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(54) **BLIND CLEANING DEVICE**

VORRICHTUNG ZUR REINIGUNG VON JALOUSIEN

DISPOSITIF DE NETTOYAGE DES LAMES DE STORES

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Description

TECHNICAL FIELD

[0001] The present disclosure relates to a blind cleaning device.

BACKGROUND

[0002] Window blinds are commonly installed in various spaces, such as commercial buildings or a residential space as part of an interior decoration of such spaces. The window blinds are used to regulate an amount of desired light in the space where they are installed. Further, the window blinds may block direct sunlight, promote energy conservation, and provide privacy.

[0003] The window blinds typically consist of multiple lamellae that are arranged in parallel. The lamellae are spaced apart from each other by a predefined distance. Generally, a number of controlling means are provided for controlling an angular position of the lamellae of the window blinds, such that the lamellae may be angularly rotated between an open position, which permits maximum passage of light through the window blinds, and a closed position, which provides maximum blockage of light through the window blinds. Over a period of time, dirt, dust, debris, particulate matter, and the like, may accumulate on the window blinds. Further, pathogens may also be present on the window blinds. Thus, such window blinds may have to be periodically cleaned. In applications where a large number of window blinds are installed, such as in the commercial buildings, individual cleaning of each lamella becomes a time consuming and laborious task.

[0004] Some cleaning devices, such as brushes, are available in the market to remove particles accumulated on the lamellae of the window blinds. These brushes typically use a friction surface and/or a vacuum to dislodge particles accumulated on the lamellae of the window blinds. However, some particles are well adhered to the surfaces of the lamellae which may be difficult to remove with such brushes. In some cases, greasy residues are needed to be removed from the lamellae. Further, particles accumulated on the lamellae of the window blinds tend to adhere to the greasy residues. Such greasy residues may not be completely removed with brushes that involve techniques such as friction and/or vacuum. Thus, there is a need for an improved cleaning device to clean the lamellae of the window blinds effectively, efficiently, and without causing user fatigue.

[0005] An example of a shutter slat cleaning accessory is provided in U.S. Patent Application 2017/0,127,891 (hereinafter referred to as '891 reference). The '891 reference discloses a cleaning tool for manually cleaning a variety of shutter slat types having a complex profile. The '891 reference includes various configurations of a cleaning glove and a modular system of various cleaning accessories that can be connected to the glove and easily

disconnected therefrom. However, the cleaning accessory of the '891 reference includes multiple parts that are complex in design and assembly. Further, the cleaning accessory is cumbersome to use during cleaning process. Moreover, the cleaning tool seems short of providing any arrangement which allows to have convenient or controlled cleaning by application of any fluid (say water) associated with the cleaning tool.

SUMMARY

[0006] In view of the above, it is an objective of the present disclosure to solve or at least reduce the drawbacks discussed above. The objective is at least partially achieved by a new design of a blind cleaning device. The blind cleaning device includes a body defining a bracket. The blind cleaning device also includes a pair of bristle plates coupled with the bracket of the body. The body is coupled with a fluid connection which provides a fluid. The blind cleaning device further includes a pair of bristle brushes to couple with the pair of the bristle plates. Each of the pair of bristle brushes includes a plurality of bristles. The blind cleaning device is characterized in that the pair of bristle brushes are coupled with the pair of the bristle plates such that the pair of bristle brushes contact each other to define a cleaning room with the pair of the bristle plates. The fluid connection supplies the fluid into the cleaning room.

[0007] Thus, the present disclosure provides an improved blind cleaning device for desired cleaning applications, such as to clean the lamellae of window blinds effectively and efficiently. The blind cleaning device allows desired cleaning of the lamellae of the window blinds with the fluid connection providing the fluid, such as water. Further, the cleaning room avoids splashing of the fluid. Particularly, the cleaning room of the present disclosure allows to avoid splashing of the fluid around or through the bristle brushes. It should be noted that the blind cleaning device can be used for cleaning other components apart from window blinds, as applicable.

[0008] According to an embodiment of the present disclosure, the body is removably coupled with a fluid supply device for supply of the fluid. Such a removable attachment of the fluid supply device provides flexibility in terms of cleaning the lamellae of the window blinds with or without the fluid. The fluid from the fluid supply device can be used to provide improved cleaning of various surfaces with fluids. This arrangement also allows removable coupling of different attachments, such as brushes, showers, nozzle, and the like, with the fluid supply device.

[0009] According to an embodiment of the present disclosure, the blind cleaning device includes a rotatable joint between the body and the fluid supply device. The rotatable joint between the body and the fluid supply device provides improved ergonomics during cleaning (say of a soil-deep window). The rotatable joint allows angular disposition of the fluid supply device with respect to the body. Specifically, the fluid supply device may be at-

tached horizontally or vertically. In a horizontal position of the fluid supply device, the user may feel less weight during a cleaning operation. Further, a vertical position of the fluid supply device may create less disturbance during the cleaning operation.

[0010] According to an embodiment of the present disclosure, a hose connector is removably attached to the fluid supply device. The hose connector allows connection of the fluid supply device with the fluid connection or with a hose.

[0011] According to an embodiment of the present disclosure, at least one of the pair of bristle plates define one or more openings to allow discharge of the fluid therefrom. The one or more openings may be provided in a central portion of the bristle plates to allow discharge of the fluid, such as water, through the openings.

[0012] According to an embodiment of the present disclosure, the pair of bristle plates are substantially parallel and include a spring-loaded mechanism. This arrangement may allow cleaning of both sides of the lamella of the window blinds at the same time, thereby reducing user effort. Further, the spring-loaded mechanism may allow any adjustments or movement of the pair of bristle plates and thereby provide efficient cleaning of the lamellae. According to an embodiment of the present disclosure, the pair of bristle plates is height adjustable to change a distance between the pair of bristle plates. With the height adjustable arrangement of the bristle plates, the distance between the bristle plates may be adjusted if the bristles wear out. This height adjustable nature of the bristle plates may be due to the spring-loaded mechanism.

[0013] According to an embodiment of the present disclosure, the body includes an adjustable limitation stop for different lamella width. In some embodiments, the connecting portion includes the adjustable limitation stop. The adjustable limitation stop of the blind cleaning device may be adjusted for different lamella width, thereby making the blind cleaning device versatile and adaptable in use. The limitation stop may accommodate a jet that promotes efficient cleaning and water saving. The jet may be flat or conical. Further, different types of fluid jet, such as flat fluid jet, conical fluid jet, and the like, may be obtained by adjusting the limitation stop.

[0014] According to an embodiment of the present disclosure, the pair of bristle brushes are removably coupled with the pair of the bristle plates. This arrangement allows removable coupling of different types of bristle brushes for different window blinds and also allows replacement of the bristle brushes, such as for regular service and the like.

[0015] Other features and aspects of this disclosure will be apparent from the following description and the accompanying drawings.

BRIEF DESCRIPTION OF THE DRAWINGS

[0016] The disclosure will be described in more detail

with reference to the enclosed drawings, wherein:

FIG. 1 illustrates a perspective view of a blind cleaning device, in accordance with an aspect of the present disclosure;

FIG. 2 illustrates a perspective view of the blind cleaning device disassembled from a fluid supply device, in accordance with an aspect of the present disclosure;

FIG. 3 illustrates a cross-sectional view of the blind cleaning device about a vertical plane, in accordance with an aspect of the present disclosure;

FIG. 4 illustrates a perspective view of a body of the blind cleaning device and the fluid supply device in a second position, in accordance with an aspect of the present disclosure;

FIG. 5 illustrates an exploded view of a body and a pair of bristle plates of the blind cleaning device, in accordance with an aspect of the present disclosure;

FIG. 6A illustrates a top view of the blind cleaning device, in accordance with an aspect of the present disclosure; and

FIG. 6B illustrates a cross-sectional view of the blind cleaning device about a horizontal plane, in accordance with an aspect of the present disclosure.

DESCRIPTION OF EMBODIMENTS

[0017] The present disclosure will be described more fully hereinafter with reference to the accompanying drawings, in which example embodiments of the disclosure incorporating one or more aspects of the present disclosure are shown. This disclosure may, however, be embodied in many different forms and should not be construed as limited to the embodiments set forth herein; rather, these embodiments are provided so that this disclosure will be thorough and complete, and will fully convey the scope of the disclosure to those skilled in the art. For example, one or more aspects of the present disclosure may be utilized in other embodiments and even other types of structures and/or methods. In the drawings, like numbers refer to like elements.

[0018] Certain terminology is used herein for convenience only and is not to be taken as a limitation on the disclosure. For example, "upper", "lower", "front", "rear", "side", "longitudinal", "lateral", "transverse", "upwards", "downwards", "forward", "backward", "sideward", "left", "right", "horizontal", "vertical", "upward", "inner", "outer", "inward", "outward", "top", "bottom", "higher", "above", "below", "central", "middle", "intermediate", "between", "end", "adjacent", "proximate", "near", "distal", "remote", "radial", "circumferential", or the like, merely describe the

configuration shown in the Figures. Indeed, the components may be oriented in any direction and the terminology, therefore, should be understood as encompassing such variations unless specified otherwise.

[0019] FIG. 1 is a perspective view of a blind cleaning device 100. The blind cleaning device 100 may be used for different cleaning applications, such as to clean a number of lamellae (not shown) of a window blind (not shown). The present disclosure illustrates a cleaning device as the blind cleaning device 100, however actual implementation of the present disclosure may be applied with any cleaning device making use of one or more brushes, bristles and the like. The blind cleaning device 100 includes a body 102 defining a bracket 104. The body 102 may be manufactured from a plastic, a metal, and the like. The body 102 may be embodied as a single piece unit or the body 102 may include multiple separate parts that are joined together to form the body 102. The body 102 may be coupled with different types of cleaning attachments, such as, brushes, showers, nozzle, and the like. The body 102 is coupled with a fluid connection 103 which provides a fluid towards the blind cleaning device 100. The fluid connection may include a tap, pump, and the like. Further, the fluid may include water or any other cleaning fluid.

[0020] Referring to FIG. 2, the bracket 104 defines a first end 106 and a second end 108. Further, the bracket 104 of the body 102 includes a generally U-shaped structure herein. It should be noted that the bracket 104 may include any other shape and size, without limiting the scope of the present disclosure. The bracket 104 includes a first surface 110. The bracket 104 also includes a second surface 112 (shown in FIG. 5). The bracket 104 also includes a number of projections 114 (shown in FIG. 5) on the second surface 112. In the illustrated example, the bracket 104 includes four projections 114. The body 102 includes an inlet portion 118. The inlet portion 118 includes a threaded profile. Further, the inlet portion 118 defines a through-hole 144.

[0021] FIG. 3 shows the blind cleaning device 100, in accordance with an embodiment of the present disclosure. In this embodiment, the body 102 includes a distributor 127. The distributor 127 defines a T-shaped structure, although other shapes, types, dimensions, structure have been contemplated and are well within the scope. The distributor 127 includes an inlet channel 129 and two outlet channels 131. The outlet channels 131 are substantially perpendicular to the inlet channel 129. The inlet channel 129 is fluidly coupled to the inlet portion 118 of the body 102 for a fluid flow "F" (or simply the fluid), such as water for cleaning, therethrough. Further, the outlet channels 131, receive the fluid flow "F" from the inlet channel 129 to supply the fluid flow "F" to each bristle plate 134, 136. Each bristle plate 134, 136 defines an inlet opening 135 and a number of outlet openings 137. The fluid flow "F" from the outlet channels 131 of the distributor 127 enters the bristle plates 134, 136 through the inlet opening 135. Further, the fluid flow "F"

is then discharged through the outlet openings 137, such as for applications involving cleaning of the lamella of the window blind and the like.

[0022] The present disclosure refers to the "fluid" or the "fluid flow" which have been used interchangeably for ease of explanation and understanding. The fluid flow "F" through the blind cleaning device 100 is illustrated in FIG. 3 for detail flow from a hose connector 130 to a fluid supply device 124, and then to the distributor 127 of the body 102. This fluid flow "F" then splits in the distributor 127 to move towards each bristle plate 134, 136, as illustrated in FIG. 3.

[0023] Further, the body 102 also includes an adjustable limitation stop 122 (shown in FIG. 3) for different lamella width. The limitation stop 122 may be integrated and work with the distributor 127 to allow splitting of the fluid i.e., water from the inlet channel 129 to the outlet channels 131. In some embodiments, the blind cleaning device 100 may not include any limitation stop 122 and make application of the distributor 127. In some embodiments, a connecting portion 142 (shown in FIG. 4) includes the adjustable limitation stop 122. The limitation stop 122 includes a cylindrical body defining an inlet (not shown) and an outlet (not shown). The inlet is fluidly coupled to the inlet portion 118 of the body 102 to supply fluid, such as water for cleaning, therethrough. Further, the fluid is discharged through the outlet of the limitation stop 122. The limitation stop 122 may accommodate a jet that allows discharge of fluid therethrough. Further, the limitation stop 122 can be adjusted for different lamella width. In some examples, the limitation stop 122 can be adjusted to accommodate the lamella width that approximately lies in a range of about 40 Millimeters (mm) to about 100 mm. Furthermore, the jet may be flat or conical. The limitation stop 122 may be adjusted to obtain different types of fluid jet, such as flat fluid jet, conical fluid jet, and the like. Specifically, the limitation stop 122 can be rotated to adjust a pattern of the jet. Further, the body 102 is removably coupled with the fluid supply device 124 for supply of the fluid. The inlet portion 118 of the body 102 allows removable coupling of the body 102 with the fluid supply device 124 using a rotatable joint 126.

[0024] The blind cleaning device 100 also includes the fluid supply device 124. The fluid supply device 124 includes an actuator 128 to allow passage of the fluid towards the body 102 of the blind cleaning device 100. When actuated, the actuator 128 allows passage of fluid therethrough. It should be noted that the fluid supply device 124 may include any arrangement for passage of the fluid towards the body 102 of the blind cleaning device 100, such as a button, a knob, a handle, and the like. The fluid supply device 124 includes a first inlet 116 and a first outlet 120. Further, the hose connector 130 is removably attached to the fluid supply device 124. The hose connector 130 is removably attached to the first inlet 116 of the fluid supply device 124. The hose connector 130 includes a threaded section 132 to removably

couple a hose pipe (not shown) with the hose connector **130**. The hose pipe may supply the fluid from the fluid connection **103** towards the blind cleaning device **100**.

[0025] Further, the blind cleaning device **100** includes the rotatable joint **126** between the body **102** and the fluid supply device **124**. The rotatable joint **126** includes a cylindrical body, a joint inlet (not shown), and a joint outlet (not shown). The joint inlet is connected to the fluid supply device **124** and the joint outlet is removably coupled with the inlet portion **118** of the body **102**. The joint outlet may be partially received through the through-holes **144**. Further, the joint outlet may include a threaded section (not shown) for removable coupling with the inlet portion **118** of the body **102**. The rotatable joint **126** allows coupling of the body **102** of the blind cleaning device **100** with the fluid supply device **124** at various angles. The rotatable joint **126** between the body **102** and the fluid supply device **124** provides improved ergonomics during cleaning, such as of a soil-deep window (not shown).

[0026] In a first position or a vertical position, as illustrated in **FIGS. 1 to 3**, the rotatable joint **126** allows vertical coupling of the fluid supply device **124** with the body **102** of the blind cleaning device **100**. The first position of the fluid supply device **124** may create less disturbance for the user during the cleaning operation. Referring to **FIG. 4**, in a second position or a horizontal position, the rotatable joint **126** allows horizontal coupling of the fluid supply device **124** with the body **102** of the blind cleaning device **100**. In the second position of the fluid supply device **124**, the user may feel less weight during a cleaning operation. Further, the first/vertical and the second/horizontal positions of the rotatable joint **126** may allow different positions, angles, ergonomic styles for cleaning by the body **102** of the blind cleaning device **100**. Further, the present disclosure illustrates and discusses the first/vertical and the second/horizontal positions, however actual implementation may have many and other positions in between the first/vertical and the second/horizontal positions of the rotatable joint **126**.

[0027] Referring to **FIG. 5**, the blind cleaning device **100** also includes a pair of bristle plates **134, 136** to couple with the bracket **104** of the body **102**. Specifically, the blind cleaning device **100** includes the first bristle plate **134** and the second bristle plate **136** facing the first bristle plate **134** and spaced apart from the first bristle plate **134**. The pair of bristle plates **134, 136** may be similar in shape and size. Alternatively, the bristle plates **134, 136** may include different shape and size. The bristle plate **134, 136** defines a first plate surface **138** and a second plate surface **140**. The first plate surface **138** of the bristle plate **134, 136** includes a generally planar profile. The first plate surface **138** includes a number receiving slots **146** to receive the projections **114** of the bracket **104**. The second plate surface **140** of the bristle plates **134, 136** includes a curved profile. The pair of bristle plates **134, 136** may be coupled to the bracket **104** using a snap-fit connection. It should be noted that the pair of bristle plates **134, 136** and the bracket **104** may be connected

by any other means, without limiting the scope of the present disclosure.

[0028] The pair of bristle plates **134, 136** are connected with each other by the connecting portion **142**. In the illustrated example, the pair of bristle plates **134, 136** and the connecting portion **142** are embodied as an integral unit. Alternatively, the pair of bristle plates **134, 136** and the connecting portion **142** may be embodied as separate parts that are joined together. The pair of bristle plates **134, 136** and the connecting portion **142** form a generally U-shaped structure.

[0029] The pair of bristle plates **134, 136** are substantially parallel and include a spring-loaded mechanism (not shown). The spring-loaded mechanism of the bristle plates **134, 136** may allow some adjustment or movements thereof, and may exert a pressure on the lamella of the window blinds to effectively clean dirt particles from a surface of the lamella. Further, the spring-loaded mechanism and the fluid jet may allow efficient cleaning of greasy residue on the lamella surface.

[0030] As shown in **FIG. 5**, the blind cleaning device **100** further includes a pair of bristle brushes **150** coupled with the pair of the bristle plates **134, 136**. The pair of bristle brushes **150** are disposed on the second plate surface **140** and extend therefrom. Each of the pair of bristle brushes **150** includes the plurality of bristles **152**. The pair of bristles **152** of the pair of bristle brushes **150** overlap each other. The bristles **152** may be tilted and arranged in a shape **154** to suit the shape of the lamellae of the window blind. This arrangement may allow uniform cleaning of the lamella surface. The bristles **152** may include a first row of bristles that are disposed on an outer side of the bristle brushes **150** and a second row of bristles that are disposed on an inner side of the bristle brushes **150**. The first row of bristles may include soft bristles and the second row of bristles may include hard bristles. The first row of bristles and the second row of bristles may be in contact with each other.

[0031] The pair of bristle brushes **150** are removably coupled with the pair of bristle plates **134, 136**. More particularly, each bristle plate **134, 136** may include a bristle fixation element **155** (as shown in **FIG. 3**) to removably couple the pair of bristle brushes **150**. The bristle fixation element **155** can be removably coupled to the bristle plates **134, 136**. The bristle fixation element **155** may be made up of a soft plastic material. The bristle fixation element **155** allows removable coupling of the pair of bristle brushes **150** with the bristle plates **134, 136**. The removable coupling of the pair of bristle brushes **150** allows coupling of different types of bristle brushes, or removal during service intervals and the like. The bristles **152** of each bristle brush **134, 136** may be manufactured using a synthetic material, such as nylon. It should be noted that the bristles **152** may include any other material, without limiting the scope of the present invention.

[0032] Referring to **FIGS. 6A and 6B**, different views of the blind cleaning device **100** is illustrated. As shown, at least one of the pair of bristle plates **134, 136** (see

FIGS. 6A and 6B, respectively) define one or more openings **148** to allow discharge of the fluid therefrom. The one or more openings **148** are specifically provided to allow discharge or drainage of any excess amount or flow of the fluid during application of the blind cleaning device **100**. Such discharge or drainage of the fluid will take place, through the one or more openings **148**, substantially perpendicular to the first and second bristle plates **134, 136** leading to a simple, user-friendly, and splash-proof cleaning application by the blind cleaning device **100**. In the illustrated example, each of the first and second bristle plates **134, 136** includes the opening **148**. Alternatively, any one of the first and second bristle plates **134, 136** may include the opening **148**. The openings **148** of each bristle plate **134, 136** may be identical in shape and size. The openings **148** are centrally disposed within the bristle plates **134, 136**, however, actual implementations may have any position, type, size, placement, or number of the openings **148**. The fluid jet directed through the distributor **127** (with or without the limitation stop **122**) may split through the distributor **127** to discharge the fluid from the openings **148** provided on the bristle plates **134, 136** after cleaning the lamella surface. The pair of bristle brushes **150** are coupled with the pair of the bristle plates **134, 136** such that the pair of bristle brushes **150** contact each other to define a cleaning room **156** (shown in **FIG. 6B**) with the pair of the bristle plates **134, 136**. Specifically, the pair of bristle brushes **150** overlap each other, such that minimum efforts may be required to clean the lamella, and there may not be any undesired fluid spillage through or around the pair of bristle brushes **150**. Further, the fluid connection supplies the fluid into the cleaning room **156**. The cleaning room **156** defines an axis "**A**" (shown in **FIG. 3**) normal to each opening **148** of the bristle plates **134, 136**. Further, the cleaning room **156** may allow removal or discharge of the fluid (say water) therethrough. Particularly, the cleaning room **156** may allow the fluid to discharge along the axis "**A**" therethrough, to check or avoid any undesired splashing or movement of the fluid substantially perpendicular to the axis "**A**". Moreover, the arrangement of bristles **152** and the cleaning room **156** avoids splashing of fluid during cleaning process. Further, a front side **158** of the pair of bristle brushes **150** may be covered with a textile material, a rubber material, a plastic sheet, a foil sheet, and the like, for additional protection against the splashing of fluid.

[0033] The cleaning room **156** of the present disclosure is defined between the pair of the bristle plates **134, 136** and the pair of bristle brushes **150**. This may create a rectangular, square or any other geometrical shaped volume of the cleaning room **156**, which allows to receive and hold the fluid during cleaning by the blind cleaning device **100**. Further, the cleaning room **156** may allow discharge of the fluid through the opening **148**, while avoiding any undesired spillage or discharge of the liquid through or around the pair of bristle brushes **150**.

[0034] Further, the pair of bristle plates **134, 136** is

height adjustable to change a distance "**D**" between the pair of bristle plates **134, 136**. The height adjustable bristle plates **134, 136** may be used to adjust the distance "**D**" between the pair of bristle plates **134, 136** when the plurality of bristles **152** of the pair of bristle brushes **150** wear out. More particularly, in an event of wear out of the bristles **152**, the bristle plates **134, 136** may be disposed closer to each other to compensate for a reduction in a length of the bristles **152**. This height adjustable nature of the bristle plates **134, 136** may be due to the spring-loaded mechanism. In some embodiments, the height adjustable nature of the pair of bristle plates **134, 136** may allow to change the distance "**D**" and thereby change dimensions (i.e. volume) of the cleaning room **156**. Such change in the dimensions of the cleaning room **156** may be suitable for different applications or operational requirements, such as to control a rate of the fluid leaving the cleaning room **156** (say along the axis "**A**"). In an alternate example, the bracket **104** of the blind cleaning device **100** may include a rectangular shape with rounded corners instead of the U-shaped structure. Further, in such an example, each bristle plate **134, 136** may be directly coupled with the rectangular bracket **104** using a number of mechanical fasteners and the connecting portion **142** may be omitted.

[0035] The present disclosure provides the improved blind cleaning device **100** to clean the lamellae of window blinds effectively and efficiently. The blind cleaning device **100** allows cleaning of the window blinds with or without fluid. Further, the blind cleaning device **100** allows removable coupling of different attachments, such as brushes, showers, nozzle, and the like. The blind cleaning device **100** includes fewer parts and can be easily assembled without requiring additional tools. Further, the blind cleaning device **100** is easy and convenient to use for users and does not cause user fatigue.

[0036] In the drawings and specification, there have been disclosed preferred embodiments and examples of the disclosure and, although specific terms are employed, they are used in a generic and descriptive sense only and not for the purpose of limitation of the scope of the disclosure being set forth in the following claims.

LIST OF ELEMENTS

[0037]

100	Blind Cleaning Device
102	Body
103	Fluid Connection
104	Bracket
106	First End
108	Second End
110	First Surface
112	Second Surface
114	Projections
116	First Inlet
118	Inlet Portion

120 Second Inlet
122 Limitation Stop
124 Fluid Supply Device
126 Rotatable Joint
127 Distributor
128 Actuator
129 Inlet Channel
130 Hose Connector
131 Outlet Channel
132 Threaded Section
134 First Bristle Plate
135 Inlet Opening
136 Second Bristle Plate
137 Outlet Opening
138 First Plate Surface
140 Second Plate Surface
142 Connecting Portion
144 Through-Hole
146 Receiving Slots
148 Opening
150 Pair of Bristle Brushes
152 Bristles
154 Shape
155 Bristle Fixation Element
156 Cleaning Room
158 Front Side
A Axis
D Distance
F Fluid Flow

Claims

1. A blind cleaning device (100) comprising:

a body (102) defining a bracket (104);
 a pair of bristle plates (134, 136) adapted to couple with the bracket (104) of the body (102), wherein the body (102) is adapted to couple with a fluid connection (103) which provides a fluid; and
 a pair of bristle brushes (150) adapted to couple with the pair of the bristle plates (134, 136), wherein each of the pair of bristle brushes (150) includes a plurality of bristles (152);
characterized in that:
 the pair of bristle brushes (150) are coupled with the pair of the bristle plates (134, 136) such that the pair of bristle brushes (150) contact each other to define a cleaning room (156) with the pair of the bristle plates (134, 136), wherein the fluid connection (103) supplies the fluid into the cleaning room (156).

2. The blind cleaning device (100) of claim 1, wherein the body (102) is removably coupled with a fluid supply device (124) for supply of the fluid.

3. The blind cleaning device (100) of claim 2, wherein the blind cleaning device includes a rotatable joint (126) between the body (102) and the fluid supply device (124).

4. The blind cleaning device (100) of claim 2 or 3, wherein a hose connector (130) is removably attached to the fluid supply device (124).

5. The blind cleaning device (100) of claim 1, wherein at least one of the pair of bristle plates (134, 136) define one or more openings (148) to allow discharge of the fluid therefrom.

6. The blind cleaning device (100) of claim 1, wherein the pair of bristle plates (134, 136) are substantially parallel and include a spring-loaded mechanism.

7. The blind cleaning device (100) of claim 1, wherein the pair of bristle plates (134, 136) is height adjustable to change a distance (D) between the pair of bristle plates (134, 136).

8. The blind cleaning device (100) of claim 1, wherein the body (102) includes an adjustable limitation stop (122) for different lamella width.

9. The blind cleaning device (100) of claim 1, wherein the pair of bristle brushes (150) are removably coupled with the pair of the bristle plates (134, 136).

Patentansprüche

1. Eine Jalousienreinigungsvorrichtung (100), die Folgendes umfasst:

einen Körper (102), der einen Halterung (104) bildet;
 ein Paar von Borstenplatten (134, 136), die mit der Halterung (104) des Körpers (102) koppelbar sind, wobei der Körper (102) mit einem Fluidanschluss (103) koppelbar ist, der ein Fluid bereitstellt; und
 ein Paar von Borstenbürsten (150), die dazu geeignet sind, mit dem Paar von Borstenplatten (134, 136) zu koppeln, wobei jede des Paares von Borstenbürsten (150) eine Vielzahl von Borsten (152) umfasst;

dadurch gekennzeichnet, dass:

das Paar von Borstenbürsten (150) mit dem Paar von Borstenplatten (134, 136) gekoppelt ist, so dass das Paar von Borstenbürsten (150) einander berührt, um einen Reinigungsraum (156) mit dem Paar von Borstenplatten (134, 136) zu definieren, wobei die Fluidverbindung (103) das Fluid in den Reinigungsraum (156) liefert.

2. Die Jalousiereinigungsvorrichtung (100) nach Anspruch 1, wobei der Körper (102) abnehmbar mit einer Fluidzufuhrvorrichtung (124) für die Zufuhr des Fluids gekoppelt ist.

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3. Die Jalousiereinigungsvorrichtung (100) nach Anspruch 2, wobei die Jalousiereinigungsvorrichtung eine drehbare Verbindung (126) zwischen dem Körper (102) und der Fluidzufuhrvorrichtung (124) aufweist.

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4. Die Jalousiereinigungsvorrichtung (100) nach Anspruch 2 oder 3, wobei ein Schlauchanschluss (130) abnehmbar an der Fluidzufuhrvorrichtung (124) angebracht ist.

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5. Die Jalousiereinigungsvorrichtung (100) nach Anspruch 1, wobei mindestens eine des Paares von Borstenplatten (134, 136) eine oder mehrere Öffnungen (148) definiert, um das Ablassen des Fluids daraus zu ermöglichen.

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6. Die Jalousienreinigungsvorrichtung (100) nach Anspruch 1, wobei das Paar Borstenplatten (134, 136) im Wesentlichen parallel ist und einen gefederten Mechanismus aufweist.

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7. Die Jalousienreinigungsvorrichtung (100) nach Anspruch 1, wobei das Paar von Borstenplatten (134, 136) höhenverstellbar ist, um einen Abstand (D) zwischen dem Paar von Borstenplatten (134, 136) zu verändern.

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8. Die Jalousienreinigungsvorrichtung (100) nach Anspruch 1, wobei der Körper (102) einen einstellbaren Begrenzungsanschlag (122) für unterschiedliche Lamellenbreiten aufweist.

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9. Die Jalousienreinigungsvorrichtung (100) nach Anspruch 1, wobei das Paar Borstenbürsten (150) abnehmbar mit dem Paar Borstenplatten (134, 136) verbunden ist.

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Revendications

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1. Dispositif de nettoyage de stores (100) comprenant :

un corps (102) définissant un support (104) ;
une paire de plaques de poils (134, 136) adaptées pour s'accoupler avec le support (104) du corps (102), dans lequel le corps (102) est adapté pour s'accoupler avec une connexion de fluide (103) qui fournit un fluide ; et
une paire de brosses à poils (150) adaptées pour s'accoupler avec la paire des plaques de poils (134, 136), dans lequel chacune de la paire de brosses à poils (150) comprend une pluralité

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de poils (152) ;

caractérisé en ce que :

la paire de brosses à poils (150) est couplée à la paire des plaques de poils (134, 136) de manière que la paire de brosses à poils (150) soit en contact l'une avec l'autre pour définir une chambre de nettoyage (156) avec la paire des plaques de poils (134, 136), dans lequel la connexion de fluide (103) délivre le fluide dans la chambre de nettoyage (156).

2. Dispositif de nettoyage de stores (100) selon la revendication 1, dans lequel le corps (102) est couplé de manière amovible à un dispositif d'alimentation en fluide (124) pour l'alimentation en fluide.

3. Dispositif de nettoyage de stores (100) selon la revendication 2, dans lequel le dispositif de nettoyage aveugle comprend un joint rotatif (126) entre le corps (102) et le dispositif d'alimentation en fluide (124).

4. Dispositif de nettoyage de stores (100) selon la revendication 2 ou 3, dans lequel un connecteur de tuyau (130) est fixé de manière amovible au dispositif d'alimentation en fluide (124).

5. Dispositif de nettoyage de stores (100) selon la revendication 1, dans lequel au moins une de la paire de plaques de poils (134, 136) définit une ou plusieurs ouvertures (148) pour permettre l'évacuation du fluide à partir de celles-ci.

6. Dispositif de nettoyage de stores (100) selon la revendication 1, dans lequel la paire de plaques de poils (134, 136) est sensiblement parallèle et comprend un mécanisme à ressort.

7. Dispositif de nettoyage de stores (100) selon la revendication 1, dans lequel la paire de plaques de poils (134, 136) est réglable en hauteur pour modifier une distance (D) entre la paire de plaques de poils (134, 136).

8. Dispositif de nettoyage de stores (100) selon la revendication 1, dans lequel le corps (102) comprend une butée de limitation réglable (122) pour différentes largeurs de lamelles.

9. Dispositif de nettoyage de stores (100) selon la revendication 1, dans lequel la paire de brosses à poils (150) est couplée de manière amovible avec la paire de plaques de poils (134, 136).

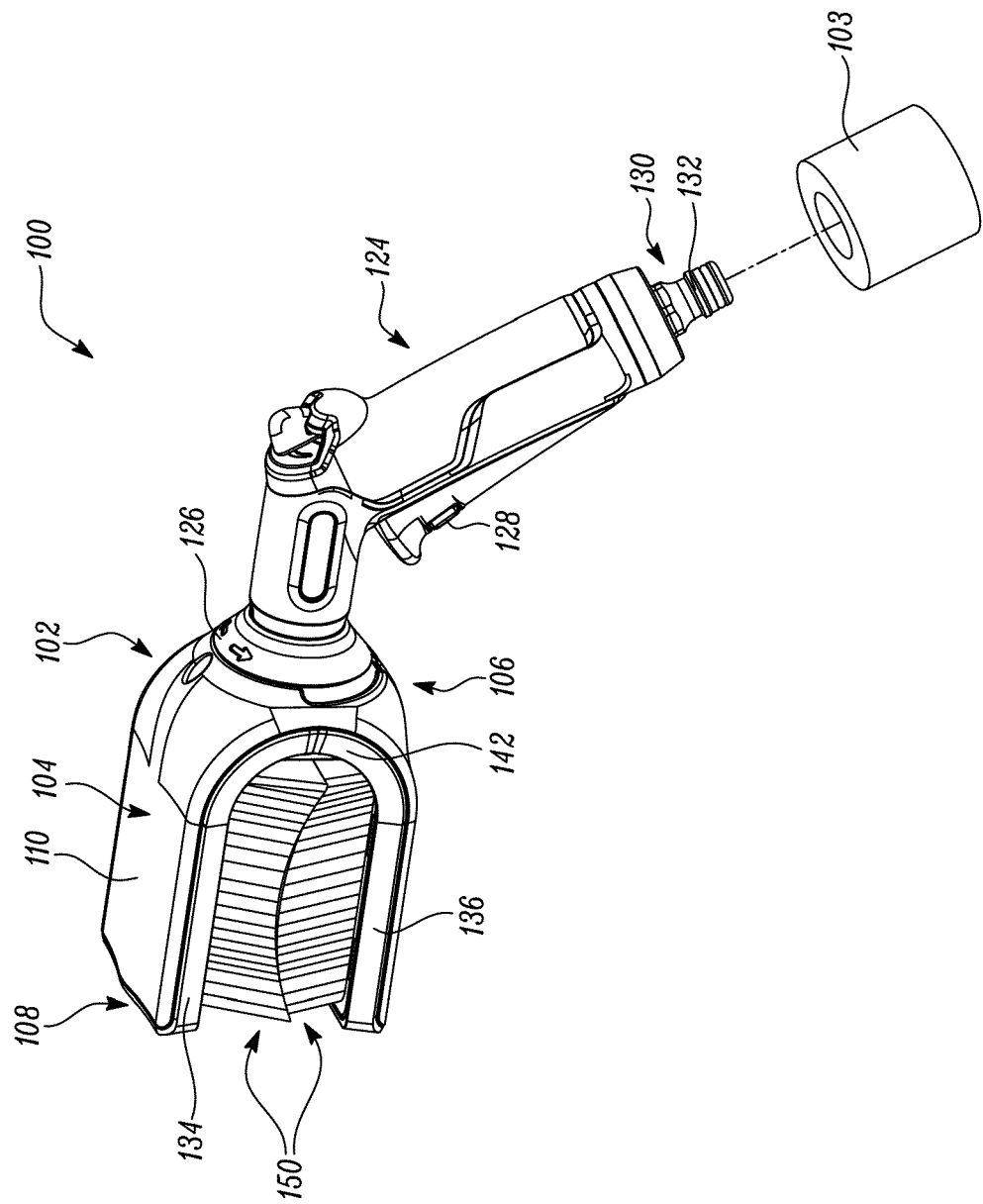


FIG. 1

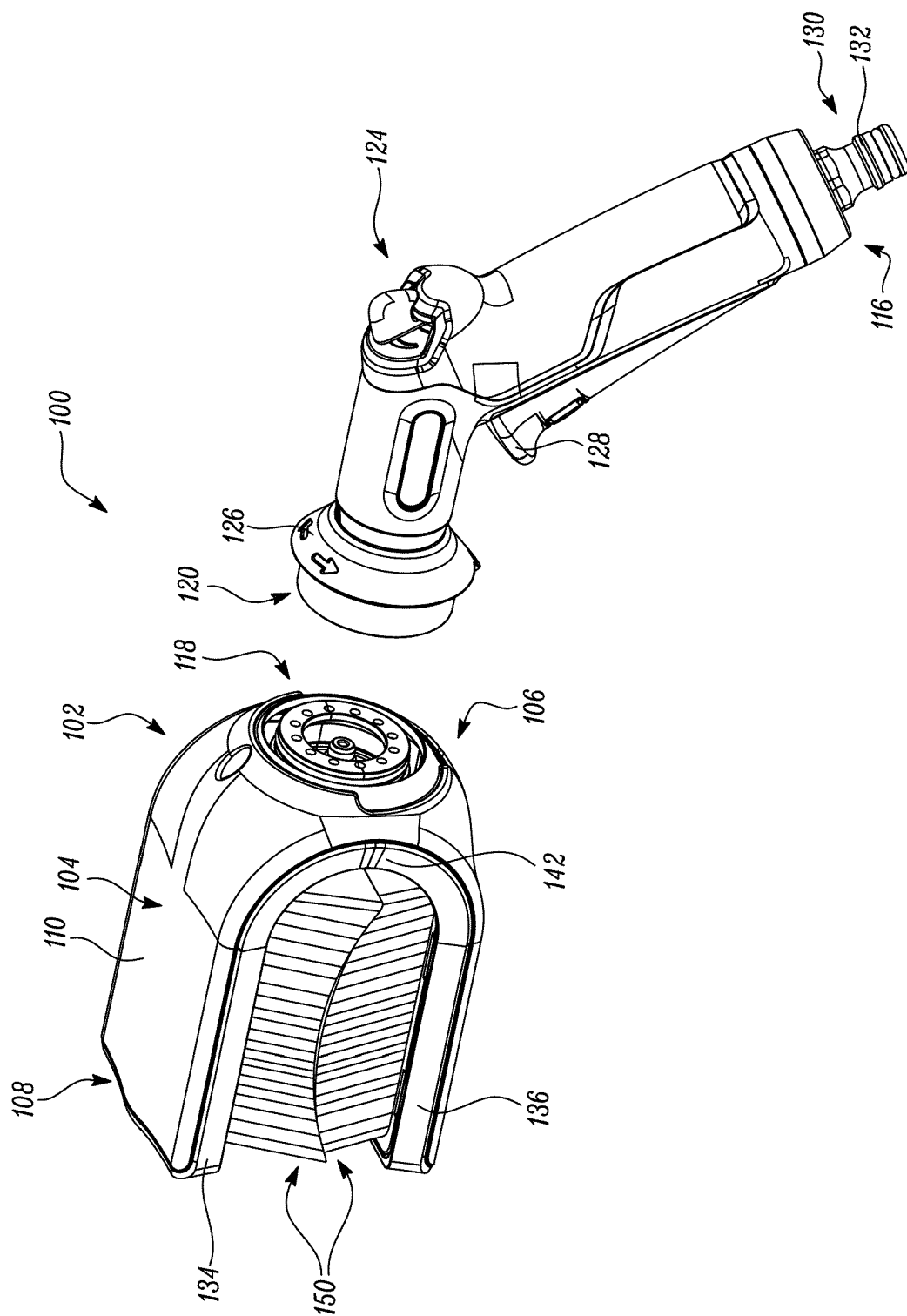


FIG. 2

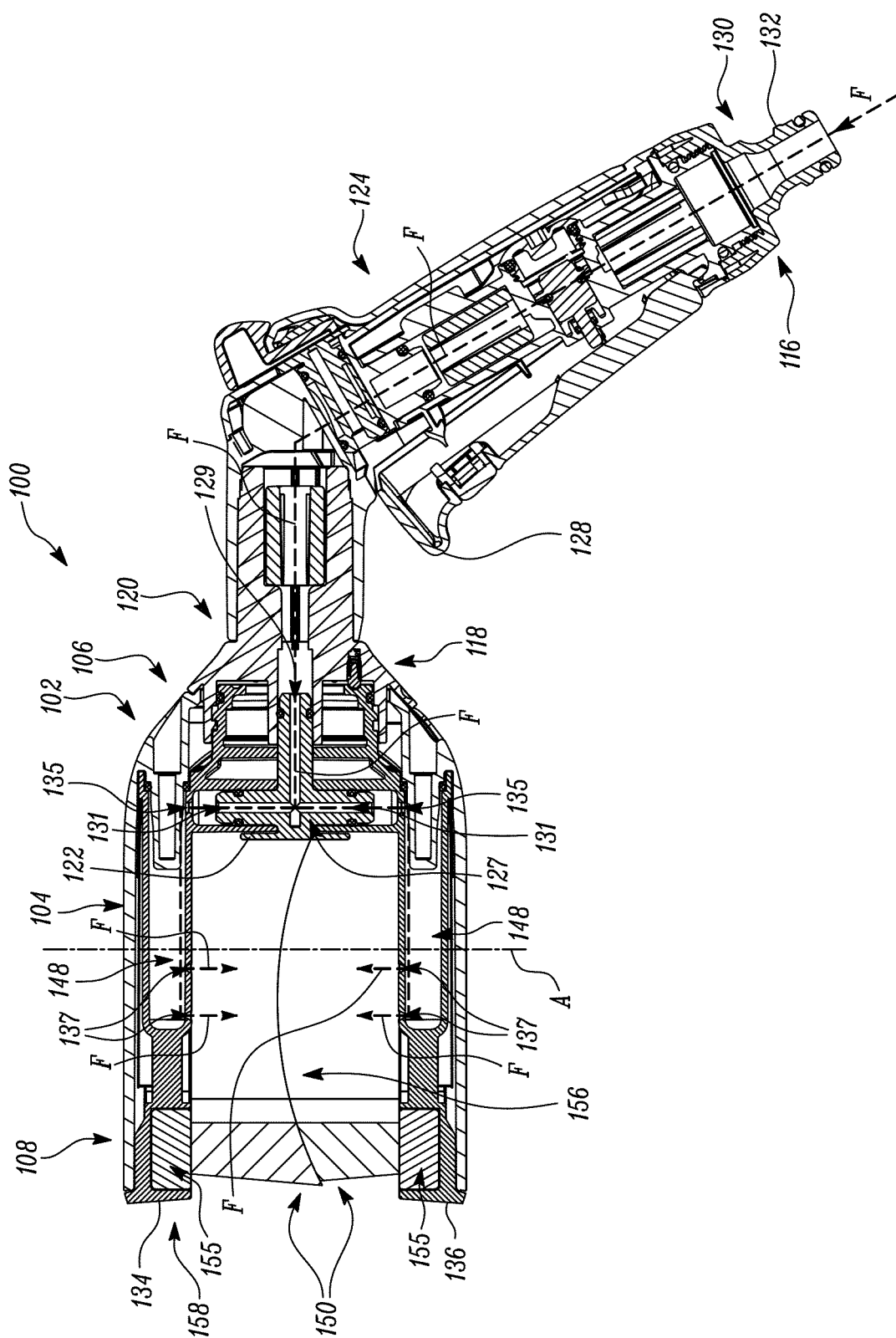


FIG. 3

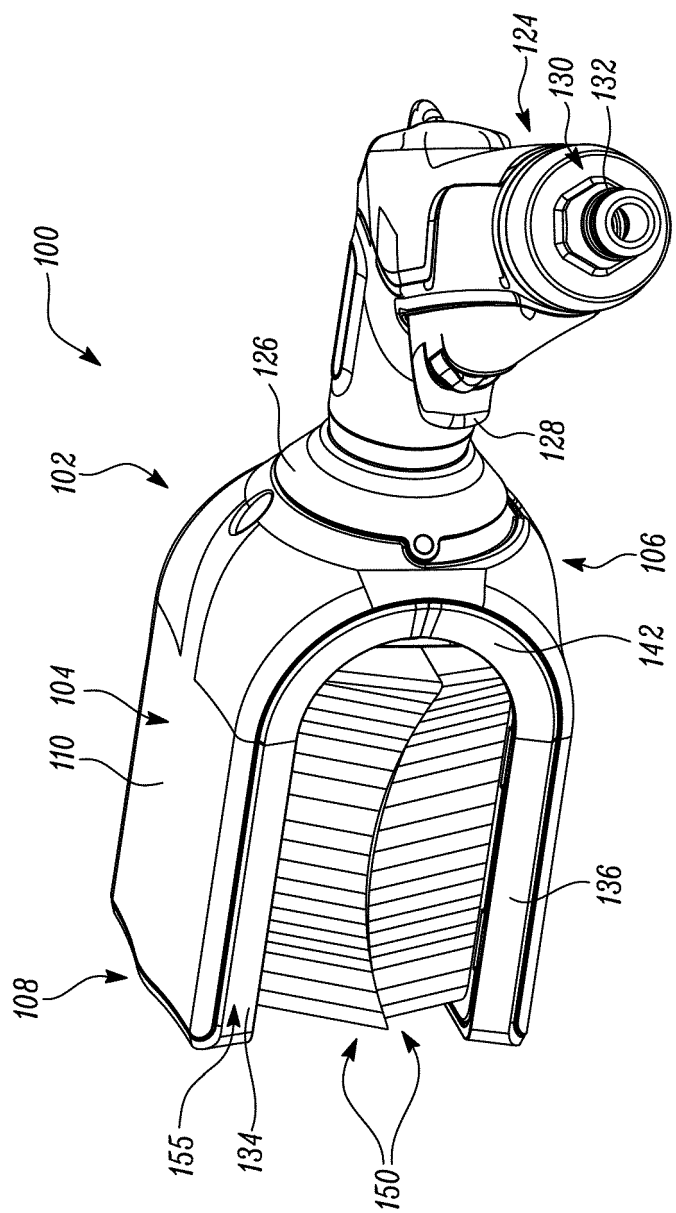


FIG. 4

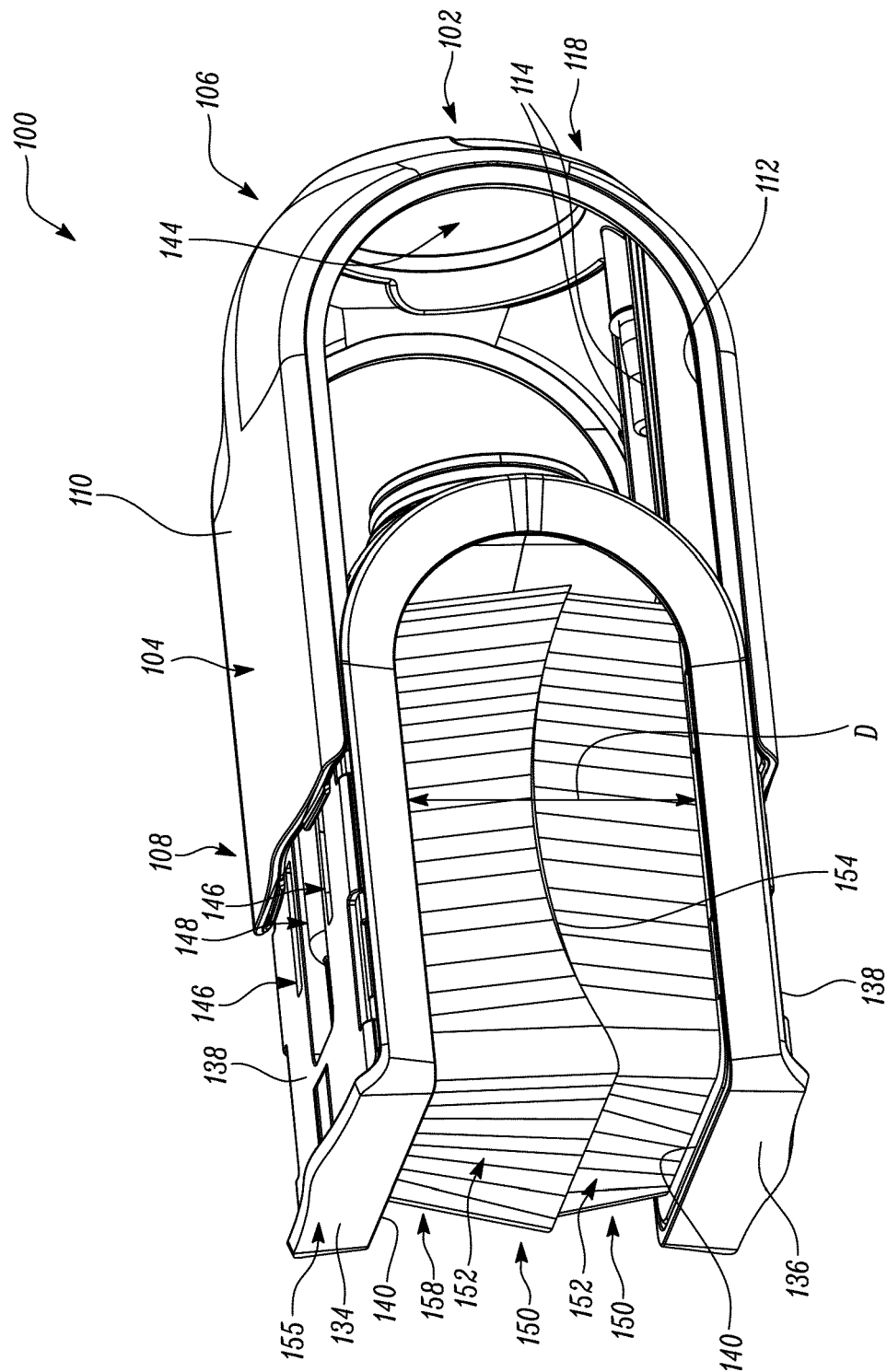


FIG. 5

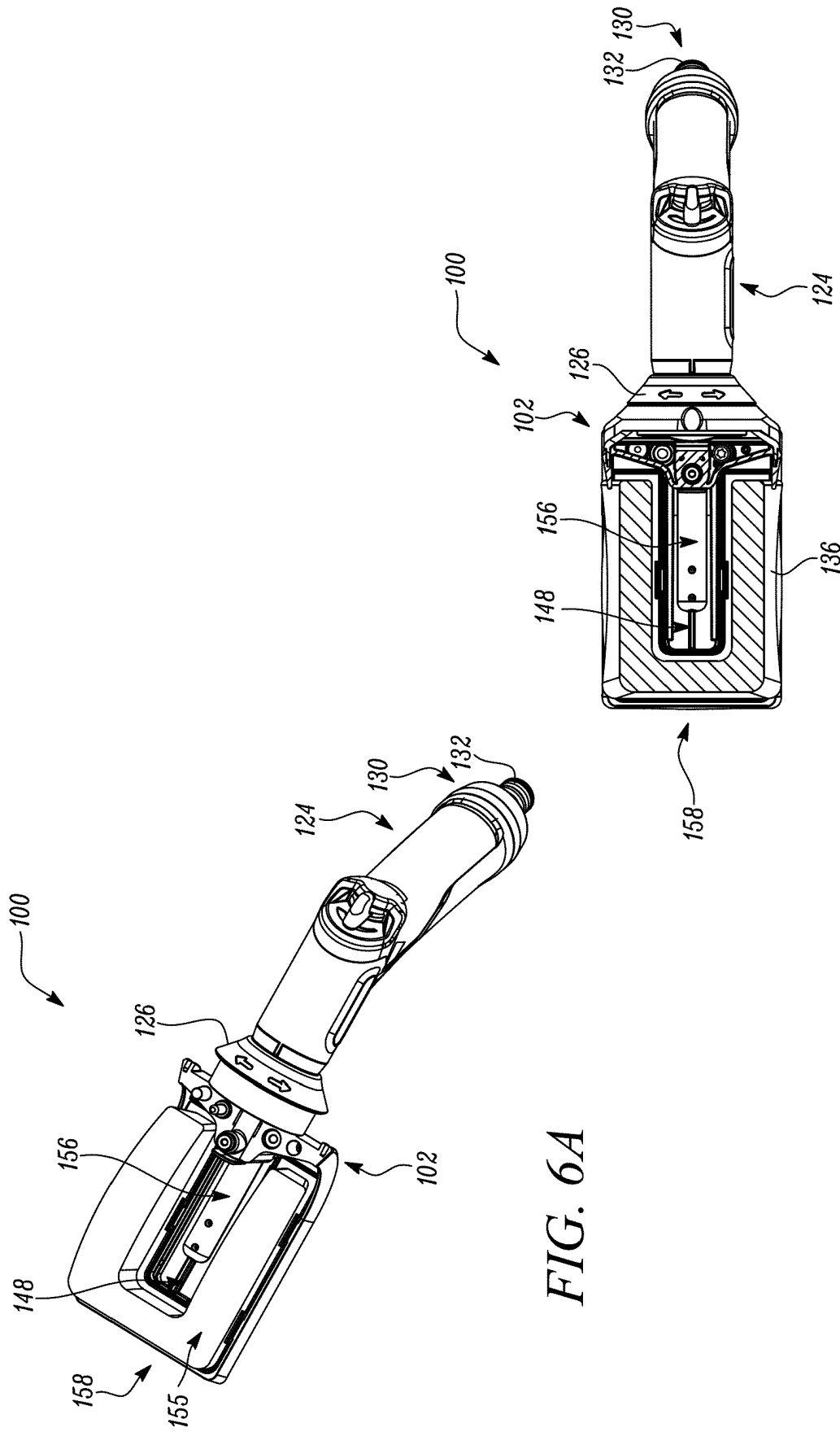


FIG. 6A

FIG. 6B

REFERENCES CITED IN THE DESCRIPTION

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