

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

SHARKNINJA, INC.,
SHARKNINJA OPERATING LLC,
SHARKNINJA MANAGEMENT LLC, AND
SHARKNINJA SALES COMPANY,
Petitioner,

v.

DYSON TECHNOLOGY LIMITED,
Patent Owner.

IPR2024-00993
Patent 11,044,979 B2

Before JAMES A. TARTAL, FRANCES L. IPPOLITO, and
MATTHEW S. MEYERS, *Administrative Patent Judges*.

TARTAL, *Administrative Patent Judge*.

DECISION
Denying Institution of *Inter Partes* Review
35 U.S.C. § 314, 37 C.F.R. § 42.4

I. INTRODUCTION

SharkNinja, Inc., SharkNinja Operating LLC, SharkNinja Management LLC, and SharkNinja Sales Company (“Petitioner”)¹ filed a Petition pursuant to 35 U.S.C. §§ 311–319 requesting an *inter partes* review of claims 1–32 (“the Challenged Claims”) of U.S. Patent No. 11,044,979 B2 (Ex. 1001, “the ’979 patent”). Paper 2 (“Pet.”). Dyson Technology Limited (“Patent Owner”)² filed a Preliminary Response. Paper 6 (“Prelim. Resp.”). With our prior authorization, Petitioner filed a Reply to the Preliminary Response (Paper 7, “Reply” or “Prelim. Resp. Reply”), and Patent Owner filed a Sur-reply (Paper 8, “Sur-reply”).

We have authority to determine whether to institute an *inter partes* review. 35 U.S.C. § 314(b) (2018); 37 C.F.R. § 42.4(a) (2023). An *inter partes* review may not be instituted “unless . . . the information presented in the petition . . . shows that there is a reasonable likelihood that the petitioner would prevail with respect to at least 1 of the claims challenged in the petition.” 35 U.S.C. § 314(a). Upon consideration of the Petition, the Preliminary Response, the Reply, the Sur-reply, and the evidence of record, we conclude that the information does not demonstrate a reasonable likelihood that Petitioner would prevail in showing the unpatentability of at least one of the Challenged Claims. Accordingly, we deny institution of *inter partes* review.

¹ Petitioner further identifies SharkNinja Midco LLC, SharkNinja Appliance LLC, SharkNinja Appliance UK Holdco Limited, and SharkNinja Global SPV, Ltd., as real-parties-in-interest. Pet. vii.

² Patent Owner identifies no additional real parties-in-interest. Paper 4, 2.

II. BACKGROUND

A. The '979 Patent

The '979 patent relates to “an attachment for a hand-held appliance, in particular a hair care appliance such as a hot styling brush.” Ex. 1001, 1:13–15. According to the '979 patent, in a conventional hot styling brush air is directed towards the hair by an attachment or head that “often includes bristles onto which hair is wrapped and held for styling,” while the “air is generally blown out of the head or attachment normal to the surface of the head.” *Id.* at 1:19–25. The '979 patent describes an attachment that includes at least one outlet as a slot “extending from near an inlet end of the attachment towards a distal end of the attachment,” that emits air “along the external surface” of the attachment. *Id.* at 1:29–36. “[F]luid emitted from the outlet is tangential to the external surface of the attachment,” and “[b]y having the fluid exiting the fluid outlet travelling around the outer surface of the head[,] hair is attracted to the surface and easily wraps around to create the style.” *Id.* at 1:41–48.

Figure 1A of the '979 patent, reproduced below, illustrates “an example of an appliance according to the invention.” *Id.* at 3:61–62.

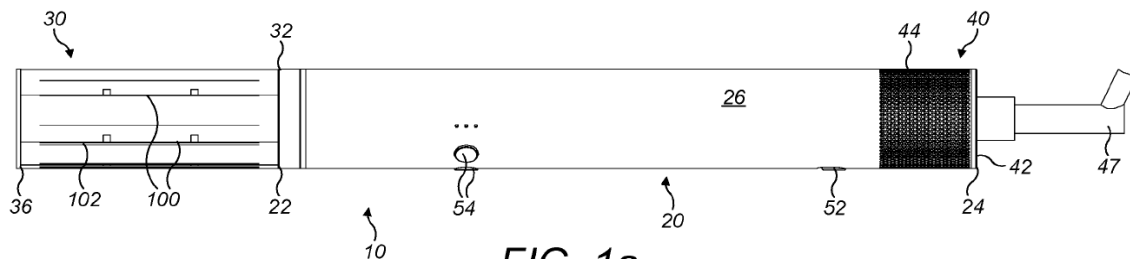


Figure 1A depicts hot styling brush 10 with handle 20 attached at distal end 22 to detachable head or attachment 30. *Id.* at 4:45–48. Handle 20 includes fluid inlet 40 at end 24 and a fan unit (not shown), which draws fluid in through fluid inlet 40, as well as a heater (not shown) that may heat

the fluid. *Id.* at 4:49–65. Head 30 includes fluid outlet 100 comprised of parallel slots 102 radially around head 30. *Id.* at 5:1–4.

Figure 5b, reproduced below, illustrates a cross section through attachment 30. *Id.* at 4:6–7.

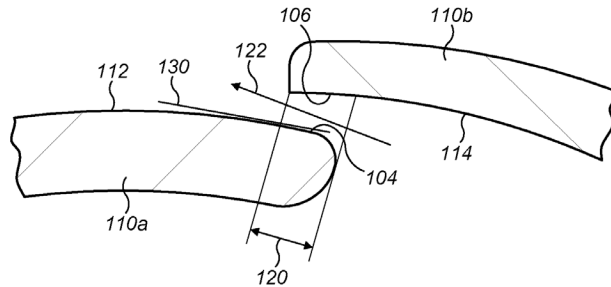


FIG. 5b

As shown in Figure 5b, slots 102 are formed by the overlap 120 between adjacent plates 110, “which results in fluid being directed between a radially inner surface 104 formed from the outer surface 112 of a first plate 110a and a radially outer surface 106 formed from the inner surface 114 of a second plate 110b.” *Id.* at 7:1–9. According to the ’979 patent, “fluid 122 flowing out of the slot 102 is tangential 130 to the outer surface 112 of the plate 110a and joins with the fluid flowing out of the other slots of the fluid outlet 100 forming a fluid flow around the circumference of the head 30,” thereby “encourage[ing] hair to wrap around the head 30 automatically.” *Id.* at 7:9–15. The ’979 patent further states as follows:

The fluid 122 exiting the slots 102 is attracted to the curved surface of the head 30 by the Coanda effect.^[3] This in

³ According to Petitioner, the Coanda effect “is the tendency of a fluid jet to stay attached to an adjacent flat or curved surface,” and “was initially described in a 1936 patent issued to its namesake, Henri Coanda, which claimed a structure including ‘a slot-shaped passage’ for utilizing the effect.” Pet. 13 (citing Ex. 1010). Patent Owner similarly states that “[t]he Coanda effect is the action in fluid mechanics whereby a flow along a solid surface tends to follow the surface rather than separating.” Prelim. Resp. 12–13.

turn causes hair that is presented to the head 30 to automatically wrap around the surface and then styled into curls. As air is blown down the length of the hair, wet hair is dried more quickly than conventionally and as the wrapping process occurs without the use of bristles, the hair can slide off the head 30 once it is dry or styled so there is no tangling.

Id. at 7:16–23.

B. Illustrative Claims

Petitioner challenges claims 1–32 of the '979 patent. Pet. 1. Claims 1 and 17 are independent. Claims 2–16 depend from claim 1 and claims 18–32 depend from claim 17. Claims 1 and 17 are illustrative of the claimed subject matter and are reproduced below.

1. An attachment for a hand held appliance comprising an inlet in a proximal first portion of the attachment; an outlet in a cylindrical second portion of the attachment; and a fluid flow path between the inlet and the outlet, wherein the outlet in the cylindrical second portion of the attachment comprises at least one slot extending continuously from the proximal first portion to a distal end of the attachment, wherein the outlet is at least partially defined by an external surface of a substantially contiguous wall of the attachment and *is configured to direct fluid flow emitted from the outlet tangentially along and around the external surface of the substantially contiguous wall to form a circumferential fluid flow around the cylindrical second portion of the attachment that encourages hair to automatically wrap around the cylindrical second portion*, wherein the external surface of the substantially contiguous wall is an outermost surface of the attachment along an entire length of the attachment from a beginning of the at least one slot to an end of the at least one slot, and wherein the distal end of the attachment is closed.

Ex. 1001, 11:16–34 (emphasis added to the portion of claim 1 identified by Petitioner as limitation [1f]); Pet. 95.

17. A hand held appliance comprising a handle having a fluid flow path from a handle inlet to a handle outlet, a fan unit for drawing fluid into the handle inlet, and an attachment for

attaching to the handle, the attachment comprising an inlet in a proximal first portion of the attachment; an outlet in a cylindrical second portion of the attachment; and a fluid flow path between the inlet and the outlet, wherein the outlet in the cylindrical second portion of the attachment comprises at least one slot extending continuously from the proximal first portion to a distal end of the attachment, wherein the outlet is at least partially defined by an external surface of a substantially contiguous wall of the attachment and *is configured to direct fluid flow emitted from the outlet tangentially along and around the external surface of the substantially contiguous wall to form a circumferential fluid flow around the cylindrical second portion of the attachment that encourages hair to automatically wrap around the cylindrical second portion*, wherein the external surface of the substantially contiguous wall is an outermost surface of the attachment along an entire length of the attachment from a beginning of the at least one slot to an end of the at least one slot, and wherein the distal end of the attachment is closed.

Ex. 1001, 12:10–32 (emphasis added to the portion of claim 17 identified by Petitioner as limitation [17f]); Pet. 97. As shown above, although claim 1 is directed to an attachment for a hand held appliance and claim 17 is directed to a hand held appliance with an attachment, limitations [1f] and [17f] each concern the outlet of the attachment and are identical.

C. Asserted Grounds of Unpatentability

Petitioner asserts that the Challenged Claims are unpatentable based on the following grounds:

Claims Challenged	35 U.S.C. § ⁴	Reference(s)/Basis
1–9, 12–14	103	Saito ⁵ , Lindsey ⁶
10, 11	103	Saito, Lindsey, Schepisi ⁷
15, 16	103	Saito, Lindsey, Nicolas ⁸
17–25, 27, 29–32	103	Saito, Lindsey, Shoemaker ⁹
26, 28	103	Saito, Lindsey, Schepisi, Shoemaker

Pet. 4. Petitioner’s contentions are supported by the Declaration of Dr. Daniel M. Nosenchuck, dated June 7, 2024. Ex. 1003. Patent Owner’s arguments in opposition are supported by the Declaration of Mr. Peter Bressler, dated September 9, 2024. Ex. 2001.

D. Related Proceedings

Petitioner and Patent Owner identify *SharkNinja Operating LLC v. Dyson, Inc.*, No. 1:23-cv-11277 (D. Mass.), filed June 6, 2023, as a related proceeding. Pet. viii; Paper 4, 2.

⁴ The Leahy-Smith America Invents Act (“AIA”) included revisions to 35 U.S.C. § 103 that became effective on March 16, 2013. We apply the AIA version of § 103 here, because the ’979 patent does not reflect a priority date earlier than the effective date of the AIA. *See* Ex. 1001, codes (22), (30), (65).

⁵ Japanese Unexamined Patent App. Pub. No. JP H1 1-178631, published Jul. 6, 1999 (Ex. 1004, “Saito”).

⁶ U.S. Patent 5,868,148, issued Feb. 9, 1999 (Ex. 1005, “Lindsey”).

⁷ U.S. Patent 6,038,782, issued Mar. 21, 2000 (Ex. 1006, “Schepisi”).

⁸ U.S. Patent 8,092,166 B2, issued Jan. 10, 2012 (Ex. 1007, “Nicolas”).

⁹ UK Patent Application No. GB 2 093 526 A, published Sep. 2, 1982 (Ex. 1009, “Shoemaker”).

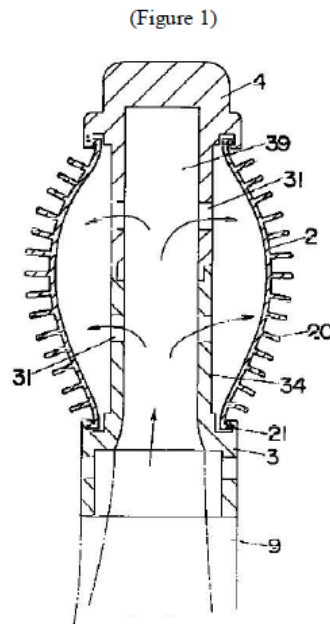
III. ANALYSIS

A. Summary of Asserted Prior Art References

1. Summary of Saito

Saito, titled “Hair dryer with attached brush,” describes a “hair dryer with an attached brush.” Ex. 1004 code (54), (57). The bristle base of the brush “is formed such that the external contour of a cross-section thereof in a longitudinal direction forms a convex curve.” *Id.* at code (57). “Hot air or steam flows along inner surfaces of the bristles and is guided to a central section of the brush to be discharged.” *Id.*

Figure 1, reproduced below, illustrates a brush detachably mounted onto a dryer body, as described in Saito.



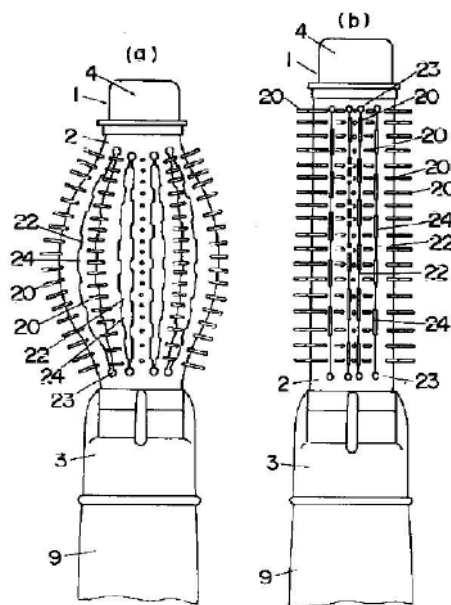
Id. ¶ 11. In Figure 1, brush 1 (not labeled) is formed from hollow, tubular bristle base 2 having bristles 20 and discharge ports 24 and from brush bases 3, 4, located at both ends of bristle base 2 in an axial direction. *Id.* Brush 1 is detachably mounted to a blowing port portion of hair dryer body 9. Brush bases 3, 4 are connected by tube 34 having a plurality of ventilation ports 31, and the interior space of tube 34 serves as airflow

channel 39. *Id.* ¶ 12. Bristle base 2 has a tubular shape in the axial direction and “is formed from a material with spring elasticity,” such that it bulges outward in an axial direction. *Id.* “[A]ir or steam discharged from the hair dryer body 9 enters a space between an outer surface of the tube 34 and an inner surface of the bristle base 2 from the airflow channel 39 within the tube 34 via openings 31 provided in the tube 34 and is discharged to the outside from discharge ports 24 formed in the bristle base 2.” *Id.* ¶ 13.

According to Saito, “the volume of air or steam discharged from a central section of the brush 1 in a longitudinal direction is greater than the volume of air or steam discharged from end sections of the brush 1,” and “when hair setting is performed on hair wound onto the central section of the brush 1 in the longitudinal direction, good setting properties are achieved.” *Id.*

Figure 5 of Saito, reproduced below, illustrates a brush detachably mounted onto a dryer body with the brush compressed in the axial direction in Figure 5(a) relative to the fully extended configuration in Figure 5(b), such that the middle of the brush bulges outward in Figure 5(a).

(Figure 5)

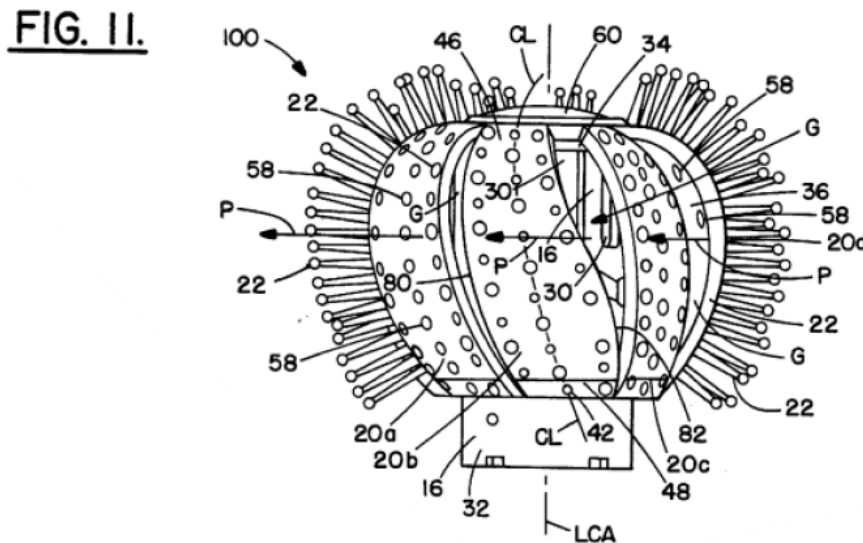


Id. ¶¶ 11, 15, 17. According to Saito, Figure 5 illustrates bristle base 2 with “a plurality of cutting grooves 22 that run in an axial direction thereof at equal intervals in a circumferential direction.” *Id.* ¶ 17. When “compressed in the axial direction by a change in the distance between the brush bases 3, 4, the bristle base 2 flexes so that the middle thereof in the axial direction bulges outward, as shown in Figure 5(a),” and thereby “the intervals between the cutting groove 22 portions widen.” *Id.* Saito states that “[b]y changing the distance between the brush bases 3, 4” the cross-section of “brush 1 in an axial direction can be made to form a circular arc,” such that “when an inward curl is to be applied to the hair, the hair can be wound on so as to form a circular arc with a curvature that matches the cross-sectional shape of the head in a circumferential direction.” *Id.* ¶ 18. Further, “[b]ecause overlap between the ventilation ports 31, 41 becomes greater when the bristle base 2 is made to bulge, the intervals between the cutting grooves 22 widens so that the hot air or steam is discharged not only from the discharge ports 24, but also from portions of the cutting grooves, so the area of the hair with which the hot air or steam comes into contact increases, improving setting properties.” *Id.* ¶ 19.

2. *Summary of Lindsey*

Lindsey, titled “Hair Styler,” is directed to a “hair styler for controlling the flow of air emitted from a hair blower,” and includes “a coupler for attachment to the hair blower” with “a plurality of vents” and “deflectors in the form of a plurality of canted vanes disposed in a turbinate arrangement exterior of the vents . . . for deflecting air that exits the vents into plural flow paths which are approximately transverse to and about” a central axis, “which manifest different angular direction about the central axis.” Ex. 1005 codes (54), (57).

Figure 11, a front elevational view with portions broken away of the hair styler” of Lindsey, is reproduced below.

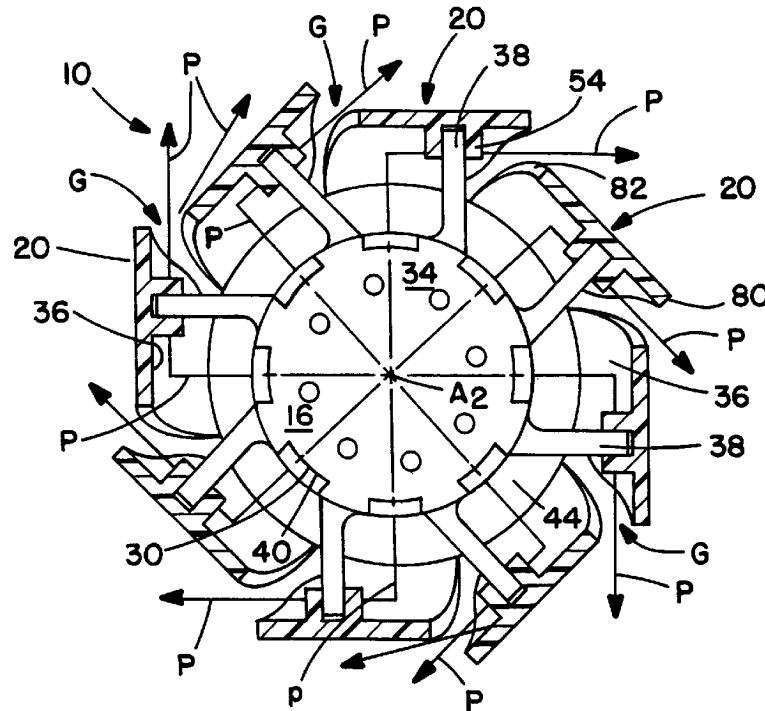


Id. at 4:66–67. Figure 11 illustrates “hair styler 100 with sleeve connector 18 [not shown] removed, and with prongs 22 of three vanes 20a, 20b, and 20c cut off at their base.” *Id.* at 8:20–25. “[V]anes 20 are elongated and, when viewed from their exterior, they are disposed generally longitudinally along and generally parallel to longitudinal central axis LCA of hair styler 100 and to central axis CA of internal chamber 26.” *Id.* at 8:25–35. “Side edges 80, 82 of vanes 20 are curved, and generally correspond to the curve of their respective center lines CL such [that] each vane has a width which varies generally along its length.” *Id.* at 8:43–46. According to Lindsey, the mounted vanes “preferably are twisted along their lengths and widths,” which provides “spaces or gaps G of varying widths and radial extents along and between side edges 80, 82 of mounted adjacent vanes.” *Id.* at 8:45–49. Further, “vanes 20 are concavely, preferably approximately conically, shaped relative to core 16, to internal chamber 26 or to its central axis CA,” and “[s]ome of the air which exits vents 28, 30 is

discharged from hair styler 100 directly through gaps G, and a lesser amount of the exiting air is discharged through vane holes 58. *Id.* at 8:55–64.

Figure 9 of Lindsey, reproduced below, illustrates “a vertical section view through the hair styler” shown in Figure 11 above.

FIG. 9.



Id. at 4:61–66. Hair styler 10 in Figure 9 includes vanes 20, disposed about axis of flow A2 and core 16, each vane having an interior surface 36 “disposed at an angle.” *Id.* at 5:42–52. “Vanes 20 are disposed in a turbinate arrangement about central axis CA of internal chamber 26, in the paths of the air exiting internal chamber 26, through vents 28, 30, in flow paths p which are approximately transverse or perpendicular to central axis CA of internal chamber 26.” *Id.* at 5:55–60. “Vanes 20 are spaced from one another and have gaps G therebetween, which allow some of the air exiting vents 28, 30 to be discharged through spaces or gaps G.” *Id.* at 5:65–67. According to Lindsey, “[t]he air impinging on interior surfaces 36 of

vanes 20 is deflected and directed to flow exterior of vanes 20 in plural flow paths which are approximately transverse or perpendicular to, and manifest different angular or tangential directions about central axis CA of internal chamber 26.” *Id.* at 5:60–65.

3. *Summary of Shoemaker*

Shoemaker, titled “Hand held hair dryers,” is directed to “a hair dryer or styler of tubular shape” and concerns “improvements in axial-flow fan assemblies.” Ex. 1009, 1:5–14, codes (54), (57). Shoemaker states that “styling attachments . . . may be releasably connected to the air outlet housing 27 [shown in Figure 1 of Shoemaker] to adapt the appliance for various combing and brushing operations in connection with the styling and drying of a user’s hair.” *Id.* at 2:64–69.

4. *Summary of Schepisi*

Schepisi, titled “Blow Dryer Having Airflow Control Means,” is directed to a blow dryer having a deflector within a barrel such that air flow is directed through the barrel opening on one mode or, in a second mode, “the air is deflected by the deflector so as to diffuse the airflow.” Ex.1006, codes (54), (57). Schepisi states that the barrel may include “a mesh-type screen” that is “positioned cylindrically around the barrel,” and that the screen “serves to block or obstruct some air” passing through holes in the barrel. *Id.* at 11:12–20.

5. *Summary of Nicolas*

Nicolas, titled “Fan,” describes “a fan assembly for creating an air current,” including a nozzle with “an interior passage for receiving the air flow from the base, a mouth through which the air flow is emitted, the mouth being defined by facing surfaces of the nozzle, and spacers for spacing apart the facing surfaces of the nozzle.” Ex. 1007, codes (54), (57).

According to Nicolas, the spacers are “preferably arranged to maintain a set distance between the facing surfaces of the nozzle,” “mounted on, preferably integral with, one of the facing surfaces of the nozzle,” and “arranged to contact the other one of the facing surfaces.” *Id.* at 3:31–40.

B. Legal Standards for Obviousness

A patent claim is unpatentable for obviousness if the differences between the claimed subject matter and the prior art are such that the subject matter, as a whole, would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. *KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 406 (2007). In *Graham v. John Deere Co. of Kan. City*, 383 U.S. 1 (1966), the Supreme Court set out a framework for assessing obviousness that requires consideration of four factors: (1) the “level of ordinary skill in the pertinent art,” (2) the “scope and content of the prior art,” (3) the “differences between the prior art and the claims at issue,” and (4) “secondary considerations” of nonobviousness such as “commercial success, long felt but unsolved needs, failure of others, etc.” *Id.* at 17–18; *KSR*, 550 U.S. at 407.

“Whether an ordinarily skilled artisan would have been motivated to modify the teachings of a reference is a question of fact.” *WBIP, LLC v. Kohler Co.*, 829 F.3d 1317, 1327 (Fed. Cir. 2016) (citations omitted). “[W]here a party argues a skilled artisan would have been motivated to combine references, it must show the artisan ‘would have had a reasonable expectation of success from doing so.’” *Arctic Cat Inc. v. Bombardier Recreational Prods. Inc.*, 876 F.3d 1350, 1360–61 (Fed. Cir. 2017) (quoting *In re Cyclobenzaprine Hydrochloride Extended-Release Capsule Patent Litig.*, 676 F.3d 1063, 1068–69 (Fed. Cir. 2012)).

C. Level of Ordinary Skill in the Art

In determining the level of ordinary skill in the art, various factors may be considered, including the “type of problems encountered in the art; prior art solutions to those problems; rapidity with which innovations are made; sophistication of the technology; and educational level of active workers in the field.” *In re GPAC Inc.*, 57 F.3d 1573, 1579 (Fed. Cir. 1995) (citation omitted).

Petitioner contends a person of ordinary skill in the art at the time of the invention “would have had a Bachelor’s degree or comparable technical degree in Industrial Design or Mechanical Engineering or equivalent work experience, and at least one year’s worth of experience in research, design and/or development related to appliances for moving air such as hair dryers (or other comparable industrial design),” and that “[a]dditional education could substitute for experience, and vice versa.” Pet. 17–18 (citing Ex. 1003 ¶¶ 17–19. At this stage of the proceeding, Patent Owner does not contest Petitioner’s proposed level of ordinary skill in the art. Prelim. Resp. 27–28.

We find, for purposes of this Decision, that the ’979 patent and the cited prior art references reflect the appropriate level of skill at the time of the claimed invention and that the level of appropriate skill reflected in these references and in the ’979 patent is consistent with the definition of a person of ordinary skill in the art proposed by Petitioner. *See Okajima v. Bourdeau*, 261 F.3d 1350, 1355 (Fed. Cir. 2001).

D. Claim Construction

In this proceeding we construe claims using the same claim construction standard that would be used to construe the claims in a civil action under 35 U.S.C. § 282(b). *See* 37 C.F.R. § 42.100(b). The claim construction standard includes construing claims in accordance with the

ordinary and customary meaning of such claims as understood by one of ordinary skill in the art at the time of the invention. *See id.*; *Phillips v. AWH Corp.*, 415 F.3d 1303, 1312–14 (Fed. Cir. 2005) (en banc). In construing claims in accordance with their ordinary and customary meaning, we take into account the specification and prosecution history. *Phillips*, 415 F.3d at 1315–17.

Petitioner proposes no express construction and contends that the Petition is based on Patent Owner’s position in district court that no construction is necessary. Pet. 6–7 (citing Ex. 1013). Patent Owner proposes no express construction at this stage of the proceeding, and states that “the claim terms can be afforded their plain and ordinary meaning.” Prelim. Resp. 28.

Only terms that are in controversy need to be construed, and these need be construed only to the extent necessary to resolve the controversy. *See Realtime Data, LLC v. Iancu*, 912 F.3d 1368, 1375 (Fed. Cir. 2019) (“The Board is required to construe ‘only those terms . . . that are in controversy, and only to the extent necessary to resolve the controversy.’”) (quoting *Vivid Techs., Inc. v. Am. Sci. & Eng’g, Inc.*, 200 F.3d 795, 803 (Fed. Cir. 1999)). In the absence of any dispute over the construction of any claim term, we find no express construction necessary for purposes of this Decision.

E. Alleged Obviousness over Saito and Lindsey

Petitioner contends that the combination of Saito and Lindsey renders the subject matter of claims 1–9 and 12–14 of the ’979 patent obvious. Pet. 18–68. Patent Owner disputes Petitioner’s contentions, particularly with regard to limitation [1f]. Prelim. Resp. 29–63,

1. *Claim 1*

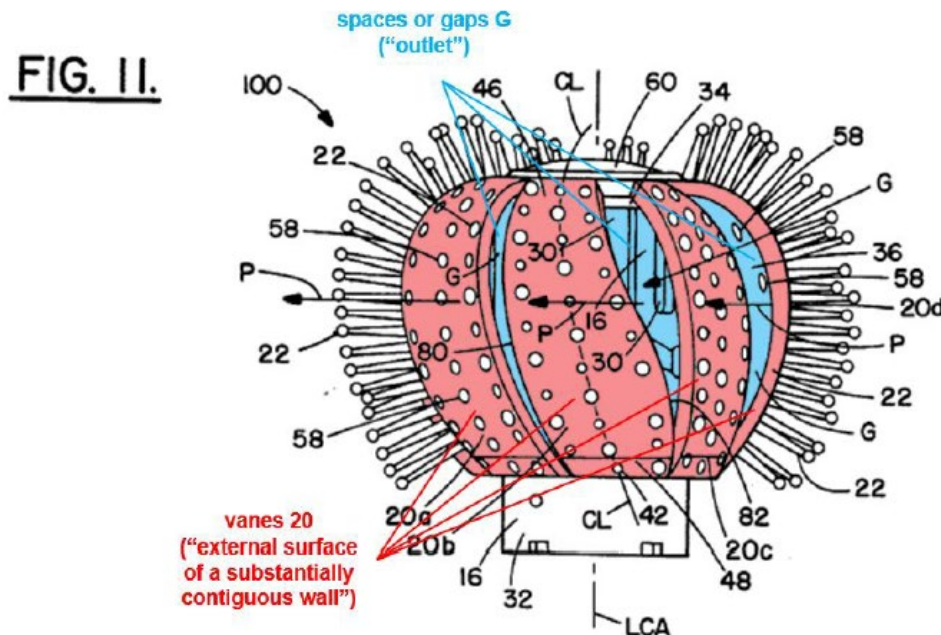
Petitioner contends each of the limitations of claim 1 is taught by the combination of Saito and Lindsey, as supported by Dr. Nosenchuck. Pet. 29–52; Ex. 1003 ¶¶ 95–148. Below we address Petitioner’s contentions with respect to certain limitations of claim 1 and Patent Owner’s opposition.

[Ipre–Id] An attachment for a hand held appliance comprising an inlet in a proximal first portion of the attachment; an outlet in a cylindrical second portion of the attachment; and a fluid flow path between the inlet and the outlet,

Petitioner contends Saito teaches a brush with a bristle base attached to a hair dryer (a “hand held appliance”), and further suggests substituting Lindsey’s vanes for Saito’s bristle base to satisfy the limitations of the claimed attachment. Pet. 30–31 (citing, *e.g.*, Ex. 1004 ¶¶ 5, 11, Figs 1, 2). More specifically, Petitioner argues that brush base 3 of Saito corresponds to an “inlet” into the attachment “as it receives ‘air or steam’ discharged from the hair dryer.” *Id.* at 31 (citing Ex. 1004 ¶¶ 11, 13, Fig 1). Petitioner further argues that bristle base 2 of Saito corresponds to a “cylindrical second portion” when the distance between brush bases 3, 4 is maximized. *Id.* at 33 (citing, *e.g.*, Ex. 1004 ¶¶ 17, 18). Petitioner suggests that modifying Saito “to use an array of vanes as taught by Lindsey, in place of Saito’s bristle base, would have likewise resulted in a “cylindrical attachment,” but does not argue that Lindsey teaches a cylindrical second portion. *Id.* Petitioner further relies on Lindsey as teaching “outlets formed between the adjacent vanes.” *Id.* According to Petitioner, in its asserted combination of Saito and Lindsey, a fluid flow path extends from the inlet in brush base 3 of Saito, into brush base 2 of Saito, and out through Lindsey’s vanes, which substitute for Saito’s bristle base. *Id.* at 35–36 (citing, *e.g.*, Ex. 1004 ¶¶ 13, 14).

[1d–1e] wherein the outlet in the cylindrical second portion of the attachment comprises at least one slot extending continuously from the proximal first portion to a distal end of the attachment, wherein the outlet is at least partially defined by an external surface of a substantially contiguous wall of the attachment

Petitioner contends the “spaces or gaps G” formed between adjacent vanes in Lindsey correspond to the recited slot, extending from entrance end 32 of the attachment of Lindsey (the “proximal first portion”) to front overcap 60 (the “distal end”). *Id.* at 37–40 (citing, *e.g.*, Ex. 1005, 6:32–40, 7:32–40, 8:29–32, 8:47–49, Fig. 11). Furthermore, Petitioner provides an annotated version of Figure 11 of Lindsey, reproduced below, identifying what portions of the vanes of Lindsey that Petitioner contends correspond to the recited “external surface of a substantially contiguous wall.”

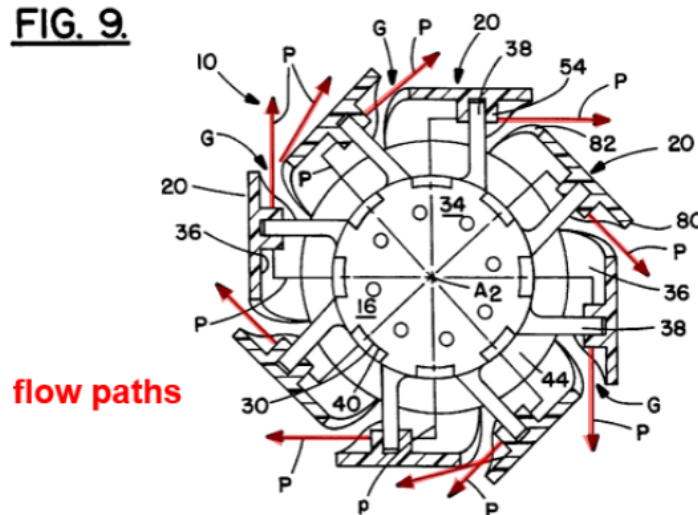


Pet. 42; Ex. 1005, Fig 11 (annotated by Petitioner). Petitioner’s annotated version of Figure 11 of Lindsey identifies vanes 20 in red having an “external surface of a substantially contiguous wall” and “gaps G” in blue between vanes 20. *Id.* (citing, *e.g.*, Ex. 1005, 9:7–26).

[1f] and [the outlet] is configured to direct fluid flow emitted from the outlet tangentially along and around the external surface of the substantially contiguous wall to form a circumferential fluid flow around the cylindrical second portion of the attachment that encourages hair to automatically wrap around the cylindrical second portion,

Petitioner asserts a person of ordinary skill in the art would have modified Saito by using the vanes of Lindsey to provide slots as outlets, thereby purportedly replacing Saito's radial airflow "with tangential airflow as taught by Lindsey's structure." Pet. 43; Prelim. Resp. Reply 4 (stating "[t]he proposed combination is a modification of Saito to use Lindsey's vanes to provide slots for tangential air output"). To show that Lindsey teaches tangential airflow, Petitioner relies on Lindsey's statements that flow paths *p* through vents 28, 30 "are approximately transverse or perpendicular to central axis CA of internal chamber 26," that external flow paths "manifest different angular directions about the central axis," and that "the different angular directions can be approximately tangential to the hair styler." *Id.* (quoting Ex. 1005, 3:26–30, 5:55–60). Petitioner provides an annotated version of Figure 9 of Lindsey, reproduced below.

FIG. 9.



Petitioner's annotated version of Figure 9 of Lindsey, a "vertical sectional view through the hair styler," shows arrows in red identified by Petitioner as flow paths. Pet. 44; Ex. 1005, 4:62–63; Fig. 9. Petitioner additionally argues as follows:

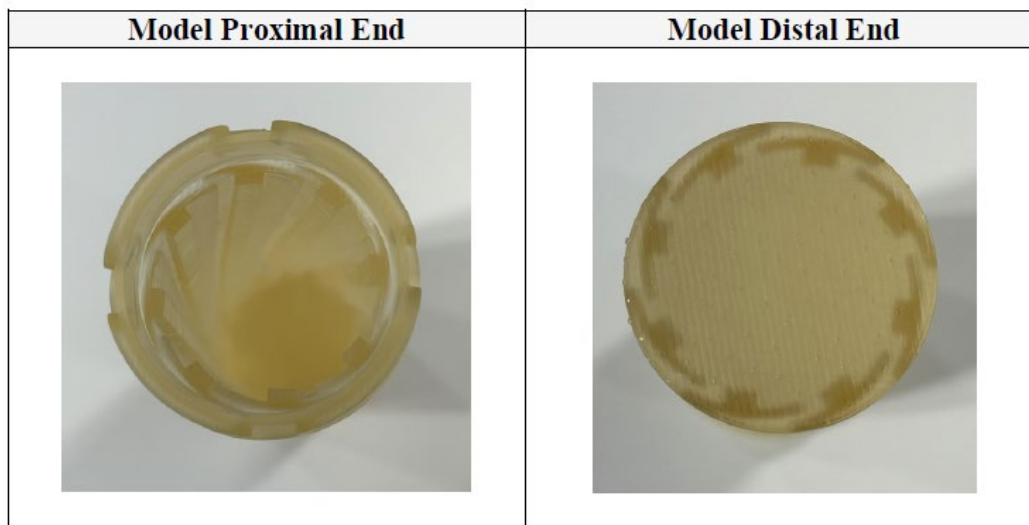
Further, "the air discharged from one vane is directed over, preferably at shallow angles over, and through the prongs on the outer surface of an adjacent vane to thereby provide above-mentioned advantages of air flow along, rather than perpendicular to the lie of hair strands among the prongs." [Ex. 1005 at] 10:28–33. The air flow is directed "around the external surface of the substantially contiguous wall," (e.g., the outer portion of a vane from Lindsey when applied to the Saito cylinder) as required by this limitation. And that airflow "render[s] the hair styler capable of providing additional lift and volume to hair." *Id.*, 10:33–38. It would have been obvious to a [person of ordinary skill in the art] that a modified Saito cylindrical attachment which used vanes in the manner taught by Lindsey would have produced the same spinning, turbulent fluid flow as Lindsey's hair styler, and particularly would have done so in the fully extended, cylindrical shape. EX1003, ¶¶128–30.

Further, due to Lindsey's disclosure of using multiple vanes around the circumference of the attachment, the airflow would have generated circumferential airflow around Saito's cylindrical attachment. That improved Saito configuration would "encourage hair to automatically wrap around the cylindrical second portion" as required by this limitation. Indeed, it was known to a [person of ordinary skill in the art] that air that is directed tangentially to a surface will be attracted to the surface due to the Coanda effect, and that effect has been used in hair care. *Id.*, ¶131; EX1016, 22:30–23:3; EX1017, 1, 17; EX1026, ¶¶[0009]–[0011]; EX1028, ¶[0036].

Pet. 44–45.

In support of its asserted combination of teachings from Saito and Lindsey, Petitioner states that Dr. Nosenchuck created "a model that approximates . . . a fully-extended (*i.e.*, cylindrical) Saito attachment that

uses an array of vanes as taught by Lindsey.” Pet. 46 (citing Ex. 1003 ¶¶ 132–133). Petitioner explains that its model attachment was mounted to a “SharkNinja FlexStyle blower as an air supply,” which Petitioner describes as a “modern blower that generates significantly more airflow,” and states that when operated, showed that “sample hair wrapped around the cylindrical portion of the attachment.” *Id.* at 47 (citing Ex. 1003 ¶¶ 136–137; Exs. 1022–1024); Prelim. Resp. Reply 4. Reproduced below are three photographs from Dr. Nosenchuck’s declaration of the model attachment with a profile view of the model centered at top, a “Model Proximal End” view at the lower left, and a “Model Distal End View” at the lower right:



Ex. 1003 ¶ 107. Dr. Nosenchuck states the model attachment depicted in the images above “approximates a cylindrical attachment (as taught by Saito) outfitted with vanes (as taught by Lindsey).” *Id.* Dr. Nosenchuck states that the model attachment “approximates the shape that would be created by

viewing Lindsey's Figure 9 as a 2D cross-section, and extruding the cross section to form a cylindrical attachment." Ex. 1003 ¶ 133. The cross section of Lindsey's attachment varies in an axial direction, and Figure 9 is only a representation of the cross section at a single location along the axis. *See, e.g.*, Ex. 1005, Figs. 4, 8–11. We note at the outset that Petitioner does not argue that Lindsey, or any other reference, teaches or suggests "extruding" the cross section of Figure 9 of Lindsey to create an attachment, nor is there any evidence to suggest a person of ordinary skill in the art would have had any reason to do so.

Further, there is no dispute that Petitioner's model attachment includes additional modifications to Saito's cylindrical attachment not taught by Lindsey or by any other asserted reference. Specifically, Petitioner acknowledges that "[t]wo minor modifications that would have been obvious to a [person of ordinary skill in the art] (slightly curved vanes and slightly extended vane edges) were made to the vanes depicted in Lindsey's Fig. 9 in the model." Pet. 46 n.6 (citing Ex. 1003 ¶¶ 133–135). Dr. Nosenchuck provides additional explanation concerning the alleged "minor" modifications to the model attachment, stating "in the model: (1) the vanes were given a slightly curved surface; and (2) the edges of the vanes were slightly extended in order to decrease the width of the gaps/slots formed between each vane." Ex. 1003 ¶ 133. With regard to adding a "slightly curved surface" to Lindsey's vanes in the model attachment, Dr. Nosenchuck states as follows:

it would have been well-known to a person of skill in the art that a longitudinally curved surface yields increased entrainment compared to a planar surface. *See, e.g.*, EX1008 at 1-2 ("When a jet attaches to a convex surface as a result of the Coanda effect, the accompanying longitudinal curvature yields increased

entrainment and jet growth compared with a wall jet on a planar surface.”); EX1020 at 1 (“In some instances curvature is used to generate supercirculation by altering the position of the rear stagnation point (i.e. the location at which the flow separates from the surface.”). It would have been obvious to a person of skill in the art that adding a slight longitudinal curvature to Lindsey’s vanes (as was done in the model) would have increased the tangential/circumferential airflow that is described as an advantage of Lindsey’s vanes.

Ex. 1003 ¶ 134. We find the characterization of the addition of curved surfaces to the vanes of Lindsey as a “minor modification” insufficiently supported and inconsistent with the evidence of record. Neither Saito nor Lindsey teach the use of curved surfaces in vanes. We find Dr. Nosenchuck’s opinion that it simply would have been obvious to a person of ordinary skill in the art to increase “tangential/circumferential airflow that is described as an advantage of Lindsey’s vanes” insufficient for purposes of supporting institution. Indeed, Lindsey does not mention “circumferential airflow,” much less any benefit attributed to “circumferential airflow,” and, as further discussed below, there is no evidence to suggest that any tangential airflow taught by Lindsey corresponds to “circumferential airflow” in the Lindsey attachment.

With regard to decreasing the gap between vanes in the model attachment, Dr. Nosenchuck states that Saito recognized a problem in “conventional brush attachments” where the discharge is concentrated in the tip of the brush “because the direction of discharge from the blowing port of the hair dryer is the same as the longitudinal direction (axial direction) of the bristle base and the direction of discharge from the discharge ports provided in the bristle base is perpendicular to that direction.” Ex. 1003 ¶ 135 (quoting Ex. 1004 ¶ 3). According to Dr. Nosenchuck, this issue identified

in Saito “reflects the recognition of a poor manifold design,” and he further states as follows:

It would have been obvious to a person of skill in the art, in light of the above passage from Saito, that by establishing a smaller slot exit/discharge area, such that that total exit area of all the slots was a relatively small percentage of the cross-sectional area of the cylinder’s interior (e.g., at least less than 50%), the air blown from the slots would have been more uniformly discharged along the length of the slots (as opposed to concentrated in the vicinity of a “tip section” at the end of the attachment). Accordingly, it would have been obvious to a person of skill in the art to have decreased the width of the vanes in a modified Saito configuration using Lindsey’s vanes to create a more uniform slot discharge area.

Ex. 1003 ¶ 135. We find the characterization of Petitioner’s proposal to substantially alter the slot configuration in its asserted combination in a manner not taught by Saito or Lindsey as a “minor modification” insufficiently supported and inconsistent with the evidence of record.

Dr. Nosenchuck identifies no support for his opinion that it would have been obvious to use “a smaller slot exit/discharge area” as a reason to extend “the edges of the vanes.” *See id. Id.* Moreover, restricting airflow is the opposite of what Lindsey teaches. Lindsey expressly states as follows:

The turbinate design of the hair styler of this invention exhausts hot air rapidly and efficiently from the interior of the hair styler. . . . The turbinate design and the features and disposition of the vanes of the invention provide a large hot air exhaust area, approximately 40% larger than the open area which would be provided, for example, by a conventional hand-held, ball type brush or comb device. The turbinate arrangement and the features of the vanes and their disposition provide flow paths of discharged air having continually varying and spiraling radii about the axis of air flow through, or about the central axis of the internal chamber of the hair styler, and provide spaces or gaps of

varied and wide circumferential and radial extent between adjacent vanes.

Ex. 1005. 9:36–53; *see also id* at 9:64–67 (cautioning that “[i]f the air is not rapidly and efficiently exhausted, the excessive build up of pressurized heated air in the internal chamber could rapidly overheat and tend to melt or soften [non-metal] materials of the hair styler”).

In addition to the preceding issues, Patent Owner further argues, and we agree, that Petitioner fails to sufficiently show how the asserted combination teaches an outlet configured “to form a circumferential fluid flow,” as required by limitation [1f]. Prelim. Resp. 29–57. As Patent Owner notes, there is no dispute that “Saito discloses a radial outward fluid flow rather than a circumferential fluid flow.” *Id.* at 31 (citing Pet. 43; Ex. 1003 ¶ 90; Ex. 1004, Fig 1). In regard to Lindsey, Patent Owner further explains that Lindsey describes “some tangential (*not circumferential*) flow paths P,” as illustrated in Figure 9 of Lindsey, which flow “away from the central longitudinal axis.” *Id.* at 31–32 (citing Ex. 1005, Fig. 9; Ex. 2001 ¶¶ 62). As to the airflow taught by Lindsey, Mr. Bressler, on behalf of Patent Owner, also explains as follows:

Moreover, the cross-sections of Lindsey’s vanes 20 are flat rather than curved, and thus would not form, and would not have been expected by a [person of ordinary skill in the art] to form, the required circumferential fluid flow that would result from a curved overlapping exterior surface. This is particularly true when one considers that Lindsey further discloses radial flow paths, which would disrupt any circumferential flow that might result from only the tangential flow paths focused on by Petitioners and Dr. Nosenchu[c]k. Indeed, neither the Petition nor Dr. Nosenchu[c]k explain how a tangential fluid flow from the flat surfaces of Lindsey’s vanes 20 could result in the “circumferential fluid flow” required by limitations [1f] and [17f]. The flat surfaces of Lindsey’s vanes 20 is consistent

with the absence of any discussion in Lindsey of a circumferential fluid flow or the Coanda effect.

Ex. 2001 ¶ 62.

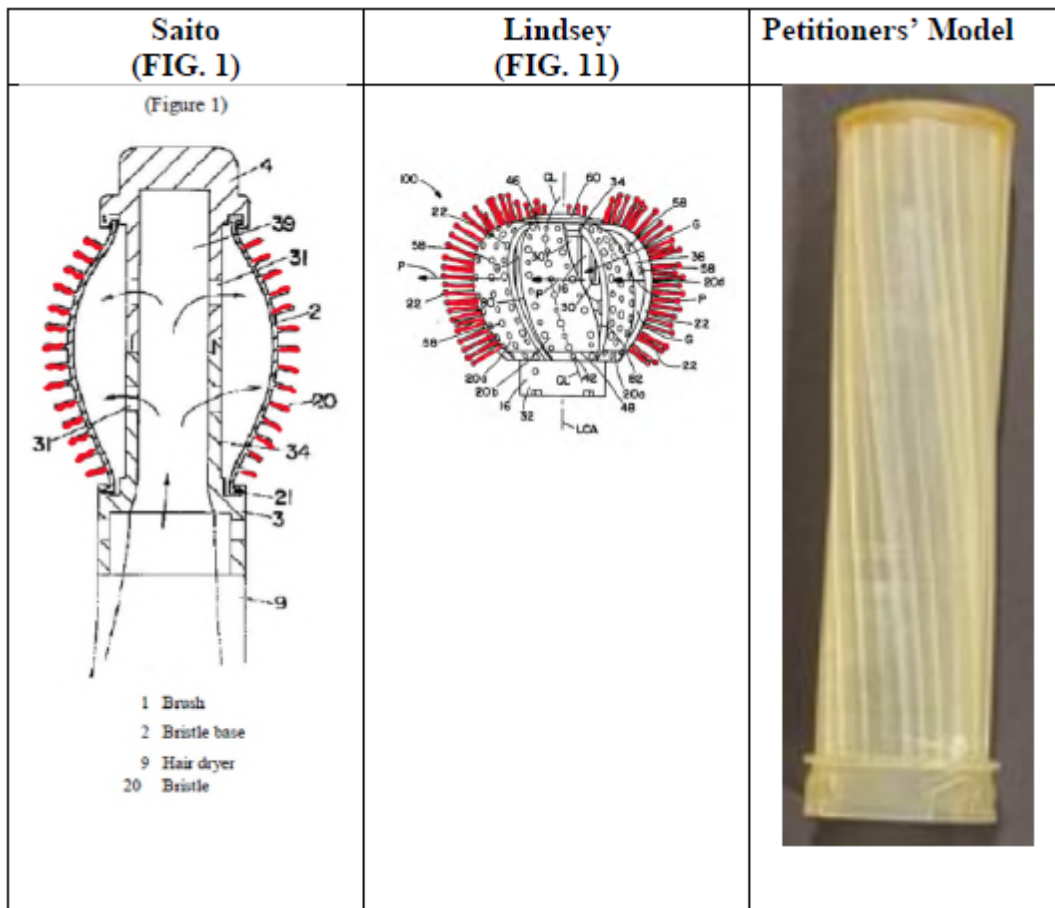
For the reasons above, we agree with Patent Owner that Petitioner has not sufficiently shown how either Saito or Lindsey teaches “circumferential airflow” or limitation [1f], however, Petitioner contends that it is “[t]he Saito/Lindsey Modification” that renders limitation [1f] obvious. Pet. 42. Limitation [1f] not only requires a configuration of the outlet that directs fluid flow “tangentially,” but a configuration that directs fluid “tangentially along and around the external surface . . . to form a circumferential flow.” While Petitioner argues its “proposed modification of Saito . . . replaces Saito’s radial airflow with tangential airflow as taught by Lindsey’s structure,” Petitioner offers no evidence to show that any “tangential airflow” taught by Lindsey also directs fluid flow “around the external surface . . . to form a circumferential flow.” See Pet. 43. To the contrary, the evidence of record suggests substantial reasons why Lindsey likely does not teach circumferential flow.

For example, Lindsey states that airflow is “directed to flow exterior of vanes 20 in plural flow paths which are approximately transverse or perpendicular to, and manifest different angular or tangential directions about central axis CA of internal chamber 26,” and that “[v]anes 20 are spaced from one another and have gaps G therebetween, which allow some of the air exiting vents 28, 30 to be discharged through spaces or gaps G.” Ex. 1005 5:60–67. Lindsey’s vanes 20 “also have holes 58 extending through the vanes allowing some of the air exiting vents 28, 30 to be discharged,” and “a plurality of elongated members, such as prongs 22.” *Id.* at 5:35–38, 6:54–56. Mr. Bressler explains that gaps G and holes 58 of

Lindsey “provide a radial airflow in addition to the tangential air flow,” and that “[a]ll of Lindsey’s vanes support radial airflow and do not create, but rather in fact prevent circumferential airflow.” Ex. 2001 ¶ 46. Petitioner, on the other hand, directs us to no evidence that the structure taught by Lindsey is capable of directing fluid to “form a circumferential flow,” as required by limitation 1[f]. Although the evidence on the current record suggests that neither Saito nor Lindsey teaches an airflow directed to form a circumferential flow, Petitioner purports to rely on a combination of the teachings of Saito and Lindsey, as embodied in the model attachment created by Dr. Nosenchuck, which we turn to next.

In combining the teachings of Saito and Lindsey, Petitioner suggests “the use of Lindsey’s vanes would have been nothing more than the use of a known technique (Lindsey’s vanes)” to improve Saito’s attachment, and “simply a rearrangement of existing parts.” Pet. 28–29. Patent Owner, however, identifies a multitude of changes Petitioner made to the vanes of Lindsey in Petitioner’s asserted combination depicted in Petitioner’s model attachment, above and beyond the two alleged “minor” modifications Petitioner, itself, acknowledged. Prelim. Resp. 41–57 (noting Petitioner’s model attachment “includes no less than eight additional changes, only two of which were acknowledged by Dr. Nosenchu[c]k,” including the additional changes of eliminating prongs, eliminating radial gaps, and eliminating holes in the vanes) (citing Ex. 2001 ¶ 77). It is readily apparent that the vanes in Petitioner’s model attachment that purports to combine the teachings of Lindsey with Saito are not “Lindsey’s vane,” as Petitioner asserts, and, in fact, bear little resemblance to Lindsey’s vanes. Compare Ex. 1005, Fig. 11 with Ex. 1003 ¶ 107 (images). Patent Owner provides a comparison of the

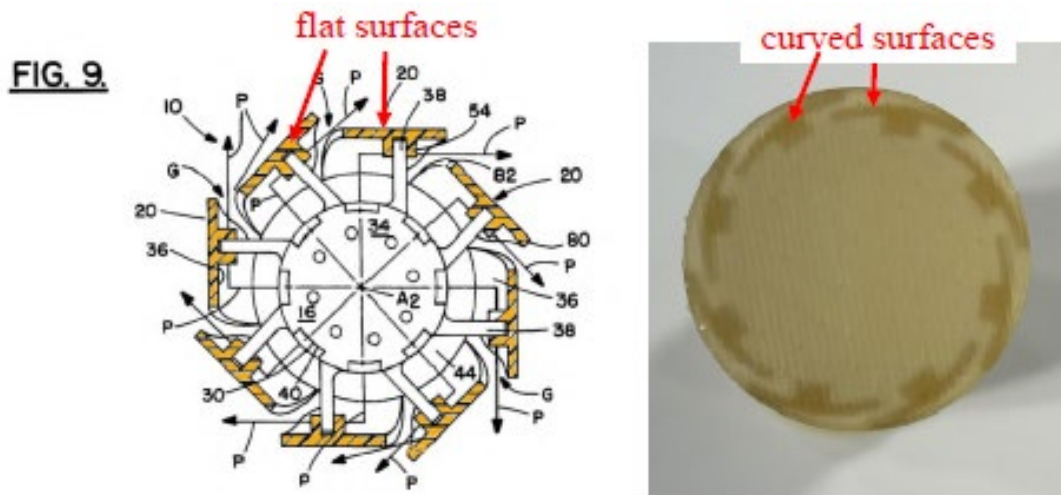
attachments of Saito and Lindsey to the Petitioner’s model attachment,
which we reproduce below:



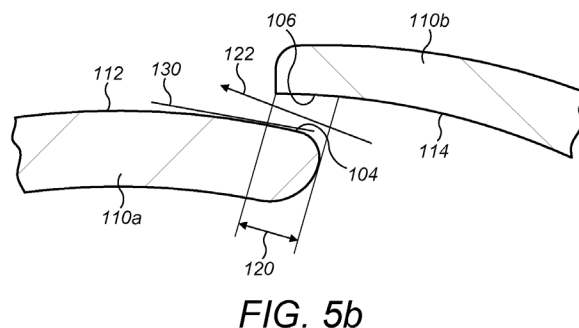
Prelim. Resp. 44. The image above appears in Patent Owner’s Preliminary Response and includes Figure 1 of Saito’s attachment on the left, Figure 11 of Lindsey’s attachment in the middle, and a profile image of Petitioner’s model attachment on the right. The comparison of attachments above shows, among other things, that the Saito and Lindsey attachments include prongs (or bristles) annotated in red by Patent Owner and that Petitioner’s model does not.

Reproduced below is an image provided in Patent Owner’s Preliminary Response comparing a cross section of the attachment of Lindsey shown in Figure 9 of Lindsey to a distal end view of Petitioner’s

model attachment, which is similar to a cross section view of the model attachment.



Prelim. Resp. 46. In the image above Figure 9 of Lindsey appears on the left and an image of the distal end view of Petitioner's model attachment appears on the right, with red annotations noting that in the model attachment the flat surfaces of the vanes of Lindsey were modified into curved surfaces in the vanes of the model attachment. Patent Owner argues that the modified vanes in the model attachment bear a striking similarity to the curved plates of the attachment illustrated in Figure 5b of the '979 patent, reproduced below, not to the flat vanes of Lindsey:



Prelim. Resp. 46; Ex. 1001, Figure 5b (described *supra* at Section II.A). The '979 patent explains the critical importance of the curved surface of

plates 110, which overlap to form slots 102, providing that “fluid 122 exiting the slots 102 is attracted to the curved surface of the head 30 by the Coanda effect,” which “causes hair that is presented to the head 30 to automatically wrap around the surface and then styled into curls.” Ex. 1001, 7:16–19.

Similarly, unlike the vanes of Lindsey, which do not overlap for substantial portions (as shown in Figure 11 of Lindsey), Petitioner’s model attachment uses vanes that overlap in a manner that, on the current record, appears nearly identical to overlap 120 between plates 110 shown in Figure 5b of the ’979 patent above. Patent Owner argues that elimination of the gaps between the vanes of Lindsey was essential for Petitioner’s model attachment to exhibit circumferential flow “because those gaps produce a radially outward air flow that would disrupt any circumferential air flow that might form in their absence and instead form a turbulent air flow as disclosed in Lindsey.” Prelim. Resp. 48 (citing Ex. 1001, Fig. 5b; Ex. 1003 ¶ 107; Ex. 2001 ¶89).

Lastly, Petitioner asserts that the Examiner noted during prosecution of the ’979 patent that “where a prior art apparatus is identical or substantially identical in structure, claimed properties or functional characteristics are presumed to be inherent.” Pet. 47 (citing Ex. 1002, 1030). According to Petitioner, “[b]ecause the modified Saito configuration using Lindsey’s vanes has all of the structural features of the claims, the function of that structure to cause circumferential airflow to encourage hair to automatically wrap around the cylindrical portion of the attachment would have also been inherently present in that structure described in the claim.” *Id.* at 47–48. Patent Owner argues, and we agree, that Petitioner’s asserted combination of Saito with Lindsey “would result in an attachment with manifest and significant differences including but not limited to bristles or

prongs, varying width gaps between vanes, and radial and tangential flow paths, while the Challenged Claims do not have this structure.” Prelim. Resp. 63 (citing Ex. 2001 ¶¶ 114–115). We determine Petitioner has not shown sufficiently that its inherency argument is applicable because Petitioner fails to sufficiently show that features of the prior art attachments relied on by Petitioner are identical or substantially identical to the structure required by claim 1. In light of the lack of sufficient evidentiary support for the numerous changes Petitioner proposes in the asserted combination of Saito and Lindsey, which were not sufficiently shown to be either suggested or taught by the asserted art or the common knowledge of a person of ordinary skill in the art, and for the preceding reasons, we determine Petitioner has not sufficiently shown a reasonable likelihood that the asserted combination of Saito and Lindsey teaches or suggests the subject matter of limitation [1f].¹⁰

2. Claims 2–9 and 12–14

Petitioner contends the subject matter of the limitations of dependent claims 2–9 and 12–14, which depend from claim 1, would have been obvious over the asserted combination of Saito and Lindsey. Pet. 52–68. Because Petitioner has not sufficiently shown a reasonable likelihood that the subject matter of limitation [1f] would have been obvious to a person of ordinary skill in the art based on the asserted combination of Saito and Lindsey, Petitioner has not shown a reasonable likelihood that the subject matter of dependent claims 2–9 and 12–14 would have been obvious to a

¹⁰ For purposes of this Decision, having determined that Petitioner has not made the necessary showing in regard to limitation [1f], we do not reach Petitioner’s arguments concerning limitations [1g] and [1h]. See Pet. 48–52.

person of ordinary skill in the art based on the asserted combination of Saito and Lindsey for the same reasons discussed above.

3. Reasons Supporting the Combination of Saito and Lindsey

Petitioner also fails to show sufficiently a reason for the asserted combination of Saito and Lindsey. *See* Pet. 22–29. Petitioner argues, for example, that a person of ordinary skill in the art “would have been motivated to combine Saito’s brush attachment with Lindsey’s teaching of an array of vanes, disposed in a turbinate arrangement, to generate a spinning airflow to provide increased lift and volume to the hair.” Pet. 26 (citing Ex. 1003 ¶¶ 90–94). According to Petitioner, “incorporation of vanes, as taught by Lindsey, would have improved Saito’s hair styling attachment by changing the air flow paths from an outwardly radial direction to transverse or perpendicular (i.e., tangential) to create a spinning/rotational flow.” *Id.* (citing Ex. 1003 ¶ 90). Petitioner, however, fails to show sufficiently that Lindsey’s attachment generates a “spinning/rotational flow.” In fact, Petitioner notes that Lindsey, itself, describes the discharge of air as being in a “spinning, turbulent manner” which provides “additional lift and volume to hair.” Pet. 27 (quoting Ex. 1005, 10:28–33); *see also* Ex. 1005, 9:47–64 (stating that the “turbinate arrangement and the features of the vanes and their disposition provide flow paths of discharged air having continually varying and spiraling radii about the axis of air flow” and that “the discharged hot air is spun out from the central portion of the vanes in a turbulent manner”).

Additionally, Patent Owner argues, and we agree, that Petitioner does not provide any reason for “the six additional unacknowledged modifications” to the vanes of Lindsey employed in Petitioner’s asserted combination as depicted in Petitioner’s model attachment. Prelim.

Resp. 58–59. According to Patent Owner, “[t]he failure to identify any motivation for those changes alone is reason enough to deny institution.” *Id.* at 59. Indeed, Petitioner neither acknowledges, for example, that its model attachment eliminated the prongs and holes of the vanes of Lindsey nor offers any sufficient reason why a person of ordinary skill in the art would have done so. Absent from the Petition is any sufficient explanation why a person of ordinary skill in the art would have only chosen attachment features from Saito and Lindsey that correspond to claimed elements of the ’979 patent, while disregarding all attachment features taught by Saito and Lindsey that are inconsistent with claimed elements of the ’979 patent. In sum, we have considered all of the arguments advanced by Petitioner in support of its asserted combination and determine Petitioner has not sufficiently shown a reasonable likelihood of prevailing in its assertion that a person of ordinary skill would have had reason to combine the asserted references in the manner set forth in the Petition by Petitioner.¹¹

¹¹ Additionally, Patent Owner argues objective indicia of non-obviousness support the non-obviousness of the Challenged Claims. Prelim. Resp. 63–84. Patent Owner, for example, argues that its commercial Airwrap product “is ‘coextensive (or nearly coextensive)’ with the Challenged Claims,” achieved commercial success, and “was recognized as one of Time Magazine’s Best Inventions of 2019” and as “one of the Greatest Innovations of 2019 by Popular Science Magazine.” Prelim. Resp. 69–71 (citing, e.g., Ex. 2018; Ex. 2019). In the Petition, Petitioner only asserts that “[t]here are no secondary considerations of non-obviousness tied to the Challenged Claims.” Pet. 89. In its Reply, Petitioner argues a lack of “legally sufficient nexus,” and states that the “Airwrap includes unclaimed features such as the cool-touch tip, non-curler tools and an allegedly innovative new motor.” Prelim. Resp. Reply 5. We do not rely on Patent Owner’s indicia of non-obviousness evidence in reaching our decision. We also find Petitioner’s arguments disputing that evidence do not persuasively support Petitioner in showing a reasonable likelihood of prevailing.

4. Determination as to a Reasonable Likelihood of Prevailing

Upon consideration of the arguments and evidence of record, we conclude, for the reasons provided above, that the information does not demonstrate a reasonable likelihood that Petitioner would prevail in showing the unpatentability of any of claims 1–9 or 12–14 of the '979 patent as obvious over Saito and Lindsey.

F. Alleged Obviousness over Saito, Lindsey, and Schepisi

Petitioner contends that the combination of Saito, Lindsey, and Schepisi renders the subject matter of claims 10 and 11 of the '979 patent obvious. Pet. 68–73. Claims 10 and 11 depend from claim 1. Petitioner relies on Schepisi only in regard to the additional limitations of claims 10 and 11. *Id.* at 72–73. Because Petitioner has not sufficiently shown a reasonable likelihood that the subject matter of limitation [1f] would have been obvious to a person of ordinary skill in the art based on the asserted combination of Saito and Lindsey, and Petitioner does not rely on Schepisi in regard to limitation [1f], Petitioner has not shown a reasonable likelihood that the subject matter of dependent claims 10 and 11 would have been obvious to a person of ordinary skill in the art based on the asserted combination of Saito, Lindsey, and Schepisi for the same reasons discussed above in regard to Petitioner's assertion that the subject matter of claim 1 would have been obvious over Saito and Lindsey.

G. Alleged Obviousness over Saito, Lindsey, and Nicolas

Petitioner contends that the combination of Saito, Lindsey, and Nicolas renders the subject matter of claims 15 and 16 of the '979 patent obvious. Pet. 74–79. Claims 15 and 16 depend from claim 1. Petitioner relies on Nicolas only in regard to the additional limitations of claims 15 and 16. *Id.* at 77–79. Because Petitioner has not sufficiently shown a

reasonable likelihood that the subject matter of limitation [1f] would have been obvious to a person of ordinary skill in the art based on the asserted combination of Saito and Lindsey, and Petitioner does not rely on Nicolas in regard to limitation [1f], Petitioner has not shown a reasonable likelihood that the subject matter of dependent claims 15 and 16 would have been obvious to a person of ordinary skill in the art based on the asserted combination of Saito, Lindsey, and Nicolas for the same reasons discussed above in regard to Petitioner's assertion that the subject matter of claim 1 would have been obvious over Saito and Lindsey.

H. Alleged Obviousness over Saito, Lindsey, and Shoemaker

Petitioner contends that the combination of Saito, Lindsey, and Shoemaker renders the subject matter of independent claim 17, and claims 18–25, 27, and 29–32, which depend from claim 17, obvious. Pet. 80–89. As to claim 17, according to Petitioner, “Saito does not explicitly disclose that its ‘hair dryer’ comprises a handle,” and Petitioner relies on Shoemaker as teaching a handle. *Id.* at 84. Claim 17 includes a limitation, limitation [17f], identical to limitation [1f] of claim 1.

In regard to limitation [17f], Petitioner relies only on the teachings of Saito and Lindsey that Petitioner relied on with respect to limitation [1f] of claim 1. *Id.* at 87. Because Petitioner has not sufficiently shown a reasonable likelihood that the subject matter of limitation [1f] would have been obvious to a person of ordinary skill in the art based on the asserted combination of Saito and Lindsey, and Petitioner does not rely on Shoemaker in regard to limitation [17f], which is identical to limitation [1f], Petitioner has not shown a reasonable likelihood that the subject matter of independent claim 17, or dependent claims 18–25, 27, and 29–32, would have been obvious to a person of ordinary skill in the art based on the

asserted combination of Saito, Lindsey, and Shoemaker for the same reasons discussed above in regard to Petitioner's assertion that the subject matter of claim 1, and specifically limitation [1f], would have been obvious over Saito and Lindsey.

I. Alleged Obviousness over Saito, Lindsey, Schepisi, and Shoemaker

Petitioner contends that the combination of Saito Lindsey, Schepisi, and Shoemaker renders the subject matter of claims 26 and 28 of the '979 patent obvious. Pet. 89. Petitioner argues that claims 26 and 28 recite the same limitations as claims 10 and 11, and that claims 26 and 28 would have been "obvious over the combination of Saito, Lindsey, Schepisi, and Shoemaker for the same reasons" claims 10 and 11 would have been obvious over Saito, Lindsey, and Schepisi. *Id.* Claims 26 and 28 depend from claim 17. Petitioner relies on Schepisi only in regard to the additional limitations of claims 26 and 28. *Id.*

Because Petitioner has not sufficiently shown a reasonable likelihood that the subject matter of limitation [17f] would have been obvious to a person of ordinary skill in the art based on the asserted combination of Saito, Lindsey, and Shoemaker, and Petitioner does not rely on Schepisi in regard to limitation [17f], Petitioner has not shown a reasonable likelihood that the subject matter of dependent claims 26 and 28 would have been obvious to a person of ordinary skill in the art based on the asserted combination of Saito, Lindsey, Schepisi, and Shoemaker for the same reasons discussed above in regard to Petitioner's assertion that the subject matter of claim 17 would have been obvious over Saito, Lindsey, and Shoemaker.

IV. CONCLUSION

For the foregoing reasons, we determine that Petitioner does not demonstrate a reasonable likelihood of prevailing with respect to at least one

of the Challenged Claims in the Petition. Accordingly, *inter partes* review of the '979 patent is *denied*.

V. ORDER

Upon consideration of the record before us, it is:

ORDERED that the Petition is denied and no trial is instituted in this proceeding.

IPR2024-00993
Patent 11,044,979 B2

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