

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,
Petitioners,

v.

DYSON TECHNOLOGY LIMITED,
Patent Owner.

Case No. IPR2024-00993

U.S. Patent No. 11,044,979

Reply to Patent Owner Preliminary Response

PETITIONERS' EXHIBIT LIST

Exhibit No.	Description
1001	U.S. Patent No. 11,044,979
1002	File History for U.S. Patent No. 11,044,979
1003	Declaration of Dr. Daniel M. Nosenchuck
1004	Japanese Unexamined Patent Application Pub. No. JP H11-178631 and Certified Translation Thereof
1005	U.S. Patent No. 5,868,148
1006	U.S. Patent No. 6,038,782
1007	U.S. Patent No. 8,092,166
1008	Caroline Lubert, <i>On Some Recent Applications of the Coanda Effect</i> , 16 Int'l J. Acoustics and Vibration 144 (2011)
1009	UK Patent Application Pub. No. GB 2,093,526
1010	U.S. Patent No. 2,052,869
1011	U.S. Patent No. 3,261,162
1012	Answer and Counterclaim to Complaint for Declaratory Judgment, D.I. 6, <i>SharkNinja Operating LLC v. Dyson, Inc.</i> , No. 1:23-cv-11277 (D. Mass. June 9, 2023)
1013	SharkNinja's Opening Claim Construction Brief, D.I. 87, <i>SharkNinja Operating LLC v. Dyson, Inc.</i> , No. 1:23-cv-11277 (D. Mass. Oct. 17, 2023)
1014	eBay Listing, <i>Vintage Clairol Pretty Power High Power Hair Brush Styling Dryer Curling Iron</i> , https://www.ebay.com/itm/192884562006 (last accessed May 22, 2024)
1015	eBay Listing, <i>Conair Hot Air Styler 2-in-1 Brand New Never Open Model BM20sbc(a)-320 ~</i> , https://www.ebay.com/itm/186171531603 (last accessed May 22, 2024)
1016	PCT Int'l Appl. Pub. No. WO 2014/006365
1017	PCT Int'l Appl. Pub. No. WO 2011/131965

PETITIONERS' EXHIBIT LIST

(continued)

Exhibit No.	Description
1018	Churchill, Randolph Allen, Ph.D., <i>Coanda effect jet around a cylinder with an interacting adjacent surface</i> , West Virginia University (1992)
1019	Robert J. Englar, <i>Circulation Control for High Lift and Drag Generation on STOL Aircraft</i> , 12 J. Aircraft 457 (1975)
1020	R. Neuendorf and I. Wygnanski, <i>On a turbulent wall jet flowing over a circular cylinder</i> , 381 J. Fluid Mech. 1 (1999)
1021	J. Dunham, <i>A theory of circulation control by slot-blowing, applied to a circular cylinder</i> , 33 J. Fluid Mech. 495 (1968)
1022	Video of Saito/Lindsey Model Attachment (I)
1023	Video of Saito/Lindsey Model Attachment (II)
1024	Video of Saito/Lindsey Model Attachment (III)
1025	G.I. Fekete, <i>Coanda Flow of a Two-Dimensional Wall Jet on the Outside of a Circular Cylinder</i> , McGill University (1963)
1026	U.S. Patent Appl. Pub. No. 2013/0111777
1027	<i>Sotera Stipulation</i> (June 7, 2024)
1028	U.S. Patent Appl. Pub. No. 2011/0010958

TABLE OF ABBREVIATIONS

Abbreviation	Term
'979 patent	U.S. Patent No. 11,044,979 (EX1001)
AIA	America Invents Act
Challenged Claims	Claims 1–32 of U.S. Patent No. 11,044,979
Fig.	Figure
IPR	<i>inter partes</i> review
Lindsey	U.S. Patent No. 5,868,148 (EX1005)
Litigation Petitioners	SharkNinja Operating LLC and SharkNinja Sales Company
Nicolas	U.S. Patent No. 8,092,166 (EX1007)
Nosenchuck Declaration	Declaration of Dr. Daniel M. Nosenchuck (EX1003)
POPR	Patent Owner Preliminary Response
Patent Owner	Dyson Technology Limited
Petitioners	SharkNinja, Inc., SharkNinja Operating LLC, SharkNinja Management LLC, and SharkNinja Sales Company
POSITA	Person[s] of ordinary skill in the art
Saito	Japanese Unexamined Patent Application Pub. No. JP H11-178631 and Certified Translation Thereof (EX1004)
Schepisi	U.S. Patent No. 6,038,782 (EX1006)
Shoemaker	UK Patent Application Pub. No. GB 2,093,526 (EX1009)

The Petition establishes that all Challenged Claims are obvious based on combinations including at least Saito and Lindsey. Faced with that strong showing, Patent Owner introduced new evidence in the POPR related to factual issues that underly the obviousness grounds presented. The Board permitted Petitioners to file this reply to address three of the newly raised factual issues: (1) citation of testimony from Petitioner's litigation expert that Patent Owner alleges supports its flawed attack on the model of Saito/Lindsey presented in the Petition; (2) testing of a product that Patent Owner alleges is a commercial version of Lindsey in a further attack on the Saito/Lindsey combination; and (3) evidence of alleged secondary considerations. All three newly raised issues do not undermine Petitioners' strong invalidity showing and, at most, create factual disputes best resolved after institution.

The first two issues relate to Patent Owner's effort to undermine the clear showing in the Petition from Dr. Nosenchuck and demonstrative evidence from a 3D printed model ("Petitioner's Model") that the proposed Saito/Lindsey combination would have generated tangential airflow and consequently encouraged hair to automatically wrap, as required by all Challenged Claims. Paper 2, 33, 40, 45–47. The POPR attempts to dispute that fact and, among other flawed arguments, cites new testimony from Petitioner's litigation expert about Petitioner's Model and new evidence regarding experiments it conducted related to an alleged commercial version of Lindsey. Paper 6, 36–40, 56–57. That new evidence fails to support the

POPR's challenge to the proposed Saito/Lindsey combination. Third, Patent Owner introduces new evidence that allegedly shows objective indicia of non-obviousness, but that evidence does not meet the nexus requirement.

SN's Litigation Expert's Testimony Demonstrates Why IPR Should be Instituted

The POPR contends that Petitioner's Model is a "false" model. Paper 6, 41. In support of that position, Patent Owner contends that Dr. Meinhart, an expert for Petitioners in the related district court case, allegedly acknowledged flaws in Petitioner's Model by stating that it lacks an internal plenum and is cylindrical. *Id.*, 56–57. This testimony, however, has no bearing on this challenge. Petitioner's Model was intended to *approximate* the slot structure of the Saito/Lindsey combination—not to reflect each and every nuance from Saito and Lindsey, including any internal plenum structure that is not even claimed in independent claims 1 or 16. Paper 2, 33, 40, 45–47; EX1001, cls. 1, 16. Petitioner's Model demonstrates that the outer slot structure that would have resulted from combining Saito and Lindsey would have caused tangential airflow and generated circumferential airflow that would necessarily have encouraged hair to wrap because of its structural similarity to the claimed attachments consistent with the teachings in Lindsey of circumferential airflow among wrapped hair. EX1005, 2:60-63, 3:25-31; 5:40-41; 10:28-33. The inclusion or exclusion of an internal central distribution plenum is irrelevant to that fact. Paper 2, 45–49. Dr. Meinhart's testimony does not

undermine the Saito/Lindsey obviousness case.

Second, the POPR suggests that both Saito and Lindsey are “designed to operate in a bulbous shape,” citing Dr. Meinhart testimony that the model is cylindrical. But the premise of this argument is inapt—*the combination of* Saito and Lindsey would not necessarily have operated only in a bulbous state because, to the contrary, Saito explicitly teaches use of a cylindrical shape. Paper 2, 33. Dr. Meinhart’s testimony that Petitioner’s Model is cylindrical thus does not undermine the proposed combination. Rather, Dr. Meinhart’s testimony confirms that Petitioner’s Model created to approximate the Saito/Lindsey combination achieves its goal: that the external cylindrical structure of the Saito/Lindsey combination would have output tangential airflow that encouraged hair to automatically wrap.

Patent Owner’s Experiments with a Conair Device Support IPR Institution

The POPR asserts that a Conair device it procured is a “commercial embodiment” of Lindsey and presented experiments with that device in an attempt to show that Lindsey’s structure would not encourage hair to automatically wrap. Paper 6, 36–40. This evidence is flawed for multiple reasons. First, the POPR fails to show that the product it tested represents *every single embodiment and implementation* taught by the Lindsey patent. Even if the Conair device tested is *one example* from the Lindsey patent, that does not establish that that *every example* based on Lindsey would fail to wrap hair. Second, even if the purported commercial

embodiment reflected all of Lindsey’s teachings (it does not), the testing of Lindsey alone is irrelevant to the Saito/Lindsey combination in the Petition. The proposed combination is a *modification of Saito* to use Lindsey’s vanes to provide slots for tangential air output; it is that *modified version of Saito* that the Petition establishes would cause hair to automatically wrap. Third, Patent Owner tested the Lindsey curler attachment using a Conair blower from the 1990s as an air supply, whereas the model in the Petition was tested using a modern blower that generates significantly more airflow. Thus, the POPR does not offer an apples-to-apples comparison using the same blower with the same airflow to determine whether the alleged Lindsey commercial example would have caused hair to automatically wrap.

Patent Owner’s “Objective Indicia” Evidence Is Inadequate Due to Lack of Nexus

The Petition stated that no evidence presented by Patent Owner has *a sufficient nexus to the Challenged Claims*. Paper 2, 89 (“There are no secondary considerations of non-obviousness *tied to the Challenged Claims*.”) (emphasis added). In response, Patent Owner faults Petitioners for failing to discuss secondary considerations and even accuses Petitioners of knowingly making a false statement to the Office because of the foregoing statement in the petition. Paper 6, 6. To be clear: Petitioners did not make a false statement to the Office at all, let alone knowingly. Patent Owner’s accusation is unfounded and unprofessional. The Petition’s statement is absolutely true—Patent Owner’s evidence does not have a

sufficient nexus to the Challenged Claims. The law makes clear that nexus requires a close tie between the alleged secondary consideration and the alleged improvement the claims provide over the prior art. *Novartis AG v. Torrent Pharms. Ltd.*, 853 F.3d 1316, 1331 (Fed. Cir. 2017).

In the district court and in the POPR, Patent Owner failed to attribute the alleged commercial success, industry praise, copying, long-felt need, unexpected results, and initial skepticism of the Airwrap to the few features relied on to overcome the prior art. Patent Owner was repeatedly denied broad protection for every device that uses airflow to wrap hair. It avoided Lindsay during prosecution only by requiring that the claimed attachment has a cylindrical portion. Paper 2, 17. Then, the claims were only allowed when they required a slot that extends from the proximal end to the distal end. *Id.* Yet, none of Patent Owner's evidence establishes that it is having a cylindrical attachment or that having a slot that goes from a proximal end to a distal end is the reason for the success, praise, etc. Instead, Patent Owner's evidence focuses only on the Airwrap product generally and fails to establish that the Airwrap is coextensive with the Challenged Claims. *Fox Factory, Inc. v. SRAM, LLC*, 944 F.3d 1366 (Fed. Cir. 2019). Nor could it because Airwrap includes unclaimed features such as the cool-touch tip, non-curler tools and an allegedly innovative new motor. Thus, the record is devoid of any objective indicia of non-obviousness that has a legally sufficient nexus to the Challenged Claims.

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IPR2024-00993
in the IPR of U.S. Patent No. 11,044,979

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Respectfully Submitted,

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CERTIFICATE OF SERVICE

The undersigned certifies service that the above-referenced Reply to Patent Owner Preliminary Response was served by email at the addresses specified by Patent Owner in its Mandatory Notice (Paper 4):

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