US 20240057841A1

(19) **United States**

(12) **Patent Application Publication**

BILLINGS et al.

(10) **Pub. No.: US 2024/0057841 A1**

(43) **Pub. Date: Feb. 22, 2024**

(54) **PET HAIR REMOVER**

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(21) Appl. No.: **17/820,666**

(22) Filed: **Aug. 18, 2022**

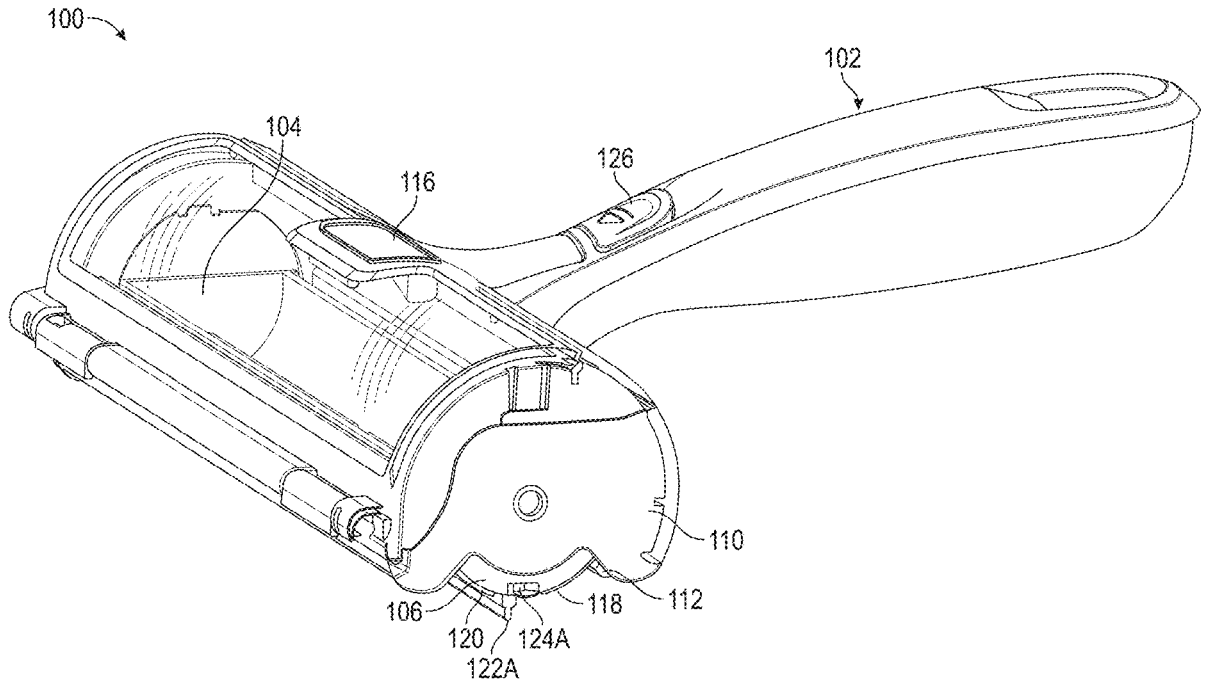
Publication Classification

(51) **Int. Cl.**
A47L 13/40 (2006.01)

(52) **U.S. Cl.**
CPC ***A47L 13/40*** (2013.01)

(57) **ABSTRACT**

Pet hair removers are disclosed herein. In some embodiments, the pet hair remover includes a handle, a collection chamber, a roller, a roller frame, a door, and a blade. In some embodiments, the pet hair remover comprises a protrusion on an exterior, planar surface of the roller, and the roller's rotation is limited by the protrusion contacting the roller frame. In some embodiments, the door is at least partially transparent to provide a view of the collection chamber. In some embodiments, the pet hair remover further comprises a spring that biases the door open, a latch that holds the door closed, and a button on the handle.



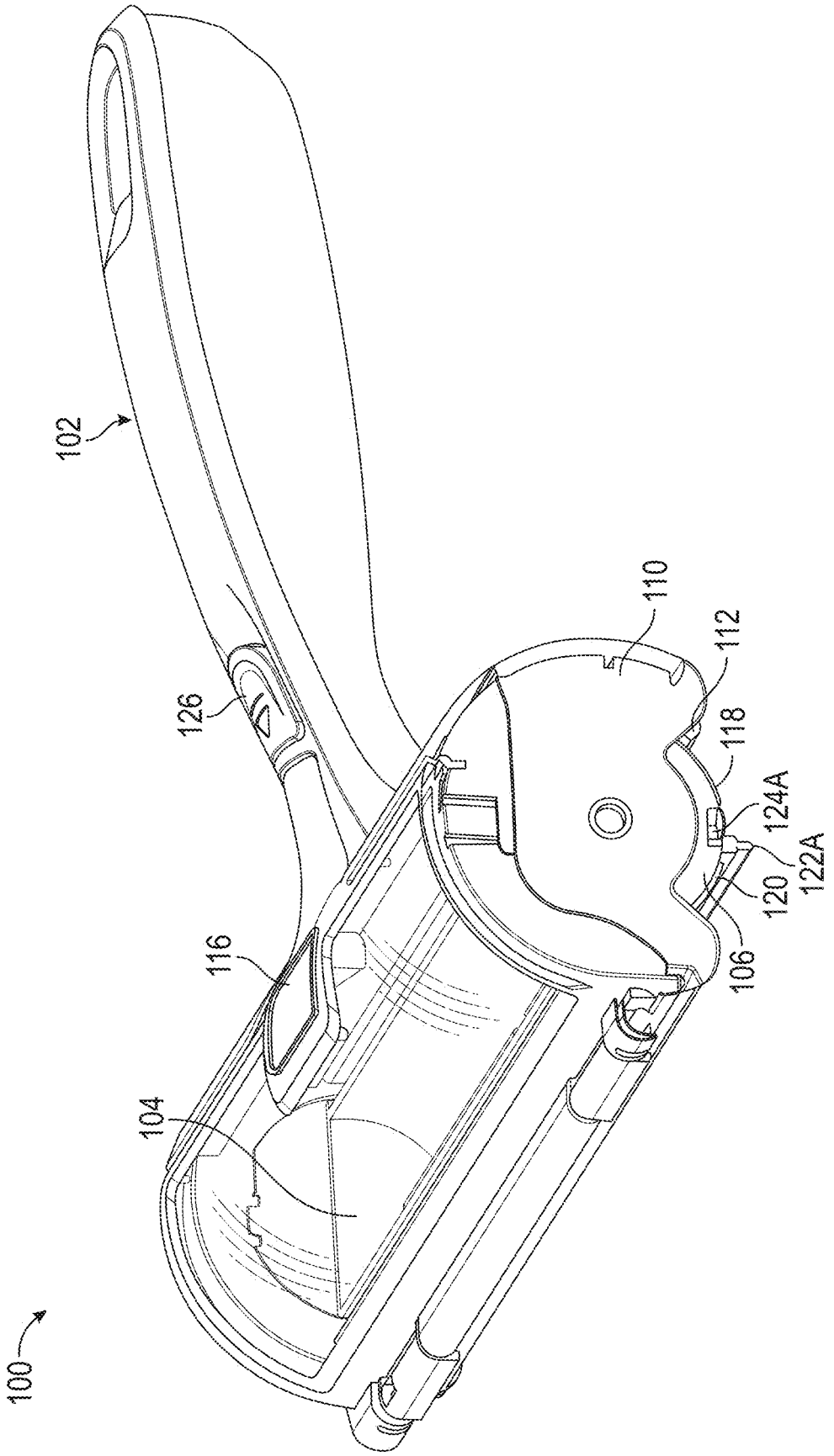


FIG. 1

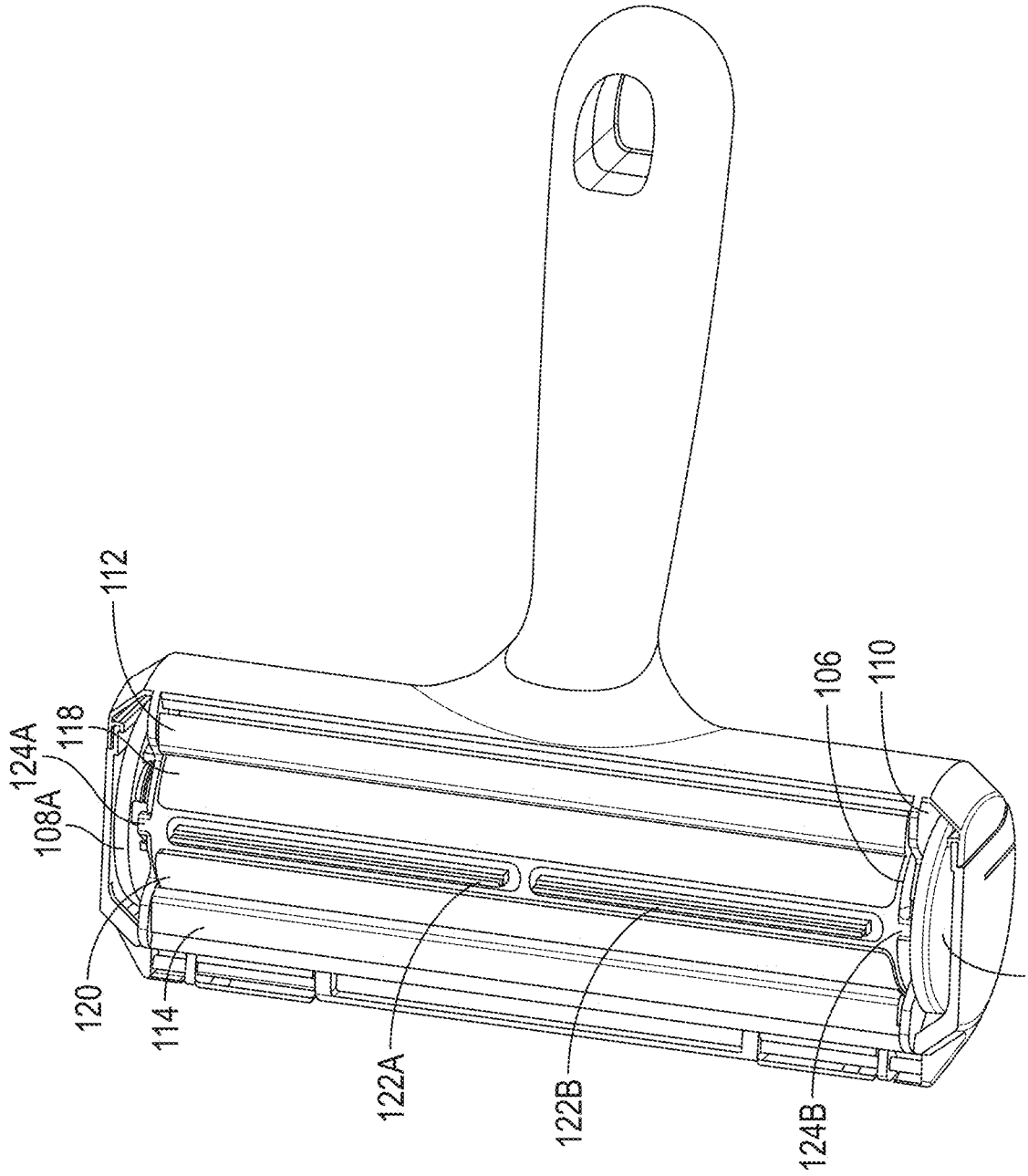


FIG. 2

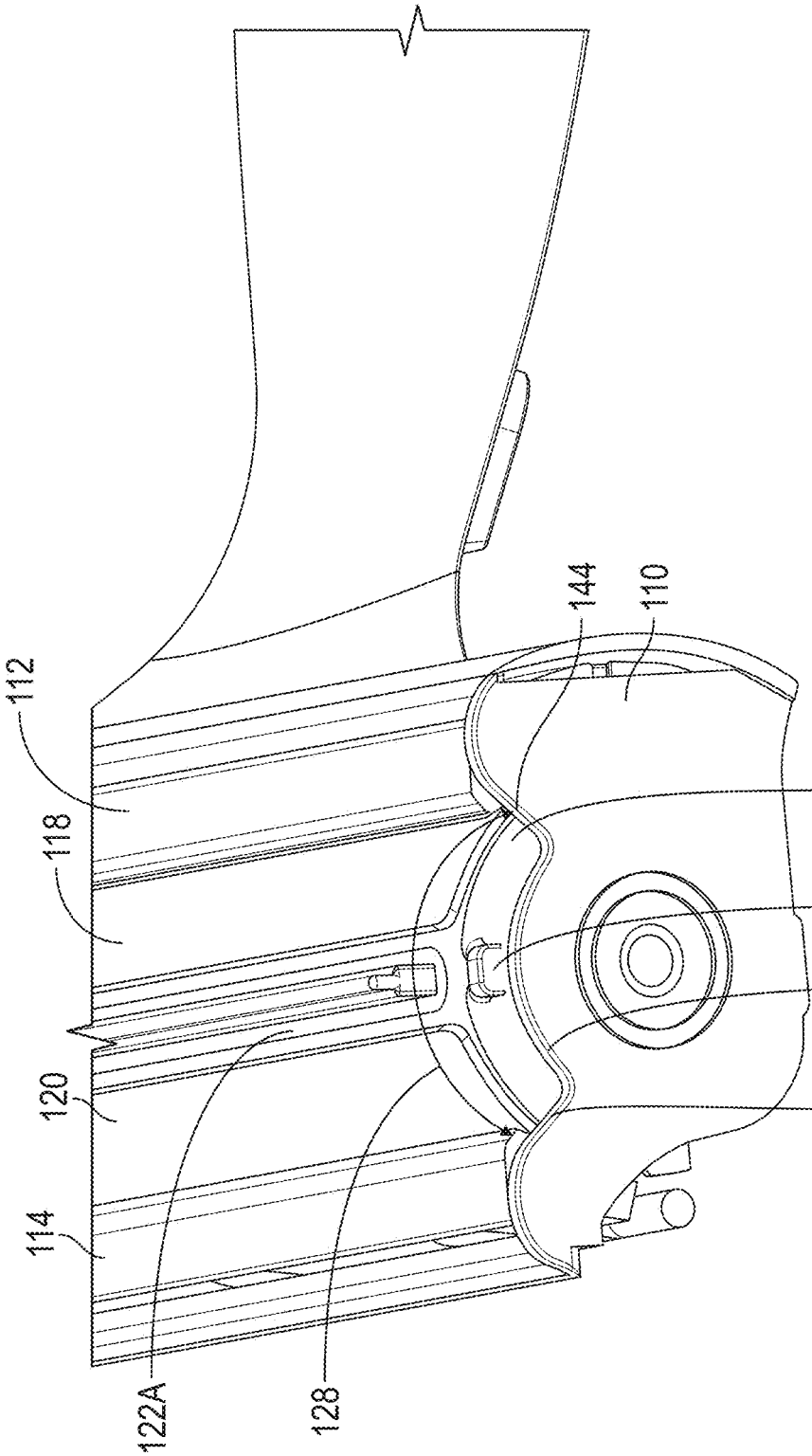


FIG. 3

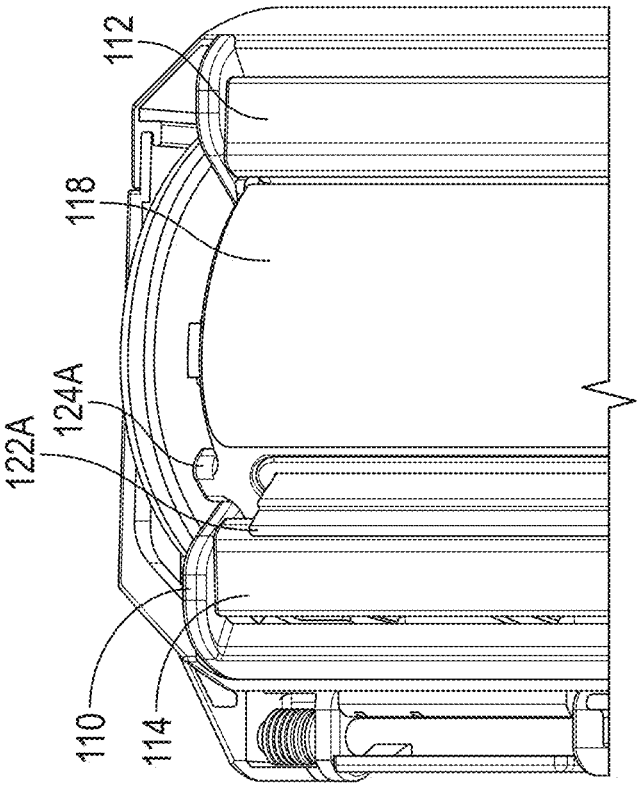


FIG. 4B

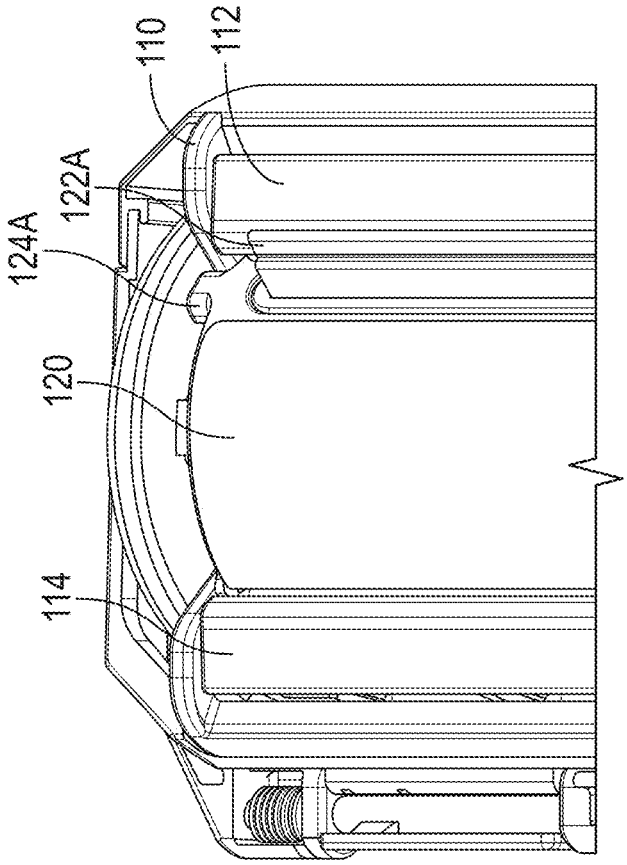


FIG. 4A

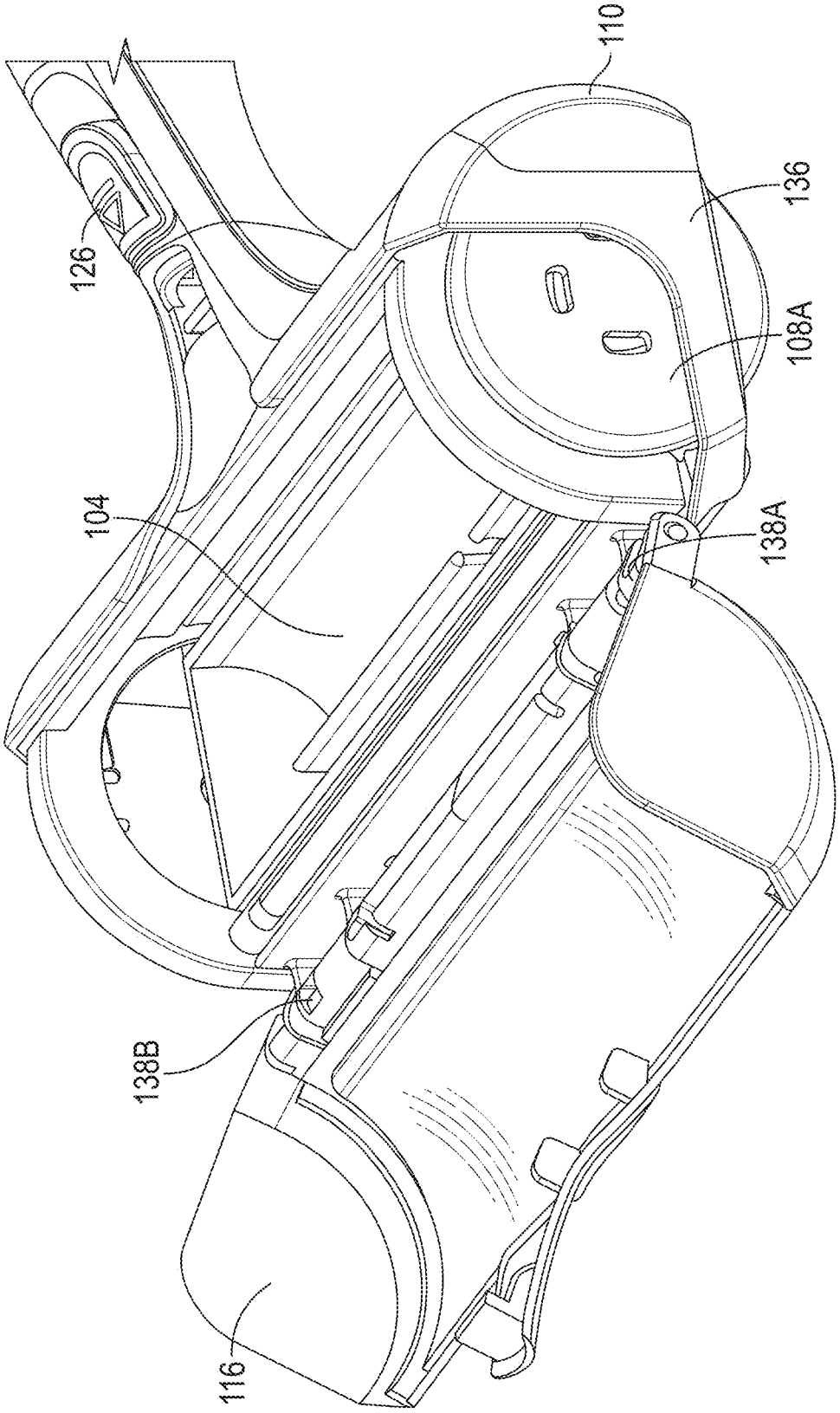


FIG. 5

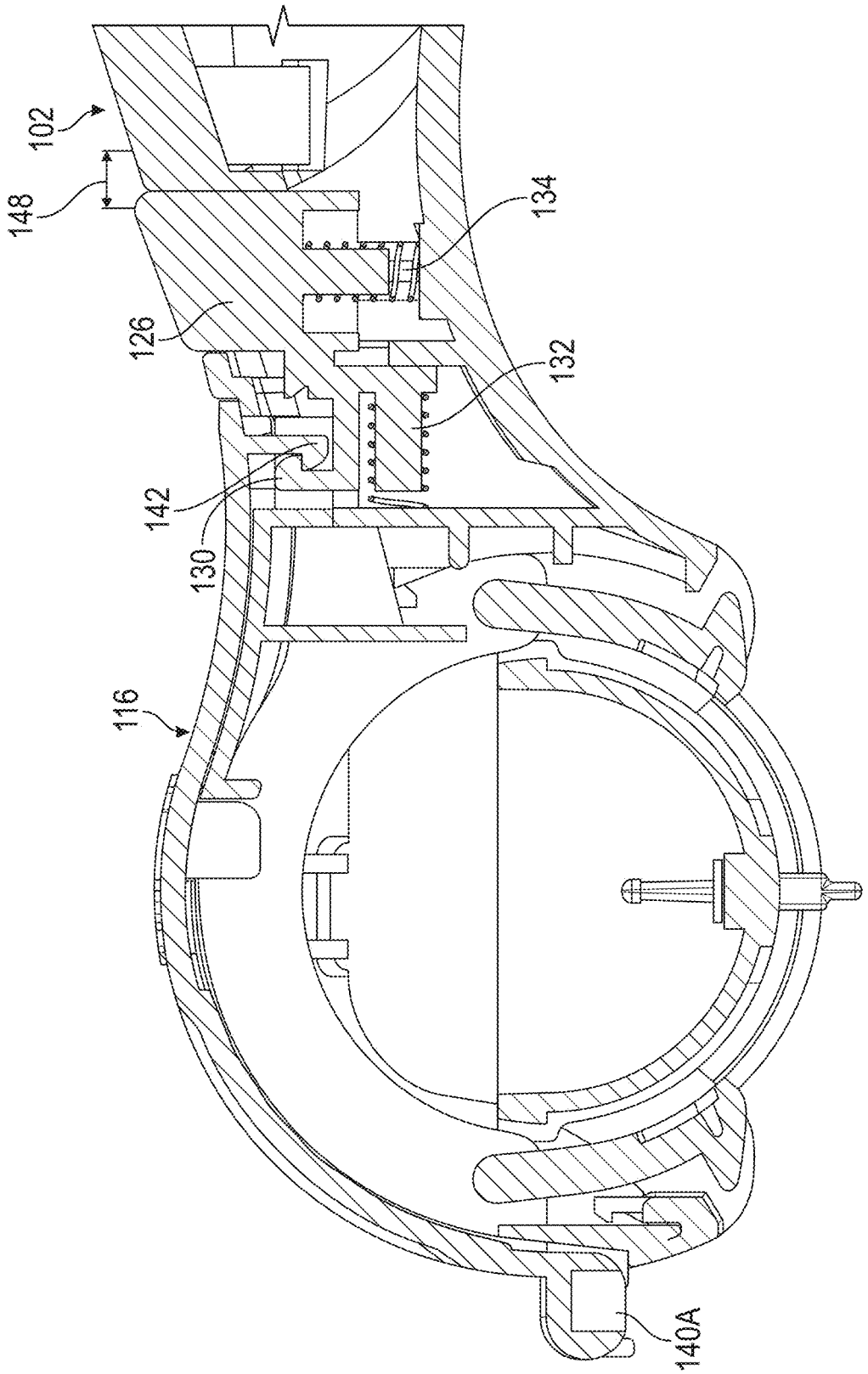


FIG. 6

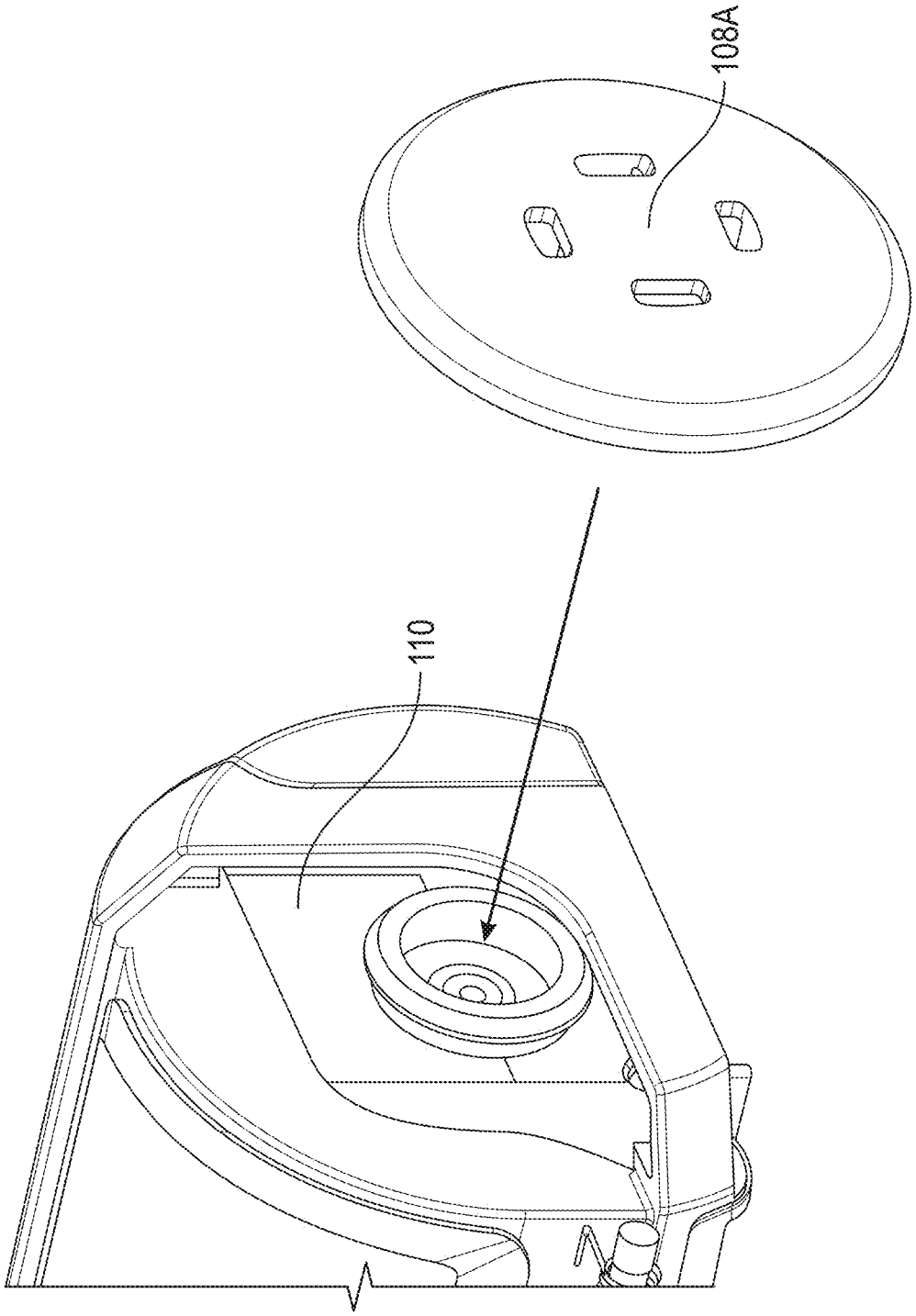


FIG. 7

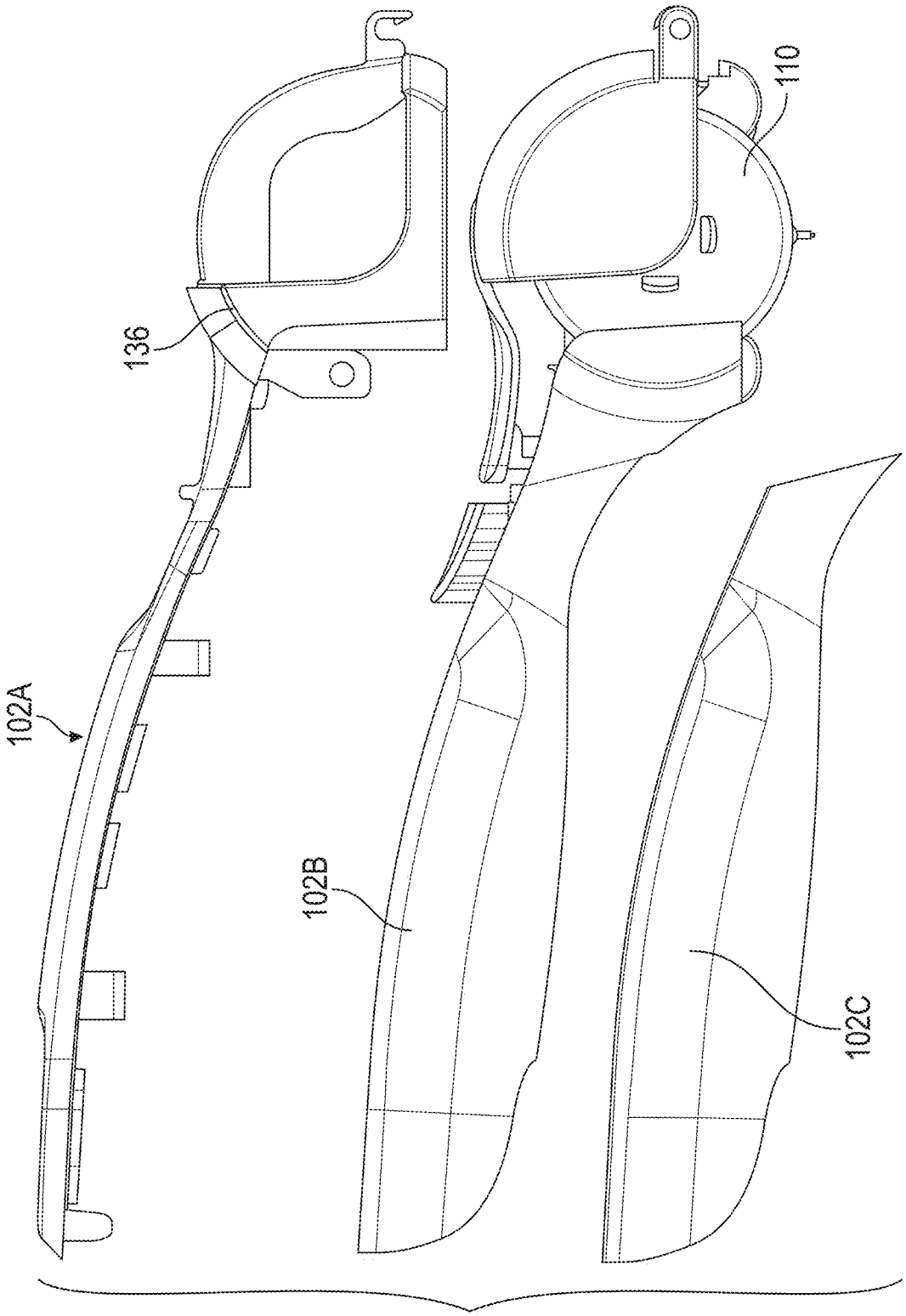


FIG. 8

PET HAIR REMOVER

TECHNICAL FIELD

[0001] This disclosure generally relates to a device for removing waste from a surface.

BACKGROUND

[0002] Pet hair may be a nuisance for owners. It may be difficult to remove pet hair from a surface (e.g., carpet, furniture) because the pet hair may stick to the surface. A device generating static electricity, which may be more cost effective than a vacuum cleaner or disposable adhesive rollers, may be used to remove pet hair from the surface. A user may create static electricity by rubbing the device back and forth against the surface, and the electrostatic force causes the pet hair to detach from the surface and attach to the device. The pet hair attached to the device may be transferred into a chamber of the device via a roller of the device, and the collected pet hair may be disposed at a later time.

SUMMARY

[0003] Pet hair removers are disclosed herein. In some embodiments, a pet hair remover includes a handle, a collection chamber, a roller, a roller frame, a door, and a blade. A user may move the pet hair remover back and forth on a surface, causing the roller to rub back and forth against the surface to generate static electricity for picking up pet hair.

[0004] In some embodiments, the pet hair remover includes a protrusion on an exterior planar surface of the roller, and the roller's rotation is limited by the protrusion contacting the roller frame. In some embodiments, the pet hair remover does not have a protrusion on the underside of the door that limits rotation of the roller. This arrangement may advantageously allow the door to be at least partially transparent and provide a view of the collection chamber, thereby providing the user a view of the collection chamber and the ability to determine whether the collection chamber is full without opening the door. Furthermore, the volume of the collection chamber may be increased. In some embodiments, the pet hair remover reduces a risk of unintentional opening of the door to the collection chamber. In some embodiments, the handle of the pet hair remover conforms to a hand of the user holding the pet hair remover.

[0005] In some embodiments, the handle is fixed relative to the collection chamber and the roller. The roller frame is configured to fix the roller in an axis of rotation, and the roller is positioned between the sides of the roller frame. The door is configured for accessing the collection chamber, and the collection chamber is bounded, at least in part, by an interior surface of the door and an interior surface of the roller. The blade is on an exterior, curvilinear surface of the roller.

[0006] The embodiments disclosed above are only examples, and the scope of this disclosure is not limited to them. Particular embodiments may include all, some, or none of the components, elements, features, functions, operations, or steps of the embodiments disclosed above. Embodiments according to the invention are in particular disclosed in the attached claims directed to a method, a device, and a system, wherein any feature mentioned in one claim category, e.g. device, can be claimed in another claim category, e.g. method, as well. The dependencies or references back in the attached claims are chosen for formal reasons only. However any subject matter resulting from a deliberate reference back to any previous claims (in particular multiple dependencies) can be claimed as well, so that any combination of claims and the features thereof are disclosed and can be claimed regardless of the dependencies chosen in the attached claims. The subject-matter which can be claimed includes not only the combinations of features as set out in the attached claims but also any other combination of features in the claims, wherein each feature mentioned in the claims can be combined with any other feature or combination of other features in the claims. Furthermore, any of the embodiments and features described or depicted herein can be claimed in a separate claim and/or in any combination with any embodiment or feature described or depicted herein or with any of the features of the attached claims.

BRIEF DESCRIPTION OF THE DRAWINGS

[0007] FIG. **1** illustrates an isometric view of an example pet hair remover.

[0008] FIG. **2** illustrates a bottom view of an example pet hair remover.

[0009] FIG. **3** illustrates a roller frame and protrusion of an example pet hair remover.

[0010] FIGS. **4**A and **4**B illustrate a roller frame and protrusion of an example pet hair remover.

[0011] FIG. **5** illustrates a collection chamber of an example pet hair remover.

[0012] FIG. **6** illustrates a cross-section view of an example pet hair remover.

[0013] FIG. **7** illustrates a wheel of an example pet hair remover.

[0014] FIG. **8** illustrates a handle and housing of an example pet hair remover.

DESCRIPTION OF EXAMPLE EMBODIMENTS

[0015] Pet hair removers are disclosed herein. In some embodiments, the pet hair remover's roller rotation is limited by a protrusion on an exterior surface of the roller, reducing a thickness of the pet hair remover's door and increasing a volume of the pet hair remover's collection chamber. In some embodiments, the pet hair remover provides a view of its collection chamber for a user to determine whether the collection chamber is full. In some embodiments, the pet hair remover reduces a risk of unintentional opening of a collection door. In some embodiments, the pet hair remover's handle conforms to a user's hand.

[0016] FIG. **1** illustrates an isometric view of an example pet hair remover **100**. In some embodiments, the pet hair remover **100** includes a handle **102**, a collection chamber **104**, a roller **106**, wheels **108**A and **108**B (shown in subsequent figures), a roller frame **110**, first arm **112**, second arm **114** (shown in subsequent figures), a door **116**, first hair collection textile **118**, second hair collection textile **120**, first blade **122**A, first protrusion **124**A, and button **126**. In some embodiments, as illustrated herein, the handle **102** is fixed relative to the collection chamber **104**, the roller **106**, and the wheels **108**A and **108**B. In some embodiments, a sheet of textile covers an exterior portion of the roller **106** to form the first hair collection textile **118** and second hair collection textile **120**.

[0017] In some embodiments, the first protrusion **124**A positioned on the exterior surface of the roller allows the door **116** to be slimmer. In some embodiments of pet hair remover **100**, the thickness of the door does not exceed 9.7 mm. For example, a radius of the surface facing away from the collection chamber of the semi-cylindrical door **116** is 28.7 mm, and a radius of the surface facing away from the collection chamber of semi-cylindrical roller **106** is 19 mm, so the thickness of the door **116** is 9.7 mm. In some embodiments, an inner surface of the door **116** is configured to not interfere with a rotation of the roller **106**. That is, if the protrusion were not on the roller, the roller would fully rotate, and the inner surface of the door **116** would not interfere with its rotation. The door thickness and/or inner surface characteristics may advantageously allow the door **116** to be at least partially transparent and provide a view of the collection chamber **104**, thereby providing the user a view of the collection chamber **104** and the ability to determine whether the collection chamber **104** is full without opening the door **116**, which, in some embodiments, provides access to the collection chamber **104**. In some embodiments, the pet hair remover **100** reduces a risk that a user unintentionally opens the door **116** to the collection chamber **104**. In some embodiments, the handle **102** of pet hair remover conforms to a hand of the user holding the pet hair remover advantageously providing a more ergonomic and comfortable user experience. In some embodiments, the collection chamber **104** is bounded, at least in part, by an interior surface of the door **116** (e.g., a surface of the door **116** facing the roller **106**) and an interior surface of the roller **106** (e.g., a surface of the roller **106** facing the door **116**). In some embodiments, because the door **116** may be slimmer, collection chamber **104** volume may be increased.

[0018] In some embodiments, the first hair collection textile **118** and the second hair collection textile **120** are on an exterior, curvilinear surface of the roller **106** (e.g., as illustrated in FIGS. **2** and **3**). In some embodiments, the first hair collection textile **118** contacts the first arm **112**, and the second hair collection textile **120** contacts the second arm **114** (as illustrated in FIGS. **2** and **3**). In some embodiments, the first arm **112** includes a textile, and the second arm **114** includes a textile. In some embodiments, the first arm **112** and the second arm **114** comprise a same material as the first and second textiles **118** and **120**. In some embodiments, the first arm **112** and the second arm **114** comprise a different material as the first and second textiles **118** and **120**. In some embodiments, as described in more detail herein, the hair collection textile contacts a respective arm to transfer pet hair from the textile to the collection chamber **104**.

[0019] A user may move the pet hair remover **100** back and forth on a surface, causing the roller **106** to move back and forth against the first arm **112** and the second arm **114** and/or the surface to generate static electricity for picking up pet hair. For example, the motion of the first hair collection textile **118** and the second hair collection textile **120** and their respective contact with the first arm **112** and the second arm **114** generate the static electricity. As another example, the static electricity is generated on first hair collection textile **118** and/or second hair collection textile **120** by moving the pet hair remover **100** back and forth on a dielectric surface. In some embodiments, the first hair collection textile **118** and/or the second hair collection textile **120** include a dielectric material configured to generate static electricity (e.g., short pile polyester textile) when the textile rubs against a dielectric surface (e.g., carpet, cloth).

[0020] In some embodiments, the roller frame **110** is configured to fix the roller **106** in an axis of rotation (e.g., the roller **106** attaches to the roller frame **110** at two points of the roller frame along the axis of rotation), and the roller frame **110** is positioned between the roller **106** and a first wheel **108**A (such that the roller **106** is positioned between sides of the roller frame **110**). In some embodiments, as illustrated in FIG. **2**, the pet hair remover **100** includes a second wheel **108**B. In some embodiments, the first arm **112** and the second arm **114** are coupled to the roller frame **110** and parallel to the axis of rotation of the roller **106**.

[0021] In some embodiments, the pet hair remover **100** includes a first protrusion **124**A on an exterior planar surface of the roller, and the roller's rotation is limited by the protrusion contacting the roller frame. For example, as shown in FIGS. **2** and **3**, the first protrusion **124**A and/or the second protrusion **124**B limit the roller **106** to rotation **128** by contacting the roller frame **110** on a side of the first arm **112** (e.g., at a first edge **144** of the roller frame **110**) and on a side of the second arm **114** (e.g., at a second edge **146** of the roller frame **110**). In some embodiments, the first edge **144** and the second edge **146** intersect an intermediate edge **150** to form a cutout to allow the protrusion to rotate between the first and second edges. That is, the intersection between the first edge **144** and a tangent line of intermediate edge **150** at the intersection point form an angle between 0 and 180 degrees, and the intersection between the second edge **146** and a tangent line of intermediate edge **150** at the intersection point form an angle between 0 and 180 degrees. In some embodiments, the protrusion is configured to rotate around an intermediate edge **150** of the roller frame between the first edge **144** and the second edge **146**, and the intermediate edge **150** is in an arc shape concentric to the roller's rotation **128**. In some embodiments, the rotation **128** is 90 degrees. It should be appreciated that the first, second, and intermediate edges may be in a shape different than illustrated. For example, the intermediate edge may comprise an oval arc shape or a straight line.

[0022] In some embodiments, the pet hair remover **100** includes a second protrusion **124**B on a second exterior planar surface of the roller, as illustrated in FIG. **2**, and the roller's rotation is further limited by the second protrusion contacting the roller frame **110** (e.g., at a third and fourth point (e.g., symmetric to the first and second points about a center of the roller frame) on the roller frame **110**). In some embodiments, the second protrusion **124**B supplements the first protrusion **124**A by performing similar functionalities and having similar features as the first protrusion **124**A.

[0023] By contacting the roller frame **110** to limit the rotation of the roller **106**, the first protrusion **124**A positioned on the exterior surface of roller **106** allows the door **116** to be slimmer. In some embodiments of pet hair remover **100**, the thickness of the door does not exceed 9.7 mm. This arrangement may advantageously allow the door **116** to be at least partially transparent (e.g., the door **116** includes a window) and provide a view of the collection chamber **104**, thereby providing the user a view of the collection chamber and the ability to determine whether the collection chamber **104** is full without opening the door **116** (e.g. allowing the user to clean the pet hair remover before the collection chamber becomes too full and pet hair in the collection

chamber exits via the arms). In some embodiments, because the door **116** may be slimmer, collection chamber **104** volume may be increased.

[0024] In some embodiments, the first blade **122**A is on an exterior, curvilinear surface of the roller **106** (e.g., as illustrated in FIGS. **1-5**). In some embodiments, the first blade **122**A is a rubber blade. In some embodiments, the first blade **122**A comprises a non-rubber material, such as plastic. In some embodiments, the first blade **122**A is positioned between the first hair collection textile **118** and the second hair collection textile **120** on the exterior, curvilinear surface of the roller **106** (e.g., as illustrated in FIGS. **2-4**). In some embodiments, the pet hair remover **100** includes a second blade **122**B positioned between the first hair collection textile **118** and the second hair collection textile **120**, as illustrated in FIG. **2**. In some embodiments, the second blade **122**B supplements the first blade **122**A by performing similar functionalities and having similar features as the first blade **122**A. In some embodiments, the surface areas of the first hair collection textile **118** and the second area hair collection textile **120** are the same, and the blades **122**A and **122**B are positioned between the textiles to increase an amount of pet hair being transferred to the collection chamber **104**, compared to collection textiles that have different surface areas. In some embodiments, the blades **122**A and **122**B are configured to transfer pet hair to the collection chamber **104** by sweeping the pet hair into the collection chamber. Although the pet hair remover **100** is illustrated as comprising two blades, it should be appreciated that the pet hair remover **100** may comprise one blade for performing operations described with respect to the first blade **122**A and second blade **122**B.

[0025] In some embodiments, the first blade **122**A is aligned with the first protrusion **124**A along a radius of the exterior, planar surface of the roller **106**. For example, the roller **106** is in a shape of a semi-cylinder, and the first blade **122**A is aligned with the first protrusion **124**A along a radius of the semi-cylinder on the exterior, planar surface of the semi-cylinder. Aligning the first blade **122**A with first protrusion **124**A along a radius of the exterior, planar surface of the roller **106** may reduce a distance between the blade **122** and an arm **112** or **114** when the roller **106** is at an end of its rotation and increase an amount of pet hair transferred to the collection chamber **104**, compared to a blade and a protrusion that do not align along the radius.

[0026] In some embodiments, the roller's rotation is limited by the first blade **122**A contacting the first and second arms **112** and **114**, respectively. For example, the roller's rotation is limited by the blade **122**A contacting the first arm **112** and the second arm **114**, in addition to the first protrusion **124**A contacting the roller frame **110**. As another example, the roller's rotation is limited by the blade **122**A contacting the first arm **112** and the second arm **114**, in lieu of the first protrusion **124**A contacting the roller frame **110**. In some embodiments, the roller's rotation is not limited by the blade contacting the first and second arms (e.g., the first blade **122**A does not contact the first or second arm while the roller is rotating). In a preferred embodiment, the first protrusion **124**A limits rotation of the roller **106** such that the first blade **122**A is adjacent the first and second arms at the end of the roller's rotation. This configuration may advantageously increase transfer of pet hair to the collection chamber **104**.

[0027] In some embodiments, the first blade **122**A is coupled to the roller **106** and configured to cause the roller **106** to rotate (e.g., pivot the roller **106**). For example, the roller **106** is in a first position (as shown in FIG. **4**A), such that the first blade **122**A is adjacent to first arm **112** and the first protrusion **124**A contacts a first point of the roller frame **110**. If a user moves the pet hair remover **100** backward (e.g., a direction from the second arm **114** to the first arm **112**) against a surface, a force between the first blade **122**A and the surface would cause the roller **106** to rotate, such that the first blade **122**A rotates toward the second arm **114**. In some embodiments, as described above, as the first blade **122**A rotates toward the second arm **114**, the first hair collection textile **118** rubs against the surface and generates static electricity for collecting pet hair. In some embodiments, hair collected on second hair collection textile **120** is transferred into the collection chamber **104** (e.g., the second arm **114** is configured to detach hair (e.g., brush hair off the collection textile) from the second hair collection textile **120** as the roller **106** is rotating, thus allowing the detached hair to be deposited into the collection chamber **104** (e.g., first blade **122**A pushes the hair detached by the arm into the collection chamber **104**, the motion of the roller **106** transfers the hair detached by the arm into the collection chamber). After the rotation of the roller **106** is limited (e.g., the first protrusion **124**A contacts the roller frame **110**), the user may continue to move the pet hair remover **100** backward to further generate static electricity on the first hair collection textile **118**.

[0028] As another example, the roller **106** is in a second position (as shown in FIG. **4**B), such that the first blade **122**A is adjacent to second arm **114** and the first protrusion **124**A contacts a second point of the roller frame **110**. If a user moves the pet hair remover **100** forward (e.g., a direction from the first arm **112** to the second arm **114**) against a surface, a force between the first blade **122**A and the surface would cause the roller **106** to rotate, such that the first blade **122**A rotates toward the first arm **112**. In some embodiments, as described above, as the first blade **122**A rotates toward the first arm **112**, the second hair collection textile **120** rubs against the surface and generates static electricity for collecting pet hair. In some embodiments, hair collected on first hair collection textile **118** is transferred into the collection chamber **104** (e.g., the first arm **112** is configured to detach hair (e.g., brush hair off the collection textile) from the first hair collection textile **118** as the roller **106** is rotating and allow the detached hair to be deposited into the collection chamber **104** (e.g., first blade **122**A pushes the hair detached by the arm into the collection chamber **104**, the motion of the roller **106** transfers the hair detached by the arm into the collection chamber). After the rotation of the roller **106** is limited (e.g., the first protrusion **124**A contacts the roller frame **110**), the user may continue to move the pet hair remover **100** forward to further generate static electricity on the second hair collection textile **120**.

[0029] FIG. **5** illustrates a collection chamber **104** of an example pet hair remover **100**. In some embodiments, as illustrated, the door **116** is configured to open to allow access to the collection chamber **104** (e.g., for collecting pet hair transferred from the collection textiles, as described herein). In some embodiments, the pet hair remover **100** includes a torsional spring **138**A for biasing the door **116** open. For example, the torsional spring **138**A couples to a side of the door **116** for biasing the door open, as illustrated. In some

embodiments, the pet hair remover **100** includes a second torsional spring **138**B for biasing the door **116** open. In some embodiments, the pet hair remover **100** includes an outer housing **136**, and the outer housing includes an interference to limit an opening of the door. For example, the interference is a portion of the outer housing that extends into a path of the door's rotation, impeding the door **116** from opening further by counteracting the force of the torsional springs **138**A and/or **138**B. In some embodiments, as illustrated, the door **116** includes walls on its side to cover the wheels **108**A and **108**B when the door is closed. This may advantageously cover the wheels from damage and/or keep debris away from rotational surfaces.

[0030] FIG. **6** illustrates a cross-section view of an example pet hair remover **100**. In some embodiments, the pet hair remover **100** includes a latch **130**, spring **132**, and spring **134**. In some embodiments, the latch **130** is configured to hold the door **116** closed. In some embodiments, the button **126** is on the handle **102**. In some embodiments, the latch **130** is adjacent to the handle **102**, as illustrated. In some embodiments, the button **126** is positioned such that a maximum height of the button is at or below a height of the surface of the handle **102**. In some embodiments, the maximum height of the button is above the surface of the handle **102** in a portion of the handle adjacent to the button. This arrangement, illustrated in the cross-section view of FIG. **6**, may advantageously improve a user's ability to press and activate the button. At a distance **148** away from the maximum height, the maximum height of the button is at or below the surface of the handle **102**. This arrangement, again illustrated in the cross-section view of FIG. **6**, can advantageously reduce risk of accidental contact, by a user, of the button and unintentional opening of the door, while allowing the user to access the button for opening the door. In some embodiments, distance **148** is 1-4 mm. The distance **148** may, in some embodiments, be a location on the handle where the maximum height of the button is the same level as the height of the handle. In these embodiments, a height of the handle and a height of the button can be understood to be measured in a direction of activation of button **102**. In such embodiments, distance **148** is measured in a direction orthogonal to a direction of activation of button **102**. The distance **148** may also, in some embodiments, orthogonal to the axis of a roller, such as roller **106**. In some embodiments, an exterior of the button **126** tapers toward the door, as illustrated (e.g., reducing risk of accidental contact of the button and unintentional opening of the door, compared to a button that does not taper). In some embodiments, the tapering and/or the button positioning allow the handle to conform to a hand of the user while holding the pet hair remover, advantageously providing a more ergonomic and comfortable user experience.

[0031] In some embodiments, the button **126** is movable to release the latch **130**. For example, the latch **130** is released after the button **126** is pushed. In some embodiments, the spring **132** is coupled to the latch **130**, and the spring **134** is coupled to the button **126**. In some embodiments, as illustrated, the spring **132** and the spring **134** are in their extended positions, and, in their extended positions, the spring **132** and the spring **134** are configured to cause the latch **130** to hold the door **116** to close.

[0032] For example, as illustrated, the spring **132**, at the extended position, exerts a force on the latch **130** toward door catch **142**, counteracting against a force of the torsional springs **138**A and/or **138**B to hold the door **116** closed. In some embodiments, when button **126** is pushed beyond a threshold distance, the button **126** pushes the latch **130** away from the door catch **142**, reducing or removing the force counteracting the torsional springs **138**A and/or **138**B and causing the door **116** to open, as illustrated in FIG. **5**. The springs **132** and **134** advantageously allow the door **116** to remain close until the button **126** is pushed beyond a threshold distance, reducing a risk of the door **116** opening by accidental contact with the button **126**.

[0033] FIG. **7** illustrates a first wheel **108**A of an example pet hair remover **100**. In FIG. **7**, the wheel **108**A is illustrated as detached from the roller frame **110** to better show detail of the wheel's engagement with the roller frame **110**. In some embodiments, the wheel **108**A rotatably engages (e.g., snaps onto an exterior ring of the roller frame, as illustrated) the roller frame **110** (e.g., allowing the pet hair remover to be easily assembled, allowing a strong attachment to the roller frame as the pet hair remover contacts a surface, allowing the wheel to rotate about an axis of rotation of the roller **106**). In some embodiments, the curvature of the wheel **108**A is configured to facilitate the movement of the pet hair remover **100** against a surface (e.g., the curvature may reduce friction between the pet hair remover and the surface). In some embodiments, the wheel **108**A is configured to rotate about an axis of rotation of the roller **106**. In some embodiments, the wheel is positioned between the outer housing **136** and the roller frame **110** (e.g., as illustrated in FIG. **5**).

[0034] FIG. **8** illustrates a handle and housing of an example pet hair remover **100**. FIG. **8** illustrates the handle and housing disassembled to better show example portions of the handle; the described portions of the handle may be assembled together to form the handle **102**. In some embodiments, the handle includes an upper handle portion **102**A, lower handle portion **102**B, and an overmold portion **102**C. As illustrated, in some embodiments, the lower handle portion **102**A is configured to couple to upper handle portion **102**A (e.g., the portions including features that allow them to mate together). In some embodiments, the overmold portion **102**C surrounds an exterior of the lower handle portion **102**B.

[0035] In some embodiments, the overmold portion **102**C is softer than the upper handle portion **102**B (e.g., the overmold portion **102**C includes a softer material than a material of the upper handle portion **102**A, a softer material has a lower corresponding durometer measurement than that of a harder material). For example, the overmold portion **102**C includes thermoplastic elastomers (TPEs) and/or thermoplastic rubbers (TPRs), and the upper handle portion **102**A includes acrylonitrile butadiene styrene (ABS), polypropylene (PP), ABS/polycarbonate (PC), nylon PA 66, glass filled PA6, or any combination thereof. The softer overmold portion **102**C may provide additional comfort for the user while the user holds the pet hair remover, compared to a device without a softer handle portion (e.g., a handle including a same material, a handle including exposed ribs).

[0036] In some embodiments, the pet hair remover **100** includes an outer housing **136** (e.g., as described above), and the upper handle portion **102**A and the outer housing **136** are integrally molded (e.g., the upper handle portion **102**A and the outer housing **136** are part of one molded piece, as illustrated). In some embodiments, the lower handle portion **102**B and the roller frame **110** are integrally molded (e.g.,

the lower handle portion **102**B and the roller frame **110** are part of one molded piece). By integrally molding portions of the pet hair remover **100**, less parts may be needed to assemble the pet hair remover **100**, reducing assembly time and cost.

[0037] In some embodiments, a pet hair remover, comprises: a collection chamber; a roller; a handle fixed relative to the collection chamber and the roller; a roller frame fixing the roller in an axis of rotation. The roller is positioned between sides of the roller frame. The pet hair remover further comprises a door for accessing the collection chamber. The collection chamber is bounded, at least in part, by an interior surface of the door and an interior surface of the roller. The pet hair remover further comprises a blade on an exterior, curvilinear surface of the roller; and a protrusion on an exterior, planar surface of the roller. The roller's rotation is limited by the protrusion contacting the roller frame.

[0038] In some embodiments, the door is at least partially transparent to provide a view of the collection chamber.

[0039] In some embodiments, a thickness of the door is less than 9.7 mm.

[0040] In some embodiments, the roller frame comprises an intermediate edge, a first edge intersecting the intermediate edge, and a second edge intersecting the intermediate edge, and the roller's rotation is limited by the protrusion contacting the first edge and the second edge of the roller frame.

[0041] In some embodiments, the pet hair remover further comprises a spring that biases the door open; a latch that holds the door closed; and a button on the handle, the button positioned such that a maximum height of the button is at a level of a surface of the handle at a distance 1-4 mm away from the maximum height of the button. The button is movable to release the latch, and the latch is adjacent to the handle.

[0042] In some embodiments, the pet hair remover further comprises a second spring coupled to the latch; a third spring coupled to the button. The second and third springs, in their extended positions, cause the latch to hold the door close.

[0043] In some embodiments, the handle comprises an upper handle portion, a lower handle portion coupled to the upper handle portion, and an overmold portion surrounding an exterior of the lower portion.

[0044] In some embodiments, the overmold portion is softer than the upper handle portion.

[0045] In some embodiments, the pet hair remover further comprises an outer housing coupled to the roller frame. The upper handle portion and the outer housing are integrally molded, and the wheel is positioned between the outer housing and the roller frame.

[0046] In some embodiments, the lower handle portion and the roller frame are integrally molded.

[0047] In some embodiments, the pet hair remover further comprises: first and second arms coupled to the roller frame and parallel to the axis of rotation; first and second hair collection textiles on the exterior, curvilinear surface of the roller. The first and second hair collection textiles contact the first and second arms, respectively.

[0048] In some embodiments, the pet hair remover further comprises a second blade positioned between the first and second hair collection textiles.

[0049] In some embodiments, the pet hair remover further comprises first and second arms coupled to the roller frame and parallel to the axis of rotation. The roller's rotation is further limited by the blade contacting the first and second arms.

[0050] In some embodiments, the pet hair remover further comprises first and second arms coupled to the roller frame and parallel to the axis of rotation. When the protrusion contacts the roller frame, the blade does not contact the arm.

[0051] In some embodiments, the roller's rotation is limited in a first direction by the protrusion contacting a first point on the roller frame and the roller's rotation is limited in a second direction by the protrusion contacting a second point on the roller frame.

[0052] In some embodiments, the pet hair remover further comprises a second protrusion on a second exterior, planar surface of the roller. The roller's rotation is further limited by the second protrusion contacting the roller frame.

[0053] In some embodiments, the wheel rotatably engages the roller frame.

[0054] In some embodiments, the pet hair remover further comprises an outer housing comprising an interference to limit an opening of the door. The wheel is positioned between the outer housing and the roller frame.

[0055] In some embodiments, the pet hair remover further comprises a wheel. The handle is further fixed relative to the wheel, and the roller frame is positioned between the wheel and the roller.

[0056] In some embodiments, a pet hair remover comprises: a collection chamber; a roller; a handle fixed relative to the collection chamber and the roller; a roller frame fixing the roller in an axis of rotation. The roller is positioned between sides of the roller frame; a door for accessing the collection chamber. The collection chamber is bounded, at least in part, by an interior surface of the door and an interior surface of the roller, and the door is at least partially transparent to provide a view of the collection chamber. The pet hair remover further comprises a blade on an exterior, curvilinear surface of the roller.

[0057] In some embodiments, a pet hair remover comprises: a collection chamber; a roller; a handle fixed relative to the collection chamber and the roller; a roller frame fixing the roller in an axis of rotation. The roller is positioned between sides of the roller frame. The pet hair remover further comprises a door for accessing the collection chamber. The collection chamber is bounded, at least in part, by an interior surface of the door and an interior surface of the roller. The pet hair remover further comprises a blade on an exterior, curvilinear surface of the roller; a spring that biases the door open; a latch that holds the door closed; and a button on the handle, the button positioned such that an exterior surface of the button is at or below an exterior, adjacent surface of the handle. The button is movable to release the latch, and the latch is adjacent to the handle.

[0058] Herein, "or" is inclusive and not exclusive, unless expressly indicated otherwise or indicated otherwise by context. Therefore, herein, "A or B" means "A, B, or both," unless expressly indicated otherwise or indicated otherwise by context. Moreover, "and" is both joint and several, unless expressly indicated otherwise or indicated otherwise by context. Therefore, herein, "A and B" means "A and B, jointly or severally," unless expressly indicated otherwise or indicated otherwise by context.

[0059] The scope of this disclosure encompasses all changes, substitutions, variations, alterations, and modifications to the example embodiments described or illustrated

herein that a person having ordinary skill in the art would comprehend. The scope of this disclosure is not limited to the example embodiments described or illustrated herein. Moreover, although this disclosure describes and illustrates respective embodiments herein as including particular components, elements, feature, functions, operations, or steps, any of these embodiments may include any combination or permutation of any of the components, elements, features, functions, operations, or steps described or illustrated anywhere herein that a person having ordinary skill in the art would comprehend. Furthermore, reference in the appended claims to an apparatus or system or a component of an apparatus or system being adapted to, arranged to, capable of, configured to, enabled to, operable to, or operative to perform a particular function encompasses that apparatus, system, component, whether or not it or that particular function is activated, turned on, or unlocked, as long as that apparatus, system, or component is so adapted, arranged, capable, configured, enabled, operable, or operative. Additionally, although this disclosure describes or illustrates particular embodiments as providing particular advantages, particular embodiments may provide none, some, or all of these advantages.

1. A pet hair remover, comprising:
a collection chamber;
a roller;
a handle fixed relative to the collection chamber and the roller;
a roller frame fixing the roller in an axis of rotation, wherein the roller is positioned between sides of the roller frame;
a door for accessing the collection chamber, wherein
the collection chamber is bounded, at least in part, by an interior surface of the door and an interior surface of the roller;
a blade on an exterior, curvilinear surface of the roller; and
a protrusion on an exterior, planar surface of the roller, wherein the roller's rotation is limited by the protrusion contacting the roller frame.

2. The pet hair remover of claim **1**, wherein the door is at least partially transparent to provide a view of the collection chamber.

3. The pet hair remover of claim **1**, wherein a thickness of the door is less than 9.7 mm.

4. The pet hair remover of claim **1**, wherein
the roller frame comprises an intermediate edge, a first edge intersecting the intermediate edge, and a second edge intersecting the intermediate edge, and
the roller's rotation is limited by the protrusion contacting the first edge and the second edge of the roller frame.

5. The pet hair remover of claim **1**, further comprising
a spring that biases the door open;
a latch that holds the door closed; and
a button on the handle, the button positioned such that a maximum height of the button is at a level of a surface of the handle at a distance 1-4 mm away from the maximum height of the button, wherein
the button is movable to release the latch, and
the latch is adjacent to the handle.

6. The pet hair remover of claim **5**, further comprising
a second spring coupled to the latch;
a third spring coupled to the button, wherein the second and third springs, in their extended positions, cause the latch to hold the door close.

7. The pet hair remover of claim **1**, wherein the handle comprises an upper handle portion, a lower handle portion coupled to the upper handle portion, and an overmold portion surrounding an exterior of the lower portion.

8. The pet hair remover of claim **7**, further comprising an outer housing coupled to the roller frame, wherein
the upper handle portion and the outer housing are integrally molded, and
the wheel is positioned between the outer housing and the roller frame.

9. The pet hair remover of claim **7**, wherein the lower handle portion and the roller frame are integrally molded.

10. The pet hair remover of claim **1**, further comprising:
first and second arms coupled to the roller frame and parallel to the axis of rotation;
first and second hair collection textiles on the exterior, curvilinear surface of the roller, wherein
the first and second hair collection textiles contact the first and second arms, respectively.

11. The pet hair remover of claim **10**, further comprising a second blade positioned between the first and second hair collection textiles.

12. The pet hair remover of claim **1**, further comprising first and second arms coupled to the roller frame and parallel to the axis of rotation, wherein
the roller's rotation is further limited by the blade contacting the first and second arms.

13. The pet hair remover of claim **1**, further comprising first and second arms coupled to the roller frame and parallel to the axis of rotation, wherein
when the protrusion contacts the roller frame, the blade does not contact the arm.

14. The pet hair remover of claim **1**, wherein the roller's rotation is limited in a first direction by the protrusion contacting a first point on the roller frame and the roller's rotation is limited in a second direction by the protrusion contacting a second point on the roller frame.

15. The pet hair remover of claim **1**, further comprising a second protrusion on a second exterior, planar surface of the roller, wherein the roller's rotation is further limited by the second protrusion contacting the roller frame.

16. The pet hair remover of claim **1**, wherein the wheel rotatably engages the roller frame.

17. The pet hair remover of claim **1**, further comprising an outer housing comprising an interference to limit an opening of the door, wherein the wheel is positioned between the outer housing and the roller frame.

18. The pet hair remover of claim **1**, further comprising a wheel, wherein
the handle is further fixed relative to the wheel, and
the roller frame is positioned between the wheel and the roller.

19. A pet hair remover, comprising:
a collection chamber;
a roller;
a handle fixed relative to the collection chamber and the roller;

a roller frame fixing the roller in an axis of rotation, wherein the roller is positioned between sides of the roller frame;

a blade on an exterior, curvilinear surface of the roller; and

a door for accessing the collection chamber, wherein

the collection chamber is bounded, at least in part, by an interior surface of the door and an interior surface of the roller, and

the door is at least partially transparent to provide a view of the collection chamber.

20. A pet hair remover, comprising:

a collection chamber;

a roller;

a handle fixed relative to the collection chamber and the roller;

a roller frame fixing the roller in an axis of rotation, wherein the roller is positioned between sides of the roller frame;

a door for accessing the collection chamber, wherein

the collection chamber is bounded, at least in part, by an interior surface of the door and an interior surface of the roller; and

a blade on an exterior, curvilinear surface of the roller;

a spring that biases the door open;

a latch that holds the door closed; and

a button on the handle, the button positioned such that a maximum height of the button is at a level of a surface of the handle at a distance 1-4 mm away from the maximum height of the button, wherein

the button is movable to release the latch, and

the latch is adjacent to the handle.

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