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(54) DIFFUSER ATTACHMENT FOR AIR-MOVING APPLIANCE

(57) An attachment assembly for an air-moving appliance includes a diffuser attachment (12) and a hair engagement cover (50). The diffuser attachment (12) includes an inlet end (14) configured to removably attach to the air-moving appliance (102). The inlet end (14) includes an inlet for airflow to enter the diffuser attachment (12) and the outlet end includes a diffuser surface (28) defining discharge openings for airflow in part to expel from the diffuser attachment (12). The diffuser surface (28) is curved relative to an exterior of the diffuser attachment (12). The hair engagement cover (50) includes prongs (64) arranged to extend outward from the diffuser surface (28) when the hair engagement cover (50) is attached to the outlet end. The attachment assembly has a first configuration in which the hair engagement cover (50) is not attached to the diffuser surface (28) of the diffuser attachment (12), and a second configuration in which the hair engagement cover (50) is attached to the outlet end of the diffuser attachment (12).

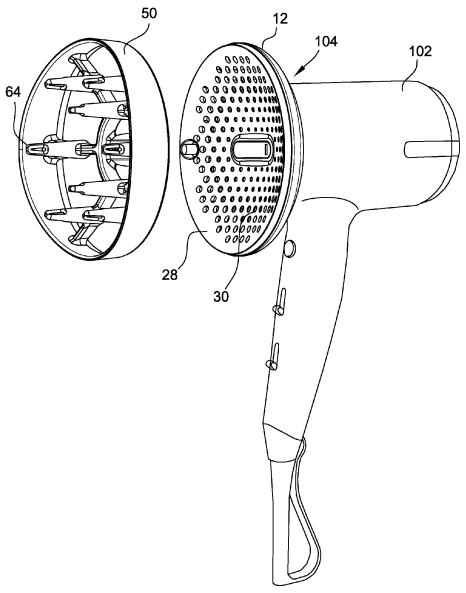

FIG. 12

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Description

FIELD OF THE DISCLOSURE

[0001] The present disclosure relates generally to an attachment for an air-moving appliance and, more particularly, to a diffuser attachment for an air-moving appliance including a diffusing surface and a hair engagement cover.

BACKGROUND

[0002] Typical hair dryers include attachments that attach to the hair dryer and provide a treatment to hair while the hair is dried. For example, a diffuser attachment is used to diffuse or spread airflow over a wider area of the hair. Traditional hair diffusers rely on a single surface or feature to diffuse hair. Thus, traditional hair diffusers lack versatility to offer a user various diffusing surfaces and features to achieve a desired result. The user may detach or switch attachments during operation to provide different hair styling operations. However, conventional attachments are bulky and difficult to store and may be difficult to attach/detach from the hair dryer. Moreover, current attachments do not provide as quality results as the attachments do not have a surface/feature designed for each step in the diffusing process. For example, current attachments do not provide a completely smooth concave surface. In addition, current attachments do not provide engagement teeth that extend throughout the entire engagement surface.

[0003] Based on the foregoing, a need exists for a hair diffuser that is versatile to assist a user in achieving a desired hair result.

BRIEF DESCRIPTION

[0004] The present disclosure describes an attachment for an air-moving appliance and, more particularly, to a diffuser attachment for an air-moving appliance including a hover diffusing surface and a hair engagement cover.

[0005] In one embodiment, an (diffuser) attachment assembly for an air-moving appliance includes a diffuser attachment. The diffuser attachment includes an inlet end configured to connect to the air-moving appliance and the inlet end includes an inlet for airflow to enter the diffuser attachment. The diffuser attachment also includes an outlet end including a diffuser surface defining discharge openings. The diffuser surface is smooth and free of any prongs and is curved relative to an exterior of the diffuser attachment. The attachment assembly also includes a hair engagement cover that is configured to removably attach to the outlet end of the diffuser attachment. The hair engagement cover includes prongs arranged to extend outward from the diffuser surface when the hair engagement cover is attached to the outlet end. The attachment assembly has a first configuration in which the diffuser surface of the diffuser attachment is configured to receive hair, and a second configuration in which the hair engagement cover is attached to the outlet end of the diffuser attachment and the prongs are positioned to engage the hair.

[0006] The diffuser attachment may be removably connected to the air-moving appliance. The discharge openings may be positioned in a grid configuration on the diffuser surface of the diffuser attachment. The outlet end of the diffuser attachment may define openings configured to receive corresponding tabs of the hair engagement cover.

[0007] The prongs of the hair engagement cover may each define an opening that is configured to expel at least a portion of the airflow discharged by the diffuser attachment. The openings of the prongs may be positioned perpendicularly to a longitudinal axis of the hair engagement cover. The hair engagement cover may define a plurality of bridge threads coupled to an outer edge of the hair engagement cover. In some instances, the prongs may extend outwardly from the plurality of bridge threads. The plurality of bridge threads in part may define a plurality of voids. The voids may be configured to expel at least a portion of the airflow discharged by the diffuser attachment.

[0008] In another embodiment, an (diffuser) attachment assembly for an air-moving appliance includes a diffuser attachment. The diffuser attachment includes an inlet end configured to removably connect to the air-moving appliance and the inlet end includes an inlet for airflow to enter the diffuser attachment. The diffuser attachment also includes an outlet end including a diffuser surface defining discharge openings configured to discharge at least a portion of the airflow. The diffuser surface is free of any prongs and the diffuser surface is curved relative to an exterior of the diffuser attachment. The attachment assembly also includes a hair engagement cover including an inner side and an outer side. The inner side of the hair engagement cover is configured to removably attach to the outlet end of the diffuser attachment. The hair engagement cover includes prongs arranged to extend outward from the diffuser surface when the hair engagement cover is attached to the outlet end. The prongs define openings that are in communication with the discharge openings of the diffuser attachment, such that the openings of the prongs are configured to expel at least a portion of the airflow discharged by the diffuser attachment. The attachment assembly has a first configuration in which the diffuser surface of the diffuser attachment is configured to receive hair, and a second configuration in which the hair engagement cover is attached to the outlet end of the diffuser attachment and the prongs are positioned to engage the hair.

[0009] The openings of the prongs may be positioned perpendicularly to a longitudinal axis of the hair engagement cover. The hair engagement cover may define a plurality of bridge threads coupled to an outer edge of the hair engagement cover, such that the prongs extend

outwardly from the plurality of bridge threads. The plurality of bridge threads in part may define a plurality of voids. The voids may be configured to expel at least a portion of the airflow discharged by the diffuser attachment.

[0010] The diffuser attachment may be removably connected to the air-moving appliance. The discharge openings of the diffuser attachment may be positioned in a grid configuration on the diffuser surface. The outlet end of the diffuser attachment may define openings configured to receive a corresponding tab of the hair engagement cover.

[0011] In yet another embodiment, an air-moving appliance assembly includes a diffuser attachment assembly and an air-moving appliance configured to expel air from an outlet end. The diffuser attachment assembly includes a diffuser attachment which includes an inlet end configured to removably connect to the outlet end of the air-moving appliance and the inlet end includes an inlet for airflow to enter the diffuser attachment. The diffuser attachment also includes an outlet end including a diffuser surface defining discharge openings. The diffuser surface is smooth and free of any prongs and the diffuser surface is curved relative to an exterior of the diffuser attachment. The diffuser attachment assembly also includes a hair engagement cover including an inner side and an outer side such that the inner side of the hair engagement cover is configured to removably attach to the outlet end of the diffuser attachment. The hair engagement cover includes prongs arranged to extend outward from the diffuser surface when the hair engagement cover is attached to the outlet end. The prongs define an opening that is in communication with the discharge openings of the diffuser attachment, such that the opening of the prongs is configured to expel at least a portion of the airflow discharged by the diffuser attachment. The diffuser attachment assembly has a first configuration in which (the diffuser surface of the diffuser attachment is configured to receive hair when) the diffuser attachment is mounted with respect to the outlet end of the air-moving appliance, and a second configuration in which the hair engagement cover is attached to the outlet end of the diffuser attachment when the diffuser attachment is mounted with respect to the air-moving appliance (and the prongs of the hair engagement cover are positioned to engage the hair).

[0012] The hair engagement cover may define a plurality of bridge threads coupled to an outer edge of the hair engagement cover, such that the prongs may extend outwardly from the plurality of bridge threads. The plurality of bridge threads in part may define a plurality of voids, such that the voids may be configured to expel at least a portion of the airflow discharged by the air-moving appliance.

[0013] The discharge openings of the diffuser attachment may be positioned in a grid configuration on the diffuser surface. The outlet end of the diffuser attachment may define openings configured to receive corresponding tabs of the hair engagement cover.

[0014] As used herein, a "user's hair", "user's roots", and "user's scalp" specify one example for using the disclosed assembly. It should be understood, however, that a user may utilize the disclosed assembly on another's hair/roots/scalp without departing from the spirit/scope of this disclosure. Thus, a "user's hair/roots/scalp" merely provides context for using the disclosed assembly but does not limit whose hair the disclosed assembly may be used on.

[0015] As used herein, "hair" may also refer to "roots" and "scalp" unless the context clearly dictates otherwise.

[0016] As used herein, "a", "an", and "the" refer to both singular and plural referents unless the context clearly dictates otherwise.

[0017] As used herein, the term "about" refers to a measurable value such as a parameter, an amount, a temporal duration, and the like and is meant to include variations of +/- 15% or less, preferably variations of +/- 10% or less, more preferably variations of +/- 5% or less, even more preferably variations of +/- 1% or less, and still more preferably variations of +/- 0.1% or less of and from the particularly recited value, in so far as such variations are appropriate to perform in the invention described herein. Furthermore, it is also to be understood that the value to which the modifier "about" refers is itself specifically disclosed herein.

[0018] As used herein, spatially relative terms, such as "beneath", "below", "lower", "above", "upper", "front", "back", "side", "left", "right", "rear", and the like, are used for ease of description to describe one element or feature's relationship to another element(s) or feature(s). It is further understood that the terms "front", "back", "left", "right", "top", and "bottom" are not intended to be limiting and are intended to be interchangeable, where appropriate. Further, it should be noted that the terms "first," "second," and the like herein do not denote any order, quantity, or relative importance, but rather are used to distinguish one element from another.

[0019] As used herein, the terms "comprise(s)", "comprising", and the like, specify the presence of stated features, integers, steps, operations, elements, and/or components, but do not preclude the presence or addition of one or more other features, integers, steps, operations, elements, components, and/or groups thereof.

[0020] As used herein, the terms "configure(s)", "configuring", and the like, refer to the capability of a component and/or assembly, but do not preclude the presence or addition of other capabilities, features, components, elements, operations, and any combinations thereof.

[0021] All ranges disclosed herein are inclusive of the endpoints, and the endpoints are independently combinable with each other. Each range disclosed herein constitutes a disclosure of any point or sub-range lying within the disclosed range.

[0022] All methods described herein can be performed in any suitable order unless otherwise indicated herein or otherwise clearly contradicted by context. The use of

any and all examples, or exemplary language (e.g., "such as"), is intended merely to better illustrate the invention and does not pose a limitation on the scope of the invention or any embodiments unless otherwise claimed.

[0023] Any combination or permutation of features, functions and/or embodiments as disclosed herein is envisioned. Additional advantageous features, functions and applications of the disclosed systems, methods and assemblies of the present disclosure will be apparent from the description which follows, particularly when read in conjunction with the appended figures. All references listed in this disclosure are hereby incorporated by reference in their entireties.

BRIEF DESCRIPTION OF THE DRAWINGS

[0024] Features and aspects of embodiments are described below with reference to the accompanying drawings, in which elements are not necessarily depicted to scale.

[0025] Exemplary embodiments of the present disclosure are further described with reference to the appended figures. It is to be noted that the various features, steps, and combinations of features/steps described below and illustrated in the figures can be arranged and organized differently to result in embodiments which are still within the scope of the present disclosure.

[0026] To assist those of ordinary skill in the art in making and using the disclosed assemblies, systems and methods, reference is made to the appended figures, wherein:

Fig. 1A depicts a left front perspective view of a diffuser attachment assembly, according to the present disclosure;

Fig. 1B depicts a right front perspective view of the diffuser attachment assembly;

Fig. 2 depicts a side view of the diffuser attachment assembly;

Fig. 3A depicts a front view of the diffuser attachment assembly;

Fig. 3B depicts a cross-sectional view of the diffuser attachment assembly taken along section line A-A of Fig. 3A;

Fig. 4 depicts a back perspective view of the diffuser attachment assembly;

Fig. 5 depicts an exploded front perspective view of the diffuser attachment assembly;

Fig. 6 depicts a front perspective view of a diffuser attachment of the diffuser attachment assembly;

Fig. 7 depicts a side view of the diffuser attachment of the diffuser attachment assembly;

Fig. 8 depicts a front view of the diffuser attachment of the diffuser attachment assembly;

Fig. 9 depicts a back perspective view of a hair engagement cover of the diffuser attachment assembly;

Fig. 10 depicts a front perspective view of a hair engagement cover of the diffuser attachment assembly;

Fig. 11 depicts a perspective view of a diffuser attachment assembly mounted to an air-moving appliance, according to the present disclosure;

Fig. 12 depicts an exploded perspective view of the diffuser attachment assembly of Fig. 11 partially mounted to the air-moving appliance; and

Fig. 13 depicts a perspective view of the diffuser attachment of Fig. 11 mounted to the air-moving appliance.

DETAILED DESCRIPTION

[0027] Referring now to the figures and in particular to Figs. 1A-5, a diffuser attachment assembly 10 of the present disclosure includes a diffuser attachment 12 and a hair engagement cover 50. As discussed in more detail below, the diffuser attachment 12 or the diffuser attachment assembly 10 may be mounted with respect to an air-moving appliance 102 (e.g., a hair dryer) shown in Fig. 12. The diffuser attachment assembly 10 provides multiple functions for the air-moving appliance 102. For example, the diffuser attachment 12 can be attached to the air-moving appliance 102 and used for diffuse drying of hair. The hair engagement cover 50 can be removably attached to the diffuser attachment 12 on the air-moving appliance 102 and used for drying hair from the root to the tip, as discussed in more detail below.

[0028] The diffuser attachment assembly 10 defines a central axis 24 which extends through a center of the diffuser attachment 12 and the hair engagement cover 50. Accordingly, the diffuser attachment 12 and the hair engagement cover 50 are coaxial when the hair engagement cover 50 is attached to the diffuser attachment 12.

[0029] In the illustrated embodiment, the diffuser attachment assembly 10 defines a circular outer shape, as depicted in Fig. 3A. In other embodiments, the diffuser attachment assembly 10 may have any suitable shape such as rectangular, triangular, and/or oval.

[0030] Referring now to Figs. 6-8, the diffuser attachment 12 includes an inlet end 14 and an outlet end 26. The inlet end 14 is opposite the outlet end 26 along central axis 24. The inlet end 14 of the diffuser attachment 12 is

configured to connect to the air-moving appliance 102 (see Figs. 11-13), either directly or indirectly. The outlet end 26 is configured to engage with the hair engagement cover 50, a user's hair, and combinations thereof, either directly or indirectly.

[0031] The inlet end 14 of the diffuser attachment 12 defines a back surface 15. The back surface 15 may be planar, partially planar, or non-planar. For example, the back surface 15 is partially planar and is partially curved, as illustrated in Figs. 4 and 7. As further illustrated in Fig. 4, the back surface 15 is dome-shaped. In other embodiments, the back surface 15 may be planar, angled, curved, or combinations thereof. The back surface 15 defines an inlet 16 which is configured to allow airflow to enter the diffuser attachment 12. The inlet 16 may have a cross-sectional shape, perpendicular to the central axis 24, that is circular, oval, quadrilateral, triangular, and variations thereof. In some instances, the inlet 16 may be sized and/or shaped similarly to an outlet of the air-moving appliance 102. In the example, the inlet 16 is circular. The inlet 16 is sized to interface with an outlet of the air-moving appliance 102.

[0032] In addition, the diffuser attachment 12 includes a collar 18 extending outward from the back surface 15 and along the central axis 24. The collar 18 is configured to engage the outlet of the air-moving 102. The collar 18 includes one or more features to removably attach to one or more features of the air-moving appliance 102. For example, the collar 18 may include and/or define a locking feature to semi-permanently engage with the air-moving appliance 102. The collar 18 defines a groove 20 and a notch 22 which are configured to rotationally engaged with the air-moving appliance 102. In the illustrated example, the collar 18 defines a plurality of grooves 20 and notches 22.

[0033] As seen in Fig. 4, the collar 18 defines the inlet 16. The inlet 16 is central to the collar 18 and extends at least partially between the inlet end 14 and the outlet end 26. The inlet 16 is sized and shaped for airflow to enter the diffuser attachment 12. For example, the inlet is circular. In other embodiments, the inlet 16 is rectangular, triangular, oval, or any suitable shape.

[0034] Referring to Fig. 6, the diffuser attachment 12 defines a diffuser surface 28 on the outlet end 26. The diffuser surface 28 is curved relative to an exterior of the diffuser attachment 12. For example, a central portion of the diffuser surface 28 (e.g., near central axis 24) is positioned closer to the inlet end 14 than an outer portion of the diffuser surface 28 such that the curvature extends inwardly towards the inlet 16. Accordingly, the diffuser surface 28 is concave. In other embodiments, the diffuser surface 28 may be convex and/or have any other suitable curve. The diffuser surface 28 may be configured to receive a user's hair such that the user's hair interacts with the curved portion.

[0035] The diffuser surface 28 also defines a plurality of discharge openings 30. The discharge openings 30 are in fluid communication with the inlet 16. The discharge openings 30 may be spaced in a grid-like configuration. For example, the discharge openings 30 are spaced in a grid-like configuration such that a majority of the diffuser surface 28 is included within the grid. The discharge openings 30 are equally (or near equally) spaced throughout the diffuser surface 28. In another example, the discharge openings 30 may be positioned in specific areas of the diffuser surface 28, as needed based on a desired use. For example, the discharge openings 30 may be grouped at different locations on the diffuser surface 28.

[0036] In some instances, the diffuser surface 28 includes a display surface 34 configured to depict an alphanumeric character, an image, and/or a symbol. For example, the display surface 34 may provide an area for branding, instructions, and combinations thereof.

[0037] The diffuser attachment 12 may be free of any prongs and/or raised features configured to engage with a user's hair. Specifically, the diffuser surface 28 is free of any prongs and/or raised features. A prong-free surface may provide several benefits, including but not limited to, enabling close contact of airflow/heat with hair/roots/scalp, and allowing the diffuser attachment 12 to interface with and glide over a user's hair without engaging ("catching") hair (e.g., hair tresses). Thus, the diffuser surface 28 may be a smooth, obstruction-free surface defining a plurality of discharge openings 30.

[0038] Referring to Fig. 8, the diffuser attachment 12 may define attachment features and/or include elements configured to engage with the hair engagement cover 50, either directly or indirectly. Thus, the hair engagement cover 50 may be semi-permanently attached with the diffuser attachment 12. The diffuser attachment 12 may define attachment features and/or include elements positioned along the outer edge of the diffuser attachment 12 that are configured to engage with the hair engagement cover 50. The diffuser attachment 12 may define attachment features and/or include elements positioned on the diffuser surface 28 that are configured to engage with the hair engagement cover 50.

[0039] In one instance, the diffuser attachment 12 defines openings 32 (see Fig. 8). The diffuser surface 28 defines openings 32 that extend at least partially inwardly of the diffuser attachment 12 (i.e., in the direction towards the inlet end 14). The openings 32 are configured to engage with the hair engagement cover 50, either directly or indirectly. The openings 32 are sized to semi-permanently engage with the hair engagement cover 50. In another instance, the diffuser attachment 12 may include tabs (not shown). The diffuser surface 28 may include tabs (not shown) that extend outwardly of the diffuser attachment 12 (i.e., in the direction towards the outlet end 26).

[0040] Referring to Figs. 9 and 10, the hair engagement cover 50 is configured to removably attach to the outlet end 26 of the diffuser attachment 12 and provide a second configuration of the attachment assembly 10 (shown in Fig. 1A). The hair engagement cover 50 de-

fines an inner side 52 (see Fig. 9) and an outer side 54 (see Fig. 10). The inner side 52 of the hair engagement cover 50 is configured to engage with the outlet end 26 of the diffuser attachment 12, either directly or indirectly. The outer side 54 of the hair engagement cover 50 is configured to engage with at least a user's hair.

[0041] As seen in Fig. 10, the hair engagement cover 50 defines one or more bridge threads 56. In the illustrated example, the hair engagement cover 50 defines a plurality of bridge threads 56, which collectively may be referred to as a web and/or matrix. The bridge thread 56 extends, either directly or indirectly, between various portions of an outer edge 55 of the hair engagement cover 50. As depicted in Figs. 9 and 10, the bridge thread 56 extends from the outer edge 55 of the hair engagement cover 50 to an inner ring 58. The inner ring 58 is coaxial with the outer edge 55 of the hair engagement cover 50, which is coaxial with the diffuser attachment 12. The hair engagement cover 50 includes a flat surface 60 that extends from an outer edge of the inner ring 58 and inwardly from an inner surface of the inner ring 58. The flat surface 60 may be configured to display an alphanumeric character, an image, and/or a symbol. For example, the flat surface 60 may provide an area for branding, instructions, and combinations thereof.

[0042] The inner ring 58 and the bridge threads 56 may provide structural support to the hair engagement cover 50. The inner ring 58 and the bridge threads 56 define voids 62 which extend between the inner side 52 and the outer side 54 of the hair engagement cover 50. The voids 62 allow air to pass from the inlet end 14 of the diffuser attachment 12 to the outer side 54 of the hair engagement cover 50. The bridge threads 56 and the inner ring 58 may define a cross-section that is solid, partially solid, and/or hollow. As illustrated, the bridge threads 56 and the inner ring 58 are hollow thereby contributing to the weight reduction of the hair engagement cover 50. The outer edge 55 defines a sidewall that extends between the inner side 52 to the outer side 54. In some instances, the outer edge 55 may extend longitudinally with the central axis 24.

[0043] The hair engagement cover 50 may define and/or include one or more prongs 64 that extend outwardly in the direction of the outer side 54. In the example, the hair engagement cover 50 defines a plurality of prongs 64 that extend outwardly in the direction of the outer side 54. For example, one or more prongs 64 extend outwardly from the bridge threads 56 and/or the inner ring 58. The prongs 64 extend axially with the central axis 24. In some instances, at least some of the prongs 64 extend outwardly beyond the outer edge 55 such that the outer side 54 of each prong 64 is outward beyond the outer side 54 of the outer edge 55. In some instances, some of the prongs 64 extend outwardly beyond the outer edge 55 and some of the prongs 64 do not extend outwardly beyond the outer edge 55. For example, Fig. 3B illustrates a cross-sectional view of the diffuser attachment assembly 10 where the prongs 64 extend outwardly beyond the outer edge 55.

[0044] The prongs 64 may be hollow, partially hollow, and/or solid. In this example, the prongs 64 define channels 66 which extend between the inner side 52 and the outer side 54. Each channel 66 extends between an upper opening 68 and a lower opening 70. The upper opening 68 is positioned on the outer side 54 of the prong 64 and the lower opening 70 is positioned on the inner side 52 of the prong 64. Thus, the channel 66 and the openings 68, 70 are in fluid communication with the diffuser attachment 12 such that air traveling between the inlet end 14 and the outlet end 26 may at least partially travel between the lower opening 70 to the upper opening 68 via the channel 66. In some cases, air may travel outwardly from the outlet end 26 of the diffuser attachment 12 through the voids 62 and the upper opening 68 of the prongs 64. The upper opening 68 may extend at least partially through the prong 64 so as to fluidly communicate with the channel 66 in a direction perpendicular to (or nearly perpendicular to) the axis 24. As depicted in Fig. 3B, the upper opening 68 may extend through the prong 64 so as to fluidly communicate with the channel 66 perpendicular to the axis 24. Thus, air may travel through the upper opening 68 despite engagement with at least a user's hair.

[0045] The hair engagement cover 50 is arranged to be removably attached to the diffuser attachment 12. For example, the hair engagement cover 50 may define and/or include one or more tabs 72 that extend outwardly of the hair engagement cover 50 in the direction of the inner side 52. In some instances, the hair engagement cover 50 includes at least two tabs 72 that extend outwardly from the bridge threads 56 of the hair engagement cover 50 in the direction of the inner side 52. In some instances, the tabs 72 may be positioned to align the hair engagement cover 50 in a specific orientation. In other instances, the tabs 72 may be positioned such that the hair engagement cover 50 can be positioned in any orientation.

[0046] In the illustrated example, the tabs 72 are configured to be removably inserted into the openings 32 of the diffuser attachment 12. The tabs 72 and the openings 32 have a circular cross-section and are sized such that each tab 72 is inserted into the corresponding opening 32. Insertion of the tabs 72 into the corresponding openings 32 ensures the hair engagement cover 50 is semi-permanently engaged with the diffuser attachment 12. In some embodiments, the tabs 72 may define one or more engagement features that are configured to interface with corresponding engagement features defined by the openings 32 so as to promote semi-permanent engagement between the diffuser attachment 12 and the hair engagement cover 50.

[0047] As depicted in Figs. 1A-5, the hair engagement cover 50 may removably engage with the diffuser attachment 12 so as to define the diffuser attachment assembly 10. The hair engagement cover 50 is positioned so as to define a space between at least the inner ring 58 and the

diffuser surface 28 when attached to the diffuser attachment 12. In some instances, engaging the hair engagement cover 50 and the diffuser attachment 12 may produce feedback to the user to ensure the components are properly attached. For example, the feedback may be audible (e.g., clicking, snapping), tactile (e.g., vibration), and combinations thereof. When engaged, the prongs 64 of the hair engagement cover 50 may extend outward from the diffuser surface 28 of the diffuser attachment 12.

[0048] Referring also to Figs. 11-13, the diffuser attachment assembly 10 is configured to interface with the air-moving appliance 102. Specifically, the outlet end 104 of the air-moving appliance 102 is configured to engage with the inlet end 14 of the diffuser attachment 12, either directly or indirectly. The diffuser attachment assembly 10 is removably engaged with the outlet end 104 of the air-moving appliance 102. For example, the outlet end 104 of the air-moving appliance 102 may define and/or include features/elements configured to engage with the groove 20 and/or the notch 22 of the diffuser attachment 12.

[0049] In operation, at least the inlet end 14 of the diffuser attachment 12 engages with at least the outlet end 104 of the air-moving appliance 102 (see Fig. 13). The inlet end 14 of the diffuser attachment 12 is inserted into the outlet end 104 of the air-moving appliance 102 and the diffuser attachment 12 may be rotated and/or translated until properly secured to the air-moving appliance 102. For example, the diffuser attachment 12 is rotated or positioned until the groove 20 and/or the notch 22 of the diffuser attachment 12 are secured with/to the air-moving appliance 102. The diffuser attachment 12 is engaged with the air-moving appliance 102 in a first configuration of the attachment assembly 10 where the diffuser surface 28 of the diffuser attachment 12 is configured to receive a user's hair. In the first configuration, air travels from the outlet end 104 of the air-moving appliance 102 through the inlet end 14 of the diffuser attachment 12 and exits the outlet end 26 of the diffuser attachment 12 through the discharge openings 30. In use, a user's hair is received by the diffuser surface 28 and air is expelled from the discharge openings 30 so as to diffuse the user's hair.

[0050] In a second configuration, as shown in Fig. 11, the hair engagement cover 50 may attach to the diffuser attachment 12 to produce the second configuration of the diffuser attachment assembly 10. For example, and as shown in Fig. 12, the inner side 52 of the hair engagement cover 50 may attach to the outlet end 26 of the diffuser attachment 12. In the second configuration, at least the prongs 64 of the hair engagement cover 50 may engage with a user's hair. In use, a user's hair may engage at least with the prongs 64 and air may be expelled from the discharge openings 30 and/or the upper openings 68 of the prongs 64. The diffuser attachment assembly 10 may produce a finishing effect when styling a user's hair.

[0051] In operation, a user may switch between the first configuration and the second configuration as needed during the diffusing process. The diffuser attachment 12 and the hair engagement cover 50 are configured to be removed with minimal effort and steps to ensure a user can easily switch between the first configuration and the second configuration, and if needed, complete removal of the diffuser attachment 12 from the air-moving appliance 102.

[0052] The inlet end 14 of the diffuser attachment 12 is semi-permanently engaged with the outlet end 104 of the air-moving appliance 102 to position the diffuser attachment 12 of the diffuser attachment assembly 10 in the first configuration. In the first configuration, airflow is directed outwardly from the air-moving appliance 102 through the inlet end 14 of the diffuser attachment 12 and exits the outlet end 26 of the diffuser surface 28 through the discharge openings 30. The user may position their hair within and/or in close proximity to the diffuser surface 28 to perform a variety of functions, including hair drying. For example, diffuse drying a user's roots/hair closest to the user's scalp. Diffusing is typically used to dry naturally curly hair in its natural curl pattern. Thus, in the first configuration, a user may dry their hair without disrupting their natural curl pattern. Air may be expelled from the discharge openings 30 as the user's hair is positioned within and/or in close proximity to the diffuser surface 28.

[0053] The user may engage the inner side 52 of the hair engagement cover 50 to the outlet end 26 of the diffuser attachment 12 to place the diffuser attachment assembly 10 in the second configuration. In the second configuration, the user can engage with the prongs 64 of the hair engagement cover 50 and/or the diffuser surface 28 of the diffuser attachment 12. Airflow from the discharge openings 30 may travel through the lower opening 70 and out the upper openings 68 of the prongs 64. The user may position their hair within and/or in close proximity to the prongs 64 and/or the diffuser surface 28 to perform a variety of functions, including hair drying. For example, a user may dry entire sections of their hair, from for example, root to tip. Thus, in the second configuration, a user may dry their naturally curly hair in its natural curl pattern by retaining/holding sections of hair within the diffuser surface 28. Air may be expelled from the upper openings 68 as the user's hair is positioned in contact with and/or in close proximity to the prongs 64.

[0054] While the invention has been described with reference to preferred embodiments, it will be understood by those skilled in the art that various changes may be made, and equivalents may be substituted for the elements thereof without departing from the scope of the invention. In addition, many modifications may be made to adapt the teaching of the invention to particular use, application, manufacturing conditions, use conditions, composition, medium, size, and/or materials without departing from the essential scope and spirit of the invention. Therefore, it is intended that the invention is not limited to the exemplary embodiments and best mode contemplated for carrying out this invention as described

herein. Since many modifications, variations, and changes in detail can be made to the described examples, it is intended that all matters in the preceding description and shown in the accompanying figures be interpreted as illustrative and not in a limiting sense.

Claims

1. A diffuser attachment assembly for an air-moving appliance, the diffuser attachment assembly comprising:

   a diffuser attachment comprising:

   an inlet end configured to connect to the air-moving appliance, the inlet end including an inlet for airflow to enter the diffuser attachment; and
   an outlet end including a diffuser surface defining discharge openings, the diffuser surface being smooth and free of any prongs, wherein the diffuser surface is curved relative to an exterior of the diffuser attachment; and

   a hair engagement cover configured to removably attach to the outlet end of the diffuser attachment, the hair engagement cover including prongs arranged to extend outward from the diffuser surface of the diffuser attachment when the hair engagement cover is attached to the outlet end,
   wherein the attachment assembly has a first configuration in which the hair engagement cover is not attached to the outlet end of the diffuser attachment, and a second configuration in which the hair engagement cover is attached to the outlet end of the diffuser attachment.

2. The diffuser attachment assembly of claim 1, wherein the prongs of the hair engagement cover each define an opening that is configured to expel at least a portion of the airflow discharged by the diffuser attachment.

3. A diffuser attachment assembly for an air-moving appliance, the diffuser attachment assembly comprising:

   a diffuser attachment comprising:

   an inlet end configured to removably connect to the air-moving appliance, the inlet end including an inlet for airflow to enter the diffuser attachment; and
   an outlet end including a diffuser surface defining discharge openings configured to discharge at least a portion of the airflow, the diffuser surface being free of any prongs, wherein the diffuser surface is curved relative to an exterior of the diffuser attachment; and

   a hair engagement cover comprising an inner side and an outer side, wherein the inner side of the hair engagement cover is configured to removably attach to the outlet end of the diffuser attachment, wherein the hair engagement cover includes prongs arranged to extend outward from the diffuser surface when the hair engagement cover is attached to the outlet end of the diffuser attachment, the prongs defining openings that are in communication with the discharge openings of the diffuser attachment, wherein the openings of the prongs are configured to expel at least a portion of the airflow discharged by the diffuser attachment,
   wherein the attachment assembly has a first configuration in which the hair engagement cover is not attached to the outlet end of the diffuser attachment, and a second configuration in which the hair engagement cover is attached to the outlet end of the diffuser attachment.

4. The diffuser attachment assembly of claim 2 or 3, wherein the openings of the prongs are positioned perpendicularly to a longitudinal axis of the hair engagement cover.

5. The diffuser attachment assembly of any preceding claim, wherein the hair engagement cover defines a plurality of bridge threads coupled to an outer edge of the hair engagement cover, wherein the prongs extend outwardly from the plurality of bridge threads.

6. The diffuser attachment assembly of claim 5, wherein the plurality of bridge threads in part define a plurality of voids, wherein the voids are configured to expel at least a portion of the airflow discharged by the diffuser attachment.

7. The diffuser attachment assembly of any preceding claim, wherein the diffuser attachment is removably connected to the air-moving appliance.

8. The diffuser attachment assembly of any preceding claim, wherein the discharge openings are positioned in a grid configuration on the diffuser surface.

9. The diffuser attachment assembly of any preceding claim, wherein the outlet end of the diffuser attachment defines openings configured to receive a corresponding tab of the hair engagement cover.

10. An air-moving appliance assembly comprising a dif-

fuser attachment assembly and an air-moving appliance configured to expel air from an outlet end, the diffuser attachment assembly comprising:

a diffuser attachment comprising:

an inlet end configured to removably connect to the outlet end of the air-moving appliance, the inlet end including an inlet for airflow to enter the diffuser attachment; and an outlet end including a diffuser surface defining discharge openings, the diffuser surface being smooth and free of any prongs, wherein the diffuser surface is curved relative to an exterior of the diffuser attachment; and

a hair engagement cover comprising:

an inner side and an outer side, wherein the inner side of the hair engagement cover is configured to removably attach to the outlet end of the diffuser attachment, wherein the hair engagement cover includes prongs arranged to extend outward from the diffuser surface when the hair engagement cover is attached to the outlet end of the diffuser attachment, the prongs defining an opening that is in communication with the discharge openings of the diffuser attachment, wherein the opening of the prongs is configured to expel at least a portion of the airflow discharged by the diffuser attachment,

wherein the diffuser attachment assembly has a first configuration in which the diffuser attachment is mounted with respect to the outlet end of the air-moving appliance, and a second configuration in which the hair engagement cover is attached to the outlet end of the diffuser attachment when the diffuser attachment is mounted with respect to the air-moving appliance.

11. The air-moving appliance assembly of claim 10, wherein the hair engagement cover defines a plurality of bridge threads coupled to an outer edge of the hair engagement cover, wherein the prongs extend outwardly from the plurality of bridge threads.

12. The air-moving appliance assembly of claim 11, wherein the plurality of bridge threads in part define a plurality of voids, wherein the voids are configured to expel at least a portion of the airflow discharged by the air-moving appliance.

13. The air-moving appliance assembly of any one of claims 10 to 12, wherein the discharge openings are positioned in a grid configuration on the diffuser surface.

14. The air-moving appliance assembly of any one of claims 10 to 13, wherein the outlet end of the diffuser attachment defines openings configured to receive corresponding tabs of the hair engagement cover.

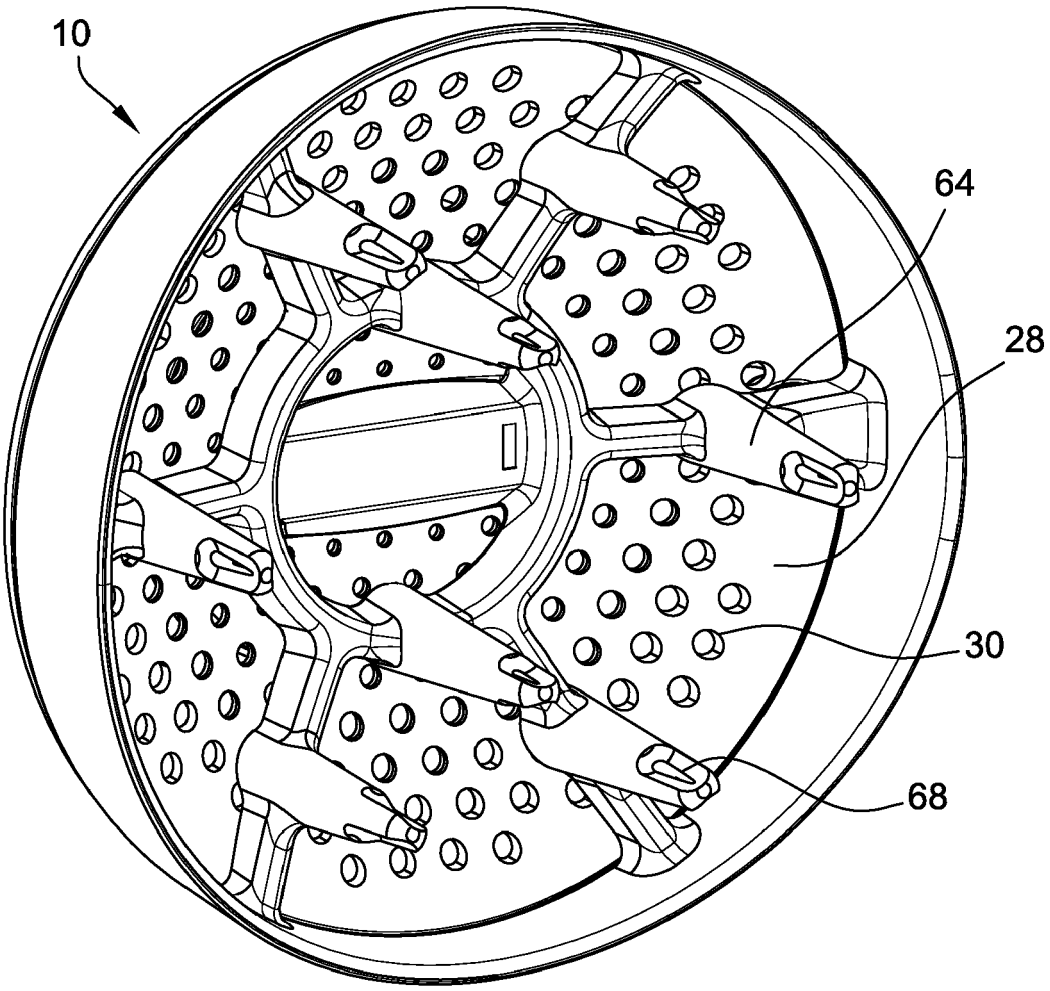


FIG. 1A

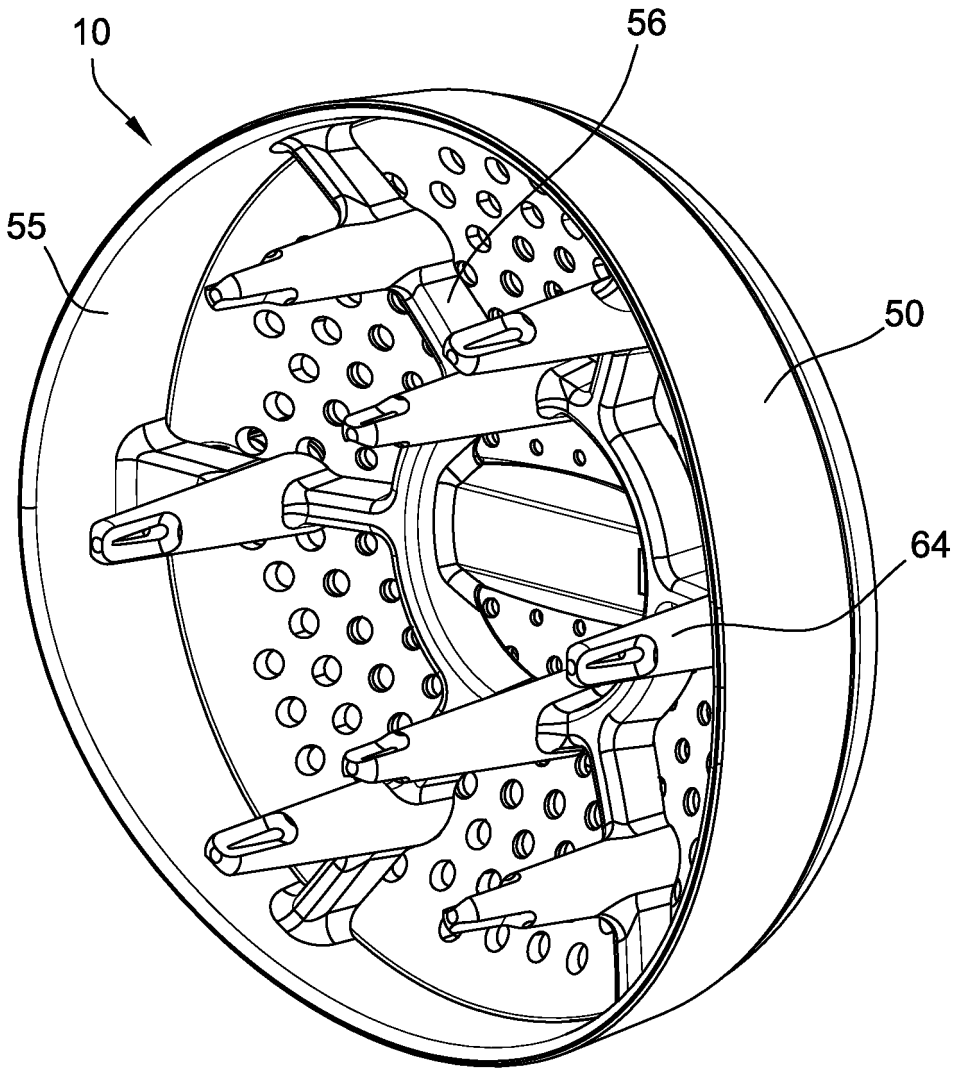


FIG. 1B

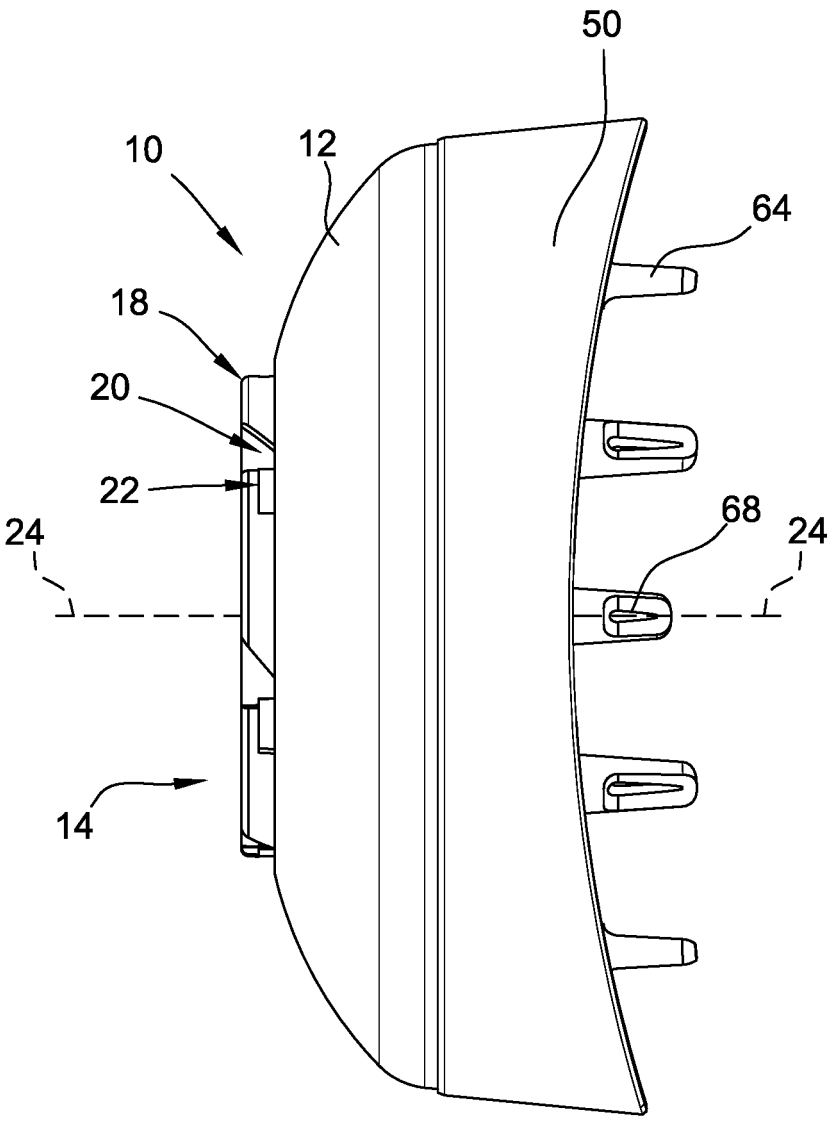
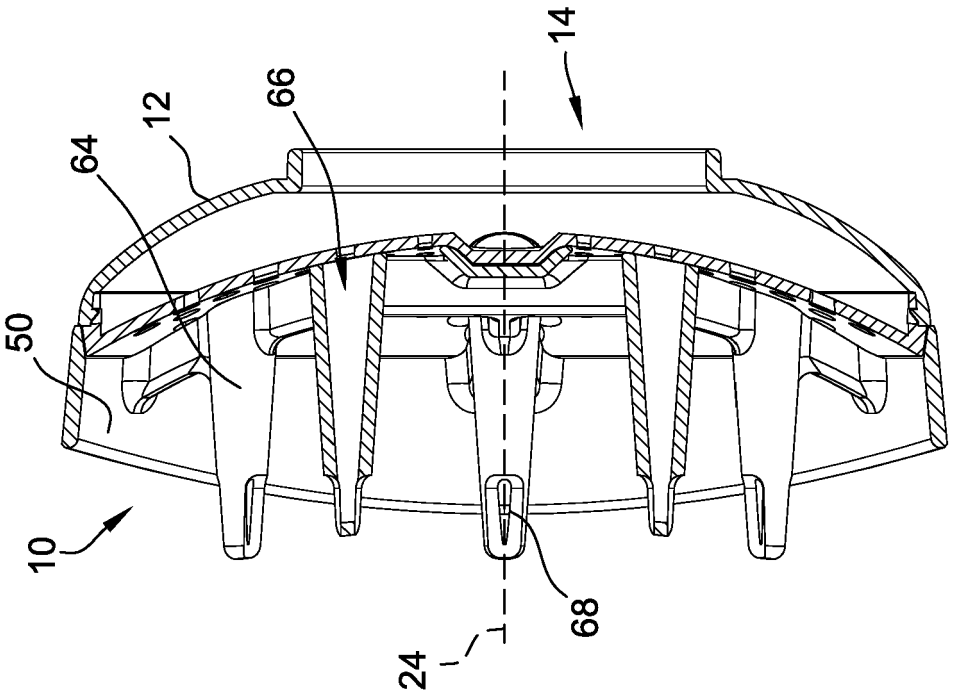


FIG. 2



Section A-A

FIG. 3B

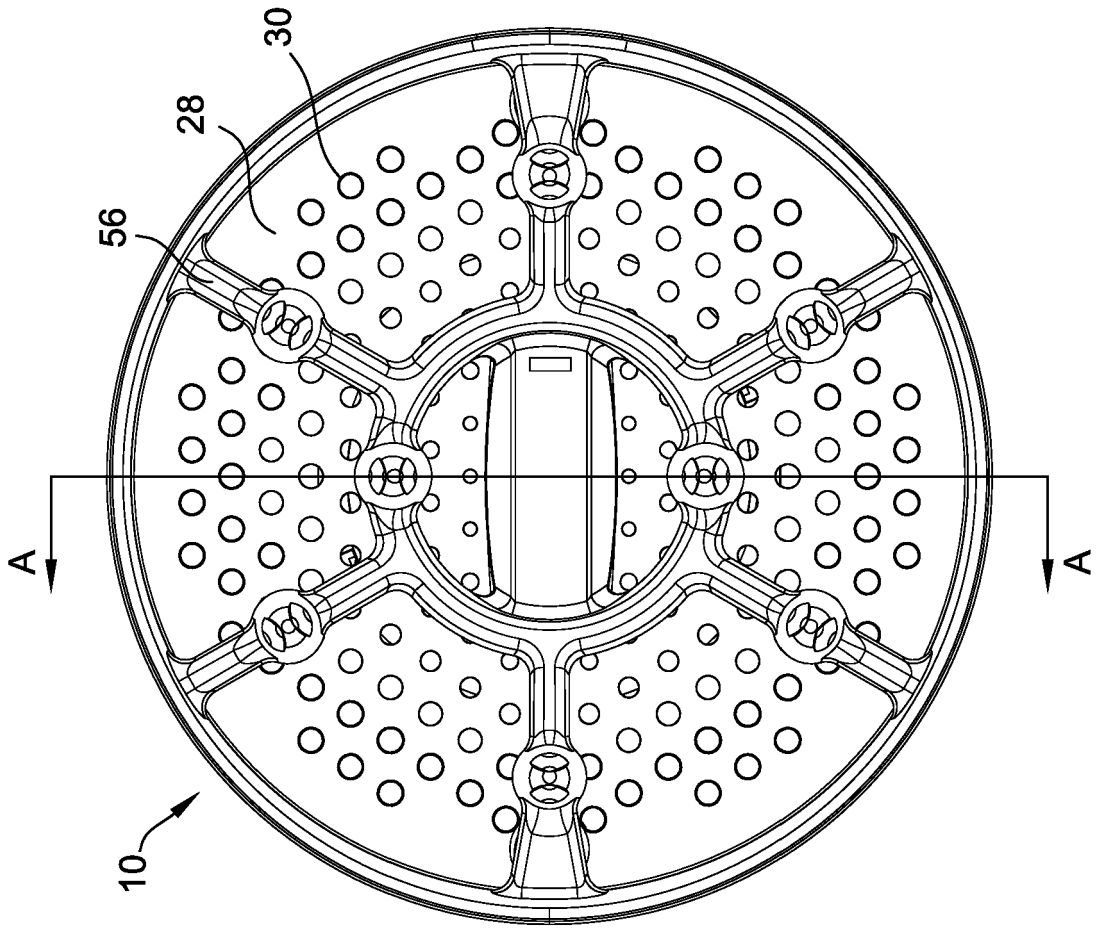


FIG. 3A

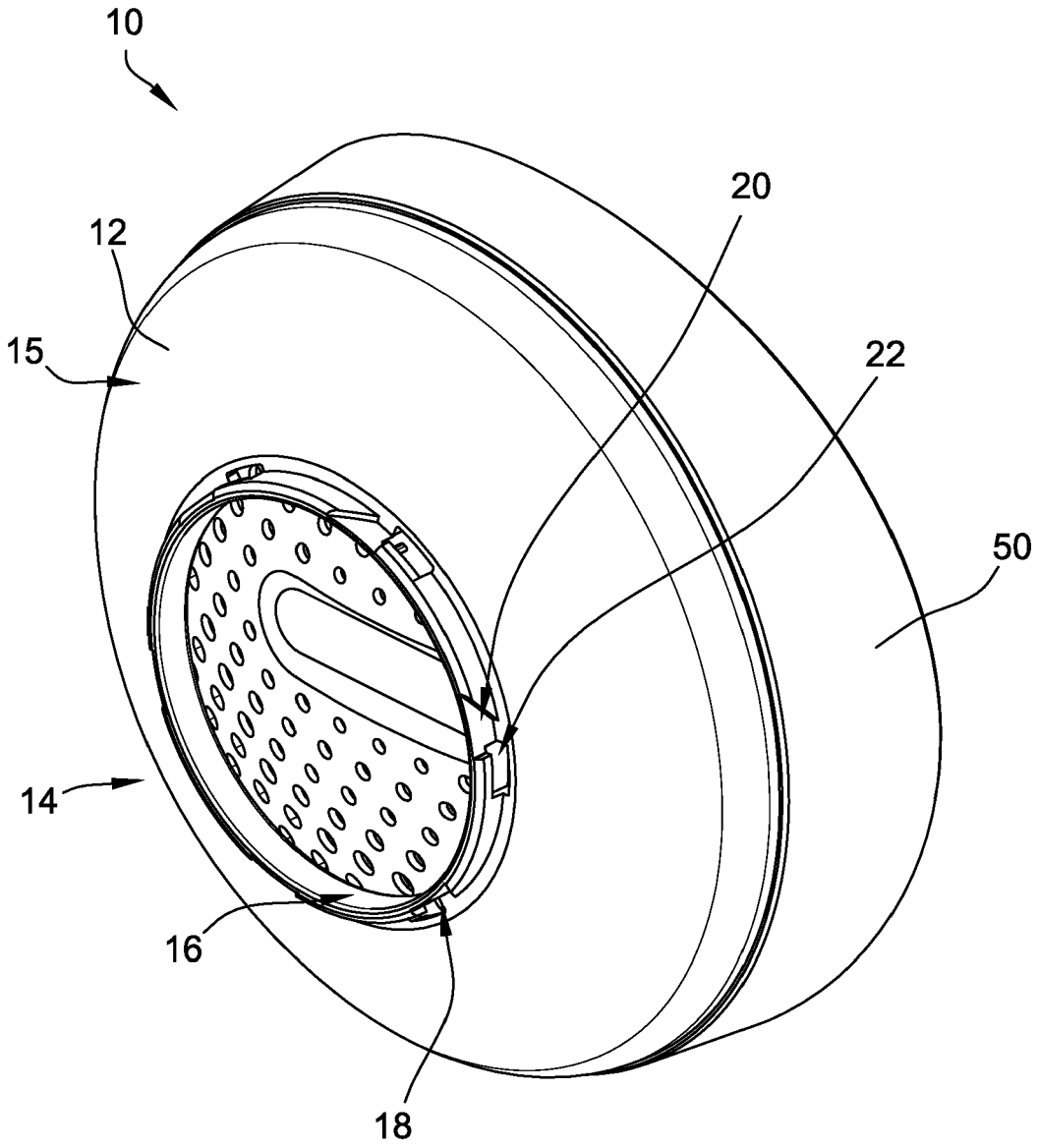


FIG. 4

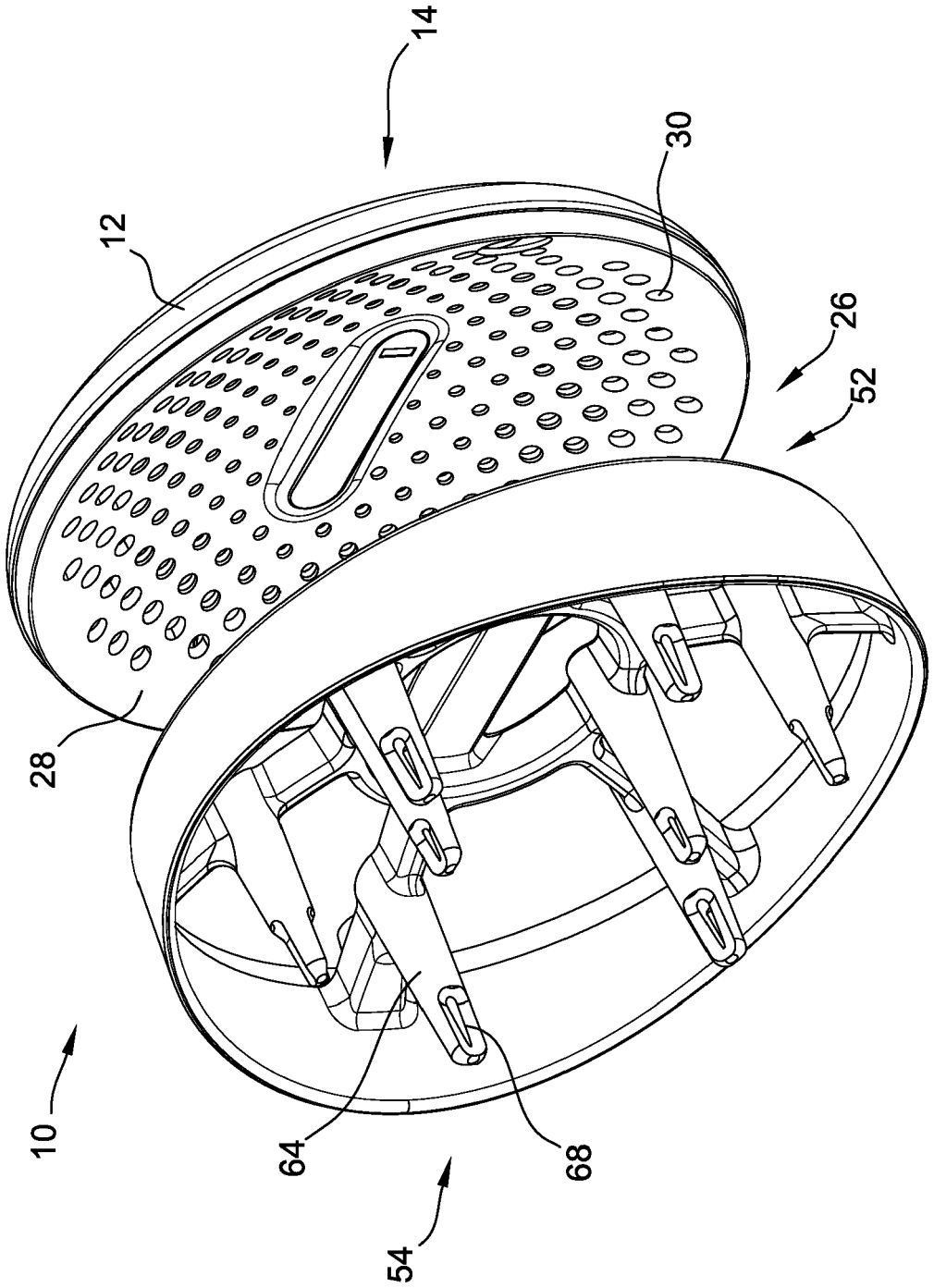


FIG. 5

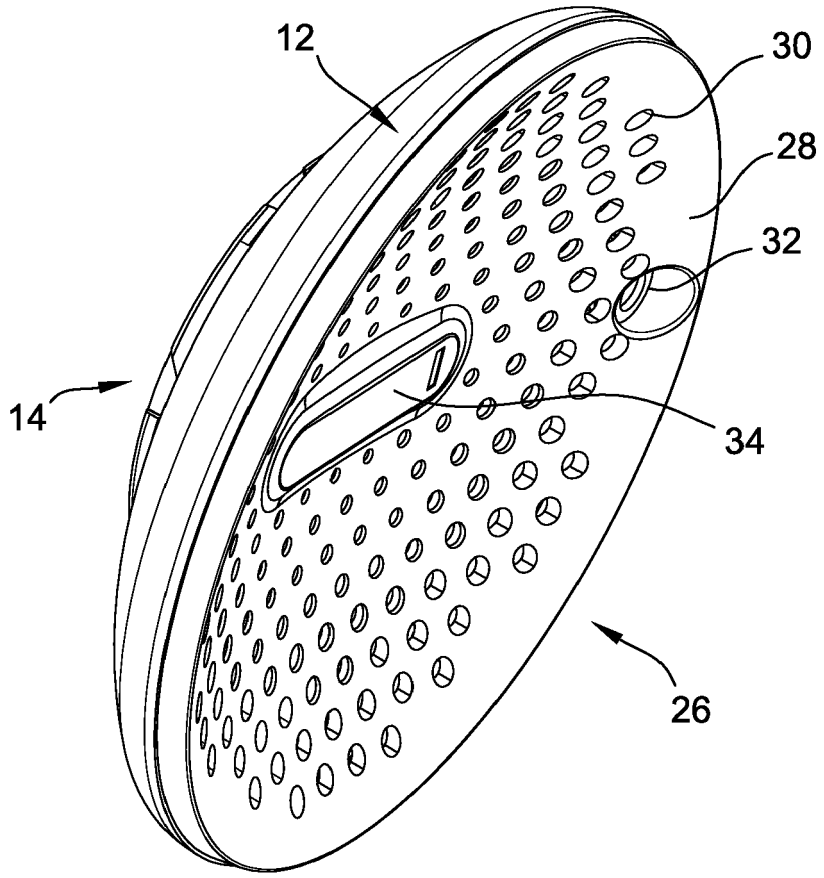


FIG. 6

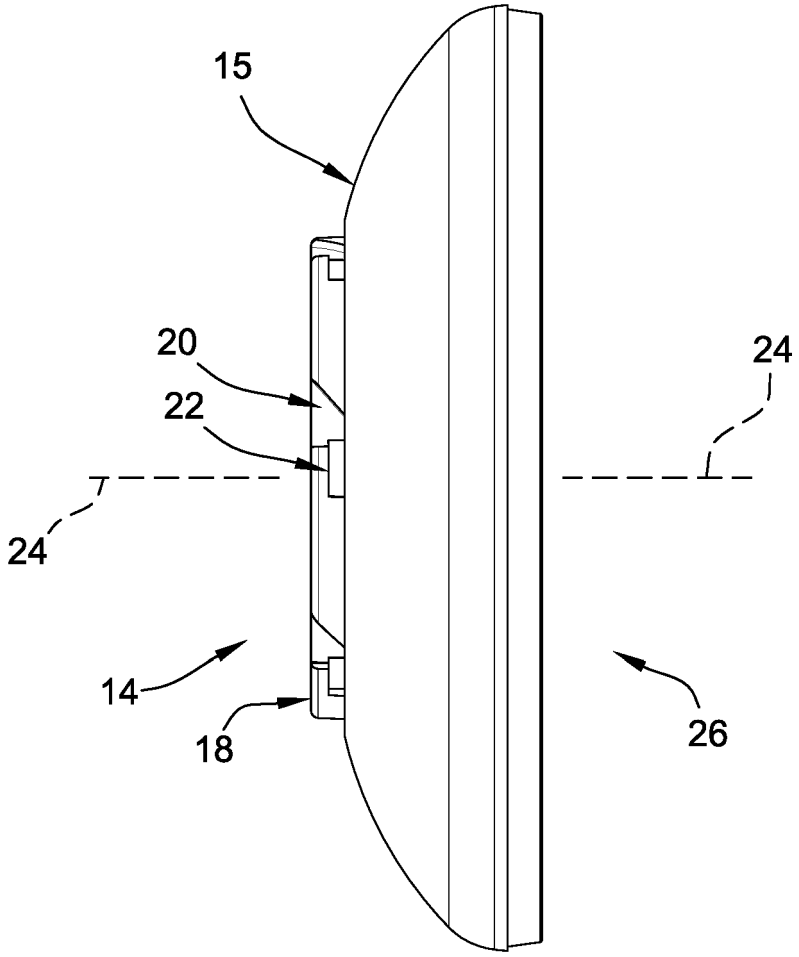


FIG. 7

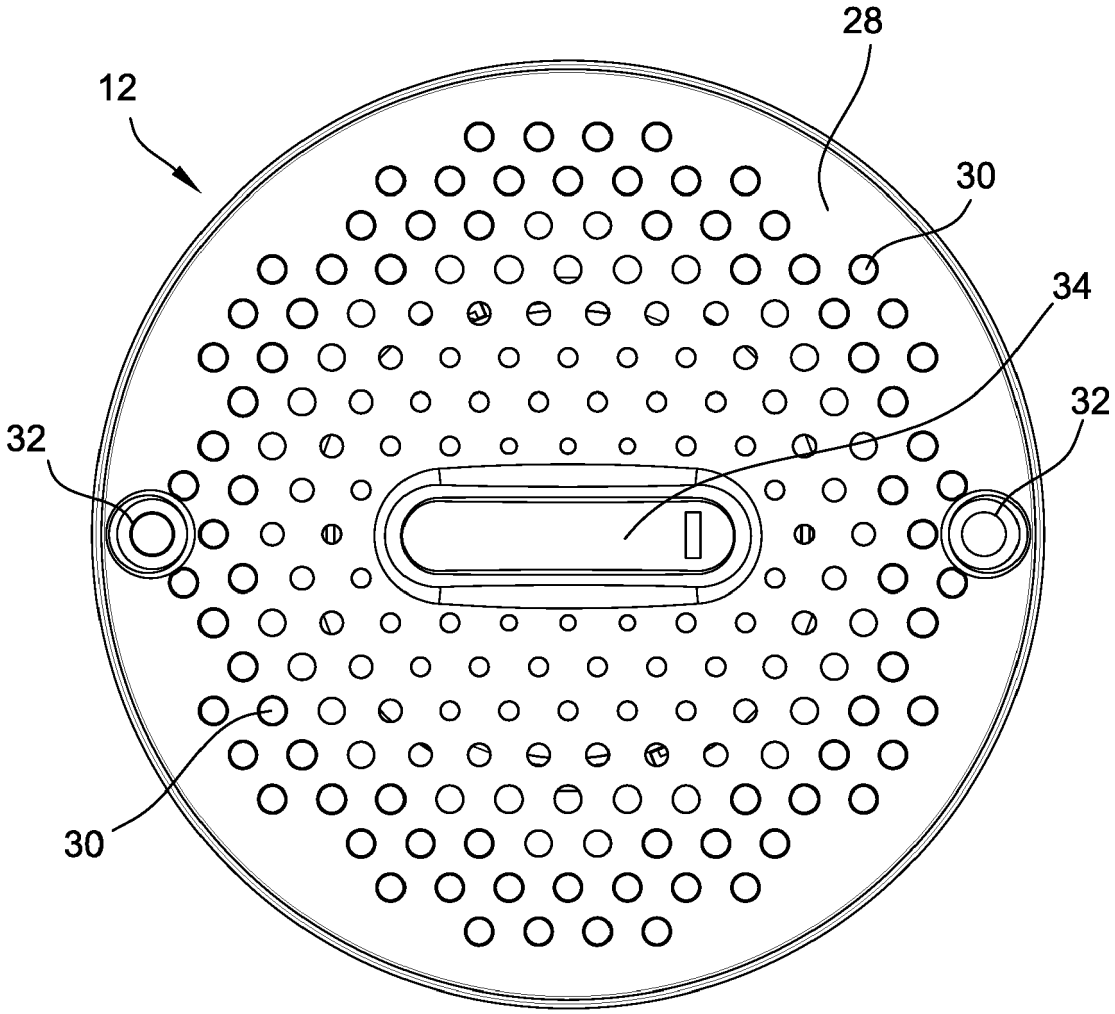


FIG. 8

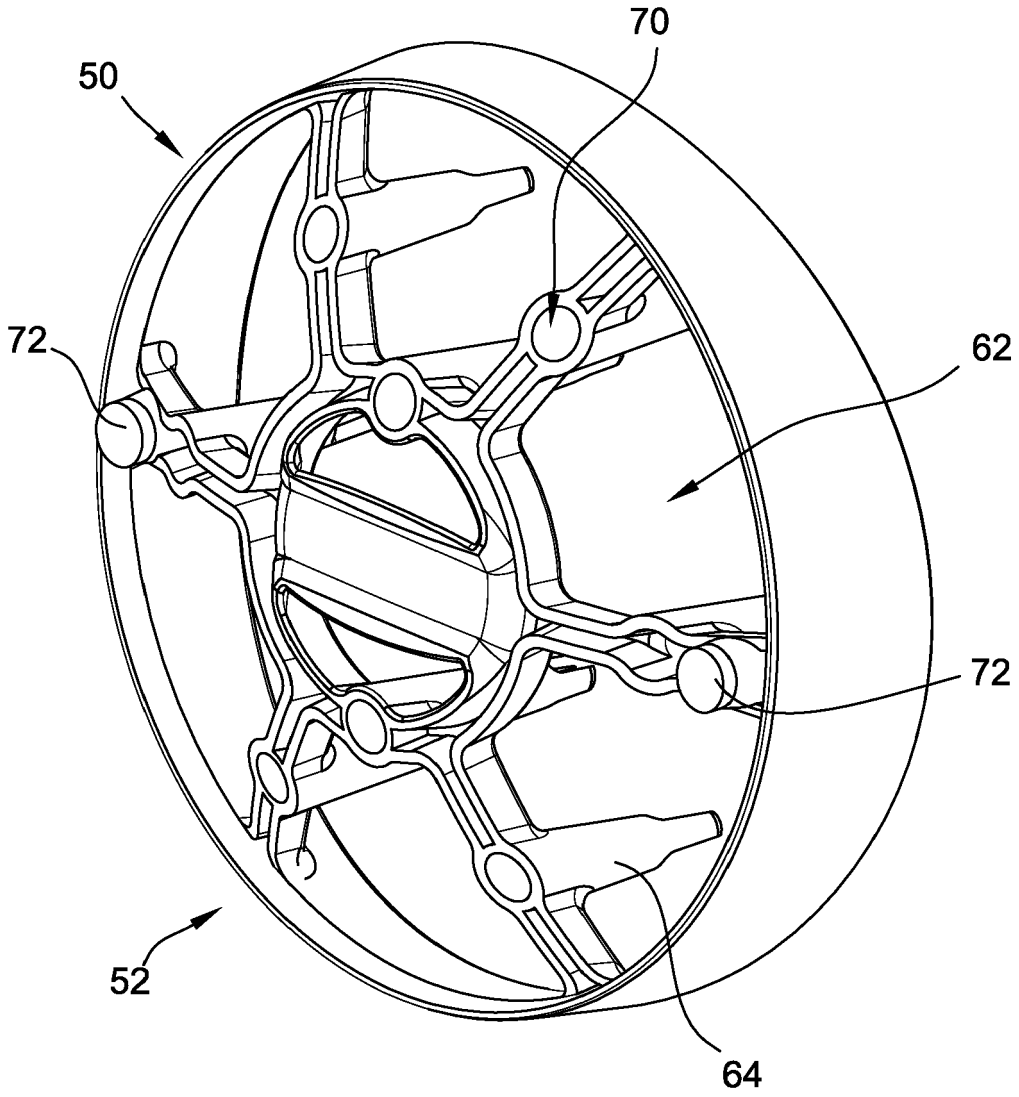


FIG. 9

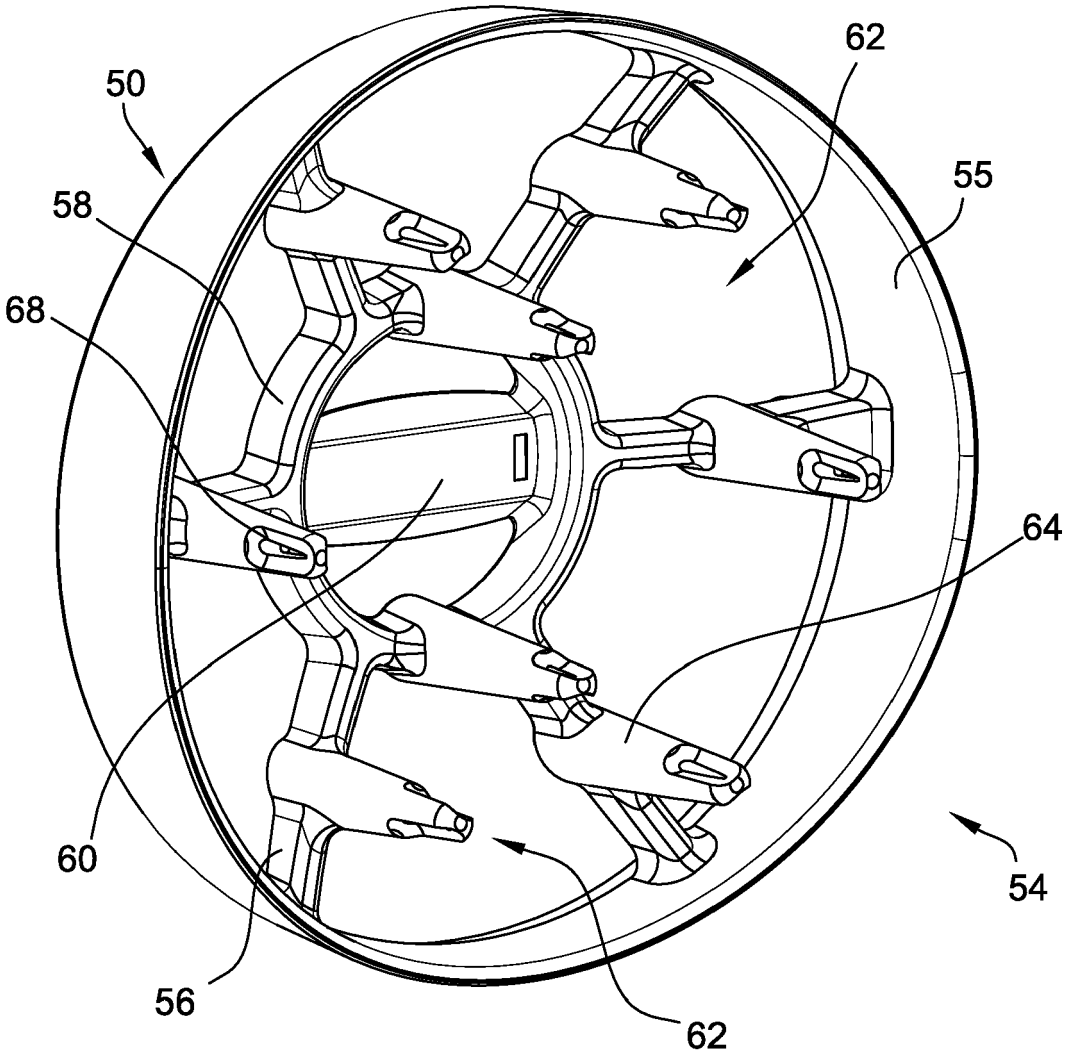


FIG. 10

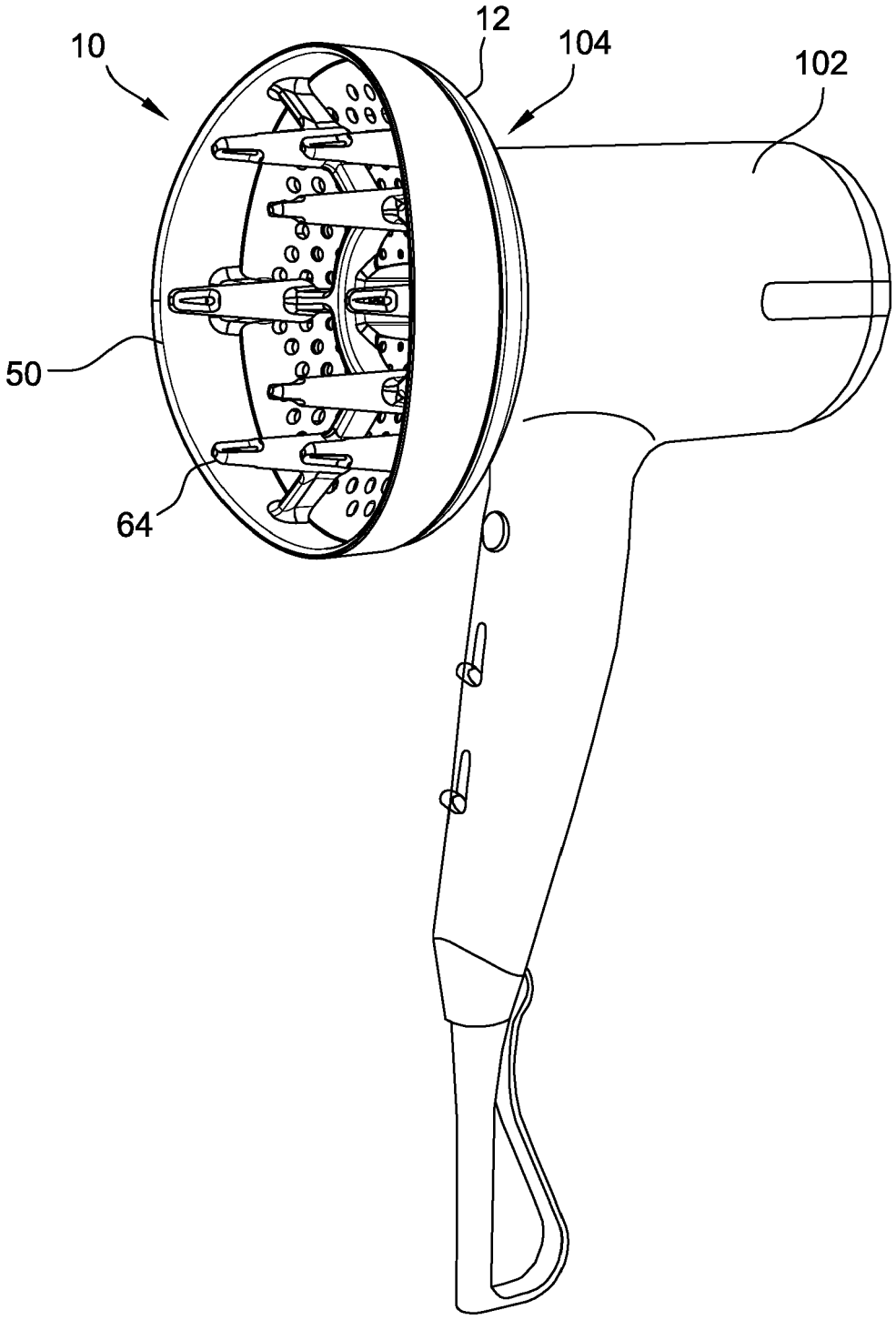


FIG. 11

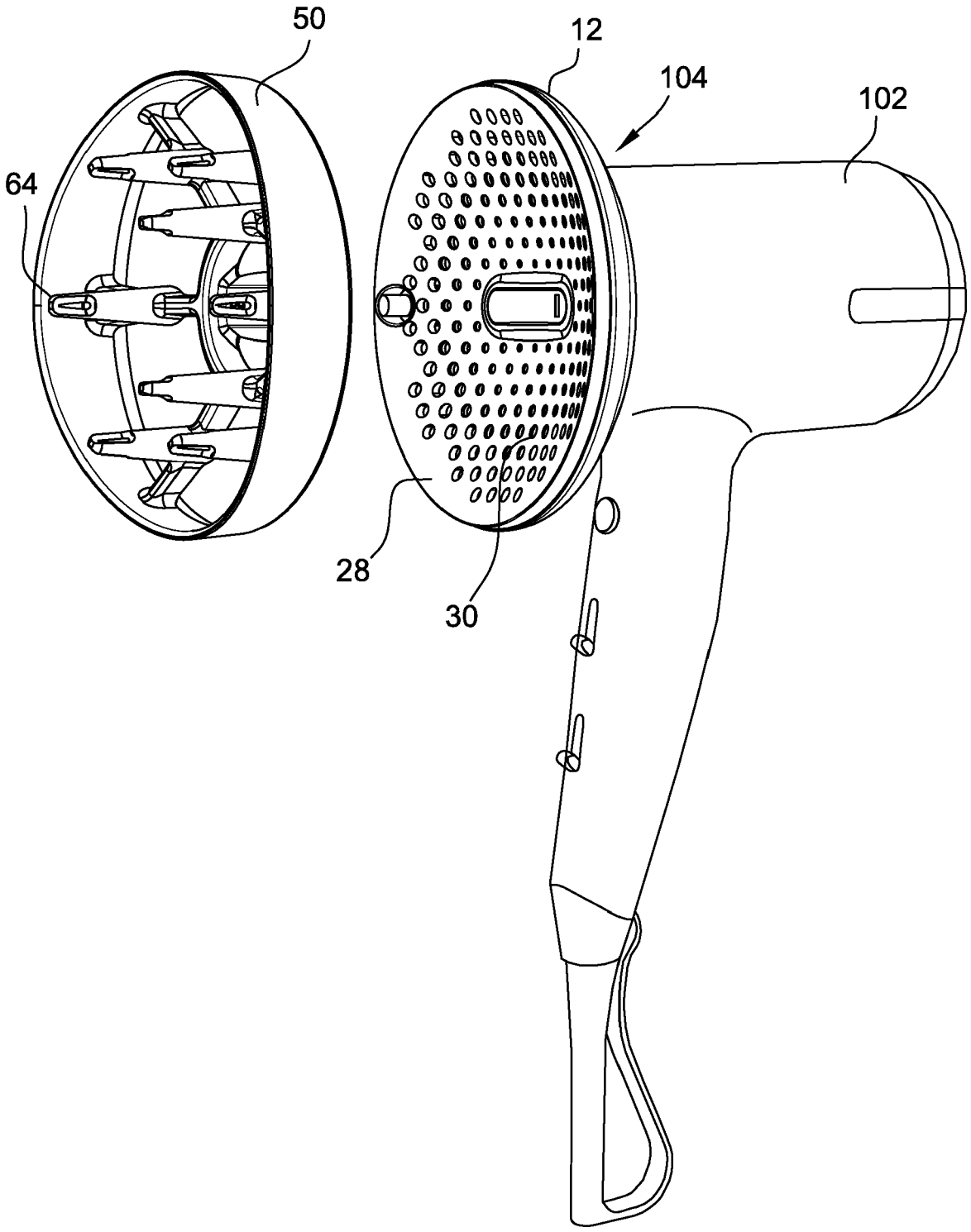


FIG. 12

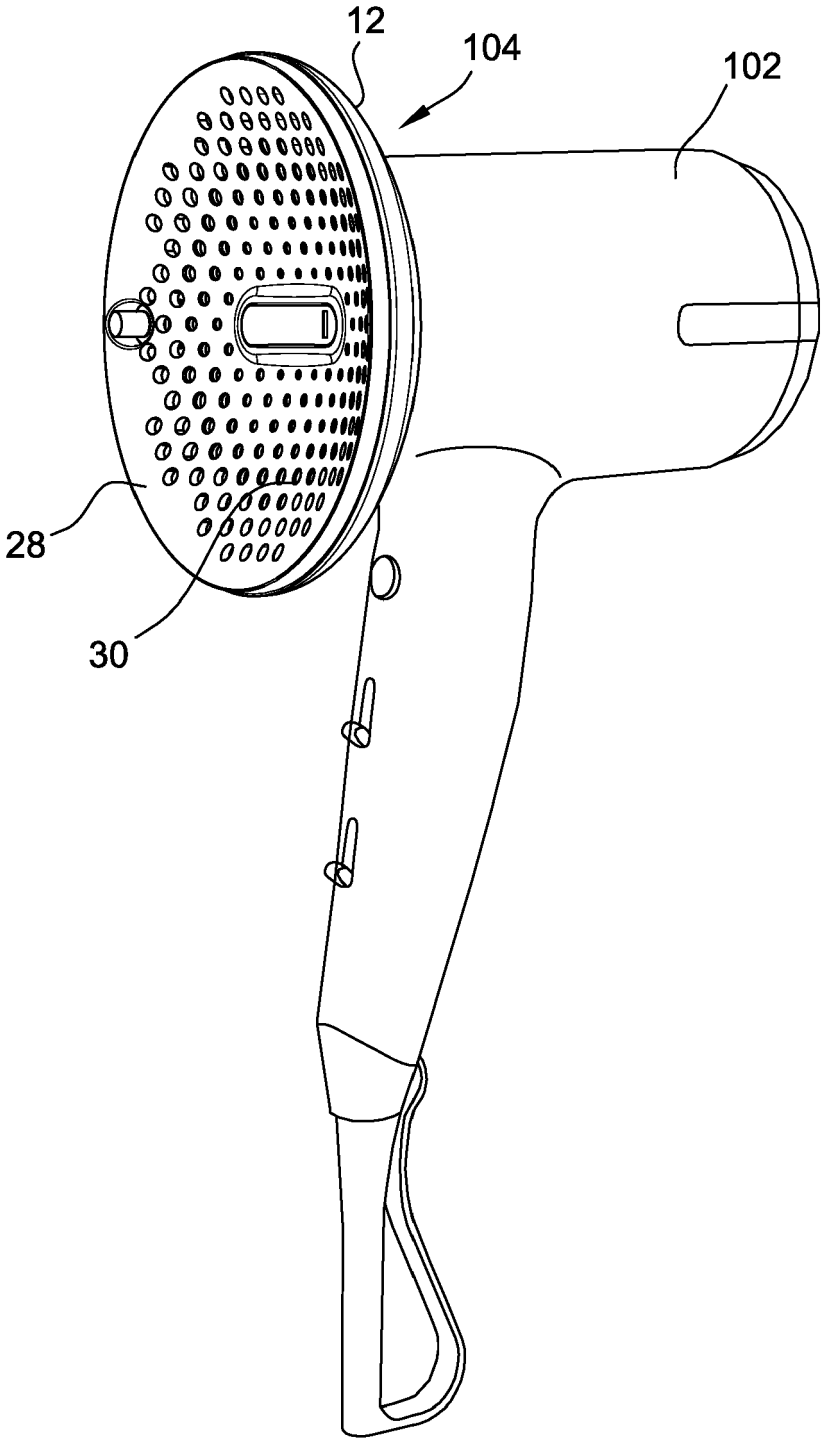


FIG. 13

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EUROPEAN SEARCH REPORT

Application Number
EP 24 17 2806

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Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
Y	EP 0 940 101 B1 (MATSUSHITA ELECTRIC WORKS LTD [JP]) 24 September 2003 (2003-09-24) * paragraphs [0017] - [0037]; figures *	1-14	INV. A45D20/10 A45D20/12
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The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
The Hague	23 September 2024	Dinescu, Daniela

CATEGORY OF CITED DOCUMENTS

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23-09-2024

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