



(51) International Patent Classification:
B08B 3/02 (2006.01) *B05B 15/00* (2006.01)
B05B 1/00 (2006.01)

(21) International Application Number:
PCT/CN2016/074288

(22) International Filing Date:
22 February 2016 (22.02.2016)

(25) Filing Language: English

(26) Publication Language: English

(71) Applicant: **AC (MACAO COMMERCIAL OFF-SHORE) LIMITED** [CN/CN]; Units A-C, 26/F Centro Comercial da Praia Grande, No. 429 Avenida da Praia Grande, Macao (CN).

(72) Inventors: **RICKEY, Todd**; 29/F, Tower 2, Kowloon Commerce Centre, 51 Kwai Cheong Road, Kwai Chung, Hong Kong (CN). **ESCHRICH, Sven**; No.1, Chuang Ke Road, Houjie Town Industrial Park, Houjie Town, Dongguan, Guangdong 523960 (CN).

(74) Agent: **RUNPING & PARTNERS**; Suite 515, Yingu Mansion, No. 9 Beisihuanxilu, Haidian District, Beijing 100190 (CN).

(81) Designated States (*unless otherwise indicated, for every kind of national protection available*): AE, AG, AL, AM, AO, AT, AU, AZ, BA, BB, BG, BH, BN, BR, BW, BY, BZ, CA, CH, CL, CN, CO, CR, CU, CZ, DE, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IR, IS, JP, KE, KG, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LU, LY, MA, MD, ME, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PA, PE, PG, PH, PL, PT, QA, RO, RS, RU, RW, SA, SC, SD, SE, SG, SK, SL, SM, ST, SV, SY, TH, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW.

(84) Designated States (*unless otherwise indicated, for every kind of regional protection available*): ARIPO (BW, GH, GM, KE, LR, LS, MW, MZ, NA, RW, SD, SL, ST, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, RU, TJ, TM), European (AL, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LT, LU, LV, MC, MK, MT, NL, NO, PL, PT, RO, RS, SE, SI, SK, SM, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, KM, ML, MR, NE, SN, TD, TG).

[Continued on next page]

(54) Title: MODULAR POWER WASHER SYSTEM, METHOD AND KIT THEREFOR

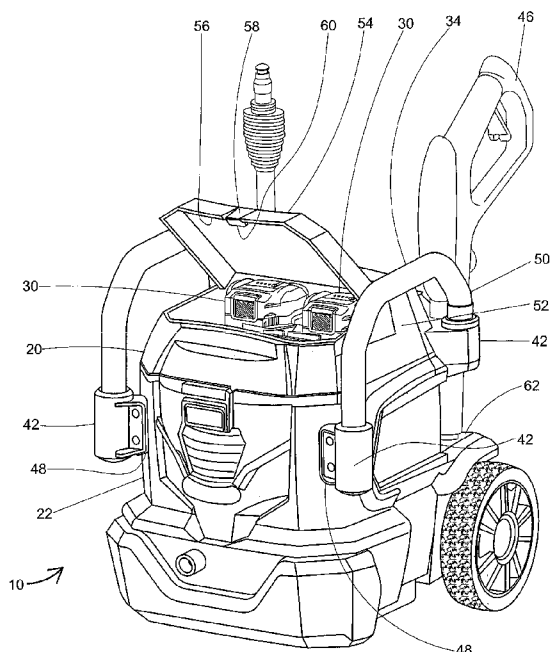


Fig. 2

(57) Abstract: A modular power washer contains a power washing system (10), containing a base unit (20) and an accessory unit (34), wherein the accessory unit (34) is removably-attached to the base unit (20). The base unit (20), contains a housing (22), a pump (26), a motor (24), a power source (28), an input valve (64), and an output valve (32). The housing (22), contains the pump (26), and the motor (24), therein, and the housing (22), at least partially contains the power source (28), therein. The motor (24), is operatively-connected to the power source (28). The pump (26), is operatively-connected to the motor (24). The pump (26), is fluidly-connected to the input valve (64), and the output valve (32). The accessory unit (34), is selected from a hose storage unit (68), an additive tank (88), a handle (36), a roll bar (50), a frame (72), a wheel (74), and a combination thereof. A kit and a method of use are also described herein.



Published:

— *with international search report (Art. 21(3))*

MODULAR POWER WASHER SYSTEM, METHOD AND KIT THEREFOR**FIELD OF THE INVENTION**

The present invention relates to the field of powered outdoor equipment, and more specifically to power washers. Methods of using such a power washer and a kit therefor are also describe herein.

BACKGROUND

Power washers are known in the art and can be powered by DC batteries, AC power or internal combustion engines. Power washers are typically used to provide a high pressure water stream to clean surfaces such as walls, sidewalks, cars, etc. The water from a reservoir or a hose is passed through a pump which creates a high pressure stream which flows through a hose to a wand for spraying. The stream exits and is directed with the wand. Typically the wand has a handle which allows the user to easily and securely hold the wand, because as the water exits the wand with great velocity, it exerts a strong force pushing back on the wand.

Power washers are increasingly popular to clean materials such as concrete, wood, plastics, and metals. Typically power washers are sold with various attachments such as different wands for different spray patterns, hose extensions, etc. However, it has been found that users desire even greater customizability and personalized options. Furthermore, customizable features may be desirable from the side of the manufacturer so as to provide different price points and options to the user. In other cases, the user may wish to add or remove certain features depending on the use of the power washer at that specific time. Other times, such as during storage, it is desirable to break down the power washer to allow it to fit into a more compact space or area.

Accordingly, the need remains for a power washer which provides greater customizability, flexibility, features, and/or options and which are also removable for storage,

when they are not needed, and/or when other features are desired by the user.

SUMMARY OF THE INVENTION

A modular power washer contains a base unit and an accessory unit wherein the accessory unit is removably-attached to the base unit. The base unit contains a housing, a pump, a motor, a power source, an input valve and an output valve. The housing contains the pump and the motor therein, and the housing at least partially contains the power source therein. The motor is operatively-connected to the power source. The pump is operatively-connected to the motor. The pump is fluidly-connected to the input valve and the output valve. The accessory unit is selected from a hose storage unit, an additive tank, a handle, a roll bar, a frame, a wheel, and a combination thereof.

A power washer kit contains a base unit and an accessory unit wherein the accessory unit is initially separate from the base unit and wherein the accessory unit is removably-attached to the base unit. The base unit contains a housing, a pump, a motor, a power source, an input valve and an output valve. The housing contains the pump and the motor therein, and the housing at least partially contains the power source therein. The motor is operatively-connected to the power source. The pump is operatively-connected to the motor. The pump is fluidly-connected to the input valve and the output valve. The accessory unit is selected from a hose storage unit, an additive tank, a handle, a roll bar, a frame, a wheel, and a combination thereof.

A method for using a power washer contains the steps of selecting an attachment unit, removably-affixing the attachment unit to the base unit, and removing the attachment unit from the base unit.

Without intending to be limited by theory, it is believed that the above inventions alleviate some of the problems associated with previous power washers and their use. It is

believed that the modular nature of the base unit and the removably-attachable accessory units allow the user to customize the power washer to the specific needs of the user and/or even the needs of that particular time it is being used. Such various configurations may also allow the same base unit to be expandable to contain additional features as the user's needs increase over time. Thus the system is flexible in that the user may be able to purchase/add/remove functionality without having to replace the base unit. Also, the removability of the accessory units allows the power washing system to be easily stored in a smaller, more compact space than otherwise possible.

BRIEF DESCRIPTION OF THE DRAWINGS

Fig. 1 shows a cut-away front perspective view of an embodiment of the power washer of the present invention;

Fig. 2 shows a front perspective view of an embodiment of the power washer of the present invention;

Fig. 3 shows a back perspective view of an embodiment of the present invention;

Fig. 4 shows a front perspective view of an embodiment of the present invention;

Fig. 5 shows a back perspective view of an embodiment of the present invention indicating the attachment of a frame with wheels; and

Fig. 6 shows a front perspective view of an embodiment of a frame with wheels useful herein.

The figures herein are for illustrative purposes only and are not necessarily drawn to scale.

DESCRIPTION OF THE PREFERRED EMBODIMENTS

Unless otherwise specifically provided, all tests herein are conducted at standard conditions which include a room and testing temperature of 25 °C, sea level (1 atm.) pressure, pH 7, and all measurements are made in metric units. Furthermore, all percentages, ratios, etc. herein are by weight, unless specifically indicated otherwise.

A modular pressure washing system has a base unit having a housing, a pump, a motor, a power source, an input valve, an output valve, and an accessory unit. The housing contains the pump and the motor and at least partially contains the power source. The motor is operatively-connected to the power source and the pump. In cases where the power source is an internal combustion engine, then the motor and the power source may actually be connected or even be the same.

The pump is fluidly-connected to the input valve and is also fluidly-connected to the output valve. The input valve is typically connected to a hose which then leads to the water supply such as a water tank, a water faucet, etc. The output valve is typically connected to a different hose which leads to a wand (see Fig. 1 at 42, 44), typically the wand grip (see Fig. 1 at 44). Typically, the input valve and the output valve are connected to opposite functional ends of the pump. The accessory unit is selected from the group of a hose storage unit, an additive tank, a handle, a roll bar, a frame, a wheel, and a combination thereof.

Turning to the figures, Fig. 1, shows a partially-cut-away, side-perspective view of a power washing system, 10, having a base unit, 20. The base unit, 20, contains a housing, 22, containing a motor, 24, and a pump, 26. The motor, 24, is operatively-connected to the pump, 26, so as to be able to drive the pump, 26.

The housing will typically be made of a relatively tough material selected from a plastic, a resin, rubber, metal, and a combination thereof; or a plastic, rubber, a metal and a combination

thereof. The plastic herein may be a high impact plastic; or polyethylene, polypropylene, polystyrene, and a combination thereof; or linear low density polyethylene, low density polyethylene, high density polyethylene, and a combination thereof either with or without other co-monomers. The metal useful herein may be, for example, brass, steel (including stainless steel), iron, aluminium, other metals known in the art of power washers and power tools, and a combination thereof.

The pump useful herein is typically a high pressure pump; or a high pressure electric pump, having an output of more than about 500 psi (3.4 MPa); or of from about 500 psi (3.4 MPa) to about 5000 psi (34 MPa); or from about 1000 psi (6.8 MPa) to about 4000 psi (27.6 MPa); or from about 1250 psi (8.6 MPa) to about 3500 psi (24.1 MPa). Such pumps are commonly available from many makers worldwide.

In Fig. 1, the housing, 22 also contains a power source, 28, which in this case is a plurality of electric batteries, 30. The battery useful herein is typically a rechargeable electric battery having a voltage of more than 1v; or from about 1v to about 56v; or from about 1.5v to about 48v; or from about 3v to about 45v; or from about 6v to about 40v. The power washer herein includes at least one battery; or from about 1 to about 12 electric batteries; or from about 2 to about 8 electric batteries. In Fig. 1, it can be seen that the power washer, 10, contains 2 electric batteries, 16 and 16', each rated at about 18v. The battery useful herein typically possesses a mAh rating of greater than 750 mAh; or from about 750 mAh to about 10000 mAh; or from about 1000 mAh to about 6000 mAh; or from about 1100 mAh to about 5000 mAh. The chemistry in the battery is largely irrelevant, but may be, for example nickel-cadmium, lithium ion, or a combination thereof; or lithium ion.

The power source, 28, is operatively-connected to the motor, 24. The pump, 26, is fluidly-connected to both the input valve (See Fig. 3 at 64) and the output valve, 32. The pump,

26, draws water from the input valve (see Fig. 3 at 64) and creates a high pressure water stream which exits via the output valve, 32.

In Fig. 1, an accessory unit, 34, which in this case is a handle, 36, specifically a non-telescoping handle, 38, is removably-affixed to the housing, 22, via two securing members, 42, which are firmly-attached to the housing, 22. The accessory unit herein is considered to be a feature or component of the power washing system which is not required for an operational power washer. The accessory unit is therefore optional to the power washer, but is necessary for the claimed power washing system.

The handle, 36, is covered with an optional rubber grip, 40, which provides a firm place to hold the base unit, 20, when picking up and moving it, and also increases friction so as to reduce slippage. Without intending to be limited by theory, it is believed that a rubber grip is especially useful herein, as the handle will often become wet and slippery during use.

Furthermore, the power washing system may weigh more than 10 or even more than 15 kg.

Accordingly, having a rubber (or other type of) grip which is remains securely graspable even when wet is especially desired by users. The handle useful herein is typically selected from a telescoping handle (Fig. 5 at 76) and a non-telescoping handle, 38. In an embodiment herein, the securing members may form an integral part of the housing. In an alternate embodiment herein, the securing members may be attached to the housing with, for example, removable screws or other fasteners. However, such securing members should be designed such that they remain attached to the housing unless they are specifically removed by the user. In an embodiment herein the base unit and/or the housing contains from about 1 to about 12 securing members; or from about 2 to about 8 securing members; or from about 2 to about 6 securing members.

In an alternate embodiment herein, a handle, 36, may be incorporated directly into the

housing, 22. In such a case, the handle may be moulded into the housing, may be a concave indentation in the housing, and/or may be separate from the housing.

The base unit, 20, also contains a wand, 44, and a wand grip, 46, removably-attached thereto. However, such a wand and a wand grip are not considered to be accessory units herein, as these are not optional, but instead are considered to be required for typical use of the pressure washer. Similarly, a hose is required and is therefore not considered to be an accessory unit within the meaning of this term as used herein, whereas an optional hose storage unit is considered to be an accessory unit. The wand, 44 and the wand grip, 46, may also be removably-attached to the housing via securing members, 42, or other structures as desired.

In Fig. 1, additional securing members, 42, may be connected at attachment sites, 48, in the front of the housing. Such a provision of attachment sites allows for future customization of the power washing system. The housing herein will typically contain from about 1 to about 10 attachment sites; or from about 2 to about 8 attachment sites; or from about 2 to about 6 attachment sites.

Fig. 2, shows a side-perspective view of an embodiment of the power washing system of the present invention. In Fig. 2, the base unit, 20, contains a securing member, 42, in an attachment site, 48, which allows an accessory unit, 34, to be attached thereto. In the embodiment of Fig. 2, the accessory unit, 34, is a roll bar, 50, which runs from the front of the housing, 22, to the back of the housing, 22, and protects the base unit, 20, from damage if it falls over during use and/or transport. Accordingly, such roll bars typically project from the housing in at least one, if not all directions so as to protect the housing. In an embodiment herein, the roll bar also has a rubber grip (see Fig. 1 at 40).

Fig. 2 also shows that the housing, 22, contains a top portion, 52, which contains a door, 54, which opens to allow access to the battery, 30. The door, 54, contains a battery seal, 56,

which reduces the chance that water will reach the battery when the door, 54, is closed. In an embodiment herein the battery seal is a water-tight seal that prevents water from accessing the battery when the door is closed. The battery seal may be formed of/by, for example, a gasket, a knife-edge combing, a sealing fin, an O-ring, and a combination thereof; or a gasket, a knife-edge combing, and a combination thereof. In an embodiment herein, the gasket may be formed from rubber, foam, a plastic, and a combination thereof. In an embodiment herein, the battery seal is located on a location such as the door, the housing, and a combination thereof. The door, 54, may further contain a locking mechanism, 58, which in Fig. 2 is a simple latch, 60, although other locking mechanisms are also useful herein. Without intending to be limited by theory, it is believed that the locking mechanism is especially useful to prevent the door from coming open during use and thereby allowing water to reach the batteries, which could potentially cause damage to the batteries and/or the power washing system. In this embodiment, the batteries, 30, are optionally removable, for ease of recharging and/or replacement.

In Fig. 2, it can also be seen that there is an optional holder, 62, for the wand grip, 46, in the rear of the housing, 22. In an embodiment herein, the housing contains a holder for the wand and the wand grip. In an embodiment herein, the holder is removably-attached to the housing. In an embodiment herein, the holder is an accessory unit.

Fig. 3 shows a back perspective view of an embodiment of the power washer herein. In Fig. 3, a plurality of holders, 62, can be seen attached to the housing, 22. The wand (Fig. 1 at 44), the wand grip (Fig. 1 at 46), etc. may be placed in the holders, 62, as needed. In an embodiment herein the holder is integrally-formed with a securing member.

Fig. 3 also shows an input valve, 64, which is optionally at the bottom of the housing, 22. In an embodiment herein the input valve is at the rear of the housing. In another embodiment herein the input valve is at the front of the housing. The input valve, 64, connects with the water

source, such as a water reservoir or a water faucet, and draws water into the housing, 22, of the power washing system, 10. This view also shows the rear feet, 66, which are present to keep the power washer level and to prevent it from falling/tipping over. The rear feet, 66, may be permanently affixed to the housing, 22, (e.g., by co-moulding), and/or may be removably-affixed as desired.

On the top of the roll bars, 50, in Fig. 3 is attached an accessory unit, 34, which in this case is a hose storage unit, 68, upon which is wound a hose, 70, for storage, and/or transport. Thus, in an embodiment herein the accessory unit contains a pair of roll bars as well as a hose storage unit. It is understood that the hose storage unit may be attached to the roll bars, or may otherwise be attached, either directly or indirectly, to the housing as desired. The hose, 70, may be connected to either the input valve, 64, or the output valve (Fig. 1 at 32), as desired. In an embodiment herein, the hose is connected to the output valve. In an embodiment herein, the hose is a high pressure hose capable of withstanding a pressure of greater than about 50 psi (0.34 MPa); or of from about 50 psi (0.34 MPa) to about 5000 psi (34 MPa); or from about 100 psi (0.68 MPa) to about 4000 psi (27.6 MPa); or from about 125 psi (0.86 MPa) to about 3500 psi (24.1 MPa).

Fig. 4 shows a front-perspective view of an embodiment of the power washing system, 10, of the present invention. The base unit, 20, has an accessory unit, 34, consisting of a pair of roll bars, 50, attached thereto, as well as an accessory unit, 34, consisting of a frame, 72. In an embodiment herein, the frame is securely, yet removably-affixed to the housing via methods known in the art, such as screws, releasable snap-fit closures, bolts, fasteners, corresponding male-female closures, etc. In addition, the power washing system, 10, also contains an accessory unit, 34, consisting of two wheels, 74, of which only one wheel is visible in Fig. 4. Without intending to be limited by theory, it is believed that the wheels allow the power washing system

to be easily transported. In an embodiment herein the power washing system has from about 1 to about 6 wheels; or from about 2 to about 4 wheels; or about 2 wheels.

Also attached to the frame, 72, is an accessory unit, 34, consisting of a handle, 36, which in Fig. 4 is a telescoping handle, 76. In this embodiment, the user can extend and shrink the telescoping handle as desired for storage, transportation, etc. Without intending to be limited by theory, it is believed that the user may wish to shorten the telescoping handle during use, so that it is out of the way; however, during transport, the user may wish to extend the telescoping handle so as to allow greater leverage and more easily move the power washing system. Telescoping mechanisms useful in the telescoping handle are commonly utilized in, for example, the luggage art. In an embodiment herein, the telescoping handle is attached directly to the housing; the top of the housing, or the back of the housing. In another embodiment herein, the telescoping handle is attached to the frame; or the back of the frame.

In an embodiment herein, the accessory unit contains a pair of roll bars, a frame, two wheels, and a telescoping handle. The roll bars and the frame are attached to the housing, while the two wheels and the telescoping handle are attached to the frame; or the rear of the frame. Without intending to be limited by theory, it is believed that such an arrangement is particularly suited for a power washing system, as the leverage provided by the length of the telescoping handle and the positioning of the wheels allows easy transportation of a relatively heavy power washing system, by a user with a minimal amount of effort and requires little strength, especially as compared to a power washing system without wheels and/or without a telescoping handle. Furthermore, it is believed that such features are especially useful if they may be removably-attached to the housing, either directly or indirectly, allowing the user significant flexibility to customize the power washing system for their individual needs.

Also in Fig. 4, an additive tank, 88 (a type of accessory unit), is shown connected to the

front of the housing, 22, above the output valve, 32. The additive tank, 88, is provided to contain an additive, typically a concentrated additive, which may be added to the pressurized water flowing through the output valve, 32. The additive herein may be provided for specific or general cleaning uses. Examples of the additive useful herein include, for example, a soap, a surfactant, a degreaser, an acid, a base, a particulate, and a combination thereof. In Fig. 4, the additive tank, 88, is placed on the front of the housing, 32, via an attachment site, 48, but may be located in a variety of locations and is not limited to the front of the housing. The additive flows from the additive tank, 88, to the output valve, 32, via an additive tube, 90. In such a case, a special output valve may be provided which is connectable to the additive tube. Alternatively, the additive tube may be fluidly-connected to the hose, wand, fluid path and/or other locations as known in the art. The additive is refilled into the additive tank, 88, by removing an additive cap, 92, which in this case is a screw-top cap.

Fig. 5 shows a rear-perspective view of an embodiment of the power washing system, 10, of the present invention. Fig. 5 shows how the housing, 22, fits together with the frame, 72, when it is removably-attached thereto. The frame, 72, securely connects to the housing, 22, via the three attachment sites, 48. The telescoping handle, 76, and the two wheels, 74, both attach to the frame. In addition, the frame, contains a cut-out area, 78, which leaves room for the hose (see Fig. 4 at 70) to be attached to the input valve, 64. Without intending to be limited by theory, it is believed that such a cut-out area is essential to maintain the functionality of the power washing system if the frame would otherwise block the input (or output) valve. As will be seen in Fig. 6, part of the frame, 72, also slides under the rear feet, 66, so as to support the housing. Fig. 5, also shows an AC power cord, 80, exiting the housing, 22, to connect to an AC power source such as an AC electrical grid, via, for example, a standard AC plug. In an embodiment herein, the cut-out area also provides space for an AC power cord to pass through.

Fig. 6 shows a perspective view of a frame, 72, useful herein, to which the wheels, 74, and the telescoping handle, 76, are attached. This view also shows that the frame, 72, clearly has a cut-out area, 78, which provides space for the input valve (see Fig. 5 at 64) and hose (see Fig. 4 at 70) to fit without being blocked by the frame, 72. In addition, Fig. 6 shows two support plates, 82, attached to the frame, 72, which slide under the rear feet (see Fig. 5 at 66) on the housing (Fig. 5 at 22) to help support the housing (Fig. 5 at 22) when it is attached to the frame, 72. Accordingly, in an embodiment herein, the frame contains a support plate; or about two support plates; or a plurality of support plates.

In an embodiment herein, the power washing system, 10, further contains a display screen, 84, as seen in Fig. 4. The display screen, 84, may provide information about the status and running conditions of the power washing system, 10, such as the remaining battery life, for example, as a percentage or a graphic, the spray power, the remaining spray time in, for example, minutes and/or seconds, the temperature of the water, the temperature or condition of the battery, the power being drawn, etc. The display screen may be, for example, a LED screen, or other screen. In an embodiment herein the display screen is located on the housing. In an embodiment herein the display screen, 84, is located on the wand, 48, and communicates with a printed circuit board (see Fig. 1 at 86) in the housing, 22, either via wires (not shown) or wirelessly. The printed circuit board, 86, may further act as an electronic control center for the power washing system, 10, and regulate one or more parameters such as, but not limited to, power output, battery drain, water pressure, motor speed, pump speed, emergency shut off, water temperature, battery temperature, motor temperature, etc.

An accessory kit may also be provided herein for use with the power washing system, 10. The accessory kit may contain an accessory unit, a securing member, and a combination thereof.

It should be understood that the above only illustrates and describes examples whereby

the present invention may be carried out, and that modifications and/or alterations may be made thereto without departing from the spirit of the invention.

It should also be understood that certain features of the invention, which are, for clarity, described in the context of separate embodiments, may also be provided in combination in a single embodiment. Conversely, various features of the invention which are, for brevity, described in the context of a single embodiment, may also be provided or separately or in any suitable subcombination.

CLAIMS

1. A modular pressure washing system, 10, comprising:
 - A. a base unit, 20, comprising a housing, 22, a pump, 26, a motor, 24, a power source, 28, an input valve, 64, and an output valve, 32, wherein the housing, 22, contains the pump, 26, and the motor, 24, wherein the housing, 22, at least partially contains the power source, 28, wherein the motor, 24, is operatively-connected to the power source, 28, wherein the pump, 26, is operatively-connected to the motor, 24, wherein the pump is fluidly connected to the input valve, 64, and wherein the pump, 26, is fluidly-connected to the output valve, 32; and
 - B. an accessory unit, 34, selected from the group consisting of a hose storage unit, 68, an additive tank, 88, a handle, 36, a roll bar, 50, a frame, 72, a wheel, 74, and a combination thereof,wherein the accessory unit, 34, is removably-attachable to the base unit, 20.
2. The modular pressure washing system, 10, according to Claim 1, where in the accessory unit is a frame, 72.
3. The modular pressure washing system according to Claim 2, wherein the frame, 72, comprises a wheel, 74.
4. The modular pressure washing system, 10, according to any of the above claims, wherein the power source, 28, is selected from the group consisting of an internal combustion engine, a DC power source, an AC power source and a combination thereof.
5. The modular pressure washing system according to Claim 4 wherein the power source comprises a DC power source.

6. The modular pressure washing system according to Claim 5 wherein the DC power source is a battery, 30.
7. The modular pressure washing system, 10, according to Claim 6 wherein the housing, 22, further comprises a top portion, 52, and wherein the battery, 30, is located within the top portion, 52.
8. The modular pressure washing system, 10, according to Claim 6 or Claim 7 wherein the housing, 22, further comprises a battery seal, 56, and wherein the battery seal, 56, prevents water from accessing the battery, 30.
9. The modular pressure washing system, 10, according to Claim 4, wherein the power source, 28, comprises an AC power source.
10. The modular pressure washing system, 10, according to claim 4, wherein the power source comprises an DC power source and an AC power source.
11. The modular power washing system, 10, according to any of the above claims further comprising a hose, 70.
12. The modular power washing system, 10, according to any of the above claims further comprising a wand, 44.
13. The modular pressure washing system, 10, according to any of the above claims, wherein the handle, 36, is selected from a telescoping handle, 76, and a non-telescoping handle.
14. The modular pressure washing system, 10, according to any of the above claims, further comprising a telescoping handle, 76, wherein the telescoping handle, 76, is removably-attachable to the frame.
15. A power washer kit comprising:
 - A. a base unit, 20, comprising a housing, 22, a pump, 26, a motor, 24, a power

source, 28, and an output valve, 32, wherein the housing, 22, contains the pump, 26, and the motor, 24, wherein the housing, 22, at least partially contains the power source, 28, wherein the pump, 26, is operatively-connected to the power source, 28, wherein the pump, 26, is operatively-connected to the motor, 24, and wherein the pump, 26, is fluidly connected to the output valve, 32; and

- B. an accessory unit, 34, selected from the group consisting of a hose storage unit, 68, an additive tank, 88, a handle, 36, a roll bar, 50, a frame, 72, a wheel, 74, and a combination thereof,

wherein the accessory unit, 34, is initially separate from the base unit, 22, and wherein the accessory unit, 34, is removably-attachable to the base unit, 22, by the user.

- 16. A method of using a power washer comprising the steps of:
 - A. selecting an attachment unit, 34;
 - B. removably-affixing the attachment unit, 34, to a base unit, 22; and
 - C. removing the attachment unit, 34, from the base unit, 22.
- 17. An accessory kit for a power washer according to Claim 1.

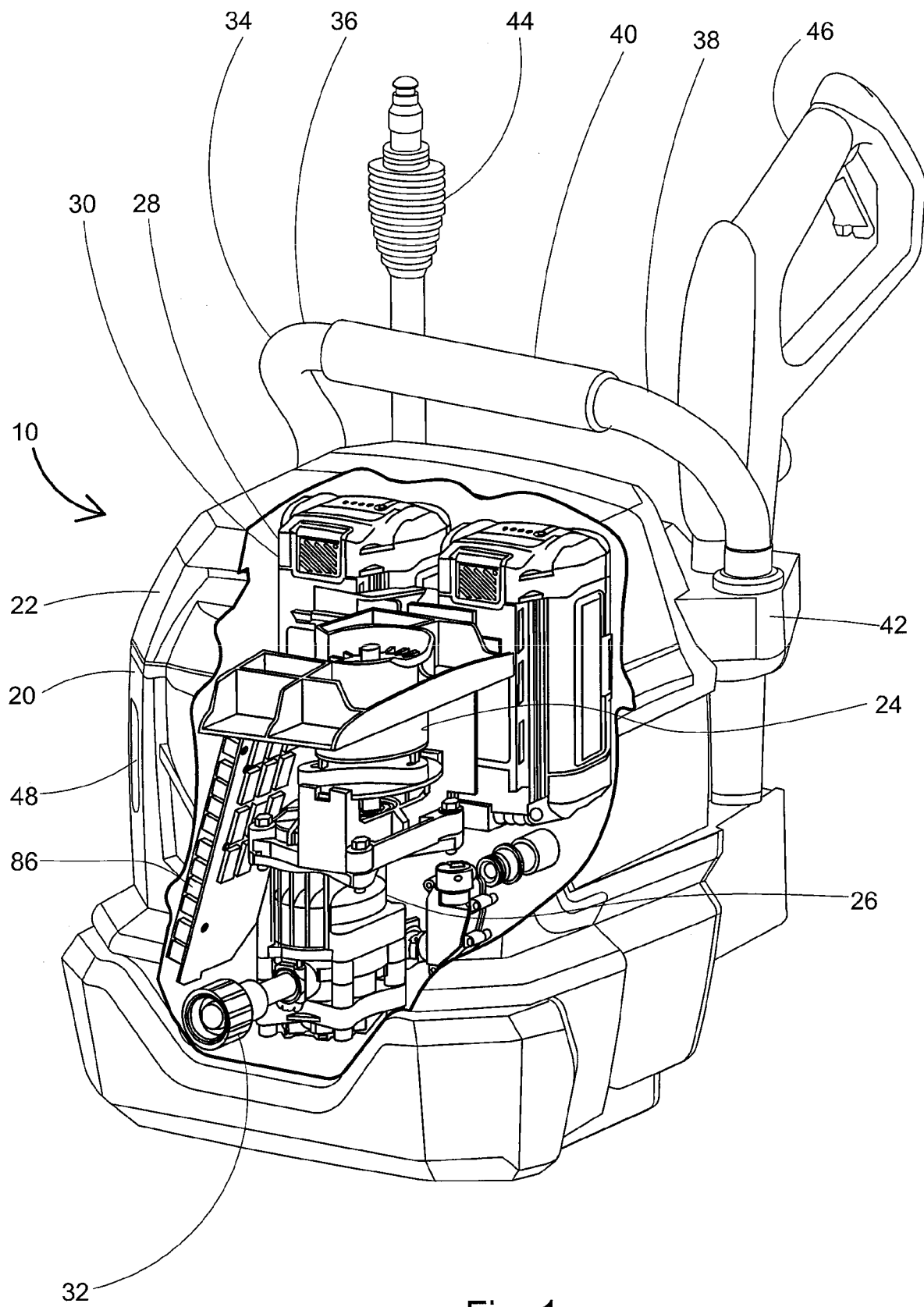


Fig. 1

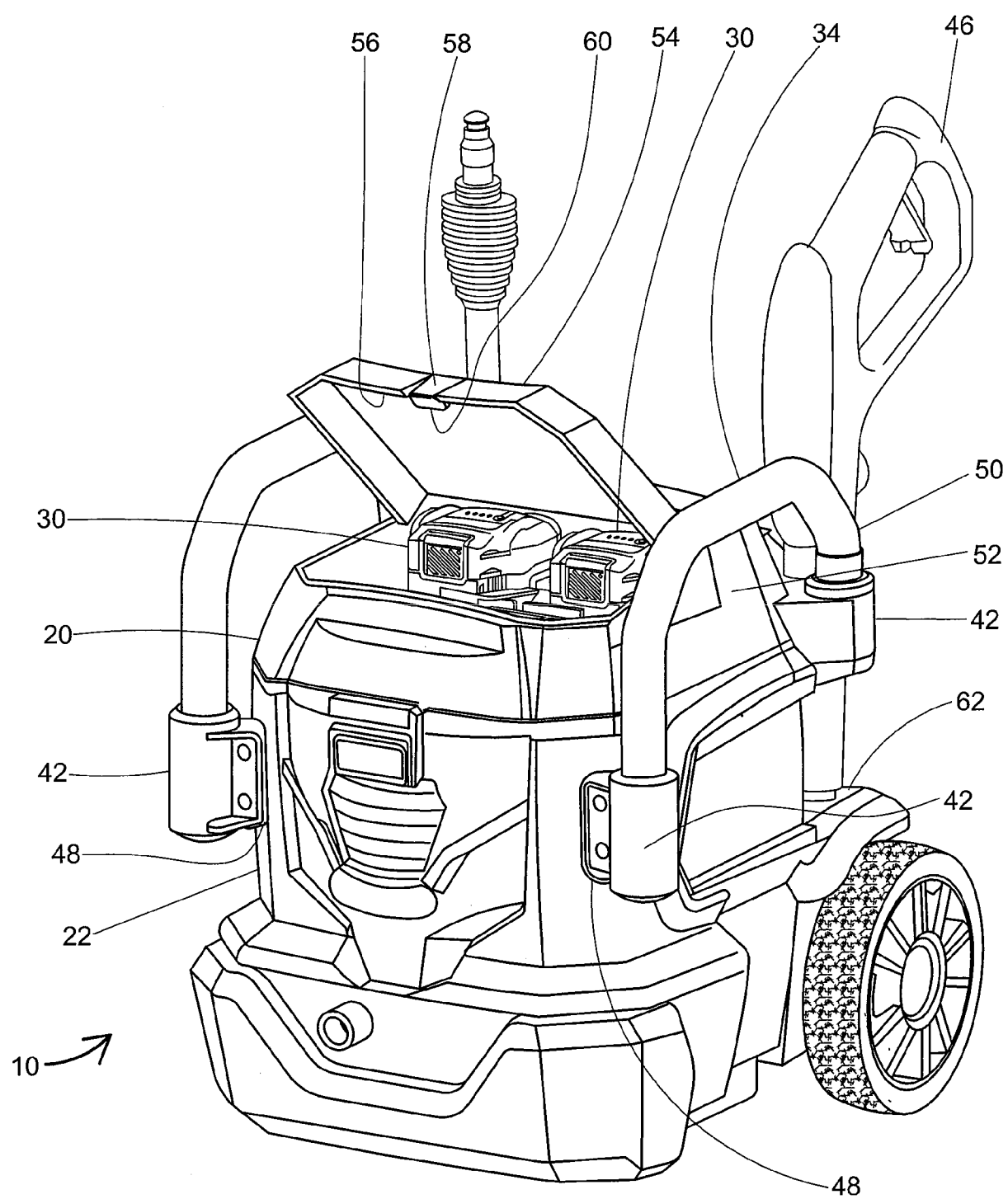


Fig. 2

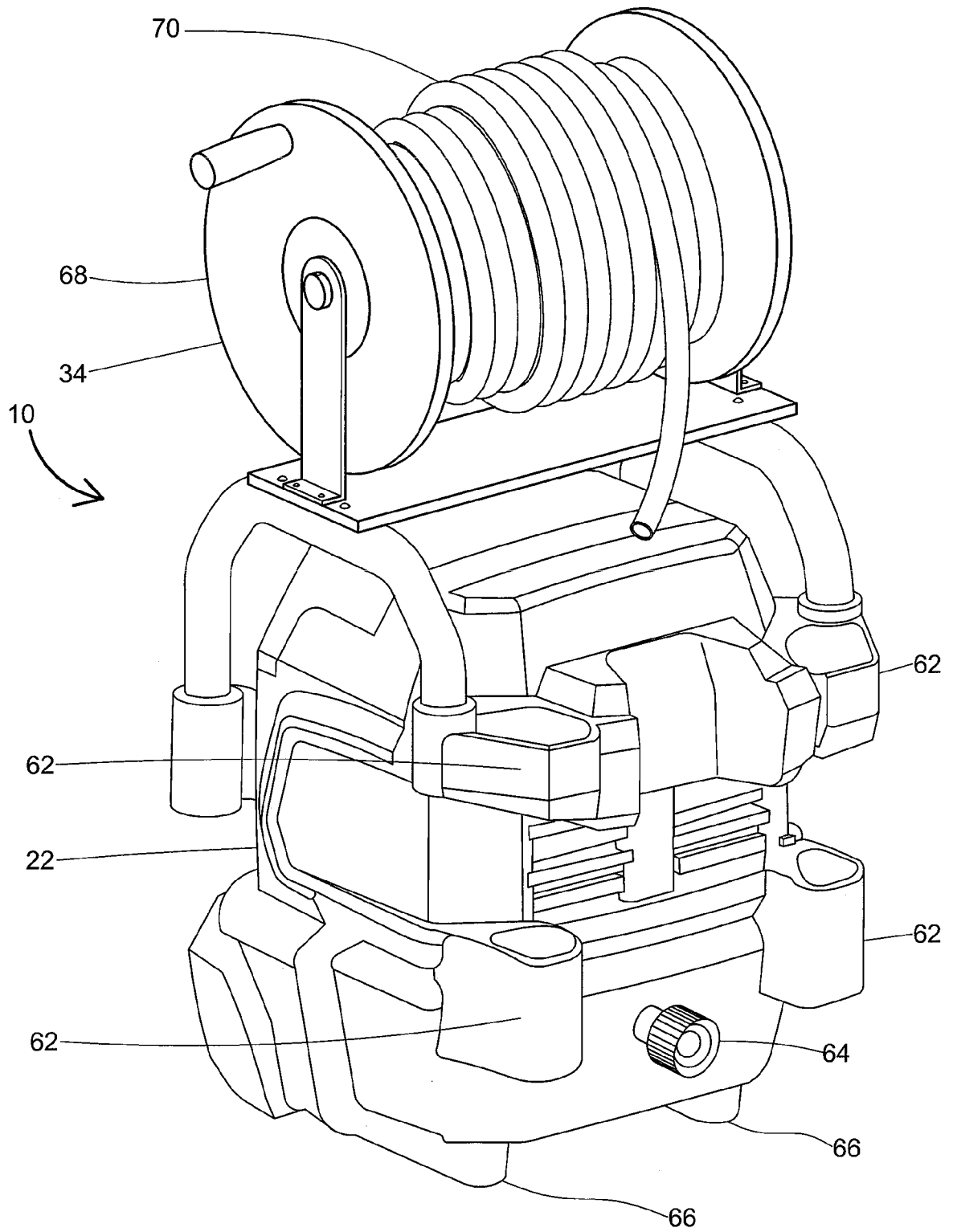


Fig. 3

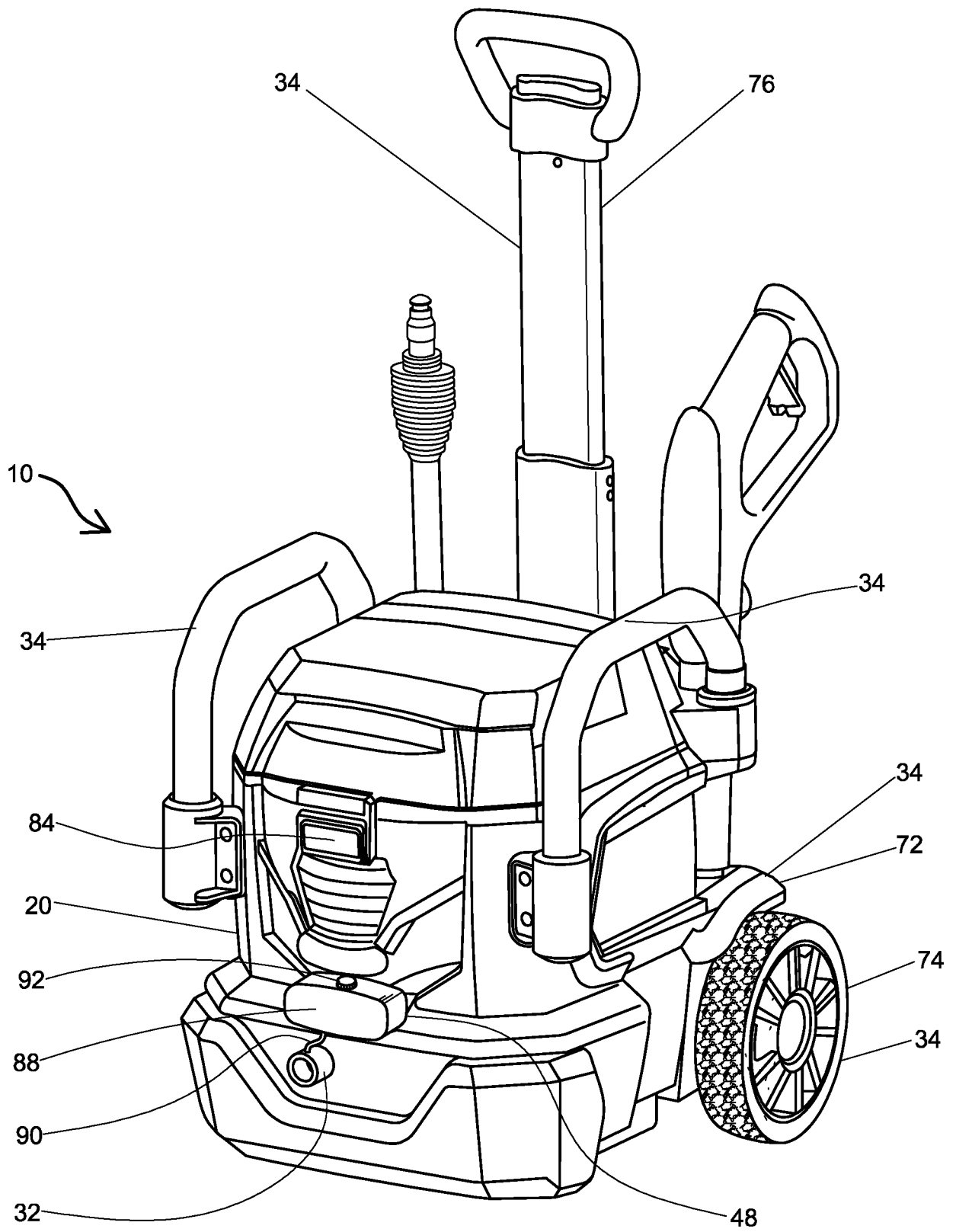


Fig. 4

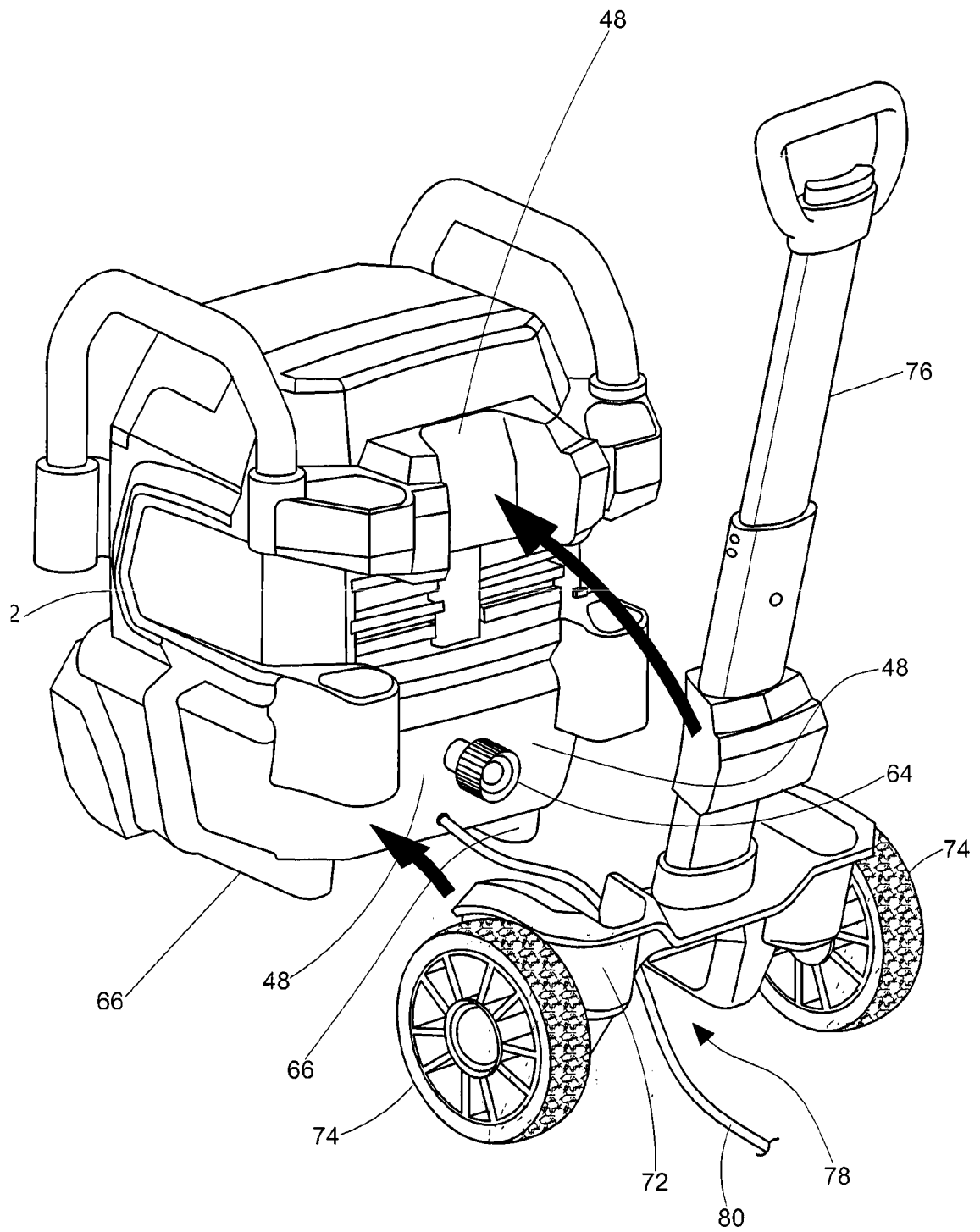


Fig. 5

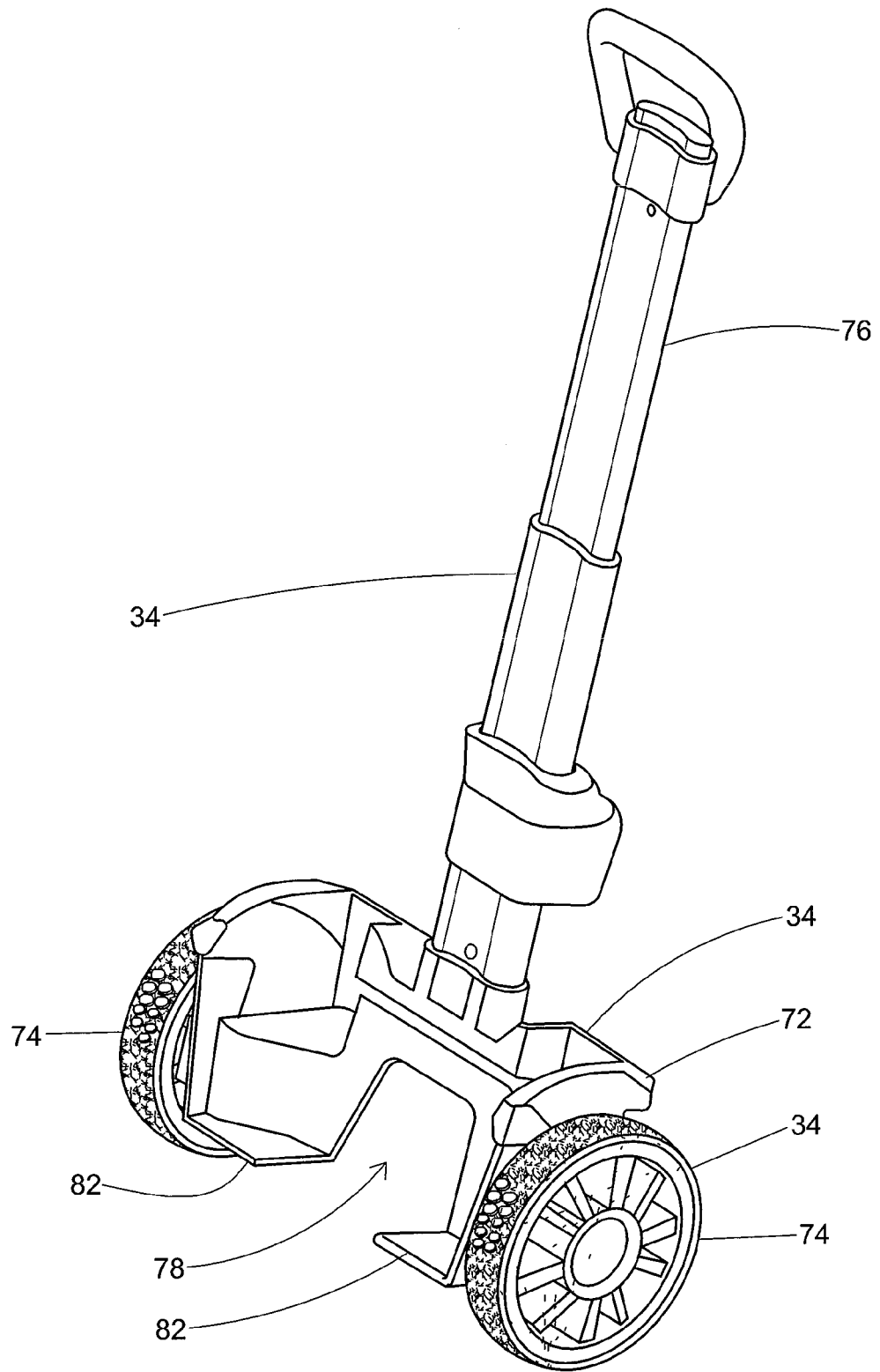


Fig. 6

INTERNATIONAL SEARCH REPORT

International application No.

PCT/CN2016/074288

A. CLASSIFICATION OF SUBJECT MATTER

B08B 3/02(2006.01)i; B05B 1/00(2006.01)i; B05B 15/00(2006.01)i

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

B08B3; B05B1; B05B15

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

CNPAT, WPI, EPODOC, CNKI:MACAO COMMERCIAL OFFSHORE, RICEY Todd, handle, pump, tank, modular, wash+, washer, valve, base, accessory, bar, motor, hose, wheel, removab+, attachment

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	DE 29717495 U1 (WAP REINIGUNGSSYSTEME G.M.B.H. & CO.) 29 October 1998 (1998-10-29) description, page 5, line 30 to page 8, line 31 and figures 1-4	1-15, 17
X	US 2014119949 A1 (GENERAC POWER SYSTEMS INC.) 01 May 2014 (2014-05-01) description, paragraph [0053]-[0057]	1-15, 17
A	CN 204234393 U (SICHUAN LIFENG TECHNOLOGY CO. LTD.) 01 April 2015 (2015-04-01) the whole document	1-17
A	CN 2880608 Y (LIU, TONGXIN) 21 March 2007 (2007-03-21) the whole document	1-17
A	CN 102489463 A (BEIJING TIETOP PRECISION CLEANING EQUIP.) 13 June 2012 (2012-06-13) the whole document	1-17
A	US 2010282866 A1 (BRIGGS & STRATTON CORP.) 11 November 2010 (2010-11-11) the whole document	1-17



Further documents are listed in the continuation of Box C.



See patent family annex.

* Special categories of cited documents:

“A” document defining the general state of the art which is not considered to be of particular relevance

“E” earlier application or patent but published on or after the international filing date

“L” document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

“O” document referring to an oral disclosure, use, exhibition or other means

“P” document published prior to the international filing date but later than the priority date claimed

“T” later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

“X” document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

“Y” document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

“&” document member of the same patent family

Date of the actual completion of the international search

28 October 2016

Date of mailing of the international search report

15 November 2016

Name and mailing address of the ISA/CN

STATE INTELLECTUAL PROPERTY OFFICE OF THE
P.R.CHINA
6, Xitucheng Rd., Jimen Bridge, Haidian District, Beijing
100088
China

Facsimile No. (86-10)62019451

Authorized officer

LIU, Long

Telephone No. (86-10)62413311

INTERNATIONAL SEARCH REPORT

International application No.

PCT/CN2016/074288

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 2015316913 A1 (TECHTRONIC OUTDOOR PRODUCTS TECHNOLOGY LTD.) 05 November 2015 (2015-11-05) the whole document	1-17

INTERNATIONAL SEARCH REPORT
Information on patent family members

International application No.

PCT/CN2016/074288

Patent document cited in search report			Publication date (day/month/year)	Patent family member(s)			Publication date (day/month/year)
DE	29717495	U1	29 October 1998	DK	0904856	T3	22 April 2003
				EP	0904856	A2	31 March 1999
				AT	231419	T	15 February 2003
				DE	19810881	A1	01 April 1999
US	2014119949	A1	01 May 2014	CN	203281538	U	13 November 2013
				AU	2013205412	A1	15 May 2014
				RU	2013118666	A	27 October 2014
				DE	202013101730	U	19 September 2013
				CA	2813880	A1	25 April 2014
CN	204234393	U	01 April 2015	None			
CN	2880608	Y	21 March 2007	None			
CN	102489463	A	13 June 2012	None			
US	2010282866	A1	11 November 2010	US	2015021412	A1	22 January 2015
US	2015316913	A1	05 November 2015	CA	2878492	A1	16 January 2014
				CN	104798048	A	22 July 2015
				WO	2014008627	A1	16 January 2014
				EP	2870537	A1	13 May 2015
				AU	2012385408	A1	05 February 2015