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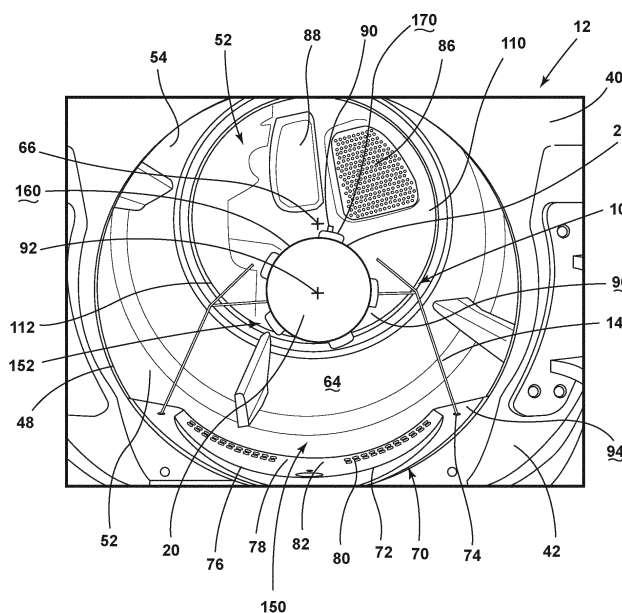
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(54) **PET HAIR REMOVAL ASSEMBLY FOR LAUNDRY APPLIANCES**

(57) A pet hair removal assembly (10) for a laundry appliance (12) includes a frame (14) having a central support (16) and legs (18). A cylindrical member is operably coupled to the central support (16) of the frame (14). The cylindrical member defines recesses (22) within an outer surface (160) of the cylindrical member. A for-

ign substrate collection member (24) is operably coupled to the cylindrical member. A fastener (26) is positioned proximate each recess (22) that operably couples the foreign substrate collection member (24) with the cylindrical member.



**FIG. 2**

## Description

### BACKGROUND OF THE DISCLOSURE

[0001] The present disclosure generally relates to a laundry appliance, and more specifically, to a pet hair removal assembly for a laundry appliance.

### SUMMARY OF THE DISCLOSURE

[0002] According to one aspect of the present disclosure, a pet hair removal assembly for a laundry appliance includes a frame having a central support and legs. A cylindrical member is operably coupled to the central support of the frame. The cylindrical member defines recesses within an outer surface of the cylindrical member. A foreign substrate collection member is operably coupled to the cylindrical member. A fastener is positioned proximate each recess that operably couples the foreign substrate collection member with the cylindrical member.

[0003] According to another aspect, a laundry appliance includes a rotating drum that rotationally operates within a cabinet. A door is coupled to a front portion of the cabinet and operable to allow selective access to the rotating drum via an access opening in the front portion. The rotating drum rotates about a primary rotational axis. A cylindrical member includes a foreign substrate collection member. The cylindrical member is selectively positioned within a lower portion of the rotating drum to rotate about a secondary rotational axis that is parallel with the primary rotational axis.

[0004] According to another aspect, a laundry appliance includes a rotating drum that rotationally operates about a primary rotational axis. Lifters are attached to an interior surface of the drum. Rotation of the drum is configured to agitate articles being processed within the drum. A cylindrical member includes a foreign substrate collection member. The cylindrical member is selectively positioned within a lower portion of the drum to rotate about a secondary rotational axis that is parallel with the primary rotational axis. Rotation of the drum moves the lifters near an outer surface of the cylindrical member to engage the articles against the foreign substrate collection member of the cylindrical member.

[0005] These and other features, advantages, and objects of the present disclosure will be further understood and appreciated by those skilled in the art by reference to the following specification, claims, and appended drawings.

### BRIEF DESCRIPTION OF THE DRAWINGS

[0006] In the drawings:

FIG. 1 is a front perspective view of a laundry appliance of the present disclosure;

FIG. 2 is a partial front perspective view of a pet hair removal assembly of the present disclosure within a

laundry cavity;

FIG. 3 is a top perspective view of a pet hair removal assembly of the present disclosure;

FIG. 4 is an exploded top perspective view of the pet hair removal assembly of FIG. 3; and

FIG. 5 is a front perspective view of a drum for a laundry appliance with a pet hair removal assembly and clothing items positioned within a laundry cavity.

[0007] The components in the figures are not necessarily to scale, emphasis instead being placed upon illustrating the principles described herein.

### DETAILED DESCRIPTION

[0008] The present illustrated embodiments reside primarily in combinations of method steps and apparatus components related to a pet hair removal assembly. Accordingly, the apparatus components and method steps have been represented, where appropriate, by conventional symbols in the drawings, showing only those specific details that are pertinent to understanding the embodiments of the present disclosure so as not to obscure the disclosure with details that will be readily apparent to those of ordinary skill in the art having the benefit of the description herein. Further, like numerals in the description and drawings represent like elements.

[0009] For purposes of description herein, the terms "upper," "lower," "right," "left," "rear," "front," "vertical," "horizontal," and derivatives thereof shall relate to the disclosure as oriented in FIG. 1. Unless stated otherwise, the term "front" shall refer to the surface of the element closer to an intended viewer, and the term "rear" shall refer to the surface of the element further from the intended viewer. However, it is to be understood that the disclosure may assume various alternative orientations, except where expressly specified to the contrary. It is also to be understood that the specific devices and processes illustrated in the attached drawings, and described in the following specification are simply exemplary embodiments of the inventive concepts defined in the appended claims. Hence, specific dimensions and other physical characteristics relating to the embodiments disclosed herein are not to be considered as limiting, unless the claims expressly state otherwise.

[0010] The terms "including," "comprises," "comprising," or any other variation thereof, are intended to cover a non-exclusive inclusion, such that a process, method, article, or apparatus that comprises a list of elements does not include only those elements but may include other elements not expressly listed or inherent to such process, method, article, or apparatus. An element preceded by "comprises a . . ." does not, without more constraints, preclude the existence of additional identical elements in the process, method, article, or apparatus that comprises the element.

[0011] Referring to FIGS. 1-5, reference numeral 10 generally designates a pet hair removal assembly for a

laundry appliance 12. The pet hair removal assembly 10 includes a frame 14 that has a central support 16 and legs 18. A cylindrical barrel member 20 is operably coupled to the central support 16 of the frame 14. The cylindrical barrel member 20 also defines recesses 22. At least one foreign substrate collection member 24 is operably coupled to the cylindrical barrel member 20. A fastener 26 is operably coupled with the foreign substrate collection member 24 and the cylindrical barrel member 20.

**[0012]** Referring to FIGS. 1 and 2, the laundry appliance 12 is illustrated in FIG. 1 as a horizontal axis dryer. It is also contemplated that the constructions described herein may be applicable for a dryer and/or a combination laundry appliance. The laundry appliance 12 includes a cabinet 40 that has a front portion 42, a top portion 44, and sidewalls 46. An access opening 48 is defined by the front portion 42, and a door 50 is hingedly coupled to the front portion 42 proximate to the access opening 48. Stated differently, the door 50 is configured to provide selective access to a processing space 52 defined by a drum 54 of the laundry appliance 12. The door 50 may be generally circular to correspond with the access opening 48 defined by the front portion 42 of the cabinet 40. Typically, the door 50 is formed from a rigid, metallic material. However, it is also contemplated that the door 50 may be formed from other materials known in the art, such as plastic.

**[0013]** The drum 54 is positioned within the cabinet 40 and is configured to rotate within the cabinet 40 and about a primary rotational axis 66 during a laundry cycle, described further below. In addition, a machine compartment 56 may be adjacent to the door 50 of the laundry appliance 12. The machine compartment 56 includes machine components 58 that are configured to rotate or otherwise articulate the drum 54 within the cabinet 40. A user interface 60 can be coupled to the top portion 44 of the cabinet 40 to select and control the various laundry cycles of the laundry appliance 12. Additionally or alternatively, the user interface 60 can be operably coupled to the cabinet 40 at any practicable location. The laundry appliance 12 includes a controller 62 that is operably and communicatively coupled to the user interface 60 and the machine components 58 of the laundry appliance 12. The controller 62 is configured with an algorithm of the laundry appliance 12 that is configured to control the rotational movement of the drum 54 during the laundry cycle.

**[0014]** Referring now to FIGS. 2-4 and as illustrated in FIG. 2, the access opening 48 of the processing space 52 is at least partially defined by a lint collection assembly 70 operably coupled to the front portion 42 of the laundry appliance 12. The lint collection assembly 70 can include a receiving body 72 that defines apertures 74 and defines a receiving opening 76 in which a removable lint trap 78 is selectively disposed. The lint trap 78 is configured with a plurality of holes 80 defined along a top surface 82 of the lint trap 78 and includes a mesh body 84 (FIG. 1)

coupled to the top surface 82. The lint collection assembly 70 is positioned opposite an air ventilation portion 86 partially defined by a rear wall 88 of the laundry appliance 12. It is generally contemplated that the lint collection assembly 70 is generally curved to follow the circular configuration of the access opening 48 defined by the laundry appliance 12. As will be described in more detail below, the air ventilation portion 86 is at least partially configured to direct foreign substrates 90, such as pet hair, toward the lint collection assembly 70, and the lint collection assembly 70 is configured to collect the foreign substrates 90 on the lint trap 78. Stated differently, both the foreign substrate collection member 24 and the lint trap 78 are configured to independently and/or cooperatively collect the foreign substrates 90, such as pet hair.

**[0015]** Referring still to FIGS. 2-4, the pet hair removal assembly 10 is operably coupled to a front static surface 94 of the lint collection assembly 70. The frame 14 of the pet hair removal assembly 10 attaches to the front static surface 94 of the lint collection assembly 70 via the legs 18 being positioned within the apertures 74 defined by the lint collection assembly 70. The frame 14 of the pet hair removal assembly 10 includes a rear attachment portion 100 disposed within the processing space 52 and positioned proximate to a rear static surface 96 of the rear wall 88 of the laundry appliance 12. The rear attachment portion 100 is generally configured with a lower arcuate base 102 and a planar attachment portion 104 to define a generally D-shaped configuration of the rear attachment portion 100. The rear attachment portion 100 also includes a guide portion 106 outwardly extending from the lower arcuate base 102. The guide portion 106 is generally configured to selectively engage the rear static surface 96 of the rear wall 88 of the laundry appliance 12. The central support 16 of the frame 14 extends between a rear support having the rear attachment portion 100 and a front support having the legs 18. The central support 16 is coupled to the legs 18 via a crossbar 108.

**[0016]** As mentioned above, the rear wall 88 of the laundry appliance 12 generally defines a circular recess 110 to which the air ventilation portion 86 is operably coupled. The guide portion 106 of the frame 14 generally engages the circular recess 110 defined by the rear wall 88 of the laundry appliance 12 to guide and generally retain the frame 14 in a lower portion 112 of the processing space 52. Stated differently, the rear attachment portion 100 of the frame 14 is selectively disposed proximate to the rear wall 88 while remaining generally free from direct and/or fixed coupling with the laundry appliance 12. As mentioned above, it is generally contemplated that the frame 14 is operably coupled to the laundry appliance 12 via the legs 18 while the rear attachment portion 100 remains selectively free. The legs 18 are disposed within the lint collection assembly 70, which is operably coupled to the cabinet 40 of the laundry appliance 12 and is generally fixed relative to the drum 54. To accommodate the rotation of the drum 54, the rear attachment portion 100

of the frame 14 remains stationary relative to the drum 54 and is instead operably disposed proximate to the rear wall 88 of the laundry appliance 12.

**[0017]** With further reference to FIGS. 2-4, the guide portion 106 of the rear attachment portion 100 selectively engages portions of the circular recess 110 defined by the drum 54 as the drum 54 rotates within the cabinet 40. While the rear attachment portion 100 is selectively disposed within the drum 54 proximate to the circular recess 110, it is contemplated that the drum 54 moves, rotates, or otherwise articulates independently of the frame 14 of the pet hair removal assembly 10. The selective engagement of the guide portion 106 of the rear attachment portion 100 is configured to generally align the frame 14 within the processing space 52 during a laundry cycle of the laundry appliance 12. The guide portion 106 may articulate along and engage the circular recess 110 during rotation of the drum 54, while the frame 14 remains generally stationary within the processing space 52.

**[0018]** It is generally contemplated that the pet hair removal assembly 10 is configured to have a secondary rotational axis 92 relative to the primary rotational axis 66 defined by the drum 54. The secondary rotational axis 92 of the pet hair removal assembly 10 is generally achieved by the stationary coupling of the frame 14 to the lint collection assembly 70 via the apertures 74 and the free positioning of the rear attachment portion 100 proximate to the circular recess 110. As discussed above, it is contemplated that the frame 14 remains uncoupled from the drum 54 to maintain the secondary rotational axis 92 of the pet hair removal assembly 10. In this manner, the secondary rotational axis 92 of the cylindrical barrel member 20 is offset below the primary rotational axis 66 of the drum 54. Accordingly, during rotation of the drum 54, the cylindrical barrel member 20 is positioned to have a close engagement with a lower portion 112 of the processing space 52 defined within the drum 54. This closer engagement between the cylindrical barrel member 20 and the drum 54 defines a narrowed section 152 of the processing space 52.

**[0019]** In use, as the drum 54 rotates, articles 120 being processed within the drum 54 are directed through the narrowed section 152 of the processing space 52. After moving through this narrowed section 152, each rotation of the drum 54 can result in the articles 120 being moved upward by lifters 150 that are attached to an interior surface 64 of the drum 54. As the drum 54 continues to rotate, the articles 120 are then dropped from above and onto an outer surface 160 of the cylindrical barrel member 20 for the pet hair removal assembly 10. As the drum 54 continues to rotate, the articles 120 are directed around the cylindrical barrel member 20 and then through the narrowed section 152. This manipulation of the articles 120 within the drum 54 and between the cylindrical barrel member 20 and the drum 54 results in the cylindrical barrel member 20 being rotated about the secondary rotational axis 92. This configuration also presses the arti-

cles 120 being processed within the drum 54 against the lint collection assembly 70 of the cylindrical barrel member 20 as the articles 120 move through the narrowed section 152. The close engagement of the narrowed section 152 causes the surface of the drum 54 and the lifters 150 to press the articles 120 against the lint collection assembly 70, thereby promoting the transfer of particulate matter, including pet hair, from the articles 120 and to the lint collection assembly 70.

**[0020]** With reference to FIGS. 3-5 and as mentioned above, the cylindrical barrel member 20 is operably coupled to the central support 16 of the frame 14, and is configured to rotate about the central support 16 to further define the secondary rotational axis 92 of the pet hair removal assembly 10, described further below. The primary rotational axis 66 of the drum 54 is defined relative to the cabinet 40 of the laundry appliance 12. While the secondary rotational axis 92 of the pet hair removal assembly 10 is generally offset from the primary rotational axis 66, the secondary rotational axis 92 is typically generally parallel with the primary rotational axis 66. As discussed herein, operation of the frame can result in an adjustment of the cylindrical barrel member 20 within the drum 54. Accordingly, the secondary rotational axis 92 can be modified and manipulated relative to the primary rotational axis 66.

**[0021]** The secondary rotational axis 92 of the pet hair removal assembly 10 is defined by the rotation of the cylindrical barrel member 20 operably coupled to the frame 14. The cylindrical barrel member 20 is disposed within the processing space 52 and is configured to engage articles 120 selectively disposed within the processing space 52. These articles 120 can include clothing items, linens, bedding, and other similar items that can be processed within a laundry appliance 12. The engagement of the articles 120 with the cylindrical barrel member 20 further defines the secondary rotational axis 92 of the pet hair removal assembly 10 within the processing space 52, described further herein. The cylindrical barrel member 20 has an engagement surface 130 that defines the recesses 22 in which the foreign substrate collection member 24 is disposed. It is also contemplated that multiple foreign substrate collection members 24 may be disposed within the recesses 22 defined along the engagement surface 130 of the cylindrical barrel member 20. The cylindrical barrel member 20 also defines a central channel 132 in which the central support 16 is disposed.

**[0022]** With further reference to FIGS. 3-5, a pair of bearings 134 are operably coupled to the central support 16 and the cylindrical barrel member 20 proximate to openings 136 defined by the cylindrical barrel member 20, which provide access to the central channel 132. The bearings 134 are configured to operably couple the cylindrical barrel member 20 with the central support 16 to smoothly articulate the cylindrical barrel member 20 about the central support 16 to define the secondary rotational axis 92. The bearings 134 are generally configured to glide or otherwise smoothly articulate with the

central support 16, such that there is minimal rotational interference between the bearings 134 and the central support 16. As illustrated in FIG. 3, the cylindrical barrel member 20 extends along a length  $L_1$  of the central support 16, such that the central support 16 is generally concealed by the cylindrical barrel member 20. Additionally or alternatively, the cylindrical barrel member 20 may have a smaller configuration, such that more of the length  $L_1$  of the central support 16 is exposed relative to the cylindrical barrel member 20.

**[0023]** It is generally contemplated that the bearings 134 may centrally retain the cylindrical barrel member 20 along the central support 16, such that the bearings 134 may generally assist in the rotational movement of the cylindrical barrel member 20 while minimizing lateral movement along the central support 16. As mentioned above, the foreign substrate collection member 24 is operably coupled to the cylindrical barrel member 20 within at least one of the recesses 22 via the fasteners 26. It is generally contemplated that the fasteners 26 may include a tensile fastener 26, such as a tensile spring, disposed within the recess 22. Additionally or alternatively, the fasteners 26 may include, but are not limited to, snaps, clips, screws, and other practicable fasteners 26. The tensile fastener 26 is configured to engage the foreign substrate collection member 24 and generally retain the foreign substrate collection member 24 in the recess 22.

**[0024]** For example, the foreign substrate collection member 24 may compress the tensile fastener 26 within the recess 22, such that the tensile fastener 26 defines a tensile force against the foreign substrate collection member 24 within the recess 22 to generally retain the foreign substrate collection member 24. The tensile fastener 26 also assists in the selective removal of the foreign substrate collection member 24. The user may compress the foreign substrate collection member 24 against the tensile fastener 26 to further collapse the tensile fastener 26 and release the foreign substrate collection member 24 from the recess 22 defined by the cylindrical barrel member 20. The user may remove the foreign substrate collection member 24 to clean or otherwise replace the foreign substrate collection member 24 with a foreign substrate collection member 24 that is generally free from foreign substrates and/or pet hair.

**[0025]** With further reference to FIGS. 3-5, the foreign substrate collection member 24 is illustrated as an elongated body that extends along a length  $L_2$  of the cylindrical barrel member 20. It is also contemplated that the foreign substrate collection member 24 and the recesses 22 are intermittently disposed and defined along the length  $L_2$  of the cylindrical barrel member 20. For example, multiple foreign substrate collection members 24 can be aligned along the length  $L_2$  of the cylindrical barrel member 20. According to various aspects of the device, the foreign substrate collection member 24 can include a plurality of elongated surfaces. A portion of these elongated surfaces, typically at least one of the elongated surfaces, includes one or more discrete collection sur-

faces 170.

**[0026]** The foreign substrate collection member 24 is formed from an abrasive material, such as a tacky or sticky material. This can include a fabric material containing a plurality of bristles 138. Additionally or alternatively, the material of the foreign substrate collection member 24 may include, but is not limited to, silicone, wool, leather, velvet, or other tacky, sticky or abrasive materials practicable for use in removing the foreign substrates 90. Where the fabric material containing the plurality of bristles 138 are utilized, the plurality of bristles 138 may be closely aligned along the foreign substrate collection member 24. Stated differently, the foreign substrate collection member 24 has a first side 140 and a second side 142, and it is contemplated that the bristles 138 are disposed along the first side 140. The alignment of the bristles 138 can assist in the abrasion or general engagement of the clothing item articles 120 within the processing space 52. The bristles 138 can be generally rigid, such that the engagement with the articles 120 results in minimal flexion of the bristles 138. The general rigidity of the bristles 138 assists in removal of the foreign substrates 90 from the articles 120. It is also contemplated that the bristles 138 may also retain the foreign substrates 90 that are removed from the articles 120, such that the foreign substrates 90 may be collected and retained by the bristles 138 along the foreign substrate collection member 24.

**[0027]** The foreign substrates 90 may be retained on the foreign substrate collection member 24, such that the foreign substrates 90 may be selectively retained by the bristles 138. For example, the bristles 138 can remove the foreign substrates 90 from the articles 120 and the foreign substrates 90 may be trapped within the bristles 138. It is contemplated that the user can remove the foreign substrate collection member 24 from the cylindrical barrel member 20 by laterally translating the foreign substrate collection member 24 relative the cylindrical barrel member 20. The tensile fastener 26 may then compress upon lateral translation of the foreign substrate collection member 24 to loosen the retention of the foreign substrate collection member 24 in the respective recess 22.

**[0028]** Once the foreign substrate collection member 24 is removed, the user can remove the foreign substrates 90 from the bristles 138. Additionally or alternatively, the foreign substrates 90 may be removed from the foreign substrate collection member 24 via the air ventilation portion 86. For example, during the laundry cycle, the foreign substrates 90 are collected by the bristles 138 and the articles 120 are dried, at least in part, via the air ventilation portion 86. It is contemplated that the air directed from the air ventilation portion 86 can release or otherwise remove the foreign substrates 90 collected along the foreign substrate collection member 24. The air directs the removed foreign substrates 90 toward the lint collection assembly 70, and the foreign substrates 90 are collected on the lint trap 78. The user can then remove the foreign substrates 90 collected on

the lint trap 78.

**[0029]** Referring again to FIGS. 1-5, it is generally contemplated that the pet hair removal assembly 10 can be selectively removed from the laundry appliance 12 depending on the articles 120 that are disposed in the processing space 52. For example, the user may deposit articles 120 that are more likely to have foreign substrates 90 disposed on the articles 120. The user may position the pet hair removal assembly 10 within the processing space 52 to engage the foreign substrate collection member 24 with the articles 120. Once the foreign substrates 90 are removed from the articles 120 and the laundry cycle is complete, it is contemplated that the pet hair removal assembly 10 may be removed from the laundry appliance 12. The selective positioning and removal of the pet hair removal assembly 10 maximizes the various uses of the laundry appliance 12. The lint collection assembly 70 typically collects the lint and loose foreign substrates 90. The selective addition of the pet hair removal assembly 10 to the laundry appliance 12 assists in further removing the foreign substrates 90.

**[0030]** The pet hair removal assembly 10 is selectively positioned within the apertures 74 defined by the lint collection assembly 70. The legs 18 are disposed within the apertures 74, such that the frame 14 of the pet hair removal assembly 10 can be lifted and removed from the apertures 74. The guide portion 106 assists in the placement of the pet hair removal assembly 10 within the processing space 52. For example, the guide portion 106 aligns the rear attachment portion 100 with the circular recess 110 defined by the rear wall 88 laundry appliance 12. The lower arcuate base 102 of the rear attachment portion 100 is disposed proximate to the rear wall 88. As mentioned above, the secondary rotational axis 92 is defined as the frame 14 remains free from direct coupling with the drum 54.

**[0031]** In certain aspects of the device, the frame 14 can include operable legs 18 that are operable to adjust the height of the cylindrical barrel member 20 within the rotating drum 54. In this manner, the legs 18 can include telescoping members, or can include operable portions that allow the legs 18 to be manipulated through bending, deflection, extending or other similar operation to adjust the vertical position of the cylindrical barrel member 20 within the drum 54. It is contemplated that the positioning of the cylindrical barrel member 20 can be vertically adjusted to accommodate laundry loads of different sizes. Where a larger load of laundry is being processed or where the load of laundry includes larger or bulkier articles 120, the cylindrical barrel member 20 may require a greater clearance space relative to the rotating drum 54 and the lifters 150. Conversely, where the load of laundry is smaller or includes smaller articles 120, a smaller clearance space relative to the drum 54 and the lifters 150 can be more desirable. It is contemplated that the vertical positions of the cylindrical barrel member 20 and the drum 54 can be adjusted before starting a laundry cycle.

**[0032]** It is also contemplated that the frame 14 and the cylindrical barrel member 20 can include a suspension system that can operate to allow for continual and automatic manipulation of the cylindrical barrel member 20 during performance of the laundry cycle. By way of example and not limitation, the suspension system can provide for the passage of a larger article through the narrowed space. Where an article is larger than the narrowed space, the suspension system can allow for a deflection of the cylindrical barrel member 20 relative to the drum 54. This can prevent larger articles or clumps of articles from lifting the frame out of engagement with the receiving body 72 and the rear wall 88.

**[0033]** Referring still to FIGS. 1-5, the cylindrical barrel member 20 rotates as a result of the engagement with the articles 120 within the processing space 52. The secondary rotational axis 92 assists in the removal of the foreign substrates 90 as the articles 120 are rotated within the processing space 52 according to the primary rotational axis 66 of the drum 54. The articles 120 can then engage with the cylindrical barrel member 20, and the cylindrical barrel member 20 is generally rotated as a result of the engagement with the articles 120. Stated differently, the articles 120 rotate the cylindrical barrel member 20 as the articles 120 tumble within the drum 54 as a result of the primary rotational axis 66 of the drum 54. It is generally contemplated that the articles 120 may be tumbled or otherwise lifted by lifters 150 operably coupled to the drum 54. The lifters 150 can engage the articles 120 to reposition the articles 120 within the processing space 52. The lifters 150 may also assist in the engagement of the articles 120 with the pet hair removal assembly 10 by repositioning the articles 120 above, and ultimately onto, the cylindrical barrel member 20 and then through the narrowed space between the lifters and the cylindrical barrel member 20. It is contemplated that this narrowed space can be adjustable through operation of the frame. In this manner, the narrowed space can be from approximately 5 millimeters to approximately 200 millimeters and various distances therebetween. The engagement of the articles 120 with the cylindrical barrel member 20 results in the rotation of the cylindrical barrel member 20. The rotation of the cylindrical barrel member 20 may assist in the removal of the foreign substrates 90 as a result of an increased speed of engagement of the articles 120 with the foreign substrate collection member 24.

**[0034]** The invention disclosed herein is further summarized in the following paragraphs and is further characterized by combinations of any and all of the various aspects described therein.

**[0035]** According to another aspect of the present disclosure, a pet hair removal assembly for a laundry appliance includes a frame having a central support and legs. A cylindrical member is operably coupled to the central support of the frame. The cylindrical member defines recesses within an outer surface of the cylindrical member. A foreign substrate collection member is operably cou-

pled to the cylindrical member. A fastener is positioned proximate each recess that operably couples the foreign substrate collection member with the cylindrical member.

**[0036]** According to another aspect, the foreign substrate collection member is selectively disposed within one of the recesses defined by the cylindrical member.

**[0037]** According to yet another aspect, the foreign substrate collection member includes a first side and a second side, and the first side includes a fabric material.

**[0038]** According to another aspect of the present disclosure, the foreign substrate collection member is removably coupled to the cylindrical member via the fasteners. The fasteners include tensile springs that bias the foreign substrate collection member toward the cylindrical member.

**[0039]** According to another aspect, the foreign substrate collection member includes a plurality of elongated surfaces. A portion of the plurality of elongated surfaces includes discrete collection surfaces.

**[0040]** According to yet another aspect, one of the discrete collection surfaces includes a fabric material having bristles.

**[0041]** According to another aspect of the present disclosure, the fabric material includes a plurality of bristles.

**[0042]** According to another aspect, the frame includes a front support and a rear support and the central support extending therebetween. The central support extends axially through the cylindrical member.

**[0043]** According to yet another aspect, a laundry appliance includes a rotating drum that rotationally operates within a cabinet. A door is coupled to a front portion of the cabinet and operable to allow selective access to the rotating drum via an access opening in the front portion. The rotating drum rotates about a primary rotational axis. A cylindrical member includes a foreign substrate collection member. The cylindrical member is selectively positioned within a lower portion of the rotating drum to rotate about a secondary rotational axis that is parallel with the primary rotational axis.

**[0044]** According to another aspect of the present disclosure, a frame supports the cylindrical member within the rotating drum. The frame rests upon a front static surface and a rear static surface that are positioned proximate the front and the rear of the rotating drum, respectively.

**[0045]** According to another aspect, the cylindrical member includes recesses that receive the foreign substrate collection member.

**[0046]** According to yet another aspect, the foreign substrate collection member includes collection members that are selectively positioned within the recesses, respectively.

**[0047]** According to another aspect of the present disclosure, the collection members are secured within the recesses using fasteners having tensile springs.

**[0048]** According to another aspect, each of the collection members include bristles that extend from a discrete collection surface.

**[0049]** According to yet another aspect, the frame includes a front support that is configured to rest upon the front static surface. The front static surface includes a receiving opening that selectively receives a removable lint trap.

**[0050]** According to another aspect of the present disclosure, the frame includes a rear support having a rear attachment portion that selectively rests upon the rear static surface. A central support extends between the front support and the rear support of the frame. The central support extends through the cylindrical member.

**[0051]** According to another aspect, the rear attachment portion includes a lower arcuate base and a guide portion that selectively engage the rear static surface to rotationally secure the frame relative to the cabinet.

**[0052]** According to yet another aspect, a laundry appliance includes a rotating drum that rotationally operates about a primary rotational axis. Lifters are attached to an interior surface of the drum. Rotation of the drum is configured to agitate articles being processed within the drum. A cylindrical member includes a foreign substrate collection member. The cylindrical member is selectively positioned within a lower portion of the drum to rotate about a secondary rotational axis that is parallel with the primary rotational axis. Rotation of the drum moves the lifters near an outer surface of the cylindrical member to engage the articles against the foreign substrate collection member of the cylindrical member.

**[0053]** According to another aspect of the present disclosure, the cylindrical member includes recesses that receive collection members of the foreign substrate collection member. The collection members are secured within the recesses using fasteners having tensile springs.

**[0054]** According to another aspect, each of the collection members include bristles that extend from a discrete collection surface.

## Claims

1. A pet hair removal assembly (10) for a laundry appliance (12), comprising:

a frame (14) having a central support (16) and legs (18);  
a cylindrical member operably coupled to the central support (16) of the frame (14), the cylindrical member defining recesses (22) within an outer surface (160) of the cylindrical member;  
a foreign substrate collection member (24) operably coupled to the cylindrical member; and  
a fastener (26) positioned proximate each recess (22) that operably couples the foreign substrate collection member (24) with the cylindrical member.

2. The pet hair removal assembly (10) of claim 1,

wherein the foreign substrate collection member (24) is selectively disposed within one of the recesses (22) defined by the cylindrical member.

3. The pet hair removal assembly (10) of any one of claims 1-2, wherein the foreign substrate collection member (24) includes a first side (140) and a second side (142). 5
4. The pet hair removal assembly (10) of claim 3, wherein the first side (140) includes a fabric material. 10
5. The pet hair removal assembly (10) of any one of claims 1-4, wherein the foreign substrate collection member (24) is removably coupled to the cylindrical member via the fasteners (26). 15
6. The pet hair removal assembly (10) of claim 5, wherein the fasteners (26) include tensile springs (26) that bias the foreign substrate collection member (24) toward the cylindrical member. 20
7. The pet hair removal assembly (10) of any one of claims 5-6, wherein the foreign substrate collection member (24) includes a plurality of elongated surfaces. 25
8. The pet hair removal assembly (10) of claim 7, wherein a portion of the plurality of elongated surfaces includes discrete collection surfaces (170). 30
9. The pet hair removal assembly (10) of claim 8, wherein one of the discrete collection surfaces (170) includes a fabric material having bristles (138). 35
10. The pet hair removal assembly (10) of any one of claims 4-9, wherein the fabric material includes a plurality of bristles (138). 35
11. The pet hair removal assembly (10) of any one of claims 1-10, wherein the frame (14) includes a front support and a rear support and the central support (16) extending therebetween. 40
12. The pet hair removal assembly (10) of claim 11, wherein the central support (16) extends axially through the cylindrical member. 45
13. A laundry appliance (12) comprising: 50
  - a rotating drum (54) that rotationally operates about a primary rotational axis (66) within a cabinet (40);
  - a pet hair removal assembly (10) according to any of claims 1-12, 55
    - wherein the frame (14) selectively positions the cylindrical member within a lower portion (112) of the rotating drum (54) to rotate about a sec-

ondary rotational axis (92) that is parallel with the primary rotational axis (66).

14. The laundry appliance (12) of claim 13, wherein the frame (14) rests upon a front static surface (94) and a rear static surface (96) that are positioned proximate the front and the rear of the rotating drum (54), respectively.
15. The laundry appliance (12) of any of claims 13-14, wherein the legs (18) of the frame (14) are adjustable to manipulate the secondary rotational axis (92) of the cylindrical member relative to primary rotational axis (66) of the rotating drum (54).

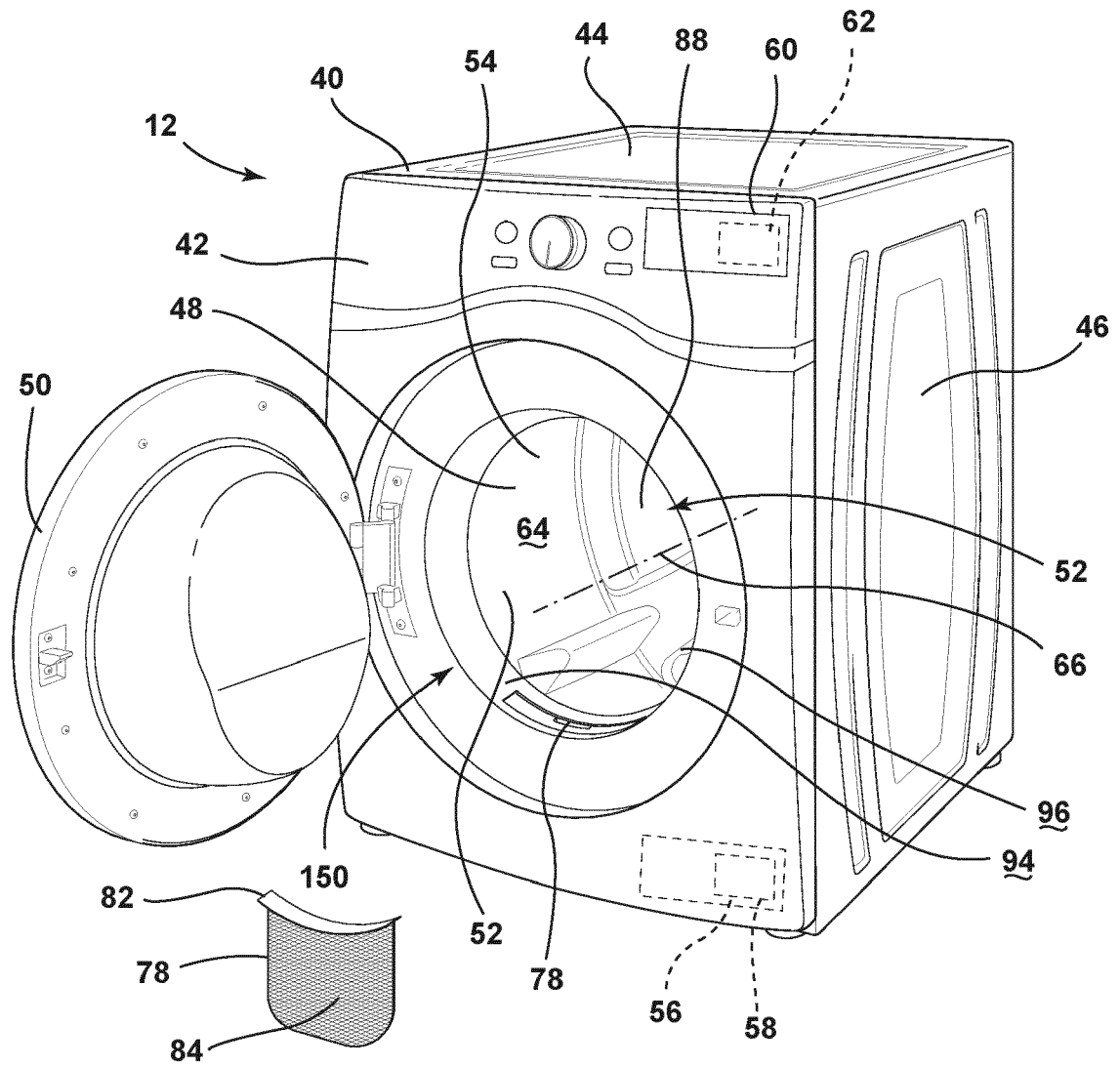


FIG. 1

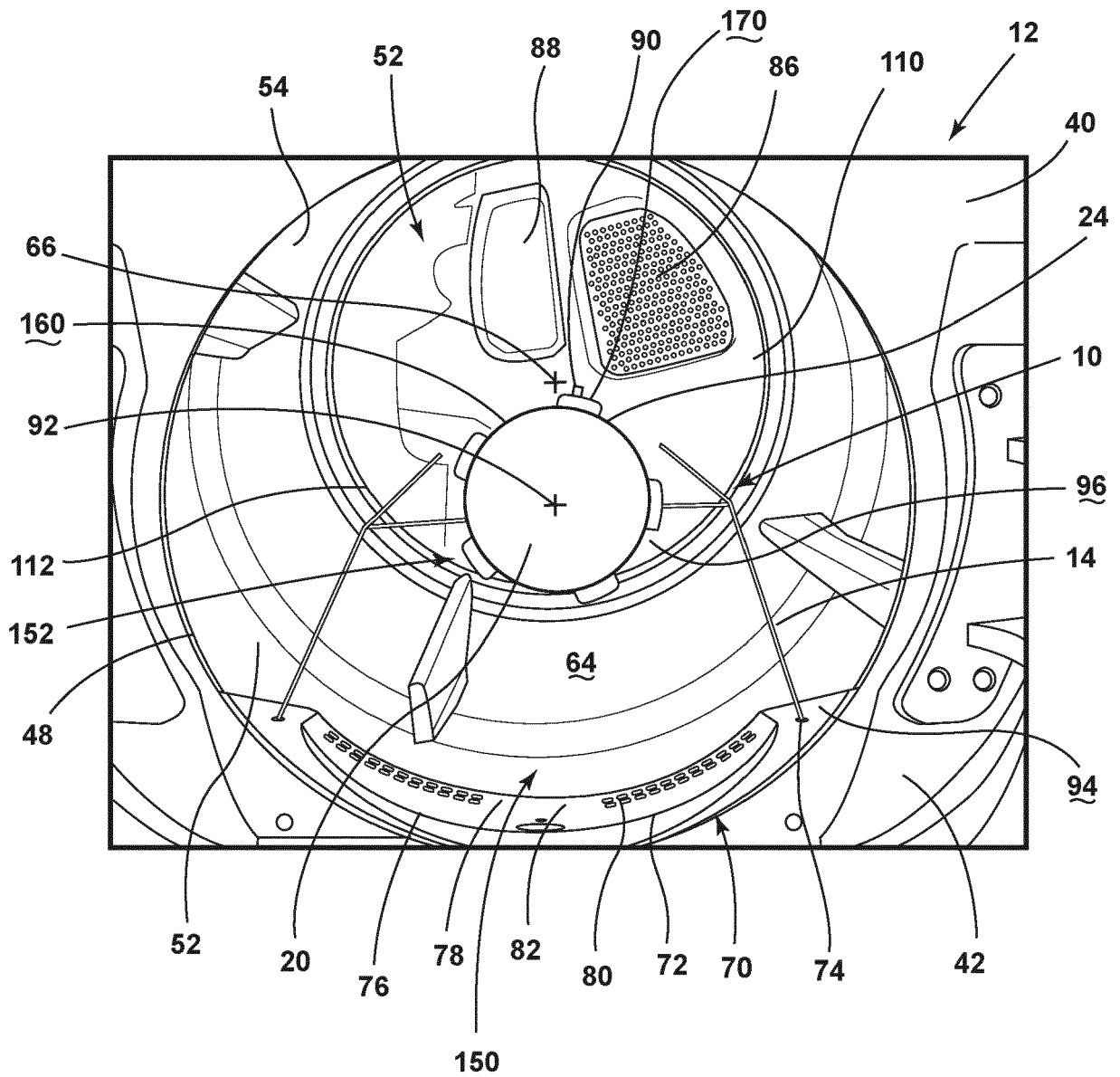
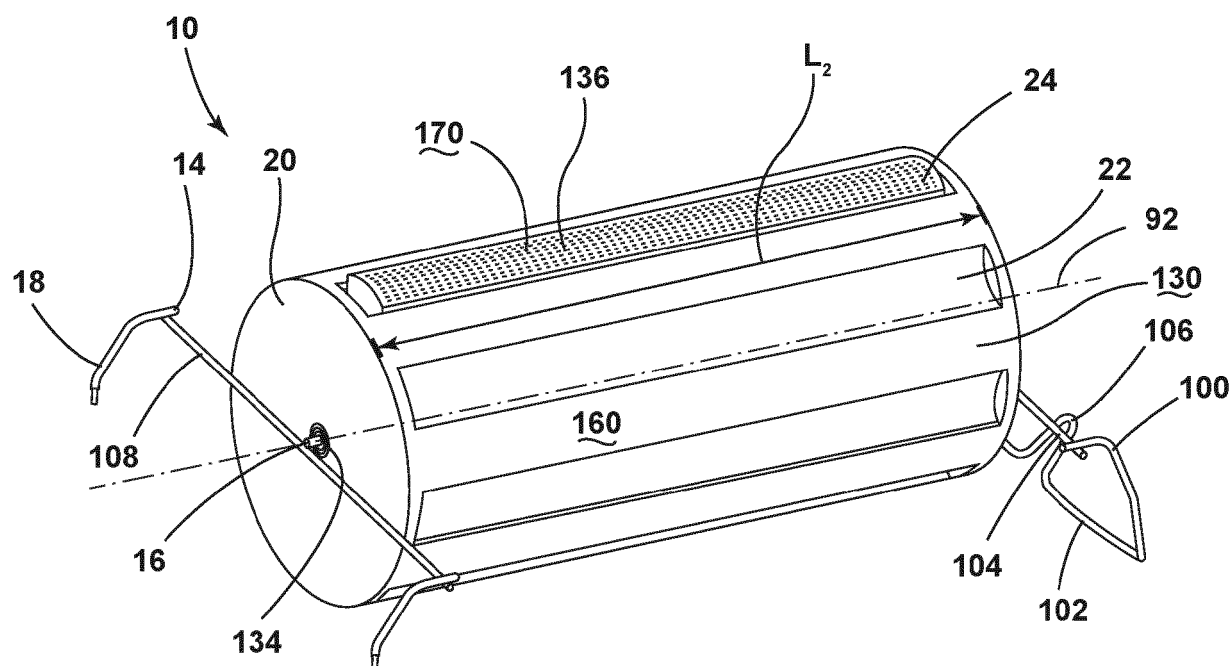


FIG. 2



**FIG. 3**

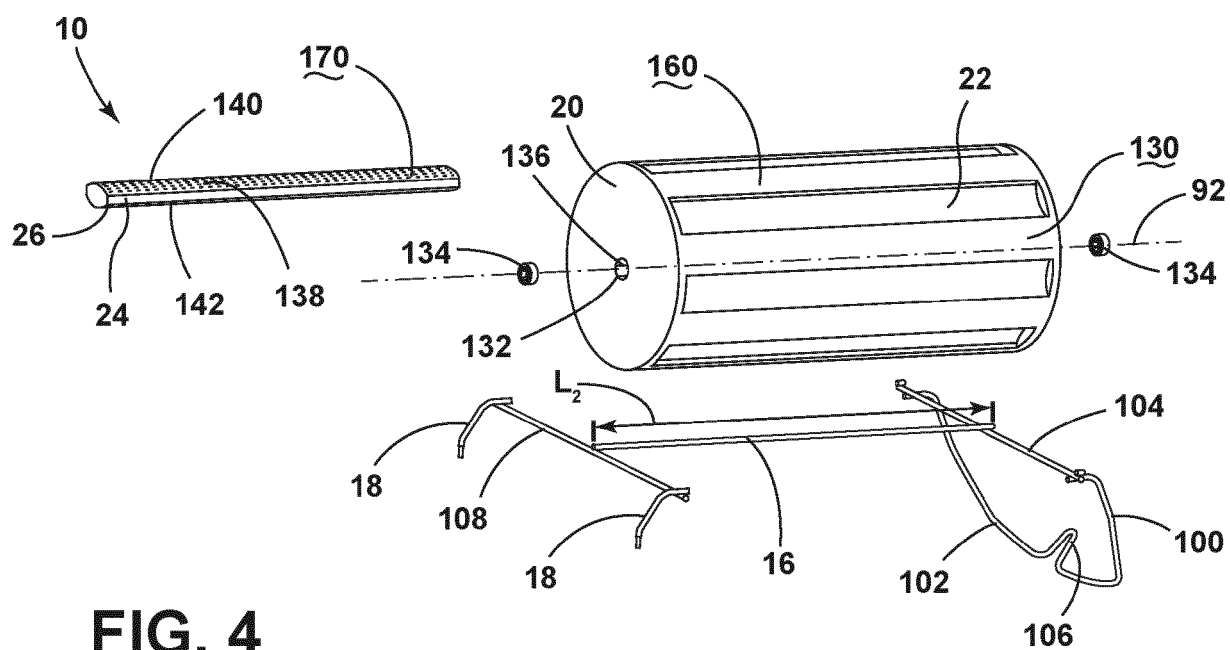


FIG. 4

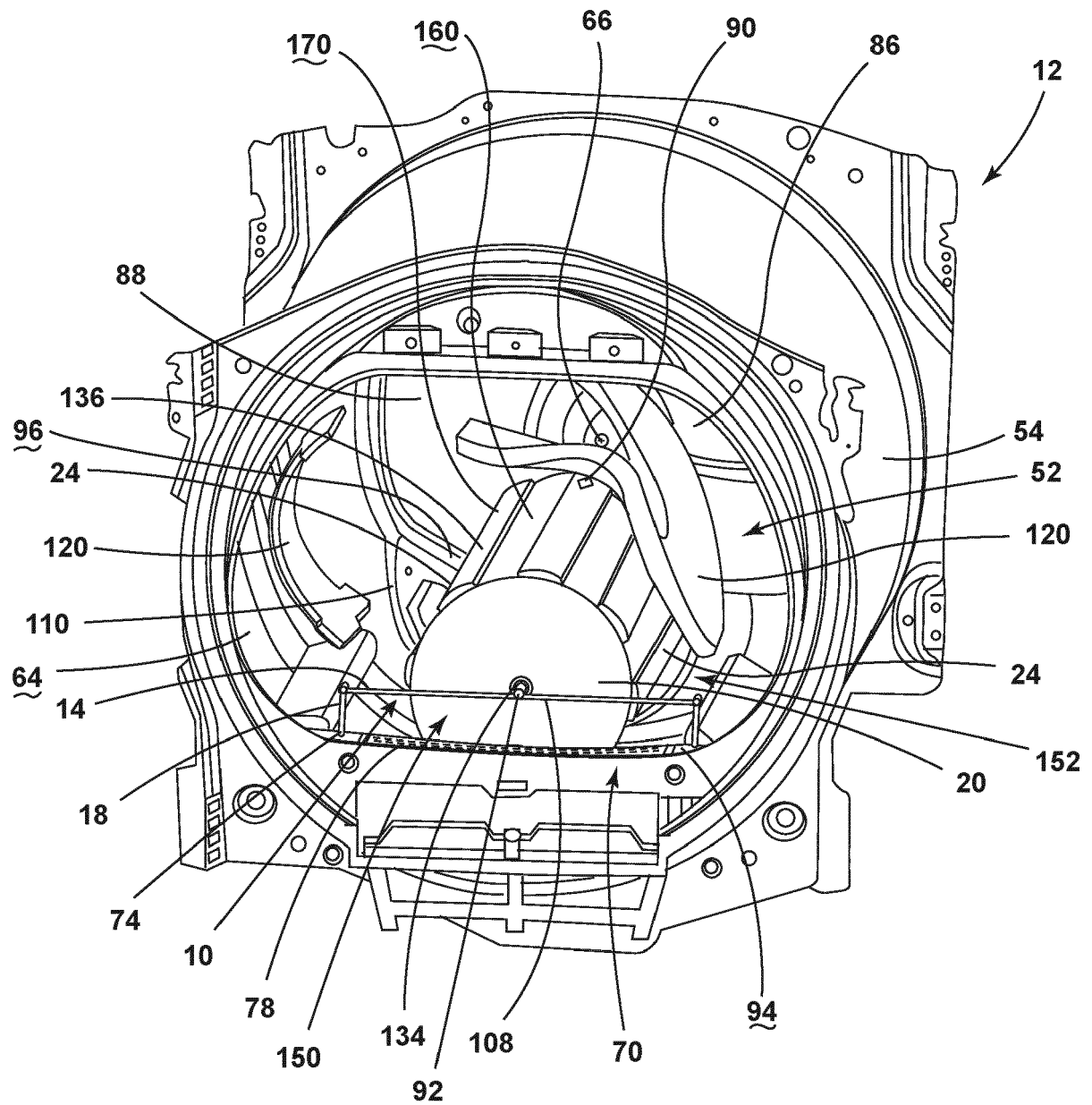


FIG. 5



## EUROPEAN SEARCH REPORT

Application Number

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| Place of search<br><b>Munich</b>                                                                                                                                                                                                                       |                                                                                                                                                           | Date of completion of the search<br><b>22 September 2022</b>                                                                                                                                                                                                                          | Examiner<br><b>Prosig, Christina</b>        |
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| T : theory or principle underlying the invention<br>E : earlier patent document, but published on, or after the filing date<br>D : document cited in the application<br>L : document cited for other reasons<br>-----<br>& : member of the same patent family, corresponding document |                                                                                                                                        |                   |                                                              |

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