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(54) **PORTABLE AIR COMPRESSOR**

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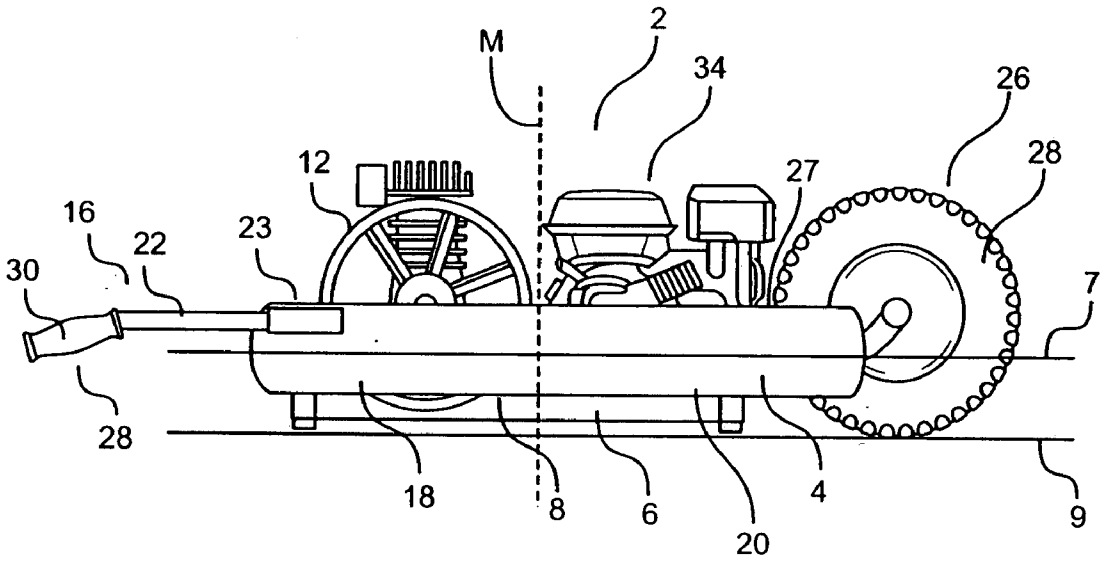
(57) **ABSTRACT**

A wheelbarrow compressor is disclosed that includes a base and a first reservoir and a second reservoir having bottom portions located at opposite sides of the base. The base is located below an uppermost surface of the first and the second reservoirs. A handle assembly is attached with a first portion of at least one of the reservoirs and a wheel assembly is attached with a second portion of the at least one of the reservoirs. A pump and a motor are operatively connected with the reservoirs and are disposed on the base and between the reservoirs.



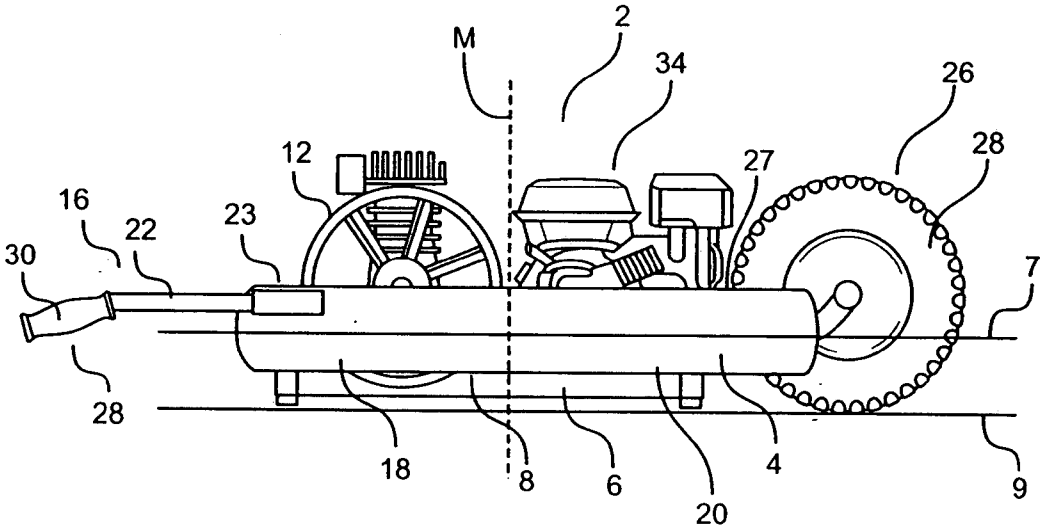

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Fig.1

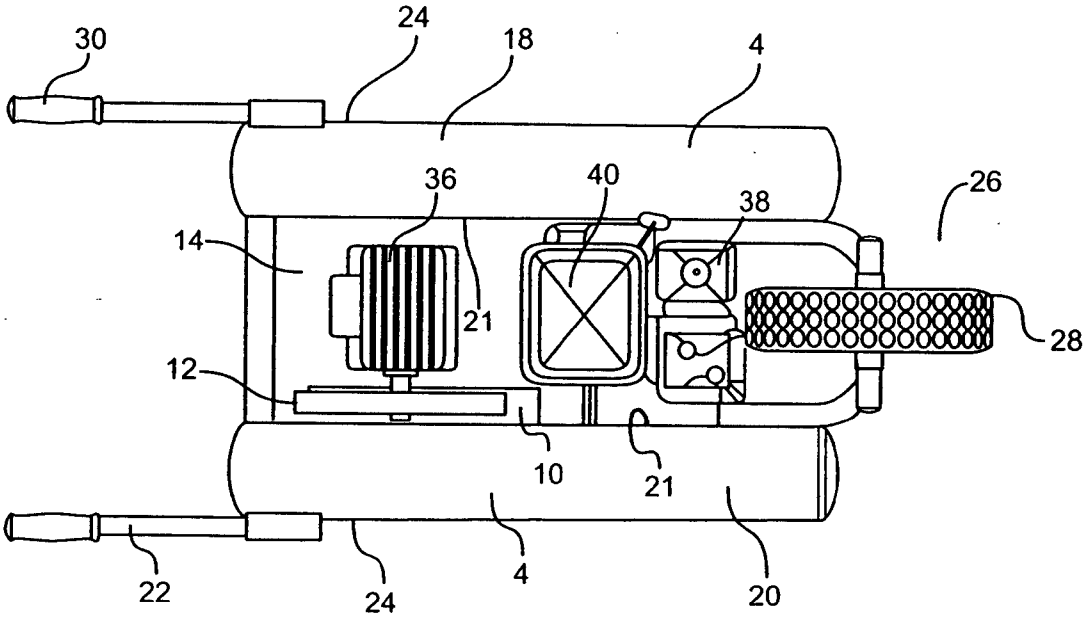
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Fig.2

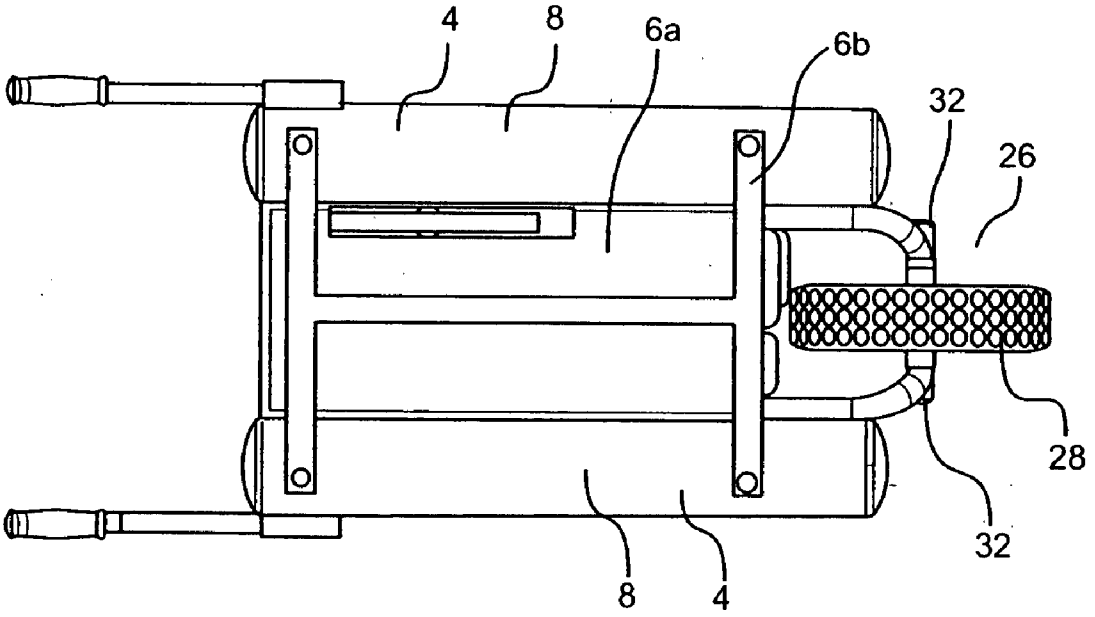

Fig.3

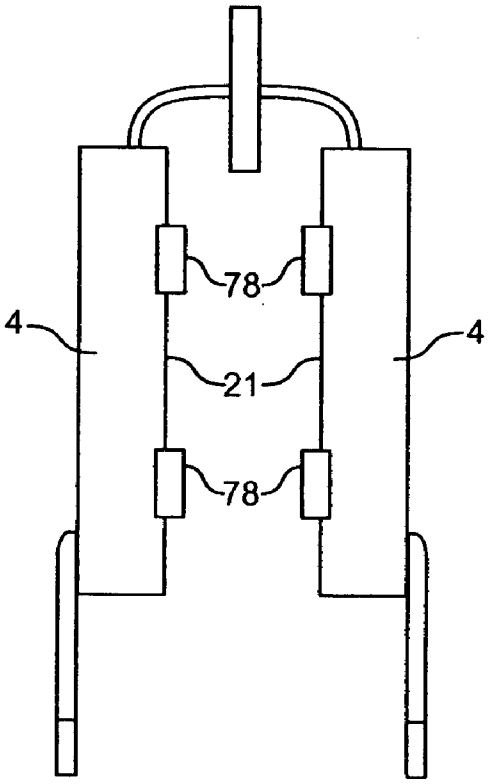

Fig.3A

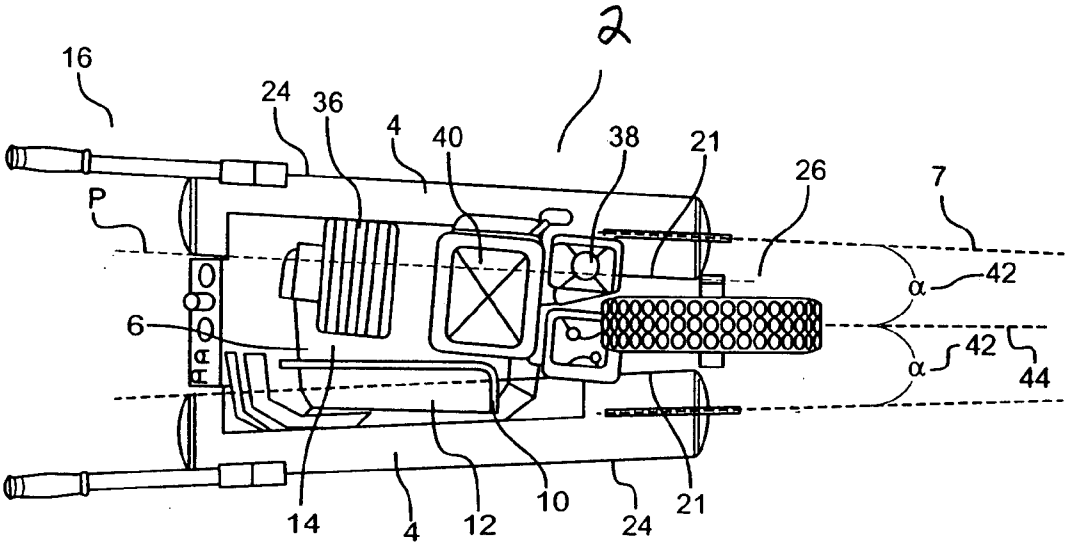

Fig.4

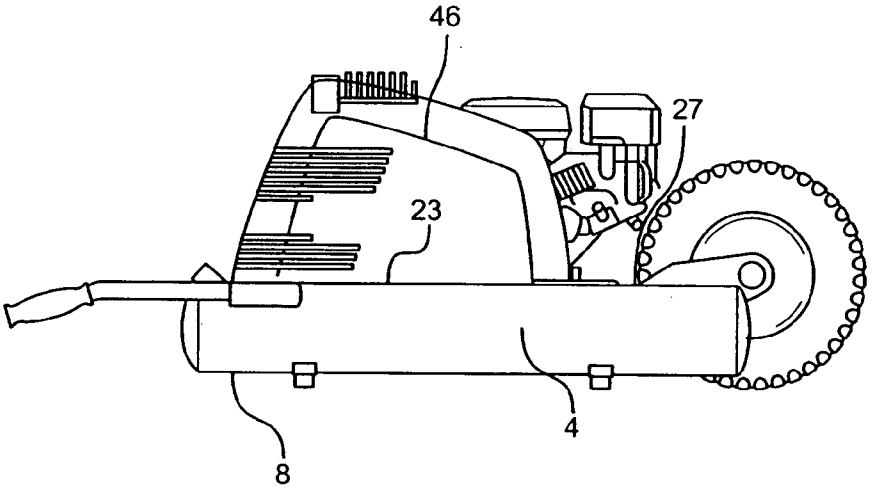

Fig.5

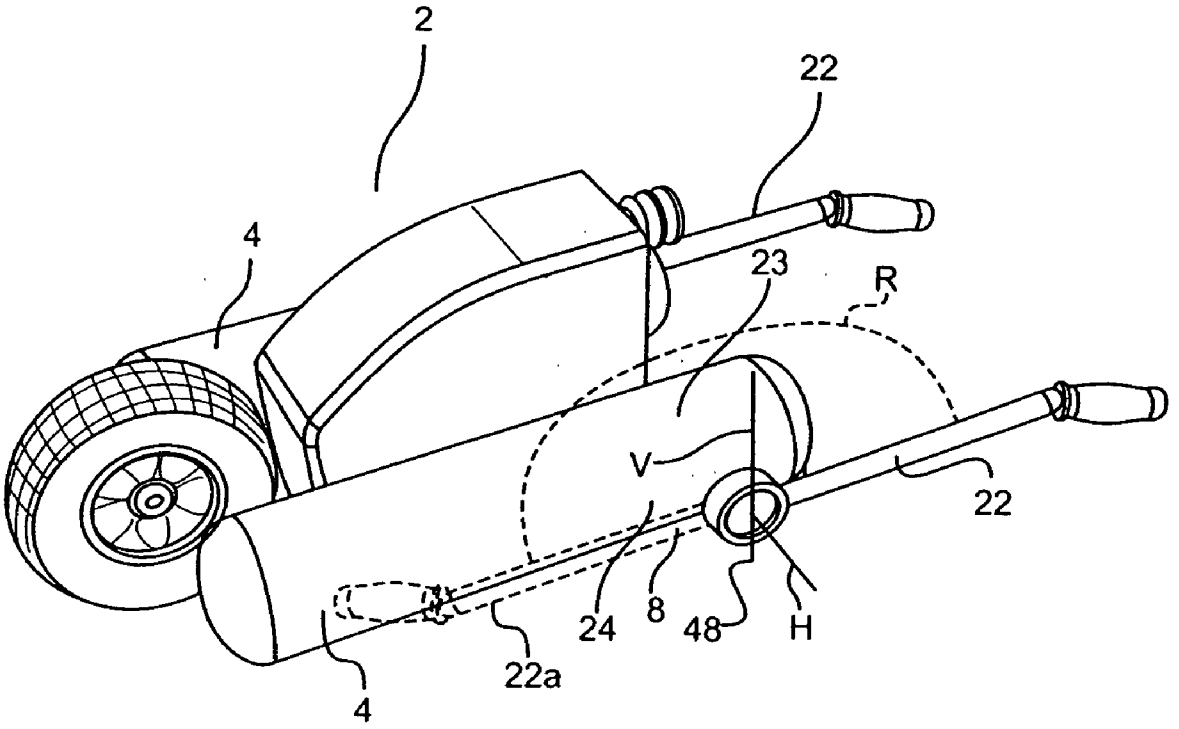

Fig.6

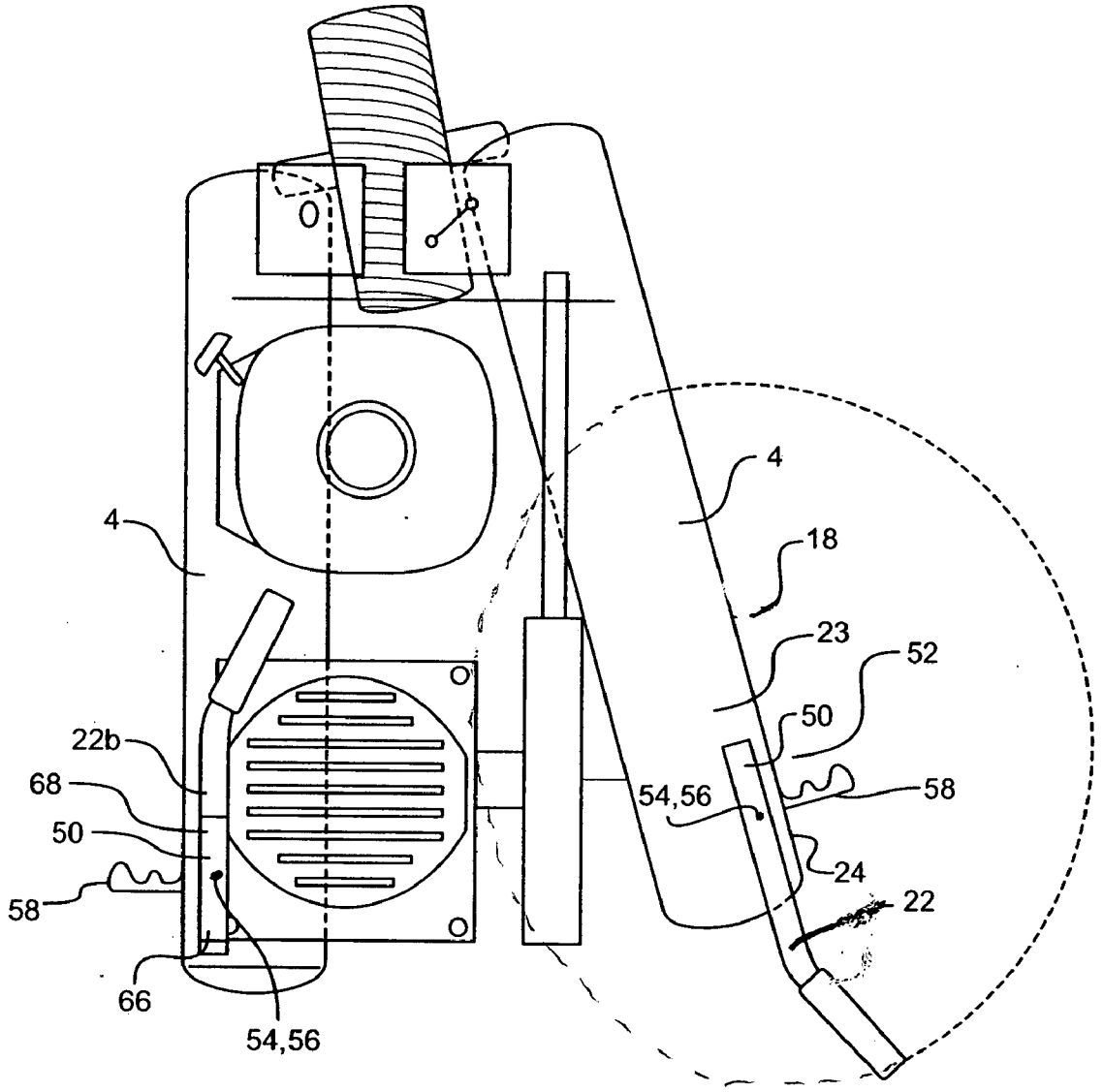

Fig.7

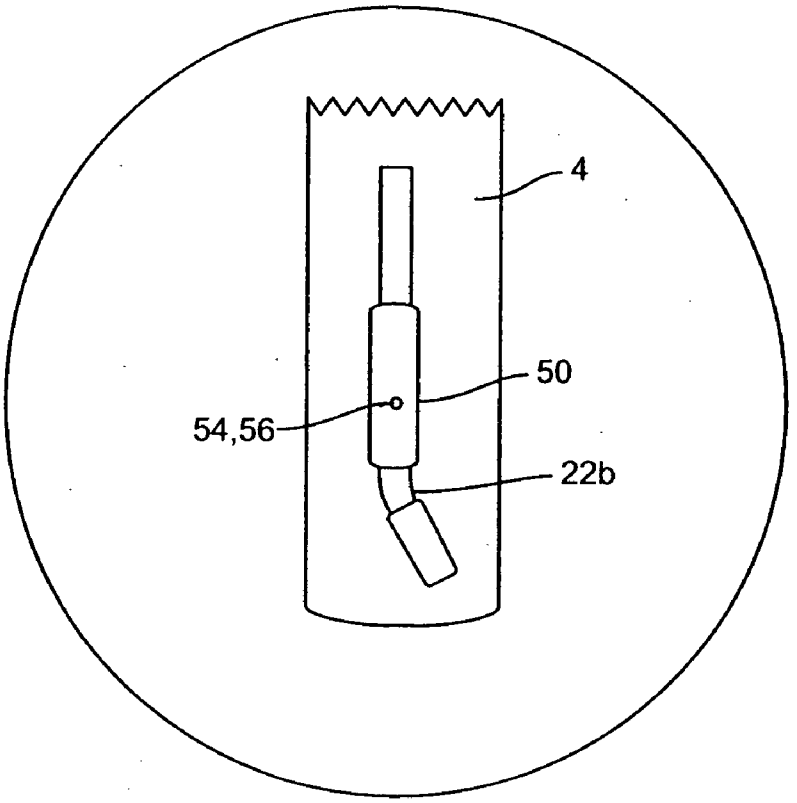

Fig.7a

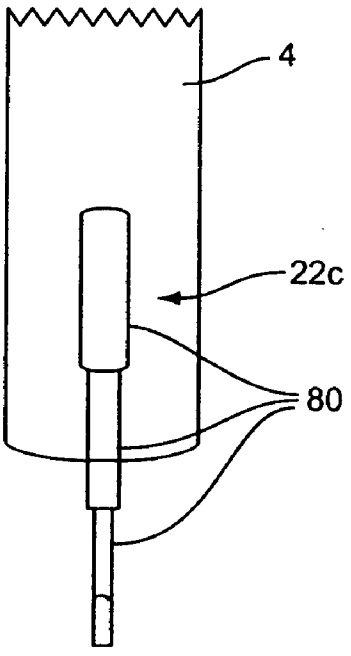

Fig.7b

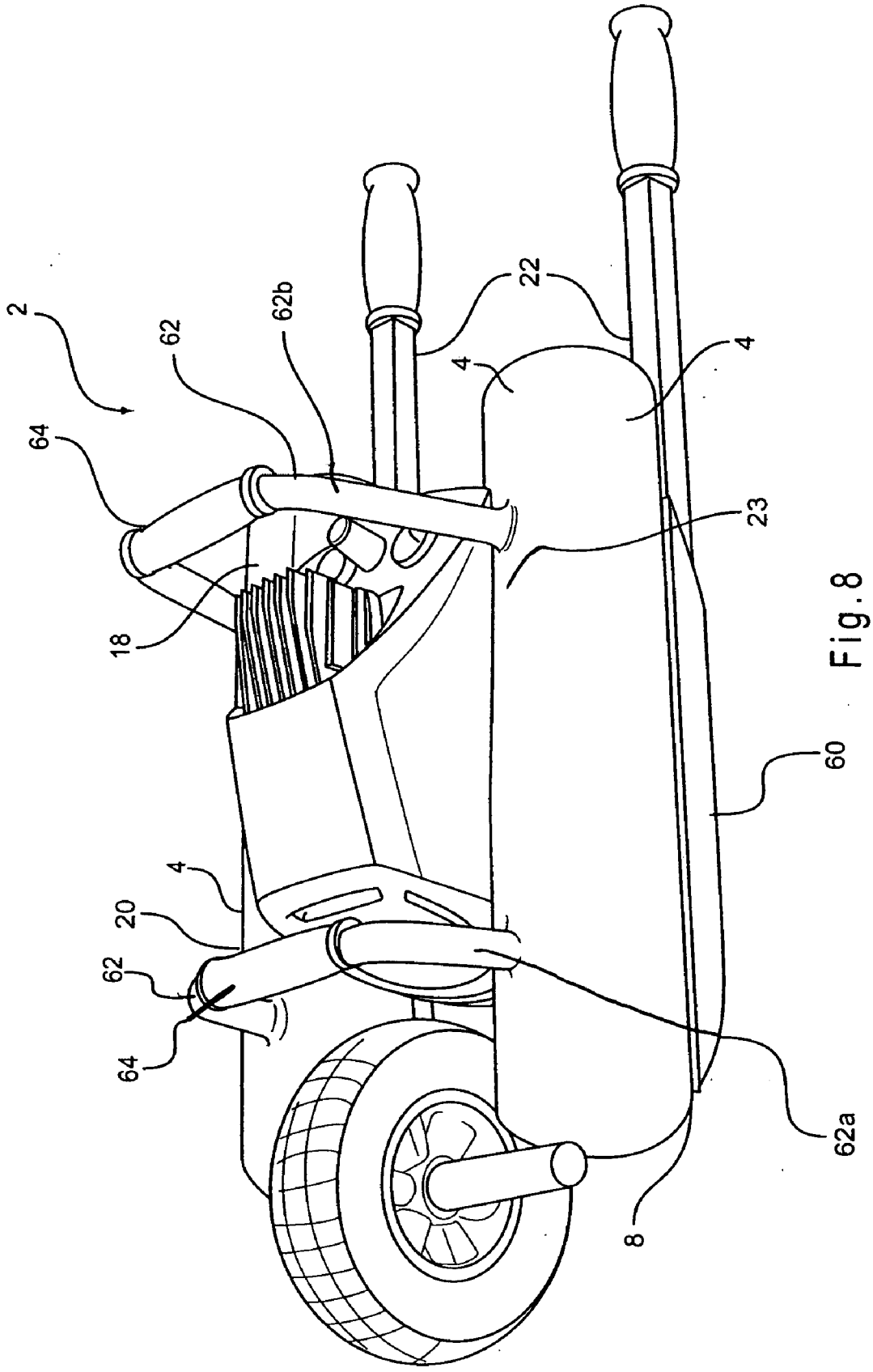

Fig.8

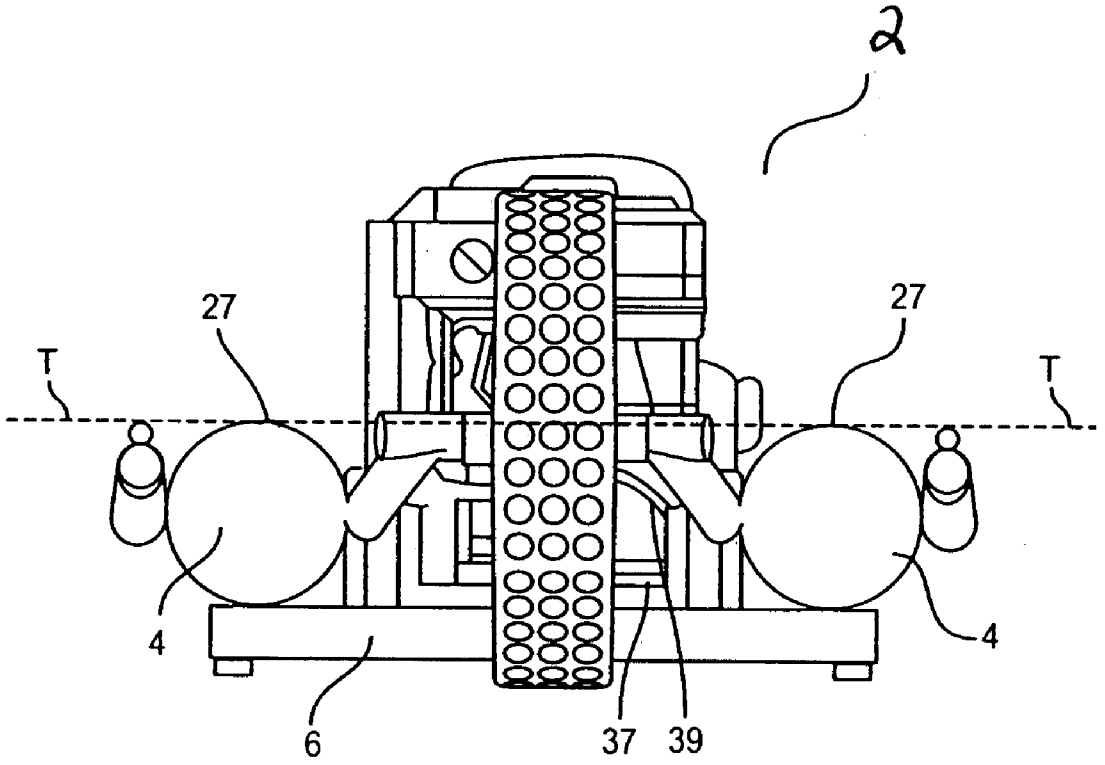

Fig.9

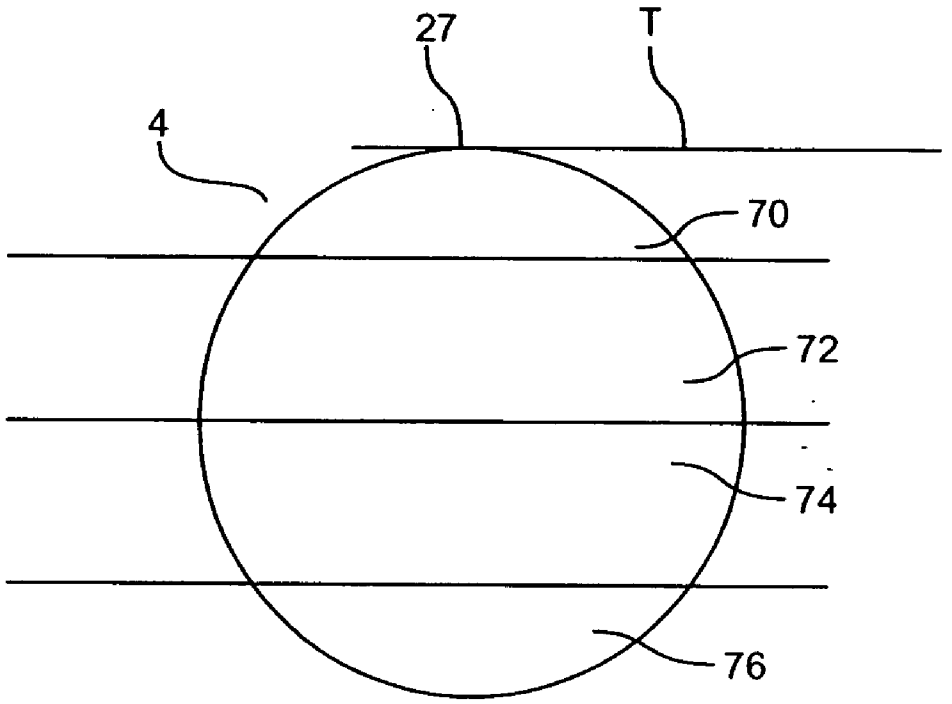

Fig.10

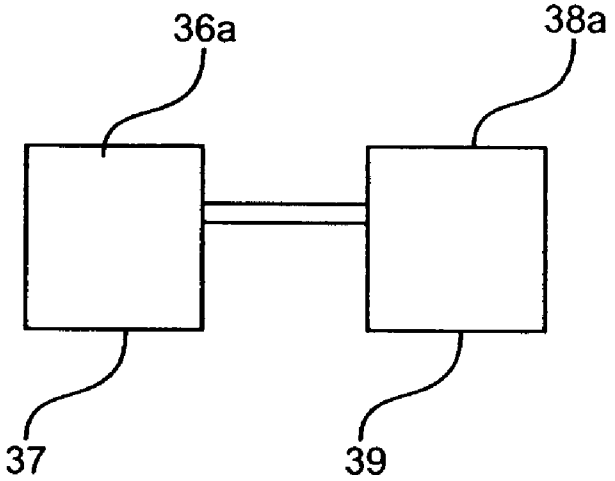

Fig.11

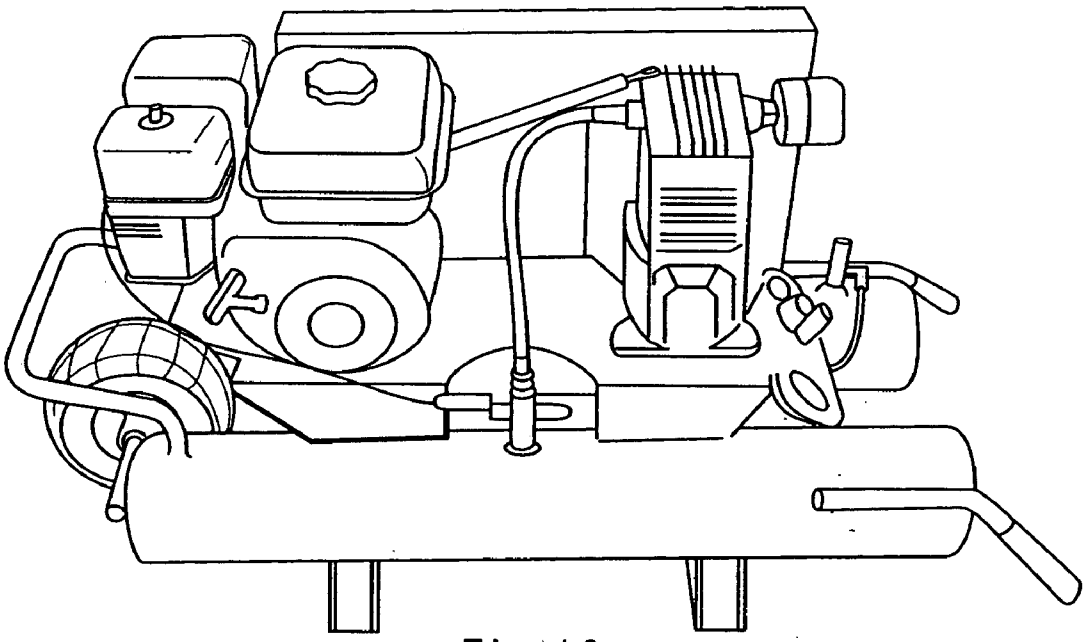

Fig.12
Prior Art

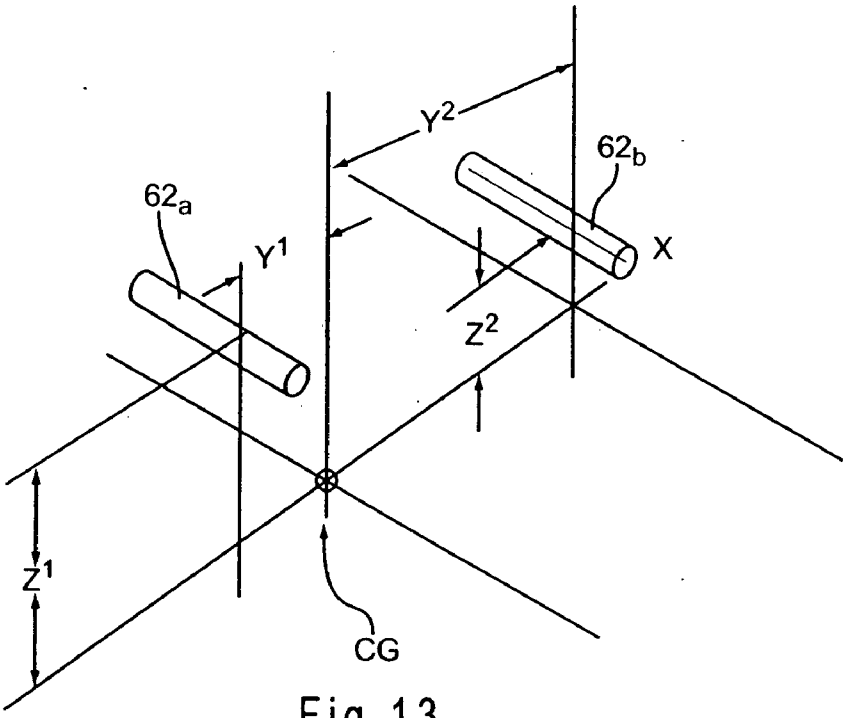

Fig.13

PORTABLE AIR COMPRESSOR

BACKGROUND

[0001] The present invention relates to compressor assemblies, and, in particular, relates to portable compressor assemblies.

[0002] Several types of compressors exist in the prior art. Some prior-art air compressors are portable and often include an air storage tank that normally includes either one or two air reservoirs for storing compressed air and, with respect to the longitudinal axis of the tank, a wheel located at one end of the air tank and a handle at the opposite end of the tank. The compressors with two air reservoirs generally utilize one wheel while the single reservoir compressors of this type generally utilize two wheels. These single and double reservoir types of compressors are often referred to as a wheelbarrow compressors The compressor will also include components to compress the air. These components generally include a motor assembly and a pump assembly. Due to space constraints, these components typically are mounted on top of the air tanks. One example of such a compressor is made by Campbell Hausfeld, model number GP90135, which is shown in FIG. **12**.

[0003] Mounting the components on top of the air tanks results in several disadvantages. One disadvantage is the high center of gravity that results from mounting the components on top of the air tanks. The high center of gravity is particularly inconvenient for a user manually transporting the compressor and may result in a user losing control of the compressor. This is particularly the case in the two-reservoir wheelbarrow-style compressors used at worksites that are often transported in a wheelbarrow type manner up and down narrow wooden ramps. Additionally, the high center of gravity may cause the air compressor to be unstable and prone to tipping or tilting when being used.

[0004] Moreover, such compressors may be difficult to package and store for, by way of example, shipping, warehousing or retail purposes. When packaged, the air compressors are often shipped, stored or displayed by being stacked atop one another on shelves. Prior-art compressors tend to have high profiles (i.e., are of a taller height). Thus, when packaged, a large amount of storage space may be necessary. Likewise, if the compressors are shipped in large shipping containers, the height limits the number of units that can be packed into a container. Moreover, a greater amount of packaging materials may be necessary due to the high profile of the compressor.

[0005] Additionally, the handles on such prior-art tanks also can cause difficulties when storing the compressors. The handles on such compressors often project outwardly and upwardly from the compressor. Such a configuration again results in an increased height and length and the need for a greater amount of storage space and packaging material.

BRIEF SUMMARY

[0006] An ultra-low profile wheelbarrow compressor is disclosed that includes a base and an air storage tank. The air storage tank includes a pair of air reservoirs having bottom portions located at opposite sides of the base. The base is located below an uppermost surface of the first and the second reservoirs. A handle assembly is attached with a first portion of at least one air reservoir and a wheel assembly is attached with a second portion of at least one air reservoir. A pump and a motor are operatively connected with the reservoirs and are disposed on the base and between the air reservoirs.

[0007] In an additional embodiment, a low-profile portable compressor is disclosed that includes a base and first and second reservoirs spaced apart and located at the base. A handle assembly is attached with a first portion of at least one of the air reservoirs and a wheel assembly is attached with a second portion of at least one of the air reservoirs. The wheel assembly includes at least one wheel. A plurality of air compressor components, including a pump assembly and a motor assembly, is at least partially disposed on a top portion of at least one of the air reservoirs. A flywheel is rotatably connected to the motor assembly. The flywheel extends between the first and second reservoirs and below the top portion of at least one of the first and second reservoirs. At least one of the first and second reservoirs is angled with respect to the central axis defined by the orientation of the wheel.

[0008] In an additional embodiment, a wheelbarrow compressor includes a first reservoir and a second reservoir. A pump and a motor are operatively connected with the reservoirs and disposed between the reservoirs. The bottom-most portions of the pump and the motor are no higher than uppermost quadrants of the first and the second reservoirs.

[0009] Another aspect of the portable compressor includes movable handles that may rotate, fold, slide, telescope, retract or be removable and stored in a separate location on or near the compressor.

[0010] Another aspect of the portable compressor includes first and second secondary handles disposed on the first and second reservoirs. One of the first and second secondary handles is located closer to the second portion of the first and second reservoirs. The secondary handles are offset from each other such that the height of the secondary handle located closer to the second portion of the first and second reservoirs is less than the height of the other first and second secondary handle.

[0011] Before turning to the drawings and the detailed description, it should be noted that although the detailed description describes an air compressor, those skilled in the art will recognize that the novel compressor disclosed herein may be used with other types of compressed gas.

BRIEF DESCRIPTION OF THE DRAWINGS

[0012] FIG. **1** is a side view of an embodiment of a compressor assembly.

[0013] FIG. **2** is a top view of the compressor assembly of FIG. **1**.

[0014] FIG. **3** is a bottom view of the compressor assembly of FIG. **1**.

[0015] FIG. **3***a* is a bottom view of an alternate embodiment of a compressor assembly.

[0016] FIG. **4** is a top view of an additional alternate embodiment of a compressor assembly.

[0017] FIG. **5** is top view of the compressor assembly of FIG. **4**.

[0018] FIG. **6** is a perspective view of an additional alternate embodiment of the compressor assembly having a movable handle assembly.

[0019] FIG. **7** is a top view of an additional alternate embodiment of the compressor assembly having a movable handle assembly.

[0020] FIG. **7***a* is a partial view of the embodiment of FIG. **7**, showing a handle inserted in a sleeve.

[0021] FIG. **7***b* is a partial view of a handle having a plurality of nesting portions.

[0022] FIG. **8** is a perspective view of a compressor assembly having skids and lifting handles.

[0023] FIG. **9** is a front view of the embodiment of the compressor of FIG. **1**.

[0024] FIG. **10** is a cross-sectional view of an air reservoir.

[0025] FIG. **11** is a view of a pump and motor.

[0026] FIG. **12** is a view of a prior-art air compressor.

[0027] FIG. **13** is a schematic diagram of a compressor having secondary handles.

DETAILED DESCRIPTION OF THE DRAWINGS AND THE PRESENTLY PREFERRED EMBODIMENTS

[0028] Turning now to FIGS. **1-3**, a novel air compressor **2** is disclosed. The novel compressor has an air storage tank that includes at least one air reservoir **4** for storing a pressurized gas, with there preferably being two air reservoirs **4** included. With reference to FIGS. **1** and **2**, the air reservoirs each include a top portion **23**, two side portions, i.e., an outer side portion **24**, an inner side portion **21** and a bottom portion **8**. The air reservoirs **4** are attached to a base **6** and are oriented such that a longitudinal axis **7** of each reservoir is substantially parallel to a horizontal plane **9** upon which the air compressor rests. The reservoirs **4** preferably are located at opposite sides of the base **6**.

[0029] The base may be a one-piece base, or, alternatively and as shown in FIG. **3**, the base may be more than one piece. As shown in one preferred embodiment, the base may include a support **6***a* and a bracket **6***b* mounted to the bottom portion **8** of each air reservoirs **4**. In an alternate embodiment, and as shown in FIG. **3***a*, the base need not include a support **6***a*, and instead may be comprised of a plurality of tabs **78**. In additional alternate embodiments, the base may be comprised of brackets, weldments, tubes or the like. In such embodiments, the air reservoirs **4** and other compressor components are mounted or otherwise supported by the tabs, brackets, weldments, or tubes. Alternatively, the compressor components may be attached to the inner side portions **21** of the air reservoirs **4**.

[0030] The base also includes a recess **10**, which, in a preferred embodiment, is a through-hole in the base. The recess **10** accommodates a flywheel **12** so that the compressor can be mounted in an ultra-low profile manner on the base. That is, a portion of the flywheel **12** may pass through the recess **10**. The air reservoirs **4** are positioned on the base **6** such that there is a space **14** between them. As explained further below, additional components of the air compressor are supported in the space **14** and on the portion of the base between the reservoirs.

[0031] A handle assembly **16** is attached to a first portion **18** of at least one of the air reservoirs **4** and a wheel assembly **26** attached to a second portion **20** of at least one of the air reservoirs **4**. The first and second portions **18**, **20** are the portions to the left and right of the reservoir **4** length midpoint indicated by the line M in FIG. **1**, respectively.

[0032] Although FIGS. **1-3** show the handle assembly and wheel assembly directly mounted to the air reservoirs **4**, in alternate embodiments they need not be directly attached to an air reservoir. Preferably, the handle assembly includes two handles **22**, each of which projects outwardly from the first portion **18** of the air reservoir **4** and is attached to the outer side portion **24** of each air reservoir **4**. More preferably, and as shown in FIG. **1**, the handles **22** are substantially horizontal with respect to the horizontal plane **9**, with the exception of an end portion **28** of each handle **22**, which, for ergonomic purposes, may angle towards the horizontal plane **9**. Optionally, the end portion **28** of the each handle includes a grip **30** for the ease of a user to grasp the handles **22**.

[0033] The wheel assembly **26** includes a wheel **28** that is mounted to a pair of brackets **32**, each of which connects the wheel **28** to the air reservoir **4**. As with the handle assembly, the wheel assembly need not be directly mounted to the air reservoirs. As disclosed above, the wheel assembly is attached to the second portion **20** of the air reservoirs **4**, opposite the first portion **18**, such that a user may grasp the handles and transport the air compressor, such that the air compressor rolls on the wheel. The configuration of such an air compressor is known as a "wheelbarrow" style air compressor.

[0034] Compressor components **34** to compress gas to be stored within the air reservoirs are operatively connected with the air reservoir and generally are located in the space **14** between the air tanks and supported by the base. The components may include a pump assembly **36** and a motor assembly **38**. The motor assembly **38** may include an electric motor or a gas engine **38***a*, and, furthermore, embodiments that include a gas engine may also include a fuel tank **40**, depending on the design of the motor assembly. A flywheel **12** is attached to the motor assembly. The pump assembly **36** includes a pump **36***a*. The pump assembly **36** is fluidly connected to the air reservoirs **4** and the motor assembly **38** is operatively connected to the pump assembly **36**. In addition, and as described above, the flywheel **12** is positioned so as to be at least partially within the recess.

[0035] The compressor components may be located anywhere in the space along the base. In one preferred example, the motor may be located in the space approximately four inches behind the wheel. In another embodiment, the pump may be located in the space immediately behind the wheel.

[0036] Having the compressor components **34** disposed on the base **6** between the air reservoirs **4** results in the air compressor having a center of gravity lower than prior-art air compressors, and more preferably, results in the novel air compressor having a center of gravity lower than an uppermost surface **27** of the air reservoirs. As shown in FIGS. **1**, **9** and **10**, the uppermost surface **27** of the air reservoirs is part of the top portion **23** and is the highest part of the reservoir from the ground when measured in its normal operating position. For the air reservoirs **4**, which are generally cylindrical reservoirs having a generally circular cross section, the uppermost surface **27** generally will be identified by the tangent, indicated as T in FIGS. **9** and **10**, to the cross section that is the farthest distance from the ground during normal operating conditions.

[0037] Referring now to FIGS. **9-11**, in alternate embodiments, the benefits of the present invention may be realized based on the position of bottom-most portions **37**, **39** of the pump **36***a* and the motor **38***a* with respect to the air reservoirs **4**. The bottom-most portions are the lowest portions of the pump and motor from the ground when measured in their normal operating positions. With reference to FIG. **10**, which shows a cross-section of a circular air reservoir **4**, the reservoir may be divided into quadrants: an uppermost quadrant **70**, an upper-mid quadrant **72**, a lower-mid quadrant **74** and a lower-most quadrant **76**. Preferably, the bottom-most portions **37**, **39** of the pump **36***a* and the motor **38***a*, respectively,

are no higher than the uppermost quadrant **70** of the air reservoirs **4**. Even more preferably, in order of ascending preference: the bottom-most portions **37**, **39** of the pump **36***a* and the motor **38***a* are no higher than the upper-mid quadrant **72**; the bottom-most portions **37**, **39** of the pump **36***a* and the motor **38***a* are no higher than the lower-mid quadrant **74**; and most preferably, the bottom-most portions **37**, **39** of the pump **36***a* and the motor **38***a* are no higher than the lower-most quadrant **76**. In alternate embodiments that do not include air reservoirs with circular cross-section, the reservoirs nonetheless may be similarly divided into quadrants.

[0038] Unlike the embodiments described herein, prior-art air compressors such as the Campbell Hausfeld model number GP90135 compressor (FIG. **12**) typically mount air compressor components on an upper portion of an air reservoir, resulting in air compressors that have a higher center of gravity. This results in a higher center of gravity that contributes to the instability of the air compressor and makes it more prone to tipping or tilting, especially when being transported, resulting in an inconvenience to a user transporting the compressor.

[0039] In contrast, having the pump and motor assemblies of the present air compressor on the base **6** between the air reservoirs **4**, as opposed to an upper portion of the air reservoir, lowers vertical height of the compressor and, in turn, the center of gravity. Lowering the vertical height of the compressor adds stability to the compressor and further discourages tipping or tilting. Preferably, and as described above, the center of gravity is below the uppermost surface of the air reservoirs. In an alternate embodiment, and as also been described above, it also is preferable to have the bottom-most portions of the pump and the motor be no higher than the uppermost quadrant of the air reservoirs. Such embodiments highly reduce the likelihood of having the air compressor tip or tilt while being transported and make transporting the compressor much easier.

[0040] Optionally, and to add further stability to the air compressor, the wheel **28** of the compressor may be enlarged to a size approximately equal to or greater than the air compressor profile, as shown in FIG. **1**. As compared to compressors with smaller wheels, the enlarged wheel **28** reduces the amount of pivoting about the central axis of the wheel needs to be pivoted in order to lift the compressor with the handle assembly. Advantageously, the smaller amount of pivoting results in less force being exerted on a user's arms and makes the compressor easier to transport with the wheel over a rough terrain.

[0041] Moreover, having the air compressor components disposed on the base results in an air compressor having a height or profile, measured with respect to the horizontal plane, lower than the profile of prior art compressors. This provides benefits with respect to the shipping and packaging of the air compressor. The lower height profile requires less packaging material. Also, the lower profile requires less storage space when being packaged. When packaged, the air compressors are often stored or displayed by being stacked atop one another on shelves. With the lower profile, more units may be stacked on top of one another within the same space. This is particularly advantageous when shipping the compressors. Shipping often is done by using large containers that are transported on boats, trains, or trucks. The low profile allows for more compressors to be packed into a container, thereby reducing the shipping costs.

[0042] FIGS. **4** and **5** show an alternate embodiment of an air compressor, which is similar to the embodiments described in FIGS. **1**-**3** and with like components having like numerals. As with the embodiments described with respect to FIGS. **1**-**3**, the air compressor includes at least one air reservoir **4**, and, more preferably, includes two air reservoirs **4**. Moreover, the compressor components, the base, handle assembly and wheel assembly generally are the same as the embodiments described with respect to FIGS. **1**-**3** and use the same reference numbers.

[0043] However, with respect to the air reservoir longitudinal axis **7**, at least one air reservoir is oriented on the base so that it is angled with respect to a central axis **44** that passes through the wheel **26**, with the central axis thus being defined as being generally perpendicular to the rotational axis of the wheel. Preferably, the reservoir **4** will be positioned at an angle α, labeled in FIG. **4** as **42**, in a range of about one and one-half through five degrees, although in other embodiments the angle α may have a lesser or greater value depending on design specifications. Because the air reservoirs are angled, the width of the compressor **2** near the wheel assembly **26** will be less then the width of the remainder of the air compressor in the direction toward the handle assembly **16**, with the width increasing towards handle assembly **16**.

[0044] The pump assembly **36** and motor assembly **38** are at least partially disposed on the top portion **23** of one of the air reservoirs **4** and are positioned so that the profile P of these air compressor components, when viewing FIG. **4**, is substantially parallel to the longitudinal axis **7** of the air reservoir. Having the profile P substantially parallel to the longitudinal axis of the air reservoir leaves room for a flywheel **12** to be disposed in the space **14** and attached to the base **6**. The space **14** is large enough to accommodate flywheels of a variety of sizes, so that a flywheel of a larger size does not need to be disposed on the reservoir. Thus, and advantageously, a larger flywheel will not greatly increase the height of the compressor, so that the disadvantages described above associated with compressors having high profiles may be avoided. Although not required, the present embodiment preferably contemplates incorporating a flywheel larger than the flywheel disclosed in the embodiments illustrated in FIGS. **1**-**3**. As shown in FIG. **5**, the flywheel **12** may be covered by a housing **46**. Optionally, and as described above, the base may include the recess **10** for partially receiving the flywheel.

[0045] As with the embodiments described above, the present embodiment of the air compressor results in a compressor having a lower-center of gravity than prior-art compressors. This is because prior-art air compressors typically mount the flywheel on an upper portion of the reservoir, thus raising the center of gravity. Moreover, angling at least one air reservoir results in the air compressor having a lower profile than prior-art compressors due to the flywheel being lower, thus providing the additional packaging benefits described above.

[0046] The embodiments described above may incorporate additional features without departing from the scope of the invention. One such feature includes movable handles **22** that may ergonomically accommodate a user transporting the compressor with the handle assembly and wheel assembly. Additionally, the movable handles **22** may be storable so that they facilitate the convenient storage of the handles. The movable handles may rotate, fold, slide, telescope, or retract in order to facilitate ergonomic adjustments or storability. Additionally, the movable handles may be removable.

Handles that are removable may be stored in a separate location on or near the compressor.

[0047] Referring to FIGS. **6** and **7**, each handle **22** of the handle assembly may be attached to the air reservoir with a joint **48** so that the handle may be rotated. The joint **48** may be of the type to allow movement about a horizontal axis H and/or a vertical axis V, or alternatively, may include be a U-joint that allows an unlimited degree of freedom of movement. The joint preferably is attached to the outer side portion **24** or the top portion **23** of the air reservoir. Alternatively, the joint **48** and handle **22** may be mounted to the inner side portion **21** of the reservoir. Such an alternate embodiment may be particularly desirable for the embodiments of FIGS. **4** and **5**, although the joint and handle may be mounted in such a way for any of the embodiments described herein. In yet alternate embodiments, the joint and handle may be attached to the bottom portion **8**. The handle **22** may be rotated as shown by the dashed line R so that it stores in a position parallel and adjacent to the reservoir **4** (shown in phantom in FIG. **6** as **22***a*).

[0048] In yet alternate embodiments, each handle may be modified to be slidably movable. Referring to FIG. **7**, a sleeve **50** is mounted to the first portion **18** of the air reservoir, and may be mounted on either of the outer side portion **24**, the top portion **23**, the bottom portion **8** or the inner side portion **21** of the air reservoir. The handle **22** is slidably engaged with the sleeve **50**. The handle **22**, upon the release of a lock **52**, may move freely within the sleeve **50**, thus facilitating a telescoping action of the handle. In one preferred embodiment, the lock **52** includes a hole **54** in the handle and a hole **56** in the sleeve **50**. When the holes are aligned, a pin **58** may be inserted into the holes to prevent the handle from moving within the sleeve. Advantageously, multiple holes may be provided along the handle so that the handle can be locked into multiple positions with respect to the sleeve.

[0049] As shown in FIG. **7**, the handle **22***b* may be removed from a first end **66** of the sleeve **50** and inserted into a second end **68** of the sleeve so that the handle **22***b* does not project outwardly from the air reservoir. Additionally, and as shown in FIG. **7***a*, the handles **22***b* may be fully inserted into the sleeves **50**. Advantageously, both of these positions reduce the amount of space required to store the compressor and the amount of packaging required for prepurchase shipping and storage. Alternatively, stops on the handle may prevent the handle from separating from the sleeve. Additionally, the sleeves **50** may be incorporated into the joint **48** so that the handles may be both rotated and telescoped.

[0050] In another alternate embodiment shown in FIG. **7***b*, each handle **22***c* may include a plurality of nesting portions **80** that allow telescopic movement by collapsing or nesting within each other, as compared to FIG. **7***a*, where the handle **22***b* is able to slide in and out of the sleeve **50**. The nesting portions **80** may be partially nested so that less than all of the nesting portions are collapsed or entirely nested. Detents or other commonly known release mechanisms may be incorporated to selectively retain the nesting portions **80** in a nested or partially-nested position. Moreover, such nested handles may be removable so that they do not project outwardly from the air reservoir as described above.

[0051] The movable handles provide several benefits. The handles may be rotated or telescoped so that they do not project outwardly from the first portion of the compressor, resulting in a compact air compressor, which provides further benefits with respect to shipping, storage and packaging as described above. Moreover, the handles may be readily adjusted to multiple positions so as to be more comfortable for a user. In fact, as those skilled in the art will recognize, the handles may be modified to both telescope and rotate as described above.

[0052] Referring to FIG. **8**, each reservoir **4** may include a skid **60** attached to the bottom portion **8** of the reservoir **4**. The skids **60** facilitate the sliding of the air compressor that under certain circumstances may be useful. For example, the skids may be used when loading the compressor into the back of a vehicle, or other situations where it may not be desirable to use the wheel assembly to transport the compressor. Specifically, when the compressor is lifted off the ground to be loaded into the back of the vehicle (e.g., the bed of a pick-up truck), the skids may be used to slide the compressor once they have made point contact with the edge of the back of the vehicle.

[0053] The skids preferably are of a material conducive to sliding, such as an elastomeric material. While the skids preferably extend across nearly the entire bottom portion **8**, in alternate embodiments, the skids may extend across less than nearly the entire length of the bottom portion. Moreover, in yet alternate embodiments, a skid may be made up of several pieces of material, which may be either continuous or not continuous, attached across the bottom portion **8** of the air reservoir.

[0054] Optionally, the air compressor may include secondary handles **62**, disposed on the air reservoirs **4**. The secondary handles **62** are helpful for lifting the compressor. Preferably, the secondary handles are rollbar-style handles as shown in FIG. **8**, and may additionally serve to protect compressor components in the event the compressor tips over. However, in alternate embodiments, the secondary handles **62** may have other shapes as well, and may not provide both benefits depending on their shape. Preferably, each secondary handle is partially disposed on the top portion **23** of each air reservoir, although in other embodiments the secondary handles may be otherwise disposed. For example, at least one secondary handle may be disposed on each reservoir. Moreover, the secondary handles may be disposed on the outer side portion **24** of the air reservoir. Optionally, grips **64** may be disposed on the handles to further facilitate the lifting of the compressor.

[0055] Preferably, the secondary handles will be offset from each other such that the handle **62***a* disposed on the second portion **20** is shorter than the handle **62***b* disposed on the first portion **18**. In a preferred embodiment, the offset will be about 3.875 inches, although in other embodiments the offset may be more than or less than this number. However, handles that differ in height as a result of manufacturing tolerances, i.e., handles that are not meant to be offset, are not secondary handles. Manufacturing tolerances for such handles are most often less than ¾ inch and usually are closer to ¼ inch.

[0056] As a result, if each secondary handle is used to lift the air compressor, the second portion **20** is raised higher than the first portion **18**, which usually will aid in the loading of the air compressor into the back of a truck or other vehicle. When the offset handles and skids are both used, loading the compressor (e.g., loading the compressor into the back of a pick-up truck) is particularly facilitated. Specifically, when lifted, the second portion **20** will be higher than the first portion **18**. The operator may then easily rest the skids **60**, which are on

the bottom surface **25** of the second portion **20**, on the truck bed and easily slide the compressor into the truck.

[0057] In another preferred embodiment, and referring to FIG. **13**, the secondary handles **62***a*, **62***b* are arranged relative to the compressor's center of gravity, depicted as CG. The secondary handles **62***a*, **62***b* may be disposed on the air reservoirs as described in the above embodiments. The first secondary handle **62***a* is located at horizontal distance Y**1** from the center of gravity CG and second secondary handle **62***b* is located at a distance Y**2** from the center of gravity CG. If the first distance Y**1** is less than the second distance Y**2**, then a vertical height Z**1** of the first secondary handle **62***a* should be greater than a vertical height Z**2** of the second secondary handle **62***b* so that the secondary handles **62***a*, **62***b* are offset as described above. Arranging the secondary handles in such a fashion will provide the benefits associated with lifting the compressor described above.

[0058] The compressor shown in FIG. **8** is particularly advantageous when it is used in a compressor having reservoirs with a capacity less than two and one-half gallons each, which capacity allows the compressor to be easily transported and lifted by a single user. In other embodiments, however, the air reservoirs may have a greater capacity. For example, in an alternate preferred embodiment the air reservoirs may have a capacity in a range of four to four and one-half gallons each, although the air reservoirs are not required to be limited to such a capacity.

[0059] The air compressor may include alternate embodiments without departing from the scope of the present invention. For example, rather than a single wheel assembly, a wheel assembly may be attached to the first portion of each air reservoir. Moreover, the handle assembly may have other shapes, including a unitary, u-shaped handle, without departing from the scope of the invention. Also, referring to FIG. **8**, the handles **22** may rotate and/or telescope and/or lock, and may use the skids **60** as sleeves, in the manner described above with respect to FIG. **7**. Furthermore, the compressor components may be enclosed within a housing or shroud and the shroud may be located in the space between the air reservoirs.

[0060] It is therefore intended that the foregoing detailed description be regarded as illustrative rather than limiting, and that it be understood that it is the following claims, including all equivalents, that are intended to define the spirit and scope of this invention.

1. A wheelbarrow compressor comprising:
a base;
a first reservoir and a second reservoir having bottom portions located at opposite sides of the base, and wherein the base is located below an uppermost surface of the first and the second reservoirs;
a handle assembly attached with a first portion of at least one of the first and second reservoirs and a wheel assembly attached with a second portion of at least one of the first and second reservoirs; and
a pump and a motor operatively connected with the reservoirs, the motor and pump disposed on the base and between the reservoirs.

2. The wheelbarrow compressor of claim **1**, having a center of gravity no greater than an uppermost surface of the first and second reservoirs.

3. The wheelbarrow compressor of claim **1**, wherein the base includes a recess that passes partially through the base.

4. The wheelbarrow compressor of claim **3**, further comprising a flywheel operatively connected to the motor, wherein the flywheel is partially received in the recess.

5. The wheelbarrow compressor of claim **1**, wherein the at least one handle assembly includes a movable handle.

6. The wheelbarrow compressor of claim **1**, wherein the at least one handle assembly includes a rotating handle.

7. The wheelbarrow compressor of claim **6**, wherein the at least one handle assembly further comprises a rotating joint attached with the first portion of at least one of the first and second reservoirs and the rotating handle.

8. The wheelbarrow compressor of claim **1**, further comprising a first secondary handle attached to a top portion of at least one of the first and second reservoirs.

9. The wheelbarrow compressor of claim **8**, further comprising a second secondary handle attached to the top portion of at least one of the first and second reservoirs.

10. The wheelbarrow compressor of claim **9**, wherein the first and second secondary handles are attached to a top portion of each of the first and second reservoirs.

11. The wheelbarrow compressor of claim **10**, wherein one of the first and second secondary handles is located closer to the second portion of the first and second reservoirs and wherein the secondary handles are offset from each other such that the height of the first or second secondary handle located closer to the second portion of the first and second reservoirs is less than the height of the other first or second secondary handle.

12. The wheelbarrow compressor of claim **10** further comprising a center of gravity, wherein the first secondary handle is located at a horizontal distance that is closer to the center of gravity than the second secondary handle, and wherein the first and second secondary handles are offset from each other such that a vertical height of the first secondary handle is greater than a vertical height of the second secondary handle.

13. The wheelbarrow compressor of claim **1** further comprising skids attached with at least a portion of a bottom surface of the first and second reservoirs.

14. The wheelbarrow compressor of claim **1**, wherein the handle assembly further comprises a first sleeve each attached with the first portion of at least one of the first and second reservoirs and a handle configured to slidably engage the sleeve in a telescoping manner.

15. The wheelbarrow compressor of claim **1** further comprising two skids each attached with at least a portion of a bottom surface of the first and second reservoirs.

16. The wheelbarrow compressor of claim **15**, where the skid is made of an elastomeric material.

17. A portable compressor comprising:
a base;
first and second reservoirs spaced apart and located at the base;
a handle assembly attached with a first portion of the at least one of the first and second reservoirs and a wheel assembly attached with a second portion of the least one of the first and second reservoirs, wherein the wheel assembly includes at least one wheel; and
a plurality of air compressor components including a pump assembly and a motor assembly, wherein the plurality of the air compressor components is at least partially disposed on a top portion of the at least one of the first and second reservoirs;

a flywheel rotatably connected to said motor assembly, the flywheel extending between the first and second reservoirs and below the top portion of at least one of the first and second reservoirs; and

wherein at least one of the first and second reservoirs is angled with respect to a central axis defined by the orientation of the at least one wheel.

18. The portable compressor of claim **17**, wherein the base includes a recess that passes partially through the base, and wherein the recess receives at least a portion of the flywheel.

19. The portable compressor of claim **17**, wherein the handle assembly further comprises a first sleeve attached the first portion of at least one of the first and second reservoirs and a handle configured to slidably engage the sleeve.

20. The portable compressor of claim **17**, wherein the handle assembly includes a movable handle.

21. The portable compressor of claim **17**, wherein the handle assembly includes a rotating handle.

22. A wheelbarrow compressor comprising an air storage tank including first and second air reservoirs, a plurality of compressor components operatively connected to the air reservoirs, a handle assembly located at a first portion of the air reservoir, a wheel assembly located at a second portion of the air reservoir, and having a center of gravity whose height is no greater than an uppermost surface of the first and second reservoirs.

23. The wheelbarrow compressor of claim **22**, wherein at least some of the compressor components are at least partially disposed between the reservoirs.

24. The wheelbarrow compressor of claim **22**, further comprising a flywheel located between the first and second reservoirs and operatively connected to the plurality of compressor components.

25. The wheelbarrow compressor of claim **22** wherein the handle assembly includes at least one movable handle.

26. A wheelbarrow compressor, comprising:

a first reservoir and a second reservoir;

a pump and a motor operatively connected with the reservoirs and disposed between the reservoirs;

wherein bottom-most portions of the pump and the motor are no higher than uppermost quadrants of the first and the second reservoirs.

27. The wheelbarrow compressor of claim **26**, wherein the bottom-most portions of the pump and the motor are no higher than upper-mid quadrants of the first and the second reservoirs.

28. The wheelbarrow compressor of claim **26**, wherein the bottom-most portions of the pump and the motor are no higher than lower-mid quadrants of the first and the second reservoirs.

29. The wheelbarrow compressor of claim **26**, wherein the bottom-most portions of the pump and the motor are no higher than lower-most quadrants of the first and the second reservoirs.

30. A wheelbarrow compressor comprising:

a first reservoir and a second reservoir;

a handle assembly attached with a first portion of at least one of the first and second reservoirs and a wheel assembly attached with a second portion of at least one of the first and second reservoirs;

at least one first secondary handle attached to one of a top portion and a side portion of at least one of the first and second reservoirs;

at least one second secondary handle attached to one of a top portion and a side portion of at least one of the first and second reservoirs; and

wherein one of the first and second secondary handles is located closer to the second portion of the first and second reservoirs and wherein the first and second secondary handles are offset from each other such that the height of the first or second secondary handle located closer to the second portion of the first and second reservoirs is less than the height of the other first or second secondary handle, and wherein the handle assembly is not either of the first and second secondary handles.

31. The wheelbarrow compressor of claim **30**, wherein the first and second secondary handles are attached to the top portion of each of the first and second reservoirs.

32. A wheelbarrow compressor comprising:

a first reservoir and a second reservoir;

a handle assembly attached with a first portion of at least one of the first and second reservoirs and a wheel assembly attached with a second portion of at least one of the first and second reservoirs;

a first secondary handle attached to one of a top portion and a side portion of the first reservoir and to one of a top portion and a side portion of the second reservoir;

a second secondary handle attached to one of a top portion and a side portion of the first reservoir and to one of a top portion and a side portion of the second reservoir; and

wherein one of the first and second secondary handles is located at the second portion of the first and second reservoirs and the other of the first and second secondary handles is located at the first portion of the first and second reservoirs, and wherein the first and second secondary handles are offset from each other such that the height of the first or second secondary handle located at the second portion of the first and second reservoirs is less than the height of the other first or second secondary handle located at the first portion of the first and second reservoirs, and wherein the handle assembly is not either of the first and second secondary handles.

33. A wheelbarrow compressor comprising:

a first reservoir and a second reservoir;

a handle assembly attached with a first portion of at least one of the first and second reservoirs and a wheel assembly attached with a second portion of at least one of the first and second reservoirs;

at least one first secondary handle attached to one of a top portion and a side portion of at least one of the first and second reservoirs;

at least one second secondary handle attached to one of a top portion and a side portion of at least one of the first and second reservoirs;

wherein one of the first and second secondary handles is located at a horizontal distance that is closer to a center of gravity than the other of the first and second secondary handles, and wherein the first and second secondary handles are offset from each other such that a vertical height of the first or second secondary handle that is closer to the center of gravity is greater than a vertical height of the other of the first and second secondary handles, and wherein the handle assembly is not either of the first and second secondary handles.

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