

(19)



(11)

EP 4 051 076 B1

(12)

EUROPEAN PATENT SPECIFICATION

(45) Date of publication and mention of the grant of the patent:
26.02.2025 Bulletin 2025/09

(21) Application number: **20816662.9**

(22) Date of filing: **29.10.2020**

(51) International Patent Classification (IPC):
A47L 11/30 ^(2006.01)

(52) Cooperative Patent Classification (CPC):
**A47L 11/302; A47L 11/4041; A47L 11/4044;
A47L 11/4088**

(86) International application number:
PCT/US2020/057943

(87) International publication number:
WO 2021/087102 (06.05.2021 Gazette 2021/18)

(54) **SURFACE CLEANING EXTRACTOR**

OBERFLÄCHENREINIGUNGSVORRICHTUNG

EXTRACTEUR POUR NETTOYAGE 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: **31.10.2019 US 201962928689 P**

(43) Date of publication of application:
07.09.2022 Bulletin 2022/36

(73) Proprietor: **Techtronic Floor Care Technology
Limited
Tortola (VG)**

(72) Inventors:
• **QUINTERO, Juan, Aviles**
Huntersville, NC 28078 (US)
• **CLAS, Tyler**
Greer, SC 29651 (US)

(74) Representative: **Sugden, Mark William**
Withers & Rogers LLP
2 London Bridge
London SE1 9RA (GB)

(56) References cited:
CN-U- 208 510 945 US-A1- 2002 092 122
US-A1- 2008 148 512 US-A1- 2019 290 089

Note: Within nine months of the publication of the mention of the grant of the European patent in the European Patent Bulletin, any person may give notice to the European Patent Office of opposition to that patent, in accordance with the Implementing Regulations. Notice of opposition shall not be deemed to have been filed until the opposition fee has been paid. (Art. 99(1) European Patent Convention).

EP 4 051 076 B1

Description

BACKGROUND

[0001] The present invention relates to surface cleaning extractors, and more particularly to surface cleaning extractors including removable brush rolls.

[0002] CN208510945U discloses a ground cleaning machine including: a base with a suction opening, a recovery tank, a suction motor, and a roller brush at the suction opening; a handle body supporting a cleaning liquid tank and a battery pack; and an infusion conduit between the cleaning liquid tank and the roller brush comprising a first solution tube mounted on the handle body and a second solution tube mounted on the base.

SUMMARY

[0003] In one embodiment, an extractor includes a body, a recovery tank coupled to the body, and a liquid tank coupled to the body. The liquid tank is configured to hold a liquid. The extractor also includes a base pivotably coupled to the body and configured to support the body above a cleaning surface. The extractor further includes a fluid distributor coupled to the base. The fluid distributor is in fluid communication with the liquid tank and configured to dispense the liquid from the liquid tank onto the cleaning surface. The extractor further includes a brush roll removably coupled to the base and a nozzle in fluid communication with the recovery tank. The nozzle is coupled to the base to block access to the brush roll. The nozzle is moveable relative to the base and the fluid distributor allowing access to the brush roll and enabling removal of the brush roll from the base.

[0004] In another embodiment, an extractor includes a liquid tank configured to hold a liquid, a fluid distributor configured to dispense the liquid from the liquid tank onto a cleaning surface, a base supporting the fluid distributor, a brush roll coupled to the base, and a cover coupled to the base to block access to the brush roll. The cover is moveable relative to the base and the fluid distributor allowing access to the brush roll.

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

BRIEF DESCRIPTION OF THE DRAWINGS

[0006]

FIG. 1 is a perspective view of a surface cleaning extractor including a body pivotably coupled to a base.

FIG. 2 is a perspective view of the base of FIG. 1 with brush rolls removed from the base.

FIG. 3 is a top view of the base of FIG. 2.

FIG. 4 is a perspective view of brush rolls of the surface cleaning extractor of FIG. 1.

FIG. 5 is a perspective view of the base of FIG. 1 illustrating a cover removed from the base allowing access to the brush rolls.

FIG. 6 is a perspective view of the base of FIG. 1 illustrating one brush roll being partially removed or partially inserted relative to the base and another brush roll coupled to the base.

DETAILED DESCRIPTION

[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 being practiced or being carried out in various ways. Also, it is to be understood that the phraseology and terminology used herein is for the purpose of description and should not be regarded as limiting. Terms of degree, such as "substantially," "about," "approximately," etc. are understood by those of ordinary skill to refer to reasonable ranges outside of the given value, for example, general tolerances associated with manufacturing, assembly, and use of the described embodiments.

[0008] A surface cleaning extractor 10 (e.g., an upright-style carpet extractor) is illustrated in FIG. 1 positioned on a cleaning surface 15 and includes a body 20 having a suction motor 25 pivotably coupled to a base 30 between an upright or storage position (FIG. 1) and an inclined or operable position (not shown). The base 30 includes a fluid distributor 175 (FIG. 2) configured to dispense liquid onto the surface 15 to be cleaned and at least a first brush roll 65a operably disposed in the base 30. The first brush roll 65a is removable from the base 30 through a top 75 of the base 30 adjacent the fluid distributor 175. In other embodiments, the extractor 10 can be a portable handheld extractor or accessory, an upright-style vacuum cleaner with fluid distribution, a canister-style cleaner with fluid distribution, a power sweeper with fluid distribution, a hard floor cleaner, etc. For example, the base 30 can be a handheld auxiliary attachment to the extractor 10. The illustrated body 20 includes a handle 35 operable by a user to push the extractor 10 in a forward direction 40 or pull the extractor 10 in a rearward direction 45. A liquid tank 50 is selectively coupled to the body 20 or the base 30 in communication with the fluid distributor 175 and holds a cleaning liquid (e.g., a mixture of water and cleaning solution). Also, a recovery tank 55 is selectively coupled to the body 20 or the base 30 and holds debris and dirty liquid collected by the extractor 10 from the cleaning surface 15 during operation.

[0009] With reference to FIGS. 1 and 2, the base 30

includes a head 60 supporting the first brush roll 65a and a second brush roll 65b. The head 60 includes a bottom 70 that faces the cleaning surface 15 and the top 75 opposite the bottom 70. The head 60 also includes a first side wall 80, a second side wall 85 (FIG. 3) opposite the first side wall 80, and a lateral wall 90 extending between the first and second side walls 80, 85. In addition, the walls 80, 85, 90 extend between the bottom 70 and the top 75 of the head 60. Drive protrusions 95a, 95b are located on the first side wall 80 and are driven by an electric motor (not shown) coupled to the base 30. With reference to FIG. 3, supports 100a, 100b are located on the second side wall 85 each positioned opposite a corresponding drive protrusion 95a, 95b. The drive protrusions 95a, 95b and the supports 100a, 100b are operable to support the first and second brush rolls 65a, 65b to the base 30, as discussed in more detail below. The first and second side walls 80, 85 and the lateral wall 90 define a cavity 105 of the base 30. The illustrated base 30 also includes a front opening 110 opposite the lateral wall 90. In other embodiments, the front opening 110 can be replaced by a wall extending between the first and second side walls 80, 85 opposite the lateral wall 90. In addition, the base 30 includes wheels (only one wheel 115 is shown in FIG. 1) that engage the cleaning surface 15 (e.g., carpet, hard wood floor, etc.) and enable movement of the extractor 10 in either the forward direction 40 or the rearward direction 45.

[0010] With continued reference to FIGS. 1 and 2, the base 30 also includes a cover 120 (e.g., a transparent cover) selectively coupled to the base 30 to cover the top 75 of the base 30 that defines a portion of the cavity 105 and the front opening 110. The cover 120 includes a nozzle 125 in fluid communication with the recovery tank 55 by a passageway at least defined by an inlet 130 coupled to the top 75 of the head 60 and a flexible conduit 135 extending between the inlet 130 and the body 20. With references to FIG. 5, the nozzle 125 includes a nozzle passageway 136 formed between an upper wall 137 of the nozzle 125 and a lower wall 138 of the nozzle 125. The nozzle passageway 136 extends from a nozzle inlet 139 to a nozzle outlet 141. A latch 140 of the cover 120 engages the inlet 130 to secure the cover 120 to the base 30 with the nozzle outlet 141 in communication with the inlet 130. In the illustrated embodiment, the cover 120 is completely disconnected from the base 30 by releasing the latch 140 from the inlet 130 (FIG. 5). In other embodiments, the cover 120 can remain coupled to the base 30 and moveable (e.g., pivotable) between a closed or secured position and an open position.

[0011] With reference to FIG. 4, each brush roll 65a, 65b includes deformable brush members 145a, 145b (e.g., bristles) coupled to a brush roll body 150a, 150b with each brush roll body 150a, 150b having a recess 155a, 155b at one end operable to drivingly engage the corresponding drive protrusions 95a, 95b, a base mount 160a, 160b at the other end, and a longitudinal axis 165a, 165b extending between the recess 155a, 155b and the

base mount 160a, 160b. Each base mount 160a, 160b is configured to releasably couple with corresponding supports 100a, 100b. Each brush roll body 150a, 150b includes a maximum dimension 170 measured perpendicular to its respective longitudinal axis 165a, 165b. A bearing is positioned between each base mount 160a, 160b and the corresponding brush roll body 150a, 150b enabling the brush roll body 150a, 150b to rotate about its longitudinal axis 165a, 165b relative to the corresponding base mount 160a, 160b and supports 100a, 100b. In other embodiments, the drive protrusions 95a, 95b can be coupled to the first and second brush rolls 65a, 65b and the corresponding recesses 155a, 155b can be formed within the first side wall 80 of the base 30. In further embodiments, various base mounts 160a, 160b can be provided to couple the bearings and the supports 100a, 100b to install the brush rolls 65a, 65b.

[0012] As shown in FIGS. 2 and 3, the fluid distributor 175 is positioned within the cavity 105 and extends between the first and second side walls 80, 85 of the head 60. The fluid distributor 175 is spaced from the lateral wall 90 by a first dimension 180 measured parallel to the forward and rearward directions 40, 45. In the illustrated embodiment, the fluid distributor 175 is fixedly coupled to the head 60 and is in fluid communication with the liquid tank 50 to dispense the liquid within the liquid tank 50 onto the cleaning surface 15. In other embodiments, the fluid distributor 175 is removable from the base 30. In one embodiment, a pressurized liquid delivery system is coupled to the liquid tank 50 and the fluid distributor 175 to dispense liquid through at least one nozzle of the fluid distributor 175 at a determined pressure. In other embodiments, a gravity-feed liquid delivery system is coupled to the liquid tank 50 and the fluid distributor 175 to dispense liquid through the fluid distributor 175 due to gravity. In further embodiments, the fluid distributor 175 can be positioned in the front opening 110 (e.g., in front of the second brush roll 65b) or coupled to the lateral wall 90 (e.g., behind the first brush roll 65a). In further embodiments, the base 30 can include more than one fluid distributor 175.

[0013] With reference to FIGS. 5 and 6, the brush rolls 65a, 65b are independently removable from the base 30 to facilitate cleaning of the brush rolls 65a, 65b. In particular, the cover 120 is disconnected from the base 30 by actuating the latch 140 from the inlet 130 (FIG. 5). In other words, the cover 120 moves relative to the base 30 and the fluid distributor 175 allowing physical access to the brush rolls 65a, 65b while the base 30 is supported on the cleaning surface 15. For example, once the cover 120 is opened or removed, which also fluidly decouples the nozzle outlet 141 from the conduit 135, the user is able to touch the brush rolls 65a, 65b to inspect the brush rolls 65a, 65b and/or remove the brush rolls 65a, 65b from the base 30. As such, the cover 120 is movable relative to the base 30 to open the top 75 of the base 30 allowing removal of the brush rolls 65a, 65b from the base 30 through the top 75 of the base 30 adjacent the fluid

distributor 175. As shown in FIG. 6, the first brush roll 65a is positioned between the fluid distributor 175 and the lateral wall 90 such that the first brush roll 65a moves past the fluid distributor 175 in an upward vertical direction 185 as the first brush roll 65a is removed from the base 30. The vertical direction 185 is perpendicular to the forward and rearward directions 40, 45. In other embodiments, the vertical direction 185 can be obliquely oriented relative to the directions 40, 45. In one embodiment, an intermediate cover is provided between the cover 120 and the brush roll 65a, 65b that is accessible and openable or removable when the cover 120 is disconnected. Also, the fluid distributor 175 is positioned on the base 30 as to not impede removal of the brush rolls 65a, 65b. Accordingly, the cover 120 and the fluid distributor 175 allow for easy access, removal, and cleaning of the brush rolls 65a, 65b while the extractor 10 is in the upright position (FIG. 1).

[0014] Once the brush rolls 65a, 65b are removed and cleaned, the brush rolls 65a, 65b are independently coupled to the base 30. In particular, when the cover 120 is removed from the base 30, the first brush roll 65a is insertable into the cavity 105 between the fluid distributor 175 and the lateral wall 90 in a downward vertical direction 190 from the top 75 to the bottom 70 of the base 30. The downward vertical direction 190 is opposite the upward direction 185. In other embodiments, the downward vertical direction 190 can be obliquely oriented relative to the forward and rearward directions 40, 45. The first dimension 180 of the base 30 is greater than the maximum dimension 170 of the first brush roll 65a allowing the first brush roll 65a to be inserted between the lateral wall 90 and the fluid distributor 175. In some embodiments, the first deformable brush members 145a can include a dimension greater than the first dimension 180 of the base 30 causing the first deformable brush members 145a to contact the lateral wall 90 and/or the fluid distributor 175 and deform while the first brush roll 65a is inserted into the cavity 105. In the illustrated embodiment, the first recess 155a receives the first drive protrusion 95a to provide a pivot point for the first brush roll 65a to then pivot the first base mount 160a into engagement with the first support 100a. The engagement between the first base mount 160a and the first support 100a can be a snap fit engagement, or the like, to hold the first brush roll 65a to the base 30. Accordingly, the first drive protrusion 95a is operable to drive the first brush roll 65a about a first rotational axis concentric with its longitudinal axis 165a while the first support 100a and the first base mount 160a support rotational movement of the first brush roll 65a.

[0015] The second brush roll 65b can be coupled to the base 30 in a similar manner as the first brush roll 65a. When the cover 120 is removed from the base 30, the second brush roll 65b is inserted into the cavity 105 between the fluid distributor 175 and the front opening 110 in the downward direction 190. The second brush roll 65b can also be coupled to the base 30 by inserting the second brush roll 65b through the front opening 110 in a

rearward horizontal direction 195 perpendicular to the downward direction 190 (e.g., parallel to the rearward direction 45). In other embodiments, the second brush roll 65b can be inserted into the cavity 105 at any angle between the downward direction 190 and the horizontal direction 195. In the illustrated embodiment, the second recess 155b receives the second drive protrusion 95b to provide a pivot point for the second brush roll 65b to then pivot the second base mount 160b into engagement with the second support 100b. The engagement between the second base mount 160b and the second support 100b can be a snap fit engagement, or the like, to hold the second brush roll 65b to the base 30. Accordingly, the second drive protrusion 95b is operable to drive the second brush roll 65b about a second rotational axis concentric with its longitudinal axis 165b while the second support 100b and the second base mount 160b support rotational movement of the second brush roll 65b. In one embodiment, the steps to couple the first and second brush rolls 65a, 65b to the base 30 are reversed to remove the first and second brush rolls 65a, 65b from the base 30.

[0016] With reference back to FIG. 1, the cover 120 is coupled to the base 30 by actuating the latch 140 on the inlet 130, thus blocking access to the brush rolls 65a, 65b as the base 30 is supported on the surface 15. In the embodiments where the fluid distributor 175 is releasable from the base 30, the fluid distributor 175 is manually coupled to the base 30 by the user before the cover 120 is coupled to the base 30. In other embodiments, the fluid distributor 175 is coupled to the base 30 in response to the cover 120 being coupled to the base 30. Once the cover 120 is coupled to the base 30, the extractor 10 is operable to collect debris from the cleaning surface 15. In particular, the suction motor 25 provides an airflow from the nozzle inlet 139 through the nozzle passageway 136 and the conduit 135 to the recovery tank 55 to draw debris into the recovery tank 55. The brush rolls 65a, 65b are driven about their rotational axes 165a, 165b to agitate the cleaning surface 15 to loosen debris that is attached to or embedded in the cleaning surface 15 allowing the airflow to more easily collect the debris. The cleaning liquid within the liquid tank 50 is selectively applied to the cleaning surface 15 by the fluid distributor 175 to help further loosen the debris and clean the surface 15. The fluid distributor 175 is positioned between the brush rolls 65a, 65b such that the cleaning liquid is dispensed between the brush rolls 65a, 65b. In addition, the fluid distributor 175 is positioned above the rotational axes 165a, 165b of the brush rolls 65a, 65b in the upward direction 185, thus in some embodiments, some of the cleaning liquid is dispensed directly onto the brush rolls 65a, 65b (e.g., to help clean the brush rolls 65a, 65b during operation).

Claims**1.** An extractor (10) comprising:

a body (20);
 a recovery tank (55) coupled to the body (20);
 a liquid tank (50) coupled to the body (20), the liquid tank (50) configured to hold a liquid;
 a base (30) pivotably coupled to the body (20) and configured to support the body (20) above a cleaning surface, the base (30) configured to be moved in a forward direction and a rearward direction along the cleaning surface, the base (30) including:

a first side wall (80) extending along the forward direction,

a second side wall (85) opposite the first side wall (80), the second side wall (85) extending along the forward direction, and
 a lateral wall (90) extending between the first side wall (80) and the second side wall (85);

a fluid distributor (175) coupled to the base (30) and spaced from the lateral wall (90) in the forward direction, the fluid distributor (175) in fluid communication with the liquid tank (50) and configured to dispense the liquid from the liquid tank (50) onto the cleaning surface;

a brush roll (65a, 65b) removably coupled to the base (30) and insertable into a cavity (105) between the fluid distributor (175), the first side wall (80), the second side wall (85), and the lateral wall (90) in a downward vertical direction (190); and

a nozzle (125) in fluid communication with the recovery tank (55), the nozzle (125) coupled to the base (30) to block access to the brush roll (65a, 65b), the nozzle (125) moveable relative to the base (30) and the fluid distributor (175) allowing access to the brush roll (65a, 65b) and enabling removal of the brush roll (65a, 65b) from the base (30) while the fluid distributor (175) is coupled to the base (30).

2. The extractor (10) of claim 1, wherein the fluid distributor (175) is fixed to the base (30).

3. The extractor (10) of claim 1, wherein the fluid distributor (175) is releasably coupled to the base (30).

4. The extractor (10) of claim 3, wherein the fluid distributor (175) is releasable from the base (30) as the nozzle (125) moves relative to the base (30).

5. The extractor (10) according to any of the preceding

claims, wherein the nozzle (125) disconnects from the base (30) allowing access to the brush roll (65a, 65b).

6. The extractor (10) according to any of the preceding claims, wherein the nozzle (125) is movable relative to the base (30) to open a top (75) of the base (30), and wherein the brush roll (65a, 65b) is removable from the base (30) through the top (75) of the base (30).

7. The extractor (10) of claim 6, wherein the brush roll (65a, 65b) is positioned between the fluid distributor (175) and a portion of the base (30) such that the brush roll (65a, 65b) moves past the fluid distributor (175) as the brush roll (65a, 65b) is removed from the base (30).

8. The extractor (10) of claim 1, wherein the base (30) includes a top (75) opposite a bottom (70), wherein the bottom (70) is configured to face the cleaning surface, and wherein the brush roll (65a, 65b) is coupled to the base (30) by inserting the brush roll (65a, 65b) into the cavity (105) in a direction from the top (75) toward the bottom (70).

9. The extractor (10) of claim 8, wherein the brush roll (65a, 65b) is driven about a rotational axis and includes a plurality of deformable brush members (145a, 145b) coupled to a brush roll body (150a, 150b), wherein a first dimension (180) is measured in a direction perpendicular to the rotational axis between the lateral wall (90) and the fluid distributor (175), and wherein the first dimension (180) is greater than a maximum dimension (170) of the brush roll body (150a, 150b) measured parallel to the first dimension (180).

10. The extractor (10) according to any of the preceding claims, wherein the brush roll (65a, 65b) is driven about a rotational axis, and wherein the brush roll (65a, 65b) is coupled to the base (30) for the rotational axis to be positioned behind the fluid distributor (175) in a forward direction of travel of the extractor (10).

11. The extractor (10) of claim 10, wherein the brush roll (65a, 65b) is a first brush roll (65a) and the rotational axis is a first rotational axis, wherein the extractor (10) includes a second brush roll (65b) removably coupled to the base (30), wherein the second brush roll (65b) is driven about a second rotational axis, and wherein the second brush roll (65b) is coupled to the base (30) for the second rotational axis to be positioned forward of the fluid distributor (175) in the forward direction of travel of the extractor (10).

12. The extractor (10) of claim 11, wherein the base (30)

includes a top (75) opposite a bottom (70), wherein the bottom (70) is configured to face the cleaning surface, wherein the first brush roll (65a) is coupled to the base (30) by inserting the first brush roll (65a) in a vertical direction (190) from the top (75) toward the bottom (70), wherein the base (30) includes a front opening (110), and wherein the second brush roll (65b) is coupled to the base (30) by inserting the second brush roll (65b) in the vertical direction (190) or a horizontal direction (195) perpendicular to the vertical direction (190) through the front opening (110).

Patentansprüche

1. Extraktor (10), umfassend:

einen Körper (20),
einen Rückgewinnungstank (55), der an den Körper (20) gekoppelt ist,
einen Flüssigkeitstank (50), der an den Körper (20) gekoppelt ist, wobei der Flüssigkeitstank (50) zum Halten einer Flüssigkeit ausgestaltet ist,
eine Basis (30), die schwenkbar an den Körper (20) gekoppelt und dazu ausgestaltet ist, den Körper (20) über einer Reinigungsfläche zu stützen, wobei die Basis (30) dazu ausgestaltet ist, in einer Vorwärtsrichtung und einer Rückwärtsrichtung entlang der Reinigungsfläche bewegt zu werden, wobei die Basis (30) Folgendes aufweist:

eine erste Seitenwand (80), die sich entlang der Vorwärtsrichtung erstreckt,
eine zweite Seitenwand (85) gegenüber der ersten Seitenwand (80), wobei sich die zweite Seitenwand (85) entlang der Vorwärtsrichtung erstreckt, und
eine seitliche Wand (90), die sich zwischen der ersten Seitenwand (80) und der zweiten Seitenwand (85) erstreckt,
einen Fluidverteiler (175), der an die Basis (30) gekoppelt und in der Vorwärtsrichtung von der seitlichen Wand (90) beabstandet ist, wobei der Fluidverteiler (175) in Fluidverbindung mit dem Flüssigkeitstank (50) steht und dazu ausgestaltet ist, die Flüssigkeit aus dem Flüssigkeitstank (50) auf die Reinigungsoberfläche abzugeben,
eine Bürstenwalze (65a, 65b), die abnehmbar an die Basis (30) gekoppelt und in einen Hohlraum (105) zwischen dem Fluidverteiler (175), der ersten Seitenwand (80), der zweiten Seitenwand (85) und der seitlichen Wand (90) in einer vertikalen Abwärtsrichtung (190) einsetzbar ist, und

eine Düse (125) in Fluidverbindung mit dem Rückgewinnungstank (55), wobei die Düse (125) an die Basis (30) gekoppelt ist, um den Zugang zu der Bürstenwalze (65a, 65b) zu blockieren, wobei die Düse (125) bezüglich der Basis (30) und dem Fluidverteiler (175) beweglich ist, um den Zugang zu der Bürstenwalze (65a, 65b) zu gestatten und das Entfernen der Bürstenwalze (65a, 65b) von der Basis (30) zu ermöglichen, während der Fluidverteiler (175) an die Basis (30) gekoppelt ist.

2. Extraktor (10) nach Anspruch 1, wobei der Fluidverteiler (175) an der Basis (30) befestigt ist.
3. Extraktor (10) nach Anspruch 1, wobei der Fluidverteiler (175) lösbar an die Basis (30) gekoppelt ist.
4. Extraktor (10) nach Anspruch 3, wobei der Fluidverteiler (175) von der Basis (30) lösbar ist, wenn sich die Düse (125) bezüglich der Basis (30) bewegt.
5. Extraktor (10) nach einem der vorhergehenden Ansprüche, wobei sich die Düse (125) von der Basis (30) trennt, was Zugang zu der Bürstenwalze (65a, 65b) gestattet.
6. Extraktor (10) nach einem der vorhergehenden Ansprüche, wobei die Düse (125) bezüglich der Basis (30) beweglich ist, um eine Oberseite (75) der Basis (30) zu öffnen, und wobei die Bürstenwalze (65a, 65b) durch die Oberseite (75) der Basis (30) von der Basis (30) entfernbar ist.
7. Extraktor (10) nach Anspruch 6, wobei die Bürstenwalze (65a, 65b) zwischen dem Fluidverteiler (175) und einem Abschnitt der Basis (30) positioniert ist, so dass sich die Bürstenwalze (65a, 65b) an dem Fluidverteiler (175) vorbei bewegt, wenn die Bürstenwalze (65a, 65b) von der Basis (30) entfernt wird.
8. Extraktor (10) nach Anspruch 1, wobei die Basis (30) eine Oberseite (75) gegenüber einer Unterseite (70) aufweist, wobei die Unterseite (70) dazu ausgestaltet ist, der Reinigungsfläche zugewandt zu sein, und wobei die Bürstenwalze (65a, 65b) durch Einführen der Bürstenwalze (65a, 65b) in den Hohlraum (105) in einer von der Oberseite (75) zu der Unterseite (70) hin gehenden Richtung an die Basis (30) gekoppelt wird.
9. Extraktor (10) nach Anspruch 8, wobei die Bürstenwalze (65a, 65b) um eine Drehachse angetrieben wird und eine Vielzahl von verformbaren Bürstengliedern (145a, 145b) aufweist, die an einen Bürstenwalzenkörper (150a, 150b) gekoppelt sind, wobei eine erste Abmessung (180) in einer senkrecht zu

der Drehachse zwischen der seitlichen Wand (90) und dem Fluidverteiler (175) verlaufenden Richtung gemessen wird, und wobei die erste Abmessung (180) größer als eine parallel zu der ersten Abmessung (180) gemessene maximale Abmessung (170) des Bürstenwalzenkörpers (150a, 150b) ist.

10. Extraktor (10) nach einem der vorhergehenden Ansprüche, wobei die Bürstenwalze (65a, 65b) um eine Drehachse angetrieben ist und wobei die Bürstenwalze (65a, 65b) zur Positionierung der Drehachse hinter dem Fluidverteiler (175) in einer Vorwärtsbewegungsrichtung des Extraktors (10) an die Basis (30) gekoppelt ist.
11. Extraktor (10) nach Anspruch 10, wobei die Bürstenwalze (65a, 65b) eine erste Bürstenwalze (65a) ist und die Drehachse eine erste Drehachse ist, wobei der Extraktor (10) eine zweite Bürstenwalze (65b) aufweist, die entfernbar an die Basis (30) gekoppelt ist, wobei die zweite Bürstenwalze (65b) um eine zweite Drehachse angetrieben wird und wobei die zweite Bürstenwalze (65b) zur Positionierung der zweiten Drehachse in der Vorwärtsbewegungsrichtung des Extraktors (10) vor dem Fluidverteiler (175) an die Basis (30) gekoppelt ist.
12. Extraktor (10) nach Anspruch 11, wobei die Basis (30) eine Oberseite (75) gegenüber einer Unterseite (70) aufweist, wobei die Unterseite (70) dazu ausgestaltet ist, der Reinigungsfläche zugewandt zu sein, wobei die erste Bürstenwalze (65a) durch Einführen der ersten Bürstenwalze (65a) in einer vertikalen Richtung (190) von der Oberseite (75) zu der Unterseite (70) hin an die Basis (30) gekoppelt wird, wobei die Basis (30) eine vordere Öffnung (110) aufweist und wobei die zweite Bürstenwalze (65b) durch Einführen der zweiten Bürstenwalze (65b) in der vertikalen Richtung (190) oder einer senkrecht zu der vertikalen Richtung (190) verlaufenden horizontalen Richtung (195) durch die vordere Öffnung (110) an die Basis (30) gekoppelt wird.

Revendications

1. Extracteur (10), comprenant:

un corps (20) ;
un réservoir de récupération (55) couplé au corps (20) ; un réservoir de liquide (50) couplé au corps (20), le réservoir de liquide (50) étant configuré pour contenir un liquide ;
une base (30) couplée de façon pivotante au corps (20) et configurée pour supporter le corps (20) au-dessus d'une surface de nettoyage, la base (30) étant configurée pour être mue dans une direction avant et une direction arrière le

long de la surface de nettoyage, la base (30) incluant :

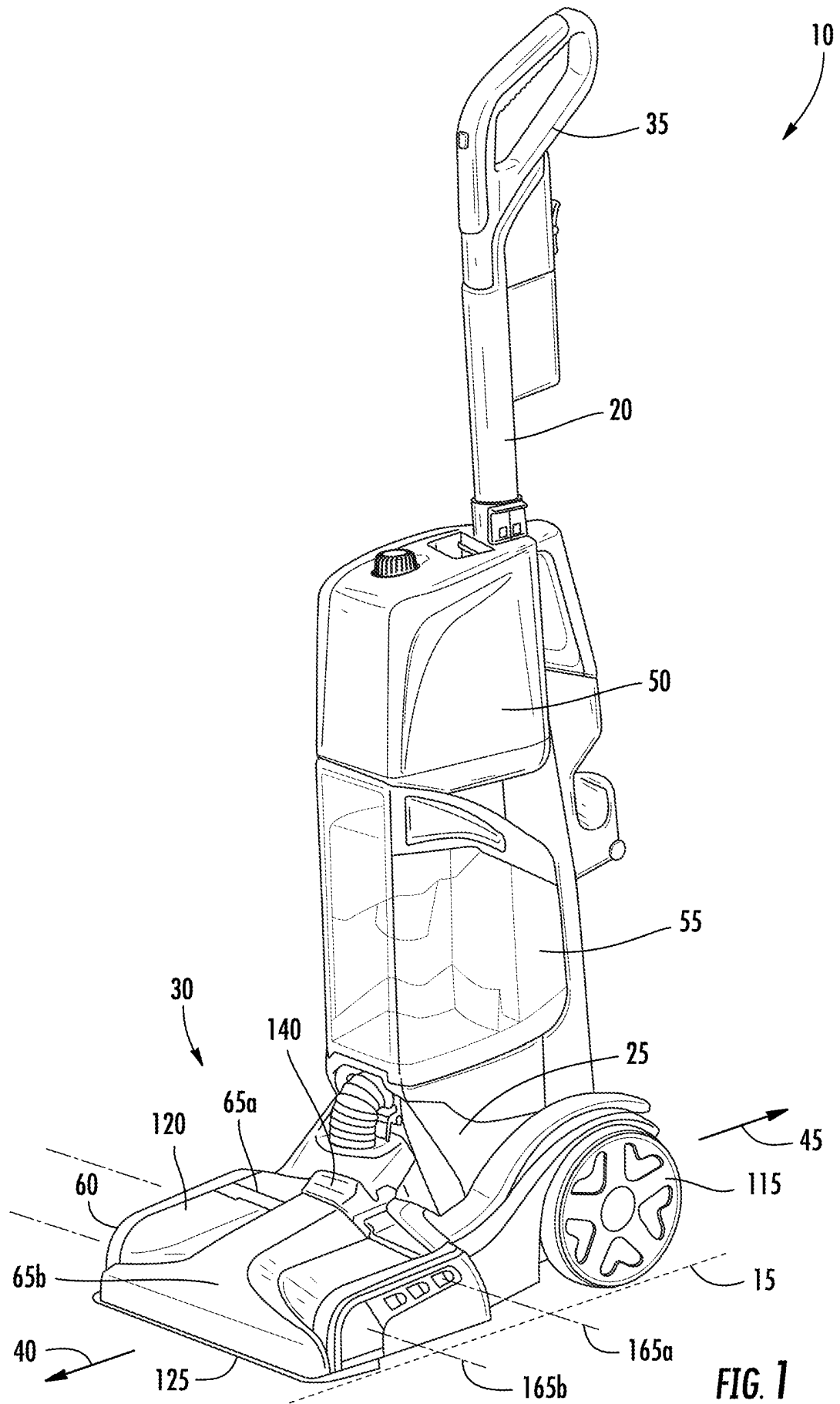
une première paroi de côté (80) s'étendant le long de la direction avant,
une seconde paroi de côté (85) opposée à la première paroi de côté (80), la seconde paroi de côté (85) s'étendant le long de la direction avant, et
une paroi latérale (90) s'étendant entre la première paroi de côté (80) et la seconde paroi de côté (85) ;
un distributeur de fluide (175) couplé à la base (30) et espacé de la paroi latérale (90) dans la direction avant, le distributeur de fluide (175) étant en communication fluide avec le réservoir de liquide (50) et configuré pour distribuer le liquide, depuis le réservoir de liquide (50), sur la surface de nettoyage ;
un rouleau à brosse (65a, 65b) couplé, de façon enlevable, à la base (30) et insérable dans une cavité (105) entre le distributeur de fluide (175), la première paroi de côté (80), la seconde paroi de côté (85), et la paroi latérale (90) dans une direction verticale descendante (190) ; et
un suceur (125) en communication fluide avec le réservoir de récupération (55), le suceur (125) étant couplé à la base (30) pour bloquer l'accès au rouleau à brosse (65a, 65b), le suceur (125) étant mobile relativement à la base (30) et au distributeur de fluide (175), permettant l'accès au rouleau à brosse (65a, 65b) et permettant l'enlèvement du rouleau à brosse (65a, 65b), de la base (30), alors que le distributeur de fluide (175) est couplé à la base (30).

2. Extracteur (10) de la revendication 1, dans lequel le distributeur de fluide (175) est fixé à la base (30).
3. Extracteur (10) de la revendication 1, dans lequel le distributeur de fluide (175) est couplé, de façon retirable, à la base (30).
4. Extracteur (10) de la revendication 3, dans lequel le distributeur de fluide (175) est retirable de la base (30) quand le suceur (125) se meut relativement à la base (30).
5. Extracteur (10) selon de quelconques des revendications précédentes, dans lequel le suceur (125) se sépare de la base (30), permettant l'accès au rouleau à brosse (65a, 65b).
6. Extracteur (10) selon de quelconques des revendications précédentes, dans lequel le suceur (125) est

mobile relativement à la base (30) pour ouvrir un haut (75) de la base (30), et dans lequel le rouleau à brosse (65a, 65b) est enlevable de la base (30) à travers le haut (75) de la base (30).

7. Extracteur (10) de la revendication 6, dans lequel le rouleau à brosse (65a, 65b) est positionné entre le distributeur de fluide (175) et une partie de la base (30) de manière telle que le rouleau à brosse (65a, 65b) se meut au-delà du distributeur de fluide (175) quand le rouleau à brosse (65a, 65b) est enlevé de la base (30). 5
8. Extracteur (10) de la revendication 1, dans lequel la base (30) inclut un haut (75) opposé à un bas (70), dans lequel le bas (70) est configuré pour faire face à la surface de nettoyage, et dans lequel le rouleau à brosse (65a, 65b) est couplé à la base (30) en insérant le rouleau à brosse (65a, 65b) dans la cavité (105) dans une direction depuis le haut (75) vers le bas (70). 10 15 20
9. Extracteur (10) de la revendication 8, dans lequel le rouleau à brosse (65a, 65b) est entraîné autour d'un axe de rotation et inclut une pluralité d'éléments brosses déformables (145a, 145b) couplés à un corps de rouleau à brosse (150a, 150b), dans lequel une première dimension (180) est mesurée dans une direction perpendiculaire à l'axe de rotation entre la paroi latérale (90) et le distributeur de fluide (175), et dans lequel la première dimension (180) est plus grande qu'une dimension maximum (170) du corps de rouleau à brosse (150a, 150b) mesurée parallèlement au première dimension (180). 25 30 35
10. Extracteur (10) selon de quelconques des revendications précédentes, dans lequel le rouleau à brosse (65a, 65b) est entraîné autour d'un axe de rotation, et dans lequel le rouleau à brosse (65a, 65b) est couplé à la base (30) pour que l'axe de rotation soit positionné derrière le distributeur de fluide (175) dans une direction avant de déplacement de l'extracteur (10). 40
11. Extracteur (10) de la revendication 10, dans lequel le rouleau à brosse (65a, 65b) est un premier rouleau à brosse (65a) et l'axe de rotation est un premier axe de rotation, dans lequel l'extracteur (10) inclut un second rouleau à brosse (65b) couplé, de façon enlevable, à la base (30), dans lequel le second rouleau à brosse (65b) est entraîné autour d'un second axe de rotation, et dans lequel le second rouleau à brosse (65b) est couplé à la base (30) pour que le second axe de rotation soit positionné à l'avant du distributeur de fluide (175) dans la direction avant de déplacement de l'extracteur (10). 45 50 55
12. Extracteur (10) de la revendication 11, dans lequel la

base (30) inclut un haut (75) opposé à un bas (70), dans lequel le bas (70) est configuré pour faire face à la surface de nettoyage, dans lequel le premier rouleau à brosse (65a) est couplé à la base (30) en insérant le premier rouleau à brosse (65a) dans une direction verticale (190) depuis le haut (75) vers le bas (70), dans lequel la base (30) inclut une ouverture avant (110), et dans lequel le second rouleau à brosse (65b) est couplé à la base (30) en insérant le second rouleau à brosse (65b) dans la direction verticale (190), ou une direction horizontale (195) perpendiculaire à la direction verticale (190), à travers l'ouverture avant (110).



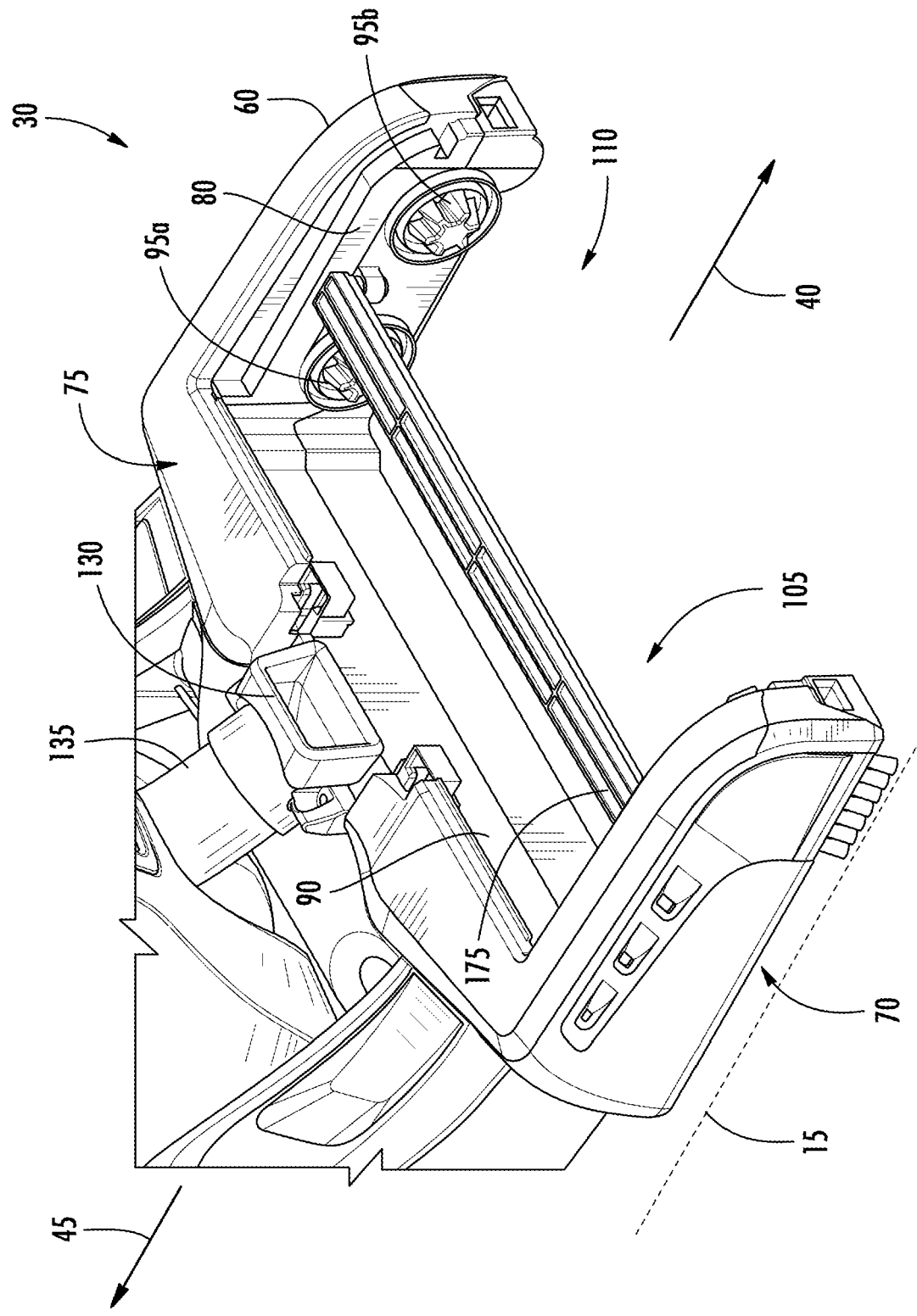


FIG. 2

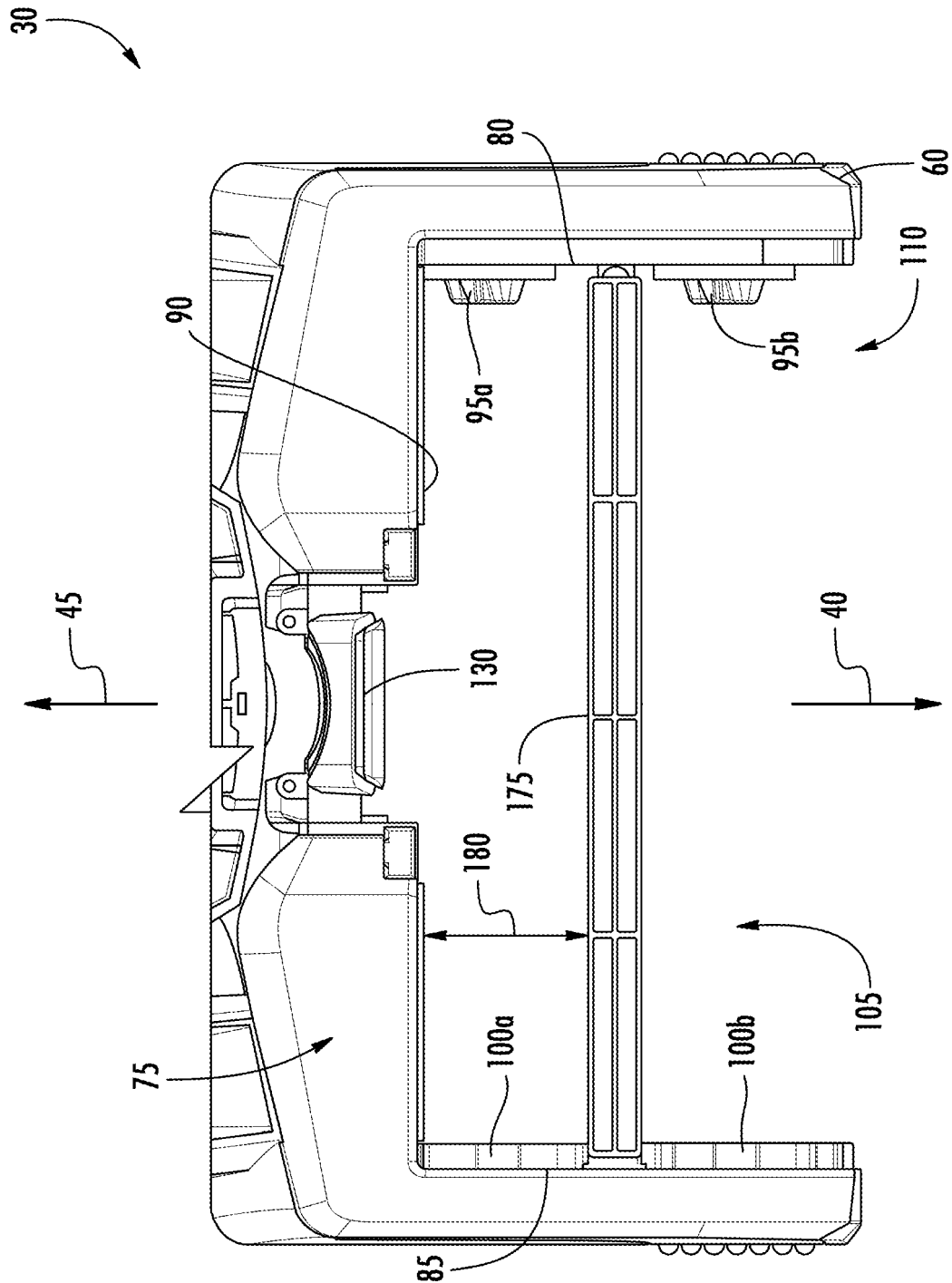
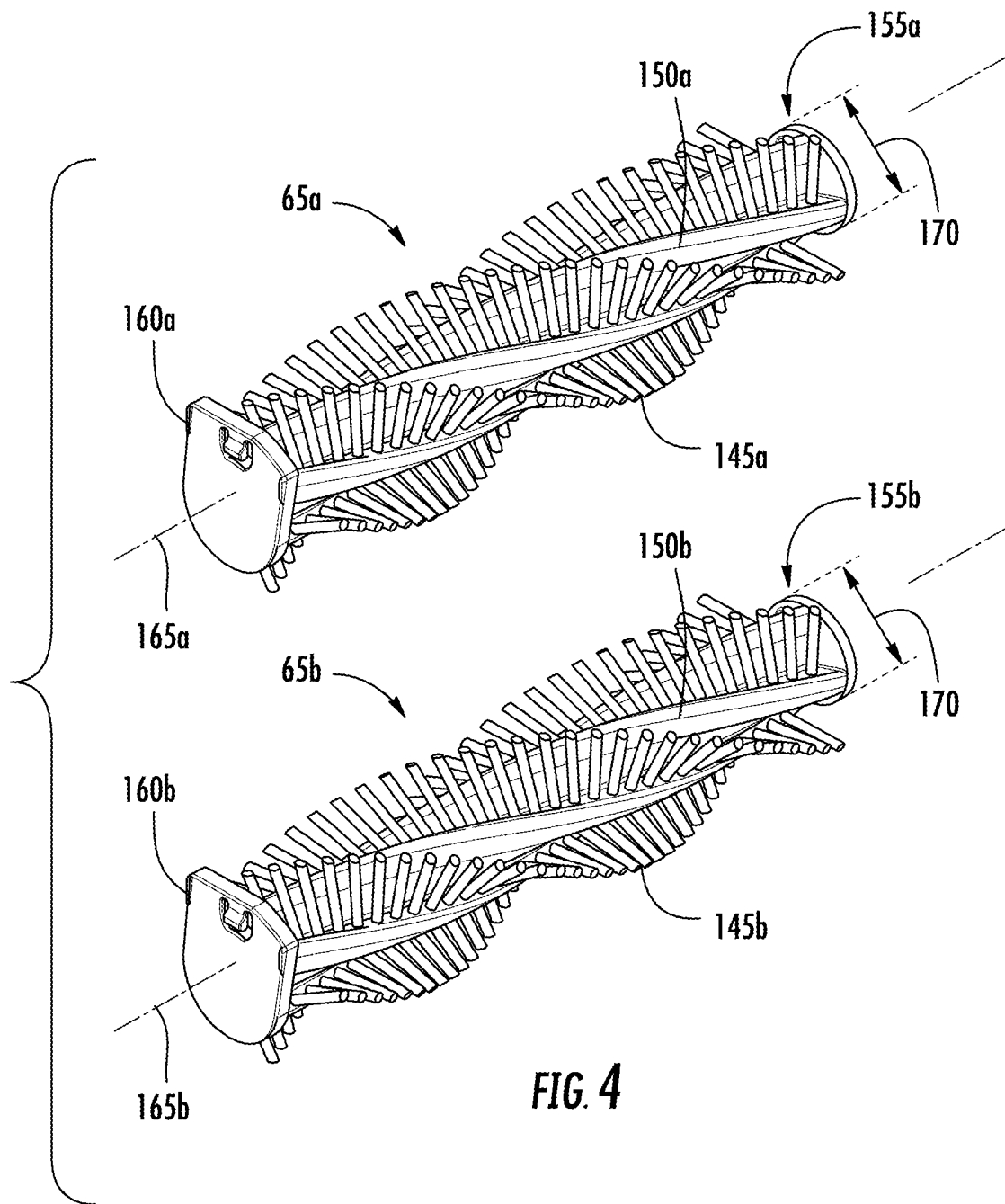


FIG. 3



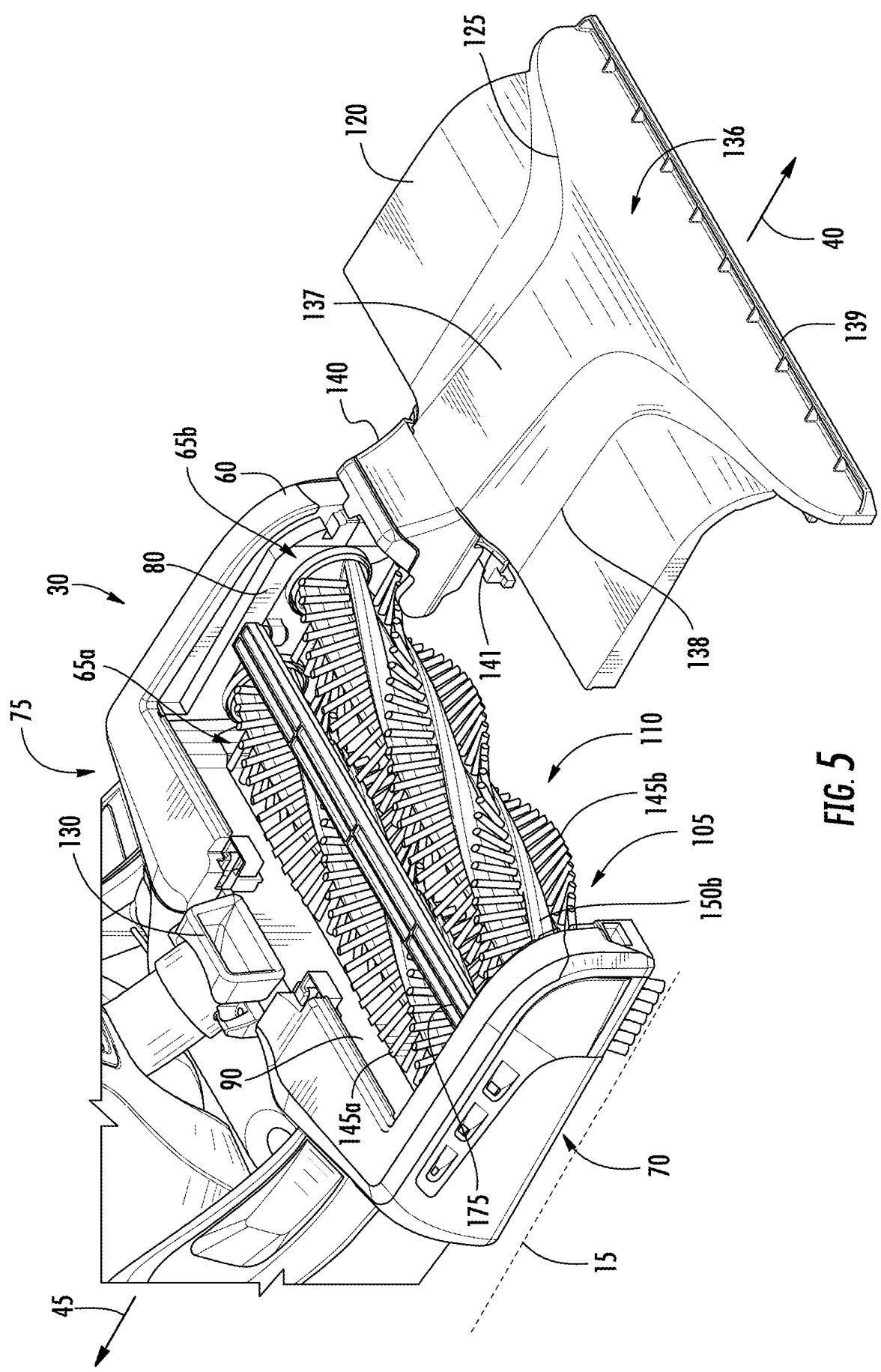


FIG. 5

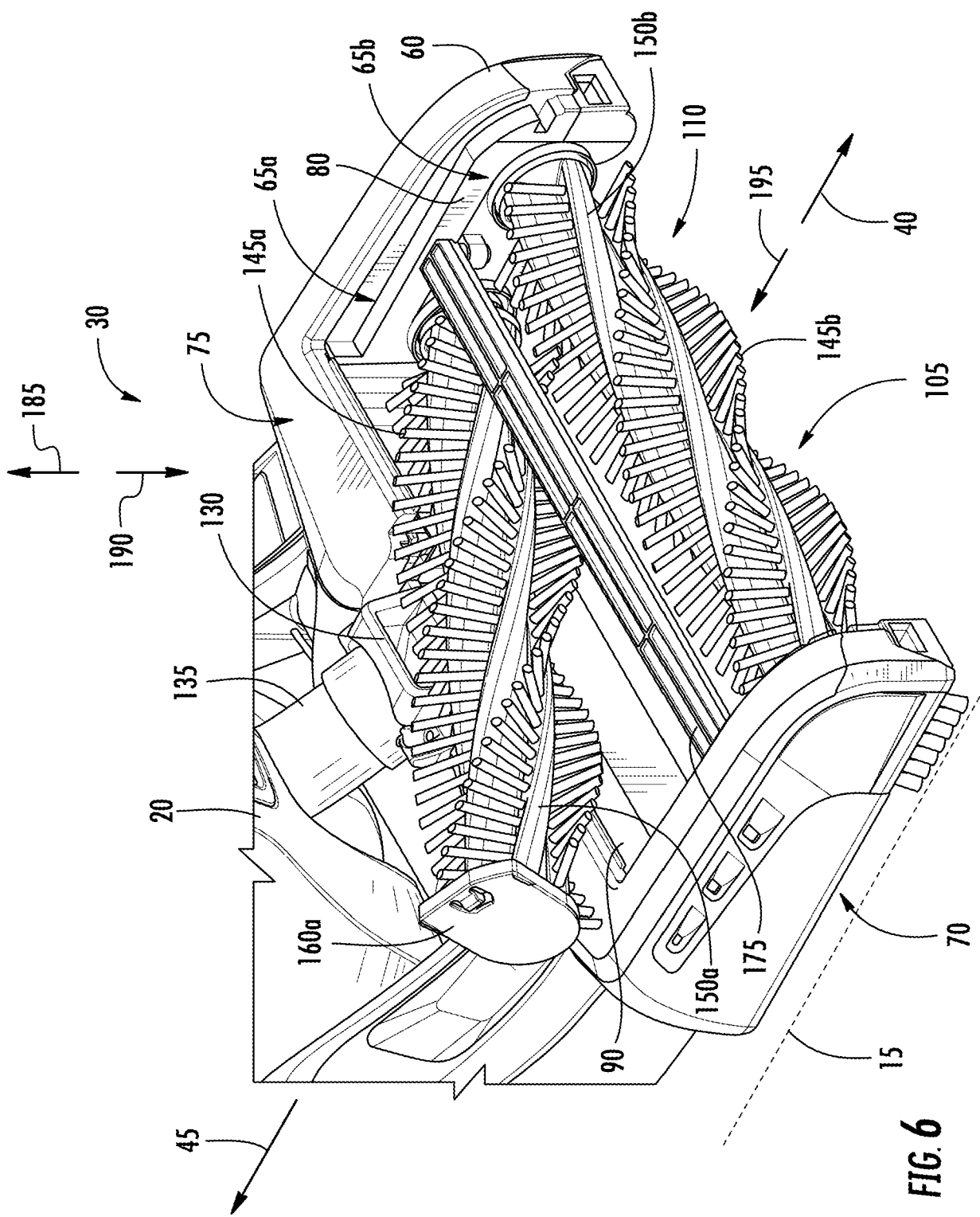


FIG. 6

REFERENCES CITED IN THE DESCRIPTION

This list of references cited by the applicant is for the reader's convenience only. It does not form part of the European patent document. Even though great care has been taken in compiling the references, errors or omissions cannot be excluded and the EPO disclaims all liability in this regard.

Patent documents cited in the description

- CN 208510945 U [0002]