



(11) **EP 4 319 611 B1**

(12) **EUROPEAN PATENT SPECIFICATION**

(45) Date of publication and mention
of the grant of the patent:
18.12.2024 Bulletin 2024/51

(51) International Patent Classification (IPC):
A47L 5/22 ^(2006.01) **A47L 7/00** ^(2006.01)
A47L 11/20 ^(2006.01) **A47L 11/34** ^(2006.01)

(21) Application number: **22726847.1**

(52) Cooperative Patent Classification (CPC):
A47L 5/225; A47L 7/0004; A47L 11/201;
A47L 11/34

(22) Date of filing: **08.04.2022**

(86) International application number:
PCT/US2022/024011

(87) International publication number:
WO 2022/217044 (13.10.2022 Gazette 2022/41)

(54) **SURFACE CLEANER**
OBERFLÄCHENREINIGER
NETTOYANT DE SURFACE

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

(30) Priority: **08.04.2021 US 202163172347 P**

(43) Date of publication of application:
14.02.2024 Bulletin 2024/07

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Description**BRIEF DESCRIPTION OF THE DRAWINGS****CROSS-REFERENCE TO RELATED APPLICATIONS****[0006]**

[0001] This application claims priority to U.S. Provisional Patent Application No. 63/172,347, filed April 8, 2021.

5 Fig. 1 is a perspective view of a surface cleaner according to one embodiment.

BACKGROUND

Fig. 2 is a perspective view of the surface cleaner of Fig. 1 shown with a canister assembly in a removed position.

[0002] The present invention relates to surface cleaners, and more particularly, a wet surface cleaner with more than one cleaning mode.

Fig. 3 is a perspective view of the surface cleaner of Fig. 1 shown with a canister assembly in a removed position.

[0003] US6058559 disclosed an electric vacuum cleaner comprising a vacuum cleaner body, a hose connected to the vacuum cleaner body, a support pipe connected to the hose and a suction device connected to the support pipe. CA2658397 discloses a surface cleaning apparatus including a removably mounted portable surface cleaning apparatus and is re-configurable to two or more different cleaning configurations. US8943647 discloses a vacuum cleaner including a base having a foot suction nozzle and a hand assembly removably coupled to the foot. US2018/177368 discloses a vacuum cleaner which includes an air treatment or debris removal assembly with a multi-layer filtration stage.

10 Fig. 4 is a perspective view showing a body and a base of the surface cleaner of Fig. 1.

Fig. 5a is a side view of a canister assembly of the surface cleaner shown in Fig. 1, according to one embodiment.

Fig. 5b is a side view of a canister assembly of the surface cleaner shown in Fig. 1, according to an alternative embodiment.

Fig. 6 is a perspective view of a cleaning tool, according to one embodiment.

SUMMARY

[0004] In one embodiment a surface cleaner is disclosed including a body, a base pivotally coupled to the body and configured to move across a cleaning surface, a nozzle, a handle, and a canister assembly coupled to the body. The body has a lower portion and an upper portion opposite the lower portion, the upper portion including the handle. The base is coupled to the lower portion of the body. The nozzle is positioned on the base adjacent the cleaning surface. The canister assembly is removably coupled to the body. The canister assembly includes a housing, a supply tank, and a recovery tank. The surface cleaner further includes a hose having a first end coupled to the canister assembly fluidly connected to the recovery tank and a second end coupled to the base fluidly connected to the nozzle. A suction source is in fluid communication with the recovery tank and is operable to draw fluid and debris through the hose into the recovery tank. The surface cleaner is operable in an upright cleaning mode when the canister assembly is coupled to the body. The surface cleaner is operable in an auxiliary cleaning mode when the canister assembly is uncoupled from the body. In the upright cleaning mode and in the auxiliary cleaning mode, the nozzle is movable over the cleaning surface by a user grasping the handle such that in operation debris and fluid are drawn through the nozzle, through the hose and into the recovery tank.

30 Fig. 7 is a perspective view of a surface cleaner shown with a canister assembly in a removed position according to one embodiment.

Fig. 8 is a perspective view of the surface cleaner of Fig. 7 shown with a canister assembly in a removed position.

Fig. 9 is a front view of a canister assembly and a base of a surface cleaner according to one embodiment.

Fig. 10 is a perspective view of a surface cleaner according to an alternative embodiment.

Fig. 11 is a perspective view of a canister assembly of the surface cleaner of Fig. 8, with the canister assembly in a removed position.

[0005] Other aspects of the invention will become apparent by consideration of the detailed description and accompanying drawings.

[0007] Before any embodiments of the invention are explained in detail, it is to be understood that the invention is not limited in its application to the details of construction and the arrangement of components set forth in the following description or illustrated in the following drawings. The invention is capable of other embodiments and of being practiced or of being carried out in various ways.

DETAILED DESCRIPTION

[0008] The present disclosure relates to a surface cleaner, specifically a surface cleaner configured to recover and/or distribute cleaning liquid, with multiple different cleaning positions or modes. The surface cleaner includes an upright cleaning mode, an auxiliary cleaning mode, and a lift-off cleaning mode. It is beneficial for the user to be able to have one machine that is able to serve multiple purposes. The surface cleaner includes a canister assembly removably coupled to a body, the canister assembly having a housing, a recovery tank, and a supply tank. The surface cleaner operates in the upright cleaning mode when the canister assembly is coupled to the body. The surface cleaner operates in the auxiliary cleaning mode when the canister assembly is removed from the body.

[0009] Fig. 1 illustrates a perspective view of a surface cleaner 10 according to an embodiment of the invention. The surface cleaner 10 is a surface cleaner that delivers a liquid, such as an extractor, a hard floor cleaner, or the like. The surface cleaner 10 has a body 12 with a base 20 that supports the surface cleaner 10 on a cleaning surface. The body 12 includes a lower portion 14 and an upper portion 16 opposite the lower portion 14. The base 20 is pivotably coupled to the lower portion 14 and is configured to move across the cleaning surface. The upper portion 16 includes a handle 22, opposite the base 20. The base 20 is movable across the cleaning surface in an upright cleaning mode and an auxiliary cleaning mode by a user grasping the handle 22.

[0010] The surface cleaner 10 includes a canister assembly 28 that is removably coupled to the body 12. The canister assembly 28 includes a housing 30, a suction source or motor 32, a supply tank 34, and a recovery tank 36. The canister assembly 28 is movable between a coupled position, illustrated in Figs. 1 and 10, and an uncoupled position, illustrated in Figs. 2, 3, 7, 8, and 11. In the embodiment illustrated in Figs. 1-3 7-11, a carrying handle 48 is positioned on the housing 30. The carrying handle 48 provides a user graspable portion to move the canister assembly 28 between the coupled position and the removed position.

[0011] As shown in Figs. 5a and 5b, the canister assembly 28 may have different internal layouts of the motor 32, supply tank 34, and recovery tank 36. In the embodiment illustrated in Fig. 1, the supply tank 34 and the recovery tank 36 are in a side by side orientation. Side by side includes orientations where the supply tank 34 and the recovery tank 36 are adjacent and touching, as well as orientations where the supply tank 34 and the recovery tank 36 are separated by a frame portion 72, such as the housing 30 illustrated in Fig. 1. In one embodiment, the top end of the supply tank and the top end of the recovery tank are substantially the same level. In the side by side embodiment illustrated in Fig. 1, the motor 32 is located at an elevation below the supply tank 34 and the recovery tank 36. In the embodiments illustrated

in Figs. 5a and 5b, the supply tank 34 is positioned above the recovery tank 36. In the embodiment illustrated in Fig. 5a, when the canister assembly 28 is coupled to the body 12 and the body upper portion 16 is positioned above the lower portion 14, the motor 32 is positioned at an elevation above the recovery tank 36 and adjacent the supply tank 34. In the embodiment illustrated in Fig. 5b, when the canister assembly 28 is coupled to the body 12 and the body upper portion 16 is positioned above the lower portion 14, the motor 32 is positioned at an elevation below both the recovery tank 36 and the supply tank 34. The different orientations help optimize tank size, weight distribution, and user experience, among other factors, based on cleaning needs for the surface cleaner.

[0012] The surface cleaner 10 includes a nozzle 24 positioned on the base 20. The nozzle 24 is in fluid communication with the suction motor 32 and the recovery tank 36. The suction motor 32 generates a working airflow along an airpath extending from a suction inlet 52 on the nozzle 24 to an exhaust outlet 58, operable to draw debris and fluid from the cleaning surface through the suction inlet 52. The working airflow extends through the hose 40 and into the recovery tank 36. In the embodiment illustrated in Figs. 1, 2, 7, and 10, the hose 40 is coupled directly to the base 20 and is in fluid communication with the nozzle 24, allowing the suction motor 32 to draw fluid and debris from the nozzle 24 through the hose 40 into the recovery tank 36. In the embodiment illustrated in Fig. 3, the hose 40 is configured to be uncoupled from the base 20.

[0013] In the embodiment illustrated in Figs. 1 and 2, the surface cleaner 10 includes a fluid distributor 50 positioned on the base 20. As illustrated in Fig. 2, the fluid distributor 50 is in fluid communication with the supply tank 34 through a fluid line 54, and the fluid distributor 50 is configured to provide a cleaning fluid to the cleaning surface. The fluid line 54 extends along the hose 40. Fluid flows from the supply tank 34, through the fluid line 54, and out the fluid distributor 50 to the cleaning surface. In the illustrated embodiment, the fluid distributor 50 delivers fluid forward of the nozzle 24. In one embodiment, the fluid distributor is disposed to deliver fluid beneath the base 20 rearward of the nozzle 24.

[0014] The surface cleaner 10 includes the hose 40 with a first end 42 coupled to the recovery tank 36 and a second end 44 for drawing debris and fluid from the cleaning surface to the recovery tank 36. As illustrated in Figs. 1 and 10, the surface cleaner 10 is operable in the upright cleaning mode when the canister assembly 28 is coupled to the body 12 and the second end of the hose 44 is coupled directly to the base 20 in fluid communication with the nozzle 24. As illustrated in Fig. 2, the surface cleaner 10 is operable in the auxiliary cleaning mode when the canister assembly 28 is removed from the body 12, and the second end of the hose 44 is coupled directly to the base 20. In both the upright cleaning mode and the auxiliary cleaning mode, debris and fluid are vacuumed into the nozzle 24, through the hose 40, and into

the recovery tank 36. The recovery tank 36 is configured to contain the debris and/or fluid collected from the cleaning surface.

[0015] The upright cleaning mode enables the user to use the surface cleaner 10 in a familiar manner, similar to a traditional upright hard floor cleaner or upright extractor. The canister assembly 28 is coupled to the body 12 and the base 20 is moved across the surface by the handle 22. The auxiliary cleaning mode illustrated in Fig. 2 provides a different cleaning experience than in the upright cleaning mode. In the auxiliary cleaning mode, the canister assembly 28 is removed and the second end 44 of the hose is still coupled to the base 20. This allows the user to use the handle 22 to guide the base 20 along the cleaning surface in the same manner as the upright cleaning mode. However, because the canister assembly 28 is removed, the body 12 has a lower profile as well as a lighter weight. This lower profile operates similar to a traditional canister cleaner allowing the surface cleaner 10 to reach hard-to-reach areas, such as under a couch or a coffee table.

[0016] As illustrated in Figs. 3, 8, and 11, the surface cleaner 10 is operable in the lift-off cleaning mode when the canister assembly 28 is removed from the body 12 and the hose 40 is uncoupled from the base 20. In one embodiment, the nozzle 24 is configured to be removed from the base 20 and the second end 44 of the hose is coupled directly to the nozzle 24. The lift-off cleaning mode allows the user to operate the surface cleaner 10 for spot-cleaning or above-floor cleaning.

[0017] The surface cleaner 10 may include an accessory cleaning tool 70 connectable to the second end 44 of the hose 40 in the lift-off cleaning mode. In the embodiment illustrated in Fig. 6, the cleaning tool 70 includes a fluid distributor 50'. The fluid distributor 50' is in fluid communication with the supply tank 34 through the fluid line 54', and the fluid distributor 50' is configured to provide a cleaning fluid to the cleaning surface. The fluid line 54' extends along the hose 40. Fluid flows from the supply tank 34, through the fluid line 54', to the cleaning tool 70 and out the fluid distributor 50' to the cleaning surface. In the embodiment illustrated in Fig. 6, the cleaning tool 70 includes an actuator 56 in fluid communication with the supply tank 34, fluid line 54', and the fluid distributor 50'. The fluid distributor 50' is activated by the actuator 56, such as a user-graspable trigger. The cleaning tool 70 is connectable to the second end of the hose 44 to fluidly connect the cleaning tool nozzle 52', 52" to the hose 40 and the cleaning tool fluid distributor 50' to the fluid line 54'. In one embodiment, the hose 40 is configured to be uncoupled from the base 20 while the canister assembly 28 is coupled to the body 12, and the second end 44 of the hose 40 connectable to the cleaning tool 70 for above-floor cleaning.

[0018] One advantage to the hose 40 connecting directly to the base 20 or the cleaning tool 70 is that the hose 40 creates a shorter and more direct airpath to recover debris and fluid from the cleaning surface. Sec-

ondly, it allows different constructions of the body 12 that allow a more compact and space efficient surface cleaner 10.

[0019] In the embodiment illustrated in Fig. 4, the body 12 is a collapsible such that the lower portion 14 and the upper portion 16 are adjacent in a collapsed position. This may be accomplished by having the upper portion 16 and lower portion 14 of the body 12 telescope together. Because there is no airflow to consider in the body 12, the construction of the telescopic body is simplified. In one embodiment, not shown, the body 12 is collapsible by folding, such that the upper portion 16 and handle 22 are folded to be adjacent to the lower portion 14 at a joint. The collapsibility of the body 12 reduces the size of the surface cleaner 10 for storage.

[0020] The surface cleaner 10 may also include an agitator 26 operatively positioned to engage the cleaning surface. In one embodiment, the agitator 26 is driven by an agitator motor 64. The agitator 26 is configured to agitate the cleaning surface in both the upright cleaning mode and the auxiliary cleaning mode. In the embodiment illustrated in Fig. 2, the agitator 26 is operatively positioned in the base 20. In this embodiment, the agitator 26 is operable in the upright cleaning mode and the auxiliary cleaning mode. In the lift-off cleaning mode, the cleaning tool 70 of Fig. 6 includes suction through the nozzle 52 to draw debris and fluid, but does not include a rotatable agitation feature. In one embodiment, the cleaning tool 70 includes bristles to enable manual agitation of the surface.

[0021] In the embodiment of Figs. 1-4, the surface cleaner 10 is powered by household electricity connected by a power cord 65 to the canister assembly 28. Alternating current (AC) is supplied to the suction motor 32 by the cord 65 to power the suction motor 32 and controls of the surface cleaner 10. In the illustrated embodiment, the cord 65 powers the suction motor 32 when the canister assembly 28 is both coupled to (Fig. 1) and uncoupled from (Fig. 2) the body 12. A power cord runs along or in the hose 40 to supply power from the canister assembly 28 via the power cord 65 to the agitator motor 64.

[0022] In an alternative embodiment illustrated in Figs. 7 and 8, the base 20' includes a battery 62 that powers the agitator motor 64 when the canister assembly 28 is uncoupled (Fig. 7) from the body 12'. The battery 62 is rechargeable. The body 12' includes electrical contacts 67 and the canister assembly 28 includes corresponding electrical contacts that mate with the electrical contacts 67 of the body 12' when the canister assembly 28 is coupled to the body 12'. When the canister assembly 28 is coupled to the body 12' power is supplied from the cord 65 to the canister assembly 28 and to the battery 62 via the contacts 67 to recharge the battery. Also, when the canister assembly 28 is coupled to the body 12' power is supplied from the cord 65 to the canister assembly 28 and to the agitator motor 64 via the contact 67 to power the agitator motor 64. In one embodiment, the agitator motor 64 is a direct current (DC) motor and the surface

cleaner 10' includes an AC to DC converter. In another embodiment, the agitator motor 64 is powered by the battery 62 when the canister assembly 28 is both uncoupled from and coupled to the body 12'. In such an embodiment, the battery 62 is charged when the canister assembly 28 is coupled to the body 12'.

[0023] . In the embodiment of Figs. 7 and 8 that includes the battery 62, (described above) powering the agitator motor 64 with the battery 62 allows the power cord that runs along or in the hose 40 to be omitted. Omitting the power cord from the hose 40 provides a hose that is more flexible and less expensive to manufacture.

[0024] In the embodiment illustrated in Fig. 9, the surface cleaner 10" includes a first or primary battery 60 and the battery 62 of the base 20 is a secondary battery. The first battery 60 powers the suction motor 32 and the secondary battery 62 powers agitator motor 64. When the canister assembly 28 is attached to the body 12', contacts on the canister assembly 28 connect to contacts 67 on the body 12' to deliver power to the agitator motor 64 and to recharge the secondary battery 62. In the embodiment illustrated in Fig. 9, instead of operating on household electricity, the surface cleaner 10" includes the primary battery 60 coupled to the canister assembly 28 to operate the suction motor 32.

[0025] In the embodiment illustrated in Fig. 10, the surface cleaner 10 includes the nozzle 24" positioned on the base 20, forward of the agitator 26". The nozzle 24" includes the suction inlet 52" in fluid communication with the suction motor 32 to vacuum up debris and fluid. In this arrangement, the surface cleaner 10 is configured to operate in the upright cleaning mode or the auxiliary cleaning mode. In the embodiment illustrated in Fig. 11, the cleaning tool 70' is connectable to the second end 44 of the hose 40 in the lift-off cleaning mode. The cleaning tool 70' includes a suction inlet 52''' to vacuum debris and liquid from a surface. The cleaning tool 70' further includes an agitator 26''' to agitate the surface in the lift-off cleaning mode.

[0026] Various features and advantages of the invention are set forth in the following claims.

Claims

1. A surface cleaner (10) comprising:

a body (12) having a lower portion (14) and an upper portion (16) opposite the lower portion (14), the upper portion (16) including a handle (22);
a base (20) pivotably coupled to the lower portion (14) of the body (12) and configured to move across a cleaning surface;
a nozzle (24) positioned on the base (20) adjacent the cleaning surface;
a canister assembly (28) removably coupled to the body (12), the canister assembly (28) in-

cludes a housing (30), a supply tank (34) and a recovery tank (36);

a hose (40) having a first end (42) coupled to the canister assembly (28) and fluidly connected to the recovery tank (36) and a second end (44) coupled to the base (20) and fluidly connected to the nozzle (24); and

a suction source in fluid communication with the recovery tank (36), the suction source operable to draw fluid and debris through the hose (40) into the recovery tank (36);

wherein the surface cleaner (10) is operable in an upright cleaning mode when the canister assembly (28) is coupled to the body (12) and the surface cleaner (10) is operable in an auxiliary cleaning mode when the canister assembly (28) is uncoupled from the body (12); and

wherein in the upright cleaning mode and in the auxiliary cleaning mode the nozzle (24) is movable over the cleaning surface by a user grasping the handle (22) such that in operation debris and fluid are drawn through the nozzle (24), through the hose (40) and into the recovery tank (36).

2. The surface cleaner (10) of claim 1 wherein the second end (44) of the hose (40) is configured to be uncoupled from the base (20), and wherein the surface cleaner (10) is operable in a lift-off cleaning mode when the canister assembly (28) is uncoupled from the body (12) and the second end (44) of the hose (40) is uncoupled from the base (20).

3. The surface cleaner (10) according to claims 1 or 2, wherein the body (12) is collapsible into a collapsed position such that the lower portion (14) and the upper portion (16) are adjacent in the collapsed position.

4. The surface cleaner (10) of claim 3, where in the upper portion (16) and the lower portion (14) telescope together.

5. The surface cleaner (10) as in any of the preceding claims, wherein the supply tank (34) is fluidly connected to a fluid line (54) extending along the hose (40) to a fluid distributor (50) positioned on the base (20), the fluid distributor (50) configured to distribute fluid to the cleaning surface.

6. The surface cleaner (10) of claim 5, wherein the surface cleaner (10) includes an actuator in fluid communication with the fluid line (54) to selectively dispense fluid from the supply tank (34) through the fluid distributor (50).

7. The surface cleaner (10) as in claim 5 or claim 6, wherein the second end (44) of the hose (40) and

the fluid line (54) are configured to be uncoupled from the base (20), and wherein the surface cleaner (10) further comprises a cleaning tool (70) having a cleaning tool nozzle (52,52") and a cleaning tool fluid distributor (50'), wherein the cleaning tool (70) is connectable to the second end (44) of the hose (40) fluidly connecting the cleaning tool nozzle (52,52") to the hose (40) and the cleaning tool fluid distributor (50') to the fluid line (54).

8. The surface cleaner (10) as in any of the preceding claims, wherein when the canister assembly (28) is coupled to the body (12) and the body upper portion (16) is positioned above the lower portion, the surface cleaner (10) including a motor (32), the motor (32) being positioned at an elevation below the supply tank (34). 5
9. The surface cleaner (10) as in any one of claims 1 through 7, wherein when the canister assembly (28) is coupled to the body (12) and the body upper portion (16) is positioned above the lower portion, (14) the supply tank (34) is positioned at an elevation above the recovery tank (36). 10
10. The surface cleaner (10) of claim 9, wherein the motor (32) positioned at an elevation below the supply tank (34). 15
11. The surface cleaner (10) as in any of claims 1 through 7, wherein when the canister assembly (28) is coupled to the body (12) and the body upper portion (16) is positioned above the lower portion (14), the surface cleaner (10) including a motor (32), the motor (32) is positioned at an elevation above the recovery tank (36). 20
12. The surface cleaner (10) of as in any one of claims 1 through 7, wherein when the canister assembly (28) is coupled to the body (12) and the body upper portion (16) is positioned above the lower portion (14), the surface cleaner (10) including a motor (32), the motor (32) being positioned at an elevation below the recovery tank (36). 25
13. The surface cleaner (10) as in any of the preceding claims, wherein the suction source is operable to generate a working airflow along an airpath extending from a suction inlet (52) to an exhaust outlet, wherein the airpath is external to the body upper portion (16). 30
14. The surface cleaner (10) of claim 13, where the airpath is external to the body lower portion (14). 35
15. The surface cleaner (10) as in any of the preceding claims, wherein the base (20) includes an agitator (26) driven by an agitator motor (64). 40

Patentansprüche

1. Oberflächenreiniger (10), umfassend:

einen Körper (12) mit einem unteren Teil (14) und einem oberen Teil (16) gegenüber dem unteren Teil (14), wobei der obere Teil (16) einen Griff (22) aufweist;
 eine Basis (20), die schwenkbar mit dem unteren Teil (14) des Körpers (12) verbunden und dazu ausgelegt ist, sich über eine zu reinigende Oberfläche zu bewegen;
 eine Düse (24), die auf der Basis (20) angrenzend an die zu reinigende Oberfläche angeordnet ist;
 eine Kanisteranordnung (28), die abnehmbar mit dem Körper (12) verbunden ist, wobei die Kanisteranordnung (28) ein Gehäuse (30), einen Vorratsbehälter (34) und einen Auffangbehälter (36) aufweist;
 einen Schlauch (40) mit einem ersten Ende (42), das mit der Kanisteranordnung (28) verbunden und fluidisch mit dem Auffangbehälter (36) verbunden ist, und einem zweiten Ende (44), das mit der Basis (20) verbunden und fluidisch mit der Düse (24) verbunden ist; und
 eine Saugquelle in Fluidverbindung mit dem Auffangbehälter (36), wobei die Saugquelle betriebsfähig ist, um Flüssigkeit und Schmutz durch den Schlauch (40) in den Auffangbehälter (36) zu saugen;
 wobei der Oberflächenreiniger (10) in einem aufrechten Reinigungsmodus betreibbar ist, wenn die Kanisteranordnung (28) mit dem Körper (12) verbunden ist, und der Oberflächenreiniger (10) in einem Zusatzreinigungsmodus betreibbar ist, wenn die Kanisteranordnung (28) vom Körper (12) getrennt ist; und
 wobei im aufrechten Reinigungsmodus und im Zusatzreinigungsmodus die Düse (24) über die zu reinigende Oberfläche bewegbar ist, indem ein Benutzer den Griff (22) ergreift, sodass im Betrieb Schmutz und Flüssigkeit über die Düse (24), über den Schlauch (40) und in den Auffangbehälter (36) gesaugt werden.

2. Oberflächenreiniger (10) nach Anspruch 1, wobei das zweite Ende (44) des Schlauchs (40) dazu ausgelegt ist, von der Basis (20) getrennt zu werden, und wobei der Oberflächenreiniger (10) in einem Abhebe-Reinigungsmodus betreibbar ist, wenn die Kanisteranordnung (28) vom Körper (12) getrennt und das zweite Ende (44) des Schlauchs (40) von der Basis (20) getrennt ist.

3. Oberflächenreiniger (10) nach Anspruch 1 oder 2, wobei der Körper (12) so in eine zusammengeklappte Position zusammenklappbar ist, dass der untere

Teil (14) und der obere Teil (16) in der zusammengeklappten Position aneinander angrenzen.

4. Oberflächenreiniger (10) nach Anspruch 3, wobei der obere Teil (16) und der untere Teil (14) ineinander teleskopierbar sind. 5
5. Oberflächenreiniger (10) nach einem der vorhergehenden Ansprüche, wobei der Vorratsbehälter (34) fluidisch mit einer Flüssigkeitsleitung (54) verbunden ist, die sich entlang des Schlauchs (40) zu einem Flüssigkeitsverteiler (50) erstreckt, der auf der Basis (20) angeordnet ist, wobei der Flüssigkeitsverteiler (50) dazu ausgelegt ist, Flüssigkeit auf die zu reinigende Oberfläche zu verteilen. 10
6. Oberflächenreiniger (10) nach Anspruch 5, wobei der Oberflächenreiniger (10) einen Aktuator in Fluidverbindung mit der Flüssigkeitsleitung (54) aufweist, um selektiv Flüssigkeit aus dem Vorratsbehälter (34) über den Flüssigkeitsverteiler (50) abzugeben. 15
7. Oberflächenreiniger (10) nach Anspruch 5 oder Anspruch 6, wobei das zweite Ende (44) des Schlauchs (40) und die Flüssigkeitsleitung (54) dazu ausgelegt sind, von der Basis (20) getrennt zu werden, und wobei der Oberflächenreiniger (10) ferner ein Reinigungswerkzeug (70) mit einer Reinigungswerkzeugdüse (52, 52") und einem Reinigungswerkzeug-Flüssigkeitsverteiler (50') umfasst, wobei das Reinigungswerkzeug (70) mit dem zweiten Ende (44) des Schlauchs (40) verbindbar ist, wodurch die Reinigungswerkzeugdüse (52, 52") fluidisch mit dem Schlauch (40) und dem Reinigungswerkzeug-Flüssigkeitsverteiler (50') mit der Flüssigkeitsleitung (54) verbunden werden. 20
8. Oberflächenreiniger (10) nach einem der vorhergehenden Ansprüche, wobei, wenn die Kanisteranordnung (28) mit dem Körper (12) verbunden ist und der obere Teil des Körpers (16) über dem unteren Teil positioniert ist, der Oberflächenreiniger (10) einen Motor (32) aufweist, wobei der Motor (32) auf einer Höhe unterhalb des Vorratsbehälters (34) positioniert ist. 25
9. Oberflächenreiniger (10) nach einem der Ansprüche 1 bis 7, wobei, wenn die Kanisteranordnung (28) mit dem Körper (12) verbunden und der obere Teil des Körpers (16) über dem unteren Teil (14) positioniert ist, der Vorratsbehälter (34) auf einer Höhe über dem Auffangbehälter (36) positioniert ist. 30
10. Oberflächenreiniger (10) nach Anspruch 9, wobei der Motor (32) auf einer Höhe unterhalb des Vorratsbehälters (34) positioniert ist. 35

11. Oberflächenreiniger (10) nach einem der Ansprüche 1 bis 7, wobei, wenn die Kanisteranordnung (28) mit dem Körper (12) verbunden und der obere Teil des Körpers (16) über dem unteren Teil (14) positioniert ist, der Oberflächenreiniger (10) einen Motor (32) aufweist, wobei der Motor (32) auf einer Höhe über dem Auffangbehälter (36) positioniert ist.

12. Oberflächenreiniger (10) nach einem der Ansprüche 1 bis 7, wobei, wenn die Kanisteranordnung (28) mit dem Körper (12) verbunden und der obere Teil des Körpers (16) über dem unteren Teil (14) positioniert ist, der Oberflächenreiniger (10) einen Motor (32) aufweist, wobei der Motor (32) auf einer Höhe unterhalb des Auffangbehälters (36) positioniert ist.

13. Oberflächenreiniger (10) nach einem der vorhergehenden Ansprüche, wobei die Saugquelle betriebsfähig ist, um einen Arbeitsluftstrom entlang eines Luftwegs zu erzeugen, der sich von einem Saugelass (52) zu einem Abluftauslass erstreckt, wobei der Luftweg außerhalb des oberen Teils (16) des Körpers verläuft.

14. Oberflächenreiniger (10) nach Anspruch 13, wobei der Luftweg außerhalb des unteren Teils (14) des Körpers verläuft.

15. Oberflächenreiniger (10) nach einem der vorhergehenden Ansprüche, wobei die Basis (20) ein Rührwerk (26) aufweist, das durch einen Rührwerksmotor (64) angetrieben wird. 30

Revendications 35

1. Appareil de nettoyage de surface (10), comprenant :

un corps (12) ayant une partie inférieure (14) et une partie supérieure (16) opposée à la partie inférieure (14), la partie supérieure (16) incluant une poignée (22) ;
 une base (20) couplée de façon pivotante à la partie inférieure (14) du corps (12) et configurée pour se déplacer sur une surface de nettoyage ;
 un suceur (24) positionné sur la base (20), de façon adjacente à la surface de nettoyage ;
 un ensemble boîte (28) couplé au corps (12) de façon amovible, l'ensemble boîte (28) inclut un logement (30), un réservoir d'alimentation (34) et un réservoir de récupération (36) ;
 un tuyau flexible (40) ayant une première extrémité (42) couplée à l'ensemble boîte (28) et raccordée fluidiquement au réservoir de récupération (36) et une seconde extrémité (44) couplée à la base (20) et raccordée fluidiquement au suceur (24) ; et
 une source d'aspiration en communication fluidique

- dique avec le réservoir de récupération (36), la source d'aspiration étant utilisable pour aspirer un fluide et des débris à travers le tuyau flexible (40) jusque dans le réservoir de récupération (36) ;
 dans lequel l'appareil de nettoyage de surface (10) est utilisable dans un mode de nettoyage vertical lorsque l'ensemble boîte (28) est couplé au corps (12) et l'appareil de nettoyage de surface (10) est utilisable dans un mode de nettoyage auxiliaire lorsque l'ensemble boîte (28) est découplé du corps (12) ; et
 dans lequel, dans le mode de nettoyage vertical et dans le mode de nettoyage auxiliaire, le suceur (24) peut être déplacé par-dessus la surface de nettoyage par un utilisateur saisissant la poignée (22) de manière telle que, en fonctionnement, des débris et un fluide sont aspirés à travers le suceur (24), à travers le tuyau flexible (40) et jusque dans le réservoir de récupération (36).
2. Appareil de nettoyage de surface (10) de la revendication 1, dans lequel la seconde extrémité (44) du tuyau flexible (40) est configurée pour être découplée de la base (20), et dans lequel l'appareil de nettoyage de surface (10) est utilisable dans un mode de nettoyage transporté lorsque l'ensemble boîte (28) est découplé du corps (12) et la seconde extrémité (44) du tuyau flexible (40) est découplée de la base (20).
 3. Appareil de nettoyage de surface (10) selon les revendications 1 ou 2, dans lequel le corps (12) est emboîtable dans une position emboîtée de manière telle que la partie inférieure (14) et la partie supérieure (16) sont adjacentes dans la position emboîtée.
 4. Appareil de nettoyage de surface (10) de la revendication 3, où dans la partie supérieure (16) et la partie inférieure (14) s'interpénètrent.
 5. Appareil de nettoyage de surface (10) tel que dans de quelconques des revendications précédentes, dans lequel le réservoir d'alimentation (34) est raccordé fluidiquement à une conduite de fluide (54) s'étendant le long du tuyau flexible (40) jusqu'à un distributeur de fluide (50) positionné sur la base (20), le distributeur de fluide (50) étant configuré pour distribuer un fluide à la surface de nettoyage.
 6. Appareil de nettoyage de surface (10) de la revendication 5, dans lequel l'appareil de nettoyage de surface (10) inclut un actionneur en communication fluidique avec la conduite de fluide (54) pour sélectivement distribuer un fluide depuis le réservoir d'alimentation (34) à travers le distributeur de fluide (50).
 7. Appareil de nettoyage de surface (10) tel que dans de la revendication 5 ou la revendication 6, dans lequel la seconde extrémité (44) du tuyau flexible (40) et la conduite de fluide (54) sont configurées pour être découplées de la base (20), et dans lequel l'appareil de nettoyage de surface (10) comprend en outre un outil de nettoyage (70) ayant un suceur d'outil de nettoyage (52, 52") et un distributeur de fluide d'outil de nettoyage (50'), dans lequel l'outil de nettoyage (70) peut être raccordé à la seconde extrémité (44) du tuyau flexible (40) raccordant fluidiquement le suceur d'outil de nettoyage (52, 52") au tuyau flexible (40) et le distributeur de fluide d'outil de nettoyage (50') à la conduite de fluide (54).
 8. Appareil de nettoyage de surface (10) tel que dans de quelconques des revendications précédentes, dans lequel, lorsque l'ensemble boîte (28) est couplé au corps (12) et la partie supérieure de corps (16) est positionnée au-dessus de la partie inférieure, l'appareil de nettoyage de surface (10) incluant un moteur (32), le moteur (32) est positionné à une élévation en dessous du réservoir d'alimentation (34).
 9. Appareil de nettoyage de surface (10) tel que dans l'une quelconque des revendications 1 à 7, dans lequel, lorsque l'ensemble boîte (28) est couplé au corps (12) et la partie supérieure de corps (16) est positionnée au-dessus de la partie inférieure (14), le réservoir d'alimentation (34) est positionné à une élévation au-dessus du réservoir de récupération (36).
 10. Appareil de nettoyage de surface (10) de la revendication 9, dans lequel le moteur (32) est positionné à une élévation en dessous du réservoir d'alimentation (34).
 11. Appareil de nettoyage de surface (10) tel que dans de quelconques des revendications 1 à 7, dans lequel, lorsque l'ensemble boîte (28) est couplé au corps (12) et la partie supérieure de corps (16) est positionnée au-dessus de la partie inférieure (14), l'appareil de nettoyage de surface (10) incluant un moteur (32), le moteur (32) est positionné à une élévation au-dessus du réservoir de récupération (36).
 12. Appareil de nettoyage de surface (10) tel que dans l'une quelconque des revendications 1 à 7, dans lequel, lorsque l'ensemble boîte (28) est couplé au corps (12) et la partie supérieure de corps (16) est positionnée au-dessus de la partie inférieure (14), l'appareil de nettoyage de surface (10) incluant un moteur (32), le moteur (32) est positionné à une élévation en dessous du réservoir de récupération (36).
 13. Appareil de nettoyage de surface (10) tel que dans de quelconques des revendications précédentes,

dans lequel la source d'aspiration est utilisable pour générer un écoulement d'air de fonctionnement le long d'un passage d'air s'étendant depuis une entrée d'aspiration (52) jusqu'à une sortie d'évacuation, dans lequel le passage d'air est externe à la partie supérieure de corps (16). 5

14. Appareil de nettoyage de surface (10) de la revendication 13, où le passage d'air est externe au corps partie inférieure (14). 10

15. Appareil de nettoyage de surface (10) tel que dans de quelconques des revendications précédentes, dans lequel la base (20) inclut un agitateur (26) entraîné par un moteur d'agitateur (64). 15

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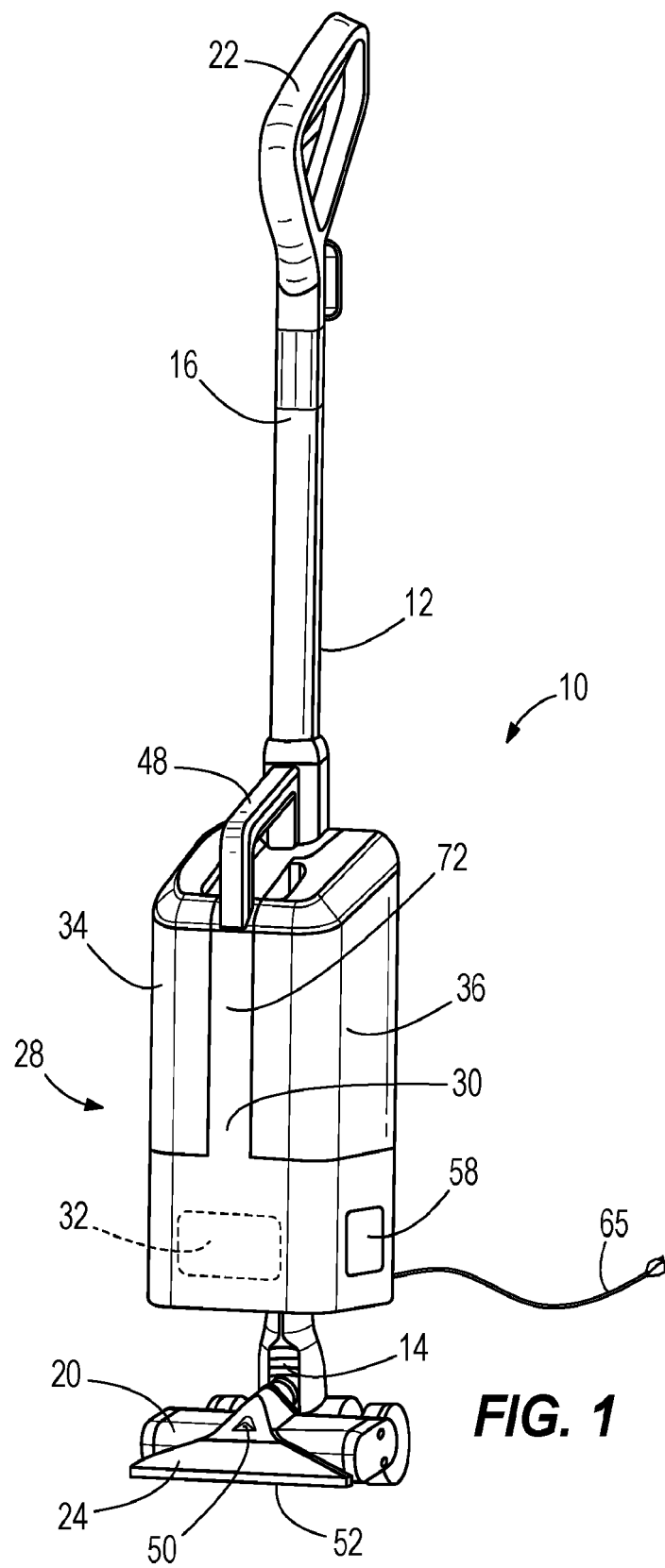
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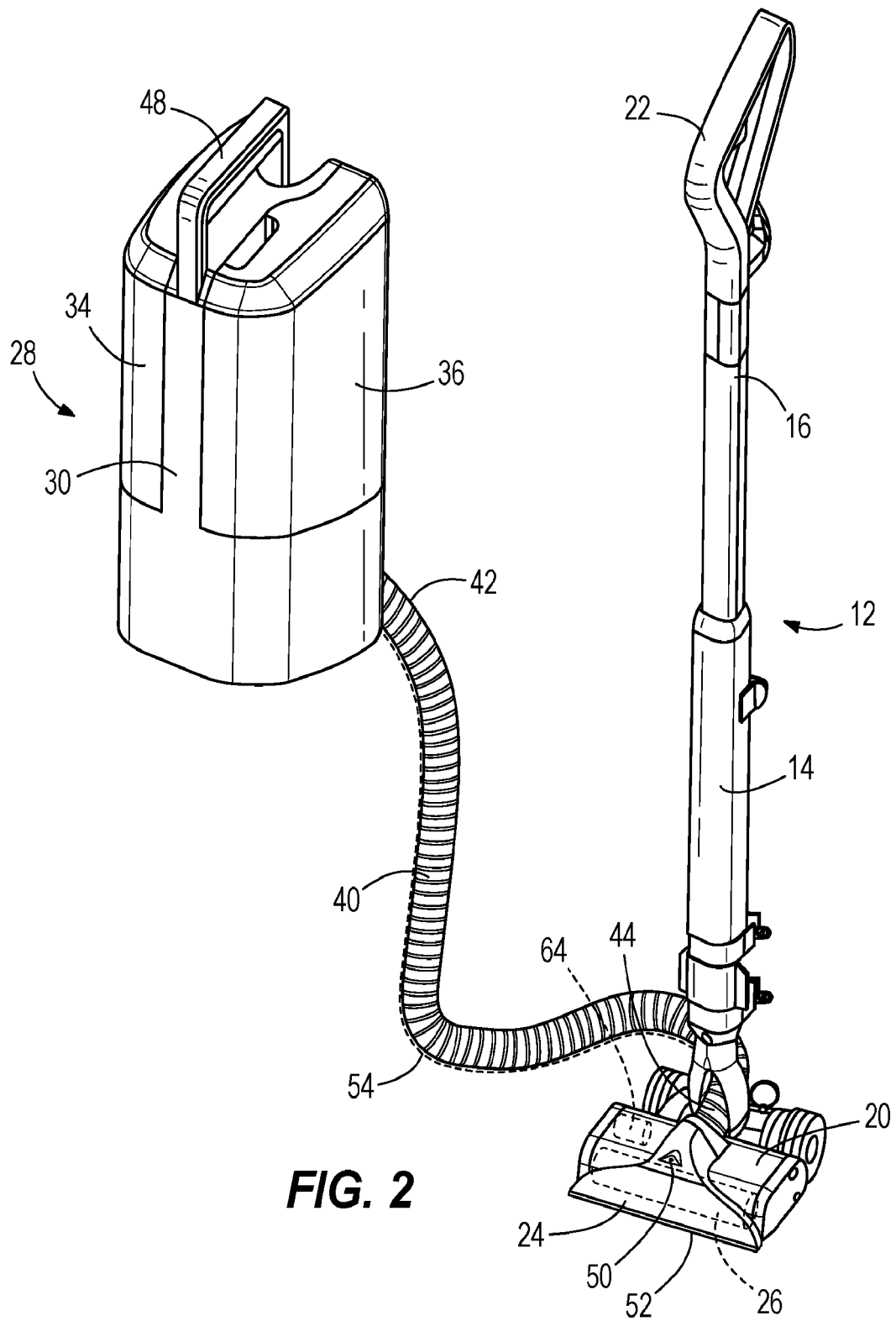


FIG. 2

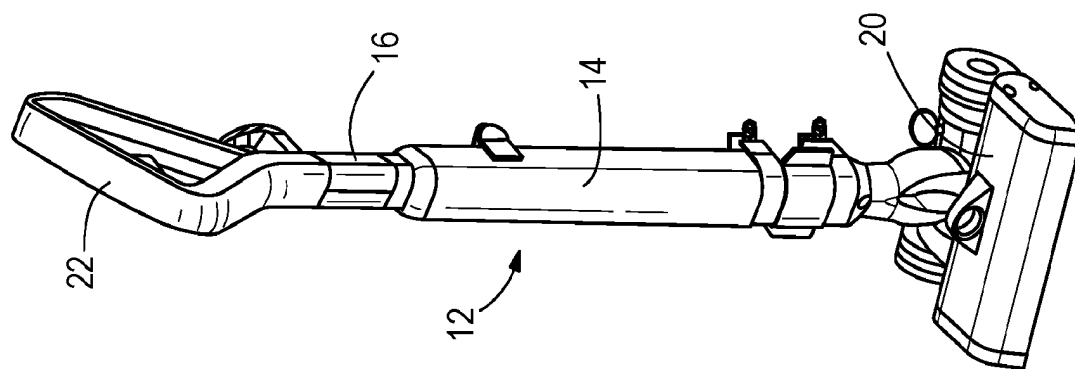


FIG. 4

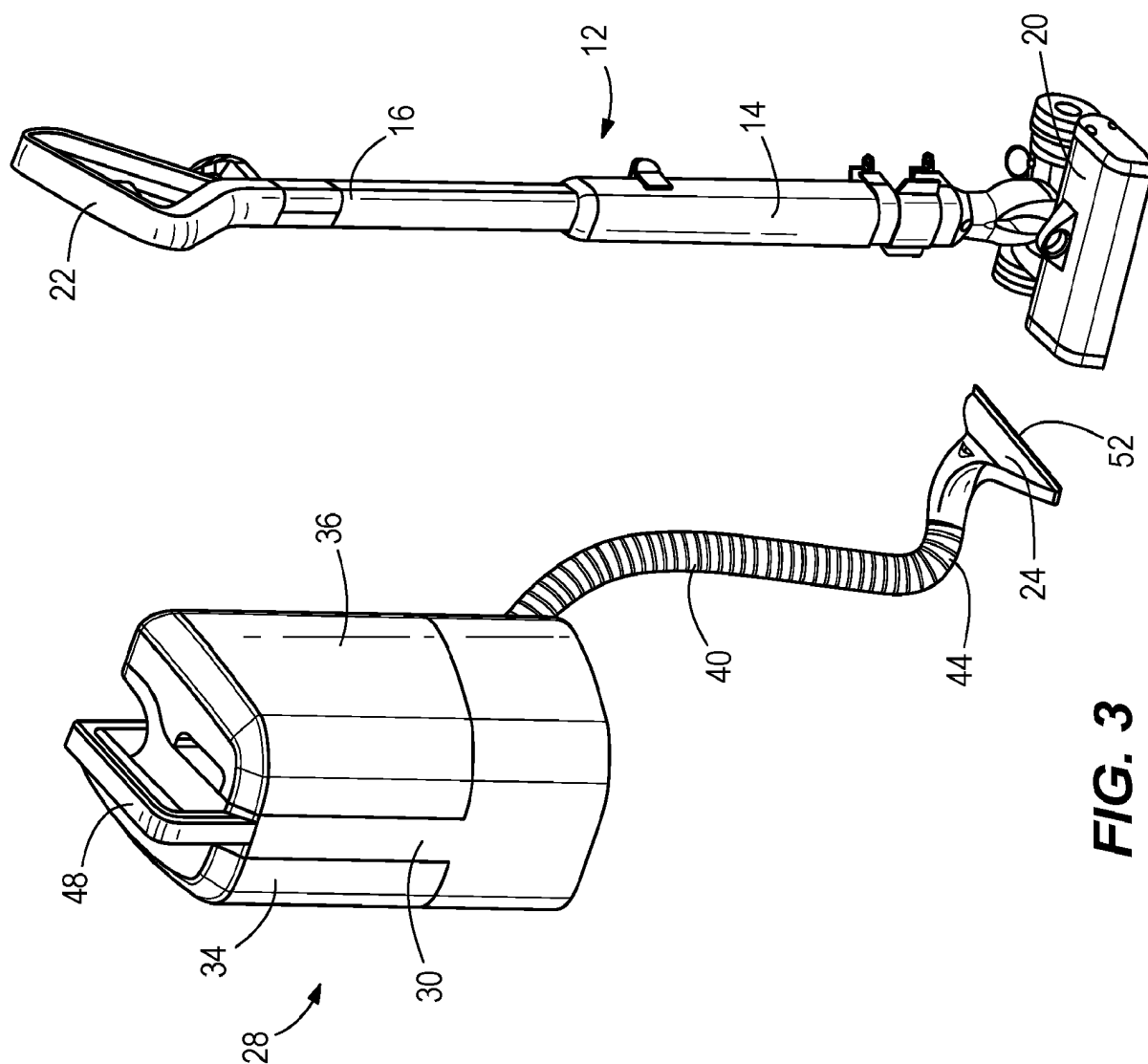


FIG. 3

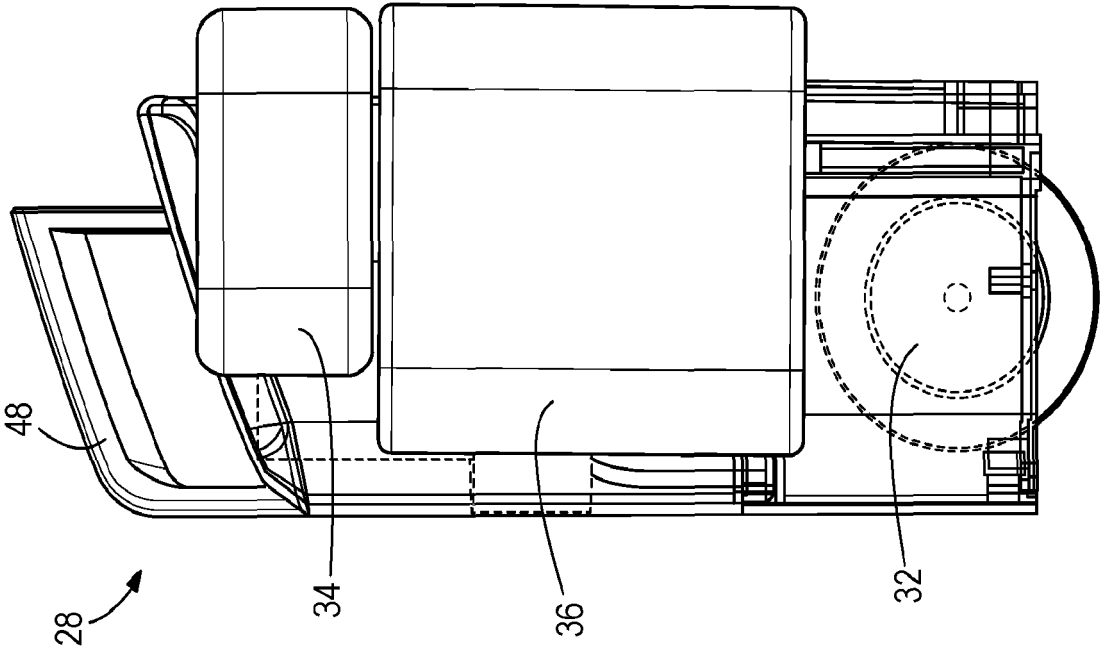


FIG. 5B

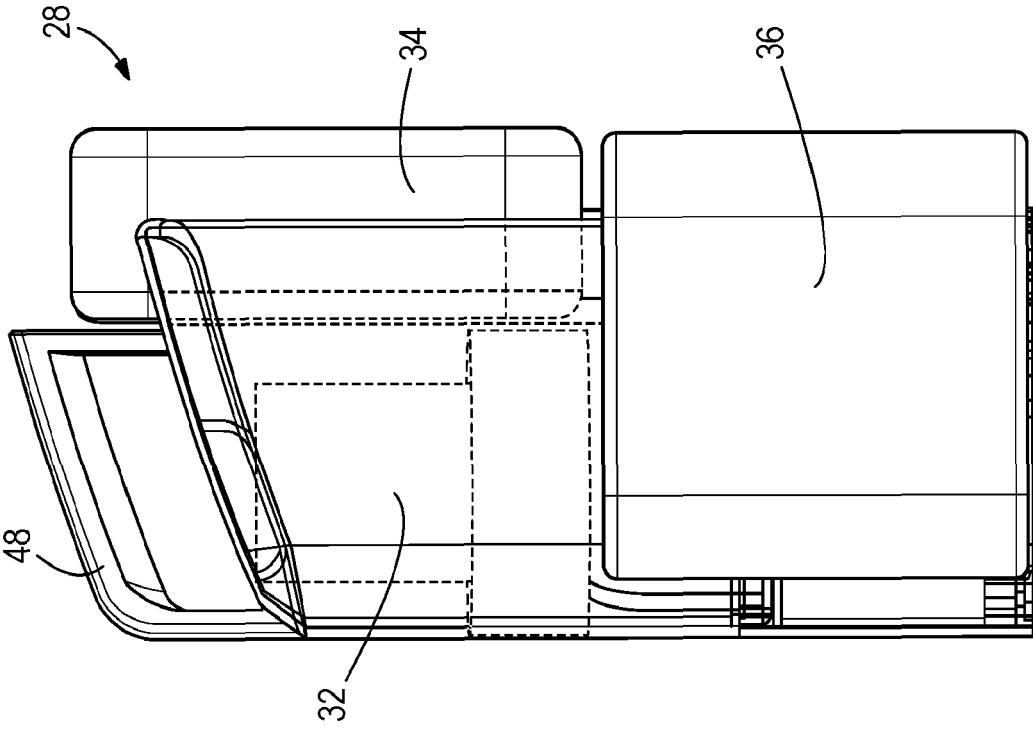
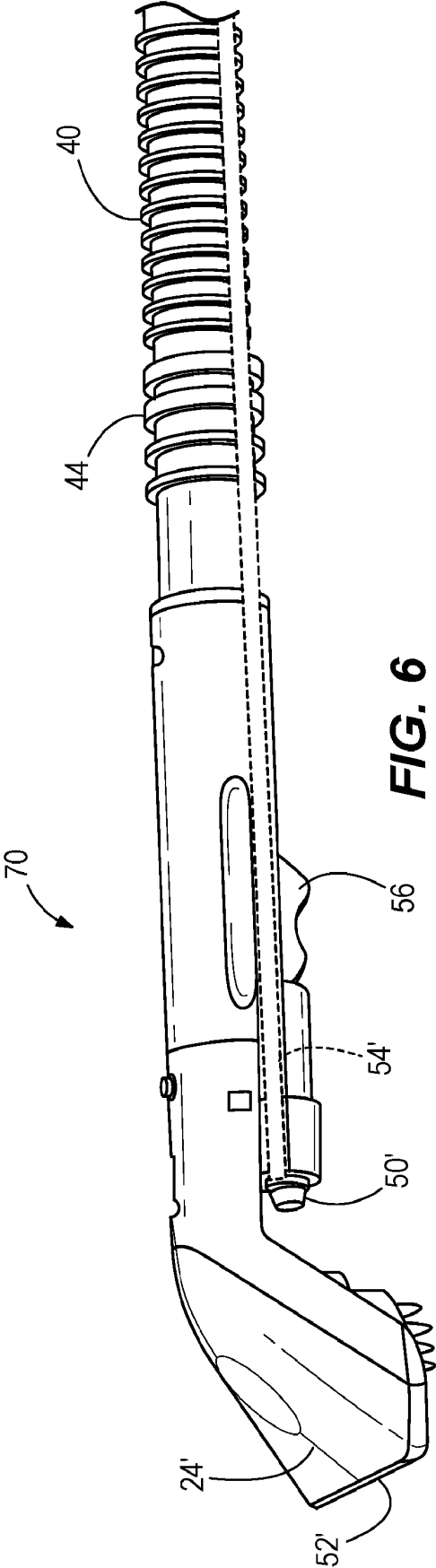
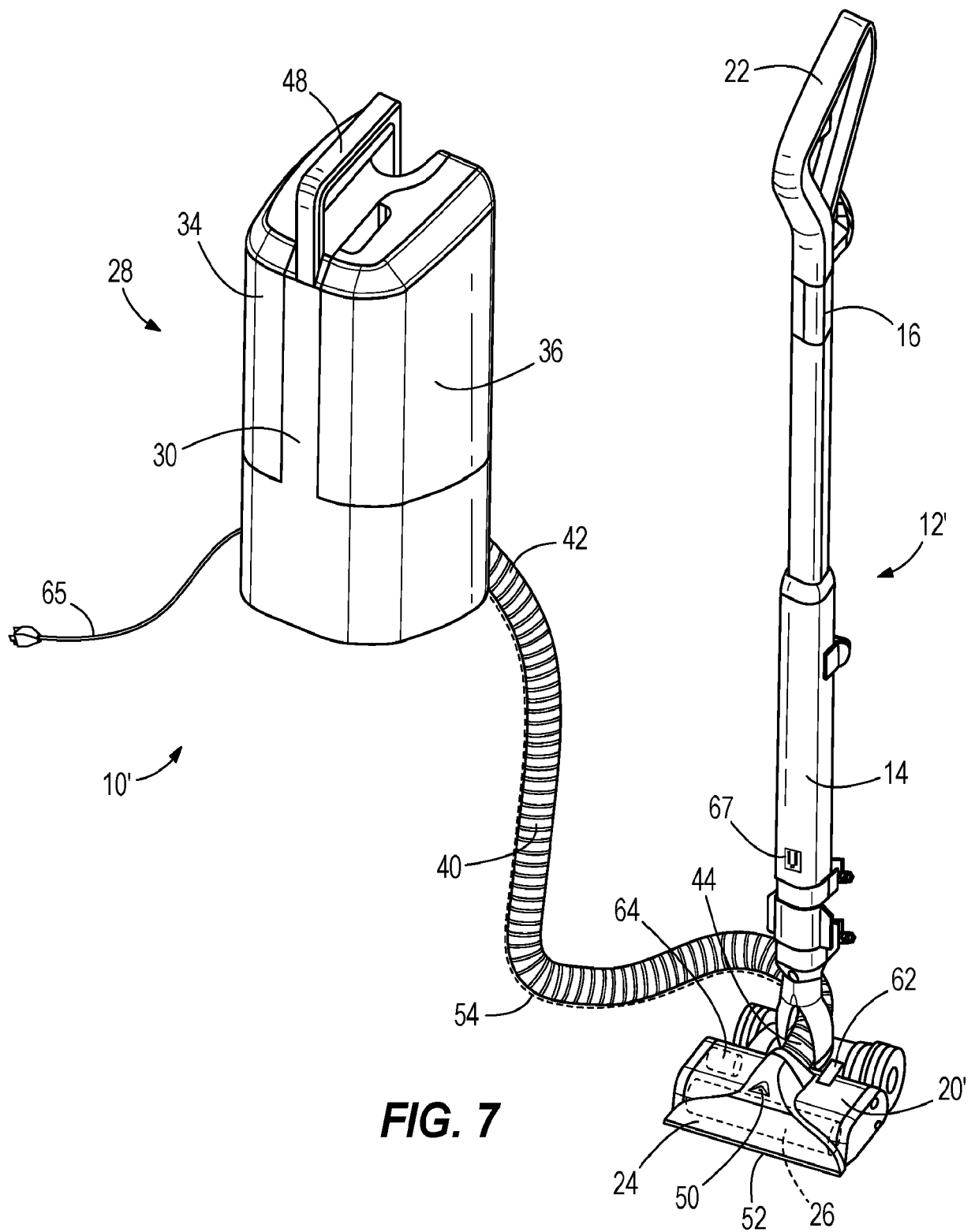


FIG. 5A





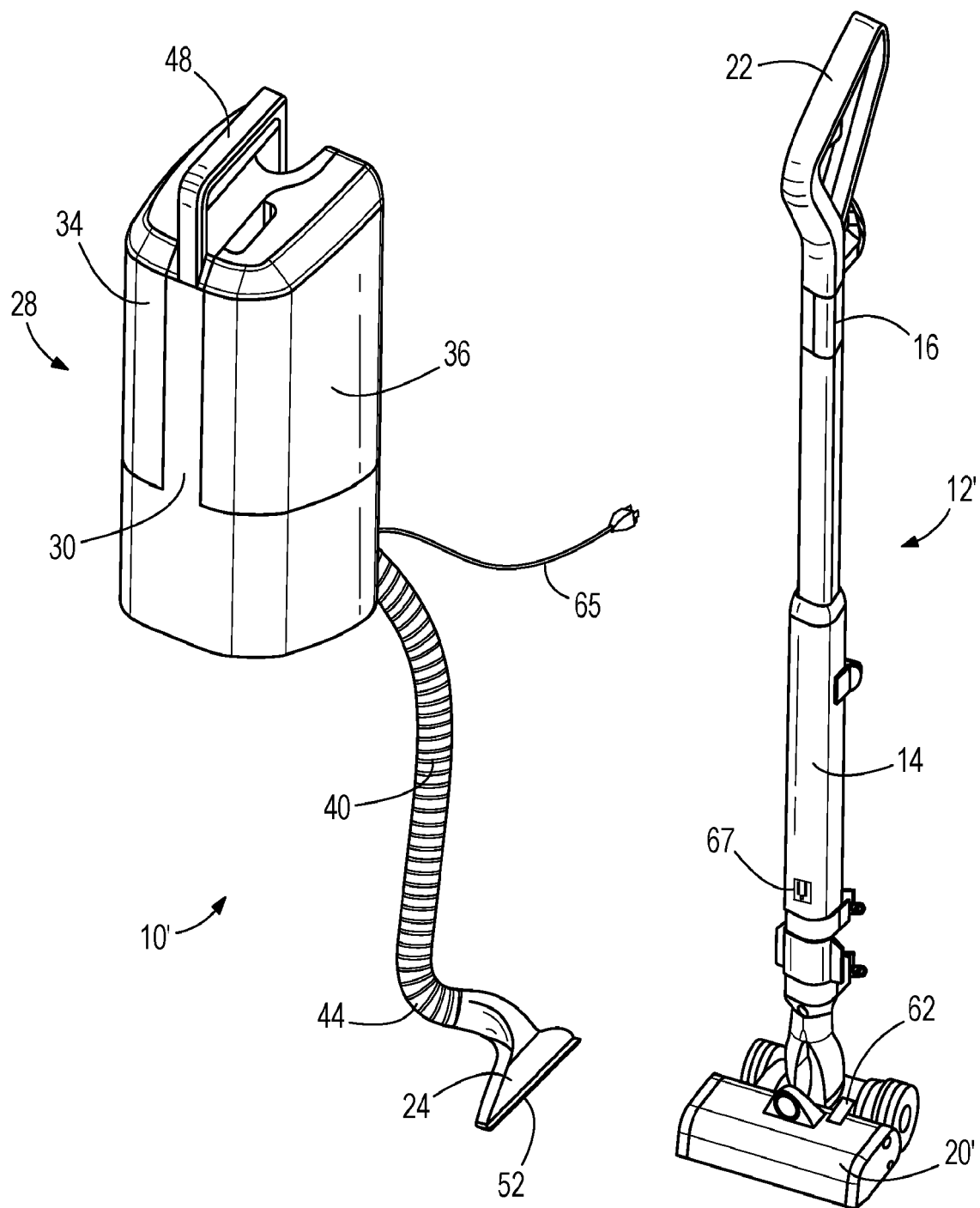


FIG. 8

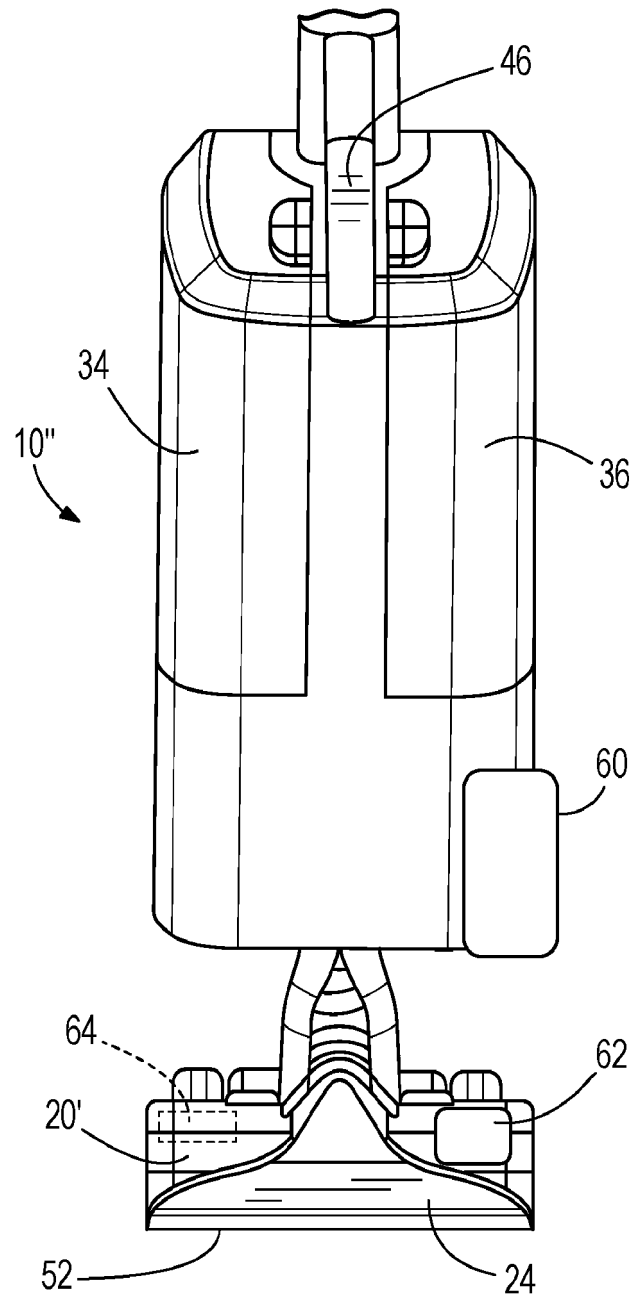
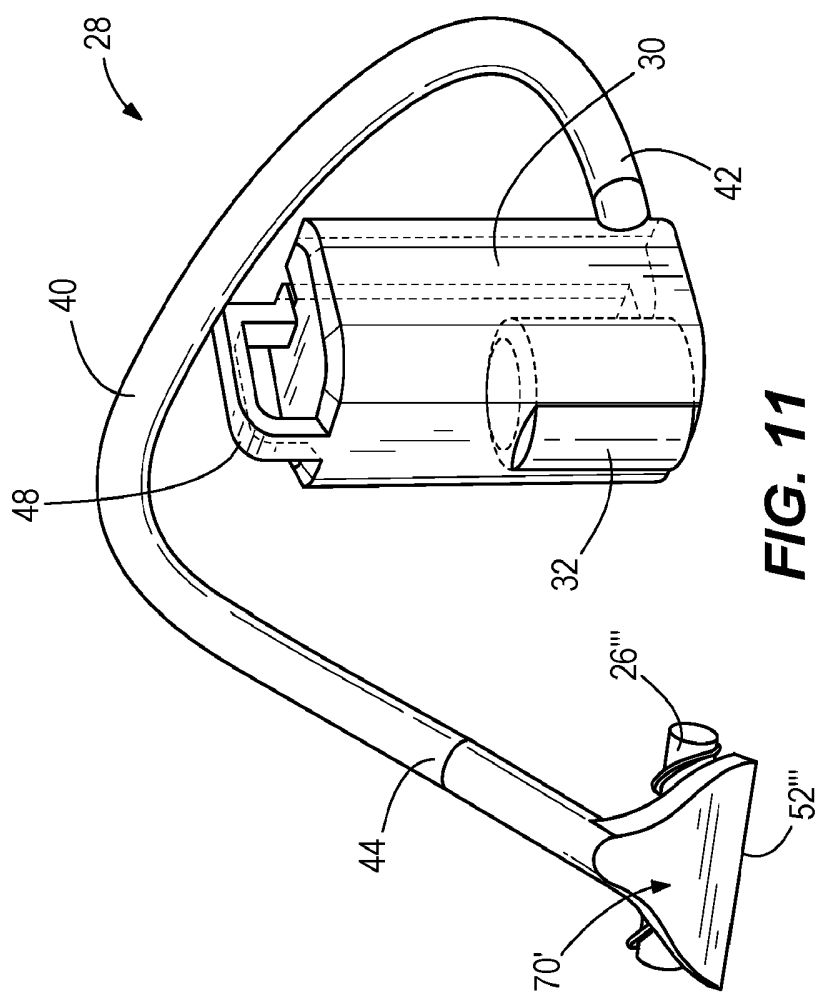
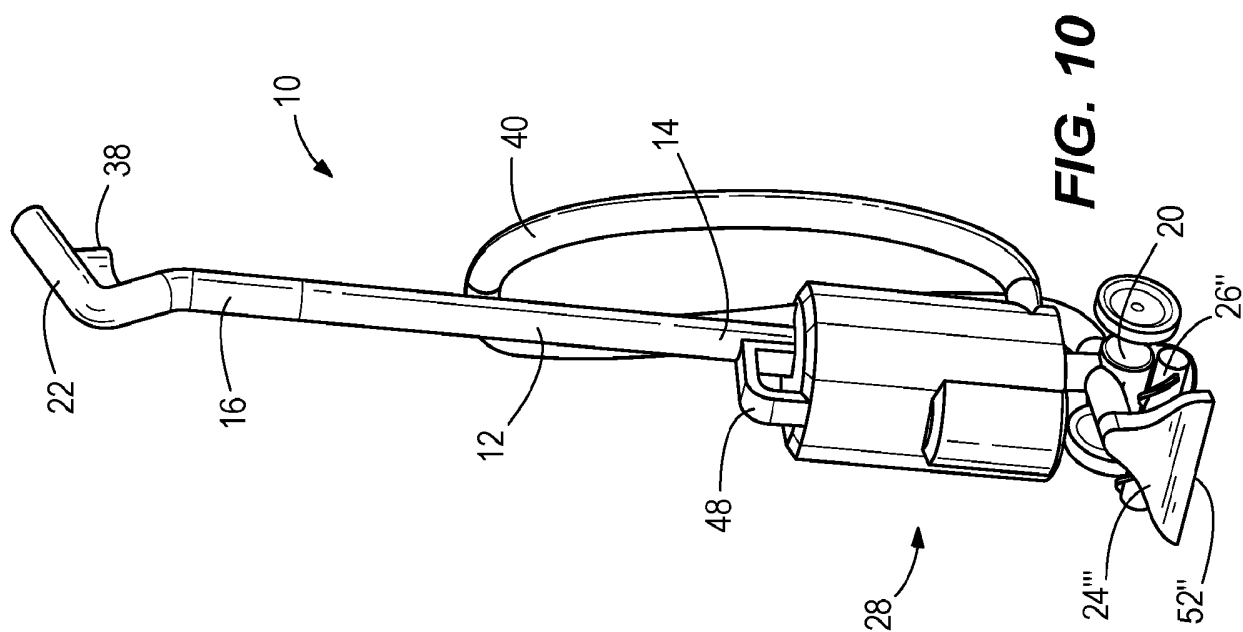


FIG. 9



REFERENCES CITED IN THE DESCRIPTION

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