the first wheel bar and the second wheel bar, wherein the first wheel bar and the second wheel bar are approximately parallel;

a second cross bar coupled to the first wheel bar and the frame;

a third cross bar coupled to the second wheel bar and the frame,

wherein the second cross bar and the third cross bar place the first wheel bar and the second wheel bar at a given angle away from the frame.

7. The apparatus of claim 2,

wherein the first top bracket assembly further comprises:

a first bracket coupled to the first top bar and to the second top bar at the end of the second top bar proximate to the frame, and

a first locking mechanism;

wherein the second top bracket assembly further comprises:

a second bracket coupled to the first top bar and to the third top bar at the end of the third top bar proximate to the frame, and

a second locking mechanism;

wherein when the first locking mechanism is in a first unlocked position, the first arm assembly is capable of folding along a first pivot point of the first top bracket assembly and a second pivot point of the first bottom bracket assembly,

wherein when the second locking mechanism is in a second unlocked position, the second arm assembly is capable of folding along a third pivot point of the second top bracket assembly and a fourth pivot point of the second bottom bracket assembly.

8. The apparatus of claim 7,

wherein the first locking mechanism comprises:

a first flexible plate coupled to the first bracket at a first end of the first flexible plate;

a first pin traversing the first flexible plate at a second end of the first flexible plate, wherein disengagement of the first pin from a first corresponding hole in the second top bar places the first locking mechanism in the first unlocked position;

wherein the second locking mechanism comprises:

a second flexible plate coupled to the second bracket at a first end of the second flexible plate;

a second pin traversing the second flexible plate at a second end of the second flexible plate, wherein disengagement of the second pin from a second corresponding hole in the third top bar places the second locking mechanism in the second unlocked position.

9. The apparatus of claim 7, wherein the first and second pivot points are more distal from the frame than the third and fourth pivot points.

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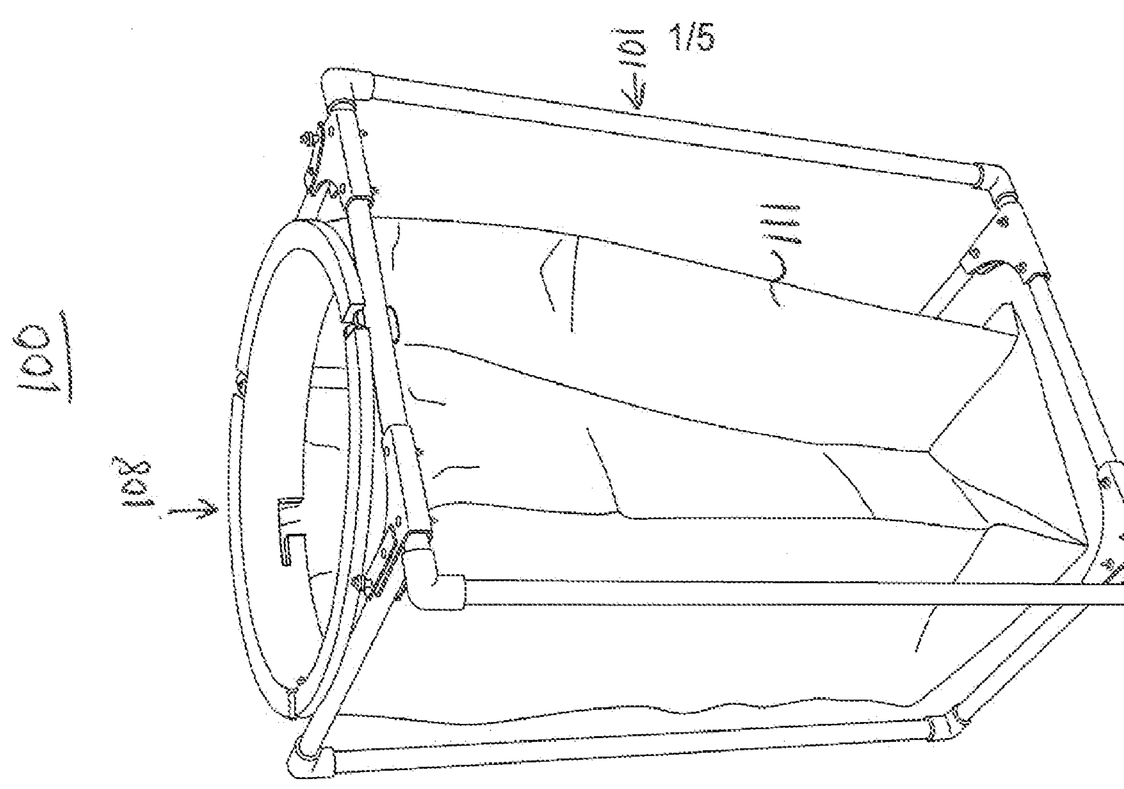
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101
111

FIG. 2

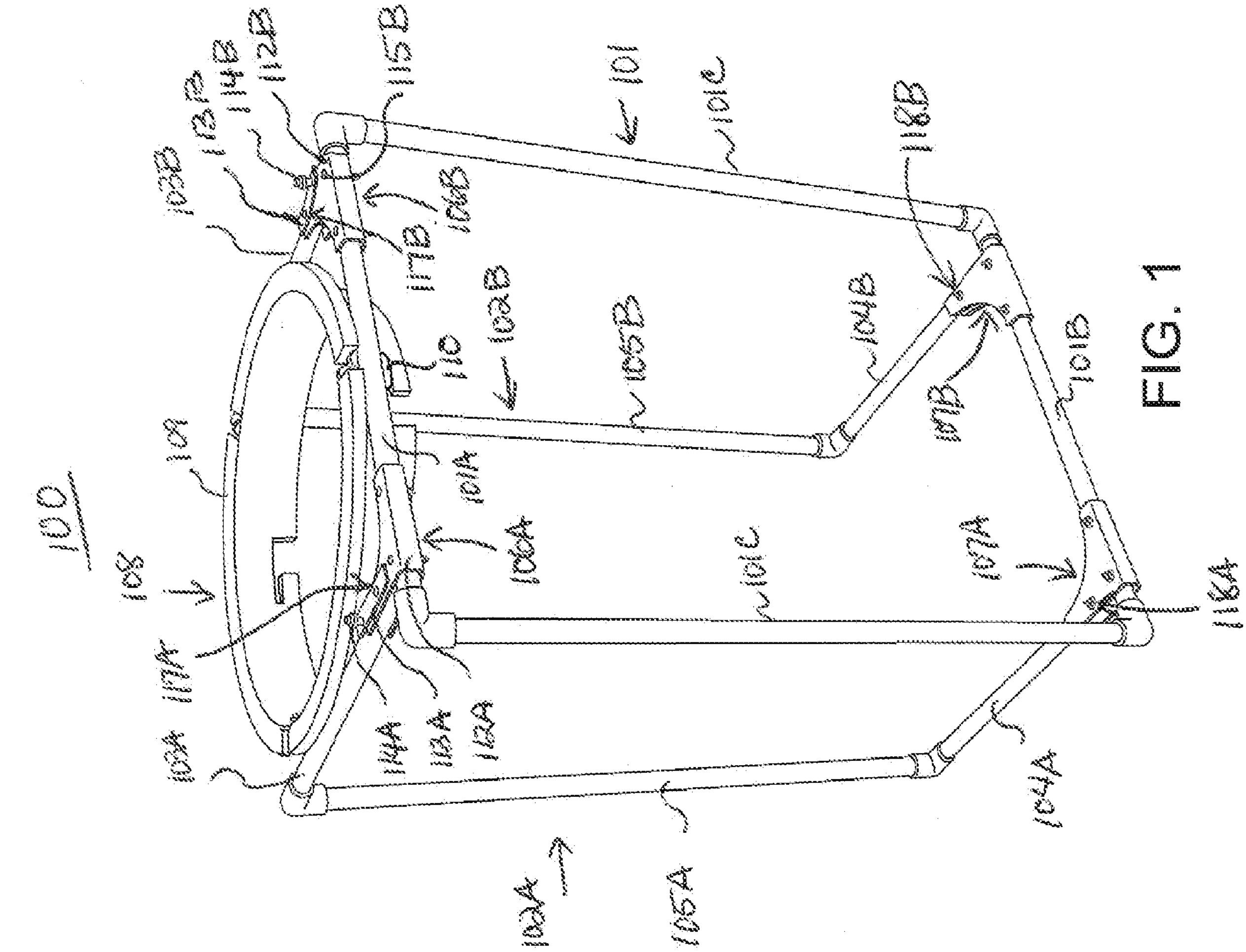
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FIG. 1

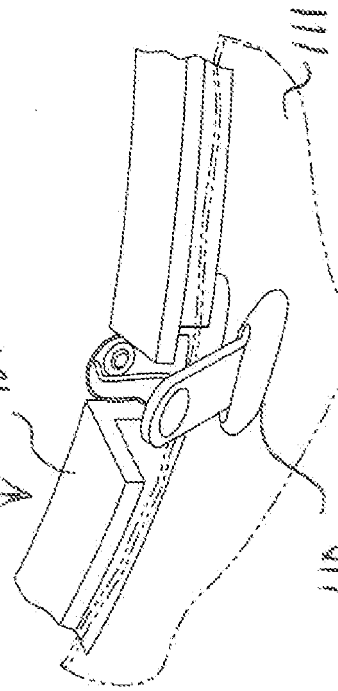


FIG. 4

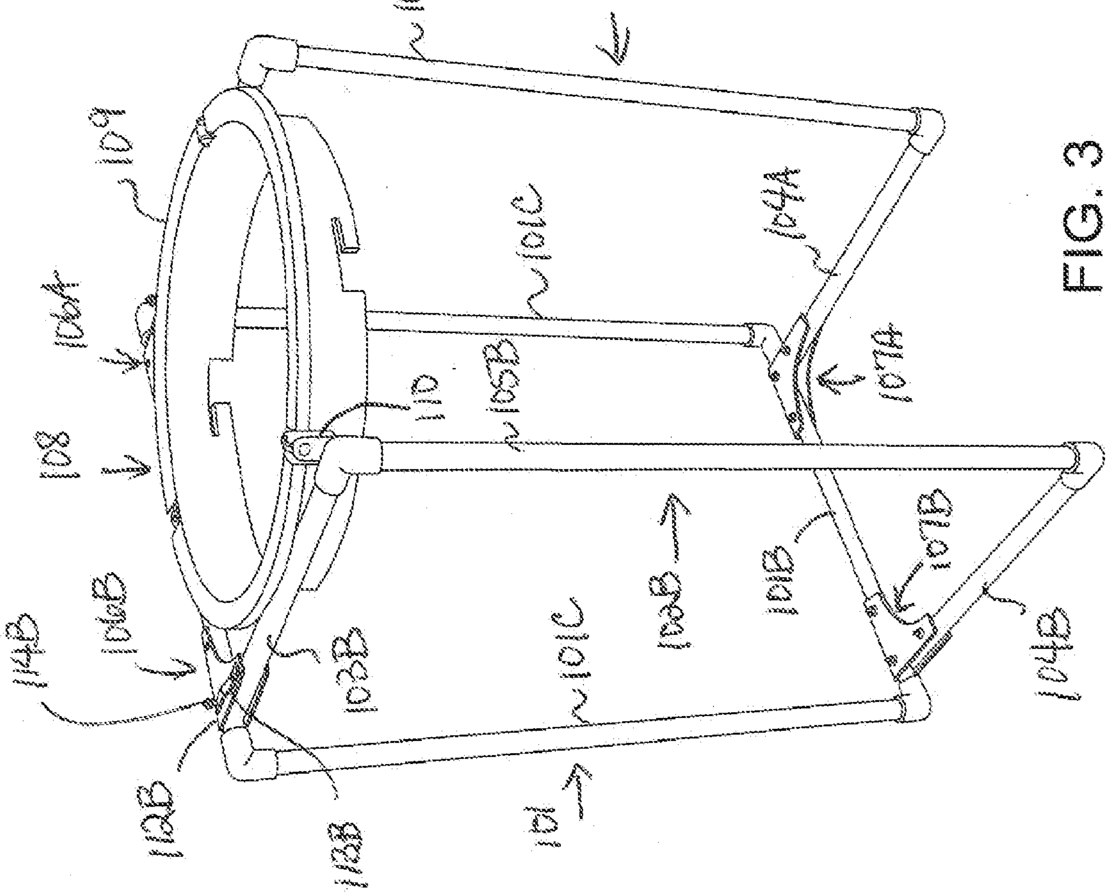


FIG. 3

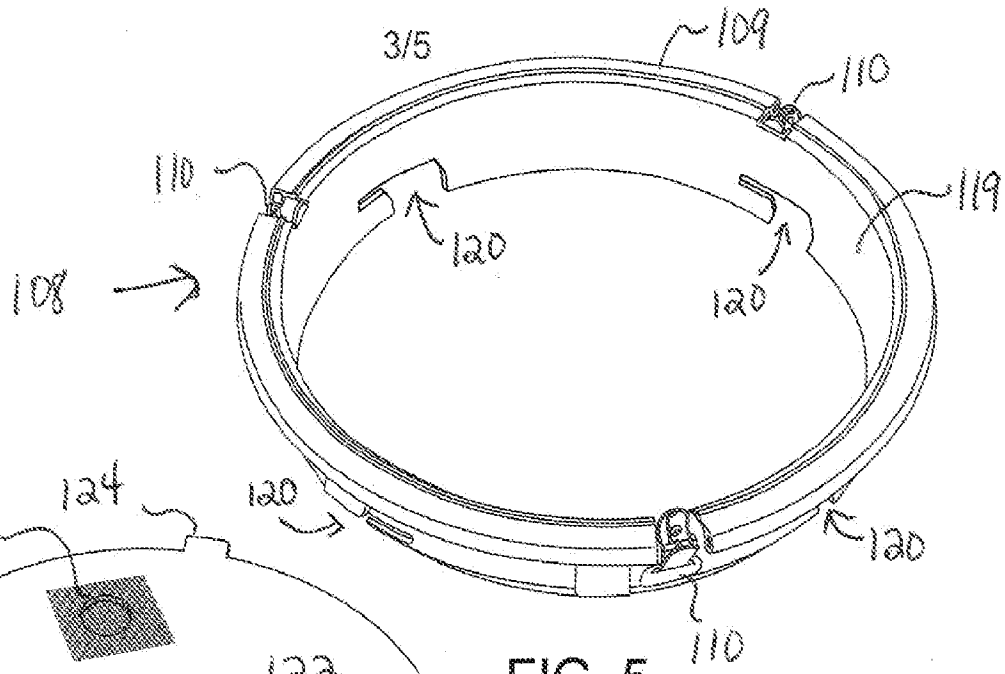


FIG. 5

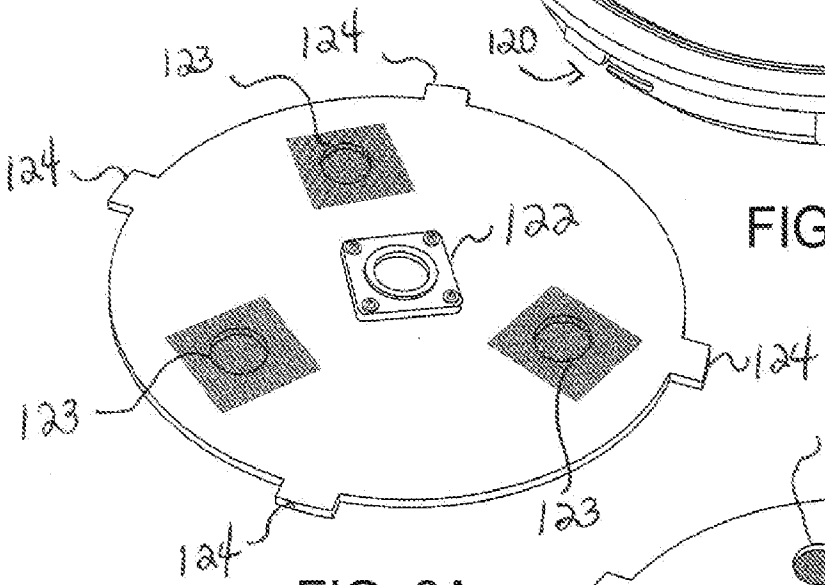


FIG. 6A

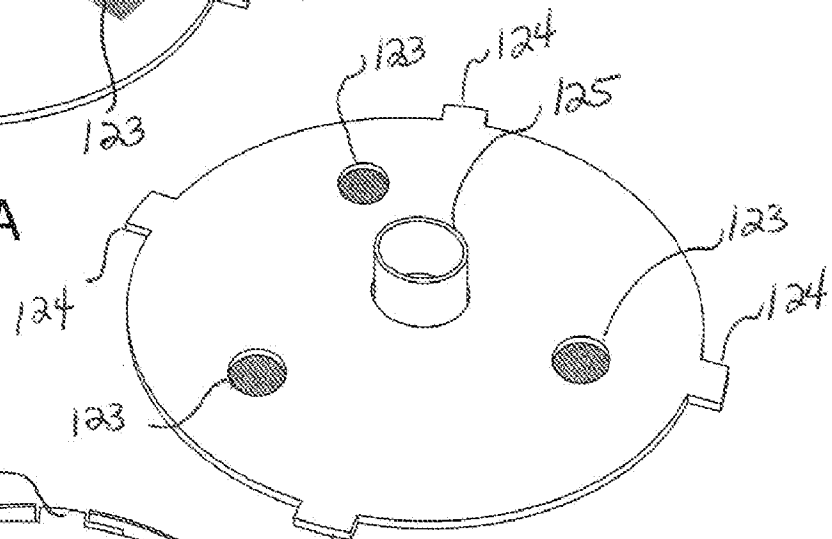


FIG. 6B

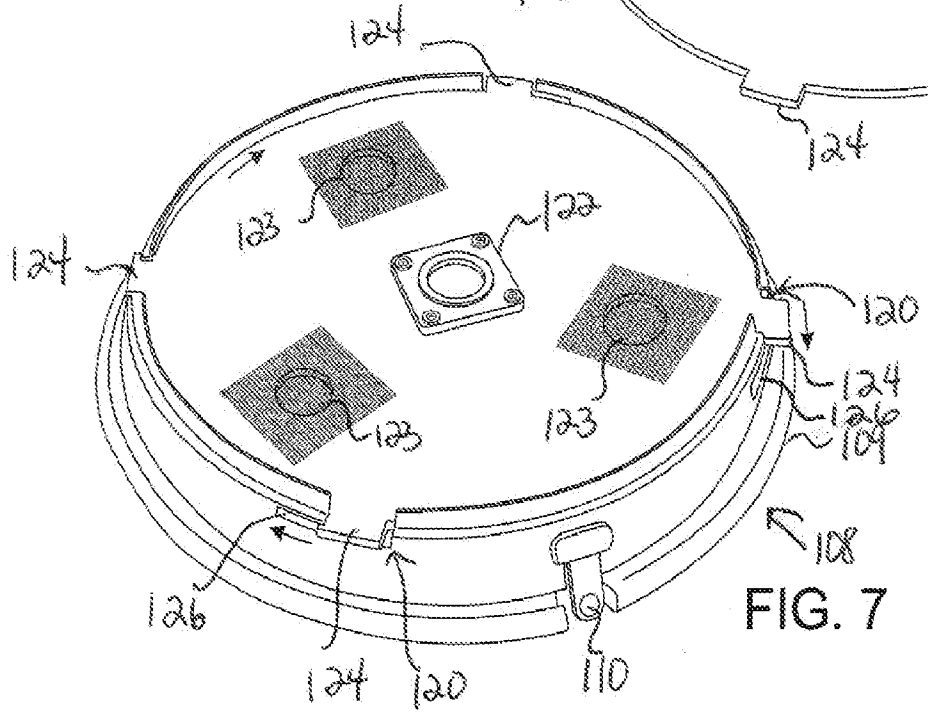
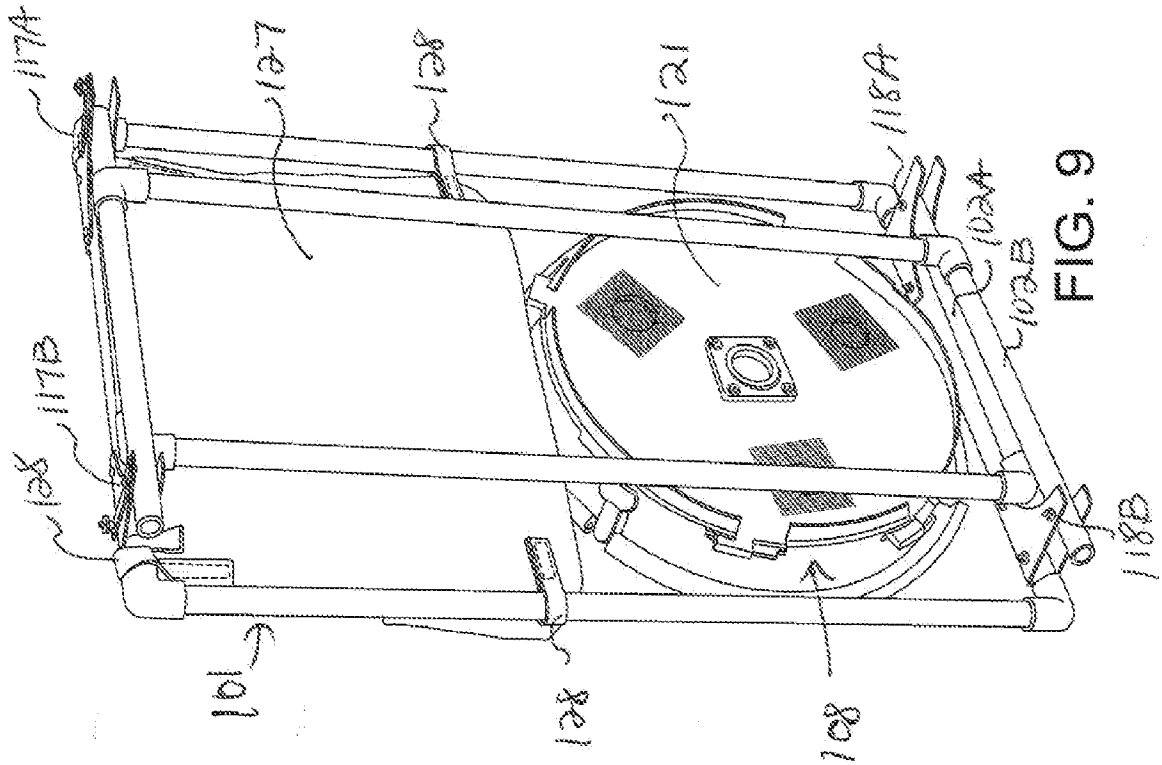


FIG. 7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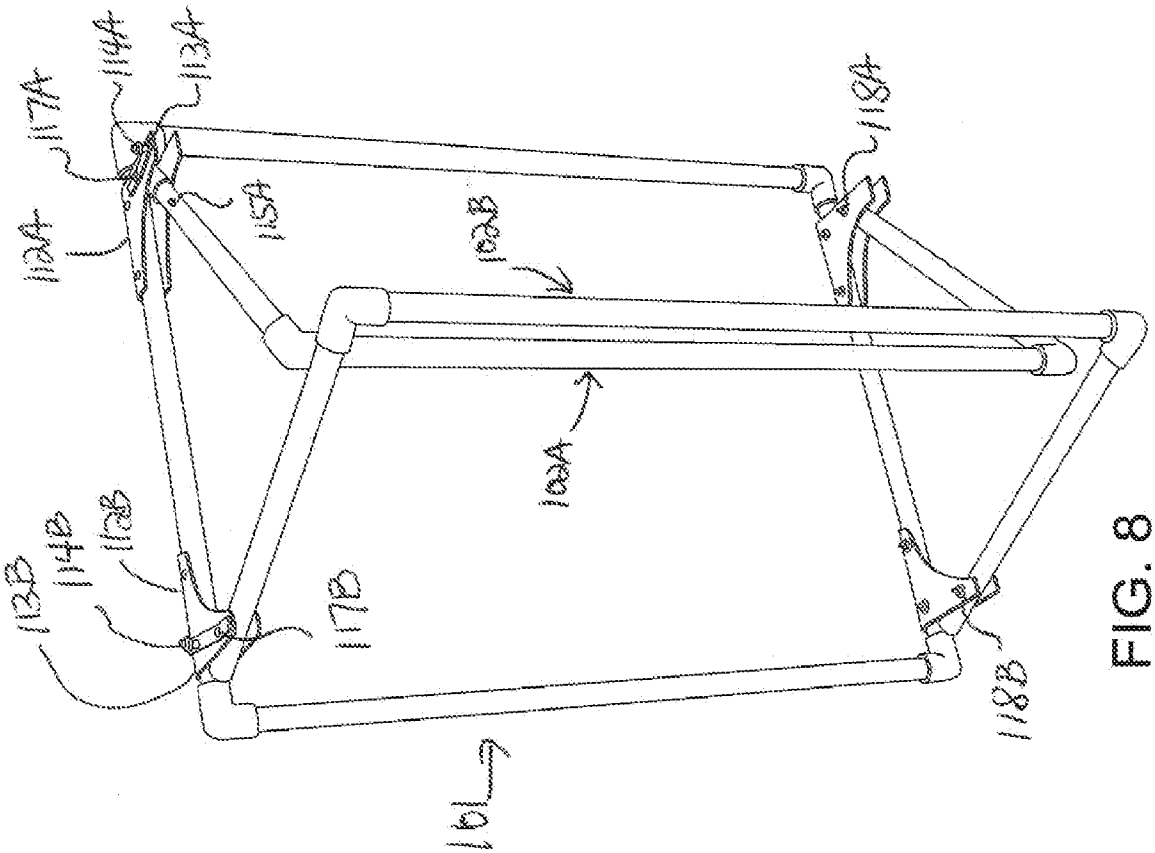
108

FIG. 9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114B
112B
117B
118B
101

FIG. 8

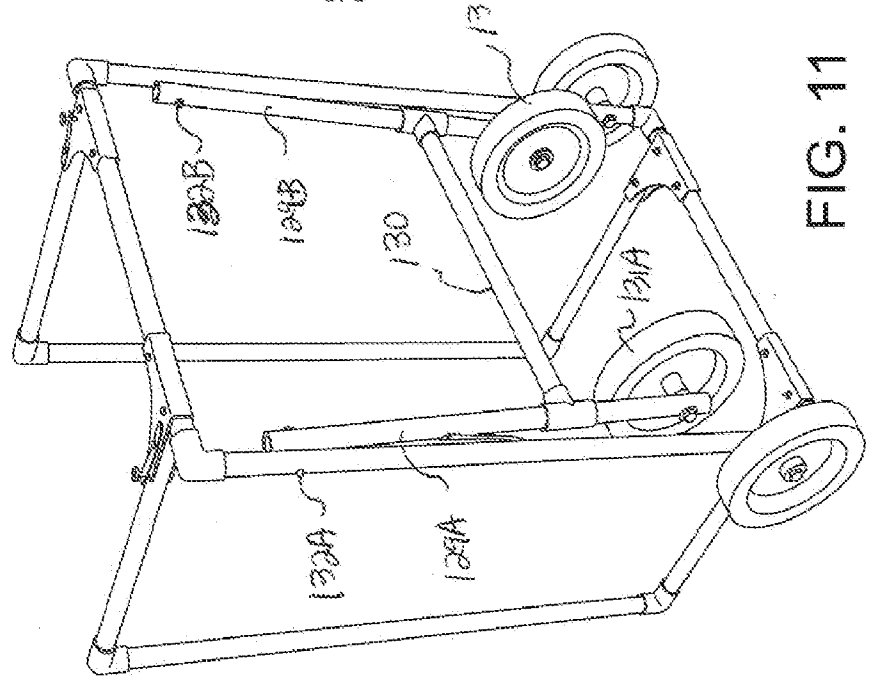

FIG. 11

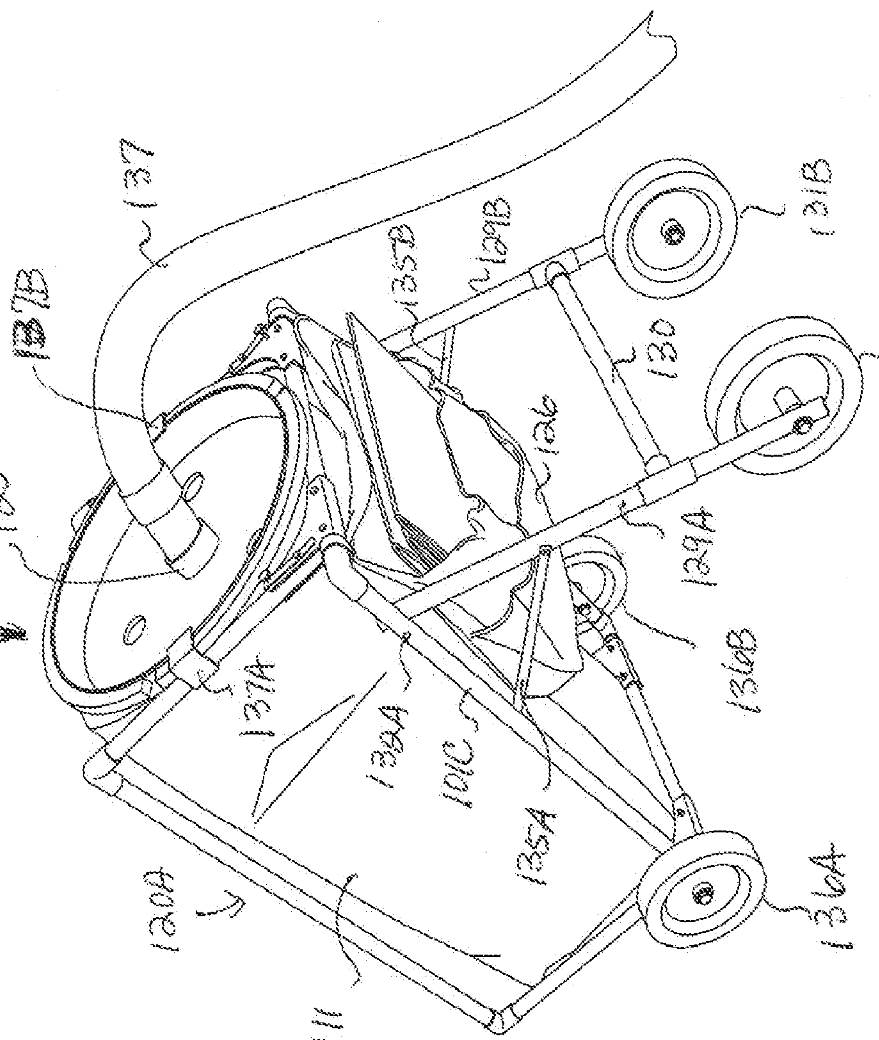

FIG. 10