

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. IPR2023-01324
U.S. Patent No. 9,414,662

**Petitioners' Opposition to
Patent Owner's Motion to Amend Under 37 C.F.R. § 42.121**

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EXHIBIT LIST

Exhibit No.	Description
1001	U.S. Patent No. 9,414,662
1002	File History for U.S. Patent No. 9,414,662
1003	Declaration of Dr. Daniel M. Nosenchuck
1004	U.S. Patent Application Pub. No. US 2013/0111777
1005	Japanese Patent Application Pub. No. JP S 60-249907 and Certified Translation Thereof
1006	U.S. Patent No. 5,407,135
1007	U.S. Patent No. 1,564,896
1008	U.S. Patent No. 5,546,674
1009	PCT Pub. No. WO 83/02753
1010	U.S. Patent Application Pub. No. 2010/0065545
1011	Great Britain Patent No. 1,417,052
1012	Declaration of Brian A. Rosenthal in Support of Petitioners' Motion For Pro Hac Vice Admission
1013	Declaration of Ahmed Eldessouki in Support of Petitioners' Motion For Pro Hac Vice Admission
1014	July 22, 2024 Deposition Transcript of Dr. Breigh Roszelle
1015	Supplemental Declaration of Dr. Daniel M. Nosenchuck
1016	U.S. Patent No. 8,104,694

TABLE OF ABBREVIATIONS AND CONVENTIONS

Abbreviation	Meaning
CMTA	Patent Owner's Contingent Motion to Amend
'662 patent	U.S. Patent No. 9,414,662
Challenged Claims	Claims 26-28 of U.S. Patent No. 9,414,662
IPR	<i>inter partes</i> review
Jeong	U.S. Patent Application Publication No. US 2013/0111777 (Ex. 1004)
Yoshida	Japanese Patent Application Publication No. JP S 60-249907 (Ex. 1005)
Jeffs	U.S. Patent No. 5,407,135 (Ex. 1006)
Yang	U.S. Patent No. 8,104,694 (Ex. 1016)
Board	Patent Trial and Appeal Board
Ex.	Exhibit
Fig.	Figure
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

I. INTRODUCTION

Patent Owner's contingent motion to substitute new claims 40-42 for Challenged Claims 26-28 should be denied because those new claims introduce new matter, lack written description support, are indefinite, and are invalid based on the prior art.

The Challenged Claims (claims 26-28) of the '662 patent are directed to an appliance (such as a hairdryer) with a handle and a body where the handle has both an inner and an outer wall and the appliance provides for non-linear airflow. As the Petition demonstrates, this configuration was well-known in the prior art, including in Jeong, Yoshida, and Jeffs and the combinations of Jeffs with Jeong and Yoshida (Grounds 1-5). As properly construed, claims 26-28 do not require that the inner wall extend entirely from a primary fluid inlet through the entirety of the handle. Recognizing that, the contingent motion attempt to add that feature into proposed new claims 40-42 by requiring that the inner wall extend from a primary fluid inlet through to an "end" of the handle that is proximal to the body of the appliance. The '662 patent discloses multiple exemplary embodiments but has no explicit textual support for the language added in proposed claims 40-42. Patent Owner's reliance on the figures and its attempt to extrapolate and infer from them fails as well.

Instead, the original disclosure is silent about any inner wall that "extends to the first end of the handle." As a result, the proposed amendments are plainly

impermissible. Further, the substitute claims are unpatentable on the following bases:

- ***Lack of Written Description.*** The proposed amendments lack written description support. The '662 patent discloses an inner wall; there is no support anywhere in the specification for a limitation that the inner wall extends from the air inlet to an “end” of the handle that is proximal to the body. Nor is there support for any benefits or functions of such inner wall that extends to an end of the handle proximal to the body.
- ***Indefiniteness.*** The substitute claims require that the claimed inner wall “extends ... to the first end of the handle” which is defined as “proximal to the body.” The substitute claims are indefinite, because it is unclear to a POSITA what constitutes “extend[ing] to the first end of the handle” where the first end is “proximal to the body.”
- ***Anticipation and Obviousness.*** The substitute claims, with the newly added limitations, are anticipated by Yang, and rendered obvious over Jeong in view of Yang (or Yang in view of Jeong) and Yoshida in view of Yang (or Yang in view of Yoshida). The idea of having a walled structure guiding an airflow through the full length of a handle is not new, and it is facially obvious to implement such a walled structure.

For these and the other reasons explained below, Patent Owner's Motion to Amend should be denied.

II. SUMMARY OF THE PROPOSED AMENDMENTS

As summarized by the Patent Owner, the proposed substitute claims each add two limitations to the original claims 26-28: (1) the handle has a "first end" proximal to the body, and (2) the inner wall extends from the primary fluid inlet to the first end of the handle. CMTA, 3. Thus, the substitute claims attempt to "define[] the extent of the inner wall, which was not explicitly defined previously." CMTA, 4.

III. THE PROPOSED AMENDMENTS LACK WRITTEN DESCRIPTION SUPPORT

There is no written description in the specification of the '662 patent to support the new limitations. Amendments "may not enlarge the scope of the claims of the patent or introduce new matter." 35 U.S.C. § 316(d)(3). To satisfy this requirement, every proposed claim limitation must have written description support in the original specification. *See Verify Smart Corp. v. Askeladden, L.L.C.*, 824 F. App'x 1015, 1023 (Fed. Cir. 2020) (affirming denial of motion to amend because proposed amendments lacked written description support). The written description requirement under 35 U.S.C. § 112 requires that the patent specification "reasonably conveys" possession of the claimed invention to persons of skill. *Ariad Pharm., Inc. v. Eli Lilly & Co.*, 598 F.3d 1336, 1351 (Fed. Cir. 2010).

In its Motion, Patent Owner identifies several excerpts from the '662 patent as allegedly providing support for the amendments. See PO Mot. at 5–7. But none of these excerpts—nor anything else in the specification or figures of the '662 patent—provides written description support for the proposed amendments.

A. There is no written description support in the '662 patent for the “extends ... to the first end of the handle” element

The new element of an inner wall that extends to the first end of the handle is completely absent from the '662 patent. Indeed, the '662 patent is completely silent with respect to where the “first end of the handle” actually is, where the proximal end of the inner wall of the handle is, and whether the inner wall of the handle extends to that “first end.”

The specification excerpts Patent Owner cites do not discuss where the end of the handle that is proximal to the body is (i.e., the “first end”) nor whether the inner wall extends to that end. See CMTA, 5–7. Most importantly, the motion does not cite any evidence with respect to what the excerpts do and do not **convey to a POSITA** regarding whether the applicants had possession of the claimed invention. Indeed, Patent Owner's expert witness admitted in her deposition that nothing in her opinion is pertinent to the issue of written support for the substitute claims. Ex. 1014 at 17:18-21:4. Instead, Patent Owner's motion relies on conclusory arguments only.

Specifically, in order for a POSITA to be conveyed that in an embodiment, the inner wall of the handle extends to the “first end” of the handle that is proximal

to the body, the POSITA needs to know (1) where the “first end” of the handle, *i.e.*, the boundary between the handle and the body is; and (2) whether the inner wall of the handle extends to that boundary, *i.e.*, comparing the end of the inner wall that is proximal to the body with the end of the handle that is proximal to the body. Ex. 1015, ¶ 18. The excerpts identified by Patent Owner say nothing about the boundary between the handle and the body and only disclose that the inner wall “would comprise the inlet 40 at its ***distal end***”¹ but say nothing about the inner wall’s end that is proximal to the body. Ex. 1002, 126 (“the inner wall 220 would comprise the inlet 40 ***at its distal end*** from the junction 90 with the body 30”). The excerpts disclose that the inner wall of the handle and the outer wall of the body can be moulded as one piece of plastic but do not discuss where the upper end of the inner wall is or whether it overlaps with the first end of the handle. Ex. 1002, 103. Ex. 1015, ¶ 19.

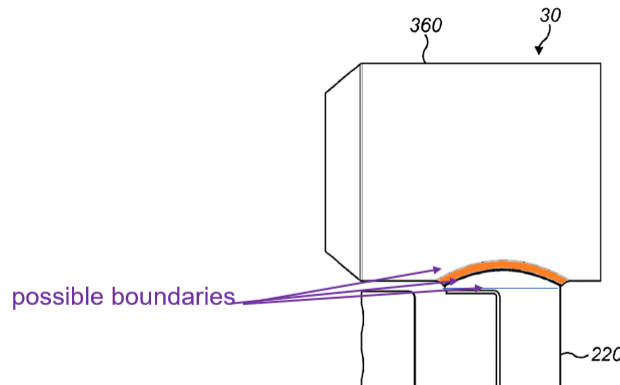
A POSITA reading these excerpts, even in conjunction with the associated figures, would not have been conveyed that the applicants had possession of the claimed invention. Ex. 1015, ¶¶ 19–25. Figure 3 does not label where the upper end of the “inner wall 220” is or indicate how to determine where the boundary between the handle and the body is. It also fails to explain where the “first end” of the handle

¹ Emphases added hereinafter, unless otherwise noted.

is positioned in relation to the “junction 90 with the body 30.” Ex. 1015, ¶ 20. As the '662 patent Figure 5 and the accompanying text further discloses, the outer wall 360 of the body and the inner wall 220 of the handle are moulded as one piece of plastic. Figure 3 shows that the outer wall 200 of the handle also intersects with the outer wall 360 of the body. But the figures do not convey to a POSITA *where the inner wall 220 ends* on the disclosed single piece of plastic. Ex. 1015, ¶¶ 19–20.

For example, a POSITA would not know where the boundary between the handle and the body is. On this single piece of plastic shown by Figure 5, a POSITA would know that there is a border where the **handle's inner wall** abuts the **body's outer wall**, but the Figure does not label this border; additionally, a POSITA would know that there is a border where the **handle's outer wall** (which is not shown in Figure 5) abuts the **body's outer wall**, but Figure 5 does not show this border either. Ex. 1015, ¶¶ 21–22. Figure 5 only shows that there is a curved angled surface between the handle's inner wall and the body's outer wall (the neck area) and that there are two unlabeled curves around this neck area. . In addition to these two curves, a POSITA may instinctively imagine a horizontal plane extending through the neck area as the boundary between the body and the handle, as Patent Owner's expert witness initially considered. Ex. 1014, 43:24–44:10. Ex. 1015, ¶¶ 22–23. A POSITA therefore now sees at least three potential boundaries and may conceivably consider the uppermost curve to be the boundary where the handle's inner wall

borders the body's outer wall; the POSITA may further consider either the straight line or the lower curve the boundary where the handle's inner wall borders the body's outer wall. Ex. 1015, ¶ 24. But as such, the POSITA is not sure whether the inner wall of the handle "extends" to the "first end" of the handle, i.e., the border between the handle and the body. For example, it is unclear whether the area between the two curves (colored orange below) is part of the handle or part of the body. The specification is silent. A POSITA therefore would not have understood that the applicants had possession of the proposed amended claims based on this embodiment. Ex. 1015, ¶ 24.



Ex. 1001, Fig. 5 (excerpted to show an enlarged view and annotated).

B. The figures do not provide written description support even if the figures coincidentally disclose one embodiment where the inner wall "extends ... to the first end of the handle"

Given the complete silence of the specification on the issue of where the "first end" of the handle is, Patent Owner is only relying on inference from the cited Figures for support. A mere inference does not constitute written description

support. The Federal Circuit has emphasized that “[a] description that merely renders the invention obvious does not satisfy the [written description] requirement.” *Ariad Pharm.*, 598 F.3d at 1352. Further, “a sufficient description of a genus . . . requires the disclosure of either a representative number of species falling within the scope of the genus or structural features common to the members of the genus so that one of skill in the art can ‘visualize or recognize’ the members of the genus.” *Id.* at 1350 (quoting *Regents of the Univ. of California v. Eli Lilly & Co.*, 119 F.3d 1559, 1568-69 (Fed. Cir. 1997)). But even if the figures cited by Patent Owner were coincidentally showing an embodiment where the inner wall of the handle “extends to the first end of the handle,” the figures are insufficient written support. The Board has consistently considered a singular, coincidental embodiment to be insufficient written support for an extrapolated genus. *See Danxiao Info. Tech. Ltd. v. Shenzhen Svakom Tech. Co.*, PGR2022-00050, Paper 36 at 27 (PTAB Jan. 19, 2024) (holding that accidental disclosure does not support a motion to amend to include an extrapolated claim limitation.”).

Even if the single embodiment disclosed by Figures 3 and 5 were disclosing an inner wall that “extends . . . to the first end of the handle,” the single embodiment disclosed would still be insufficient written description support.²

² Figures 3, 4b, 5, 6, 7 all describe one embodiment, and Patent Owner’s expert Dr. Roszelle agrees. Ex. 1014 at 59:10-60:1.

The specification does not disclose “a representative number of species falling within the scope” nor teaches “structural features common to the members of the genus” so that a POSITA can ‘visualize or recognize’ the embodiments where the inner wall “extends ... to the first end of the handle.” Ex. 1015, ¶ 25. For example, the specification discloses that it is optional that the inner wall of the handle and the outer wall of the body be moulded into one piece of plastic. But the specification does not provide a POSITA with any disclosure as to the embodiments where the inner wall of the handle is a distinct physical part from the outer wall of the body but still “extends ... to the first end of the handle.” Ex. 1015, ¶ 25. The specification does not provide structural features common to the inner walls that extend to a first end of the handle.

The '662 patent thus lacks written description for the proposed substitute claims' additional limitations.

IV. THE PROPOSED SUBSTITUTE CLAIMS ARE INDEFINITE

The proposed substitute claims 40-42 are indefinite under 35 U.S.C. § 112 because it is not clear to a POSITA as to the scope of the inner walls that would be covered by the amended claims. Specifically, a POSITA would not be able to tell when an inner wall of the handle “extends to the first end of the handle” where that first end is proximal to the body.

Under Section 112, claims are invalid as indefinite if they fail to “inform those skilled in the art about the scope of the invention with reasonable certainty.” *Nautilus, Inc. v. BioSig Instruments, Inc.*, 572 U.S. 898, 910 (2014).

A POSITA would not have been informed with reasonable certainty with respect to the substitute claims. In order for a POSITA to determine if an inner wall of a handle “extends to the first end of the handle” the POSITA needs to know where the first end of the handle is, i.e., where the handle borders the body; additionally, the POSITA needs to know where the inner wall of the handle is extended to, proximal to the body. Ex. 1015, ¶ 29. As discussed above, the specification provides no textual explanation or examples where an inner wall “extends to the first end of the handle” to begin with. And even if the embodiment of Figures 3 and 5 were to be considered one example, a POSITA cannot figure out what features (or technical advantages or purposes such common features may achieve) are covered by the substitute claims. Ex. 1015, ¶ 30. For example, the specification provides absolutely no disclosure or examples regarding how to positionally define where the inner wall of the handle ends when the inner wall continues into the body or positionally define the “first end” of the handle where the body and the handle form a continuous shape. Ex. 1015, ¶ 30.

Because the proposed substitute claims fail to inform a POSITA about the scope of the invention with reasonable certainty, they are indefinite under Section 112.

V. THE PROPOSED SUBSTITUTE CLAIMS ARE INVALID OVER PRIOR ART

The proposed substitute claims are invalid based on Grounds 6-8. Specifically, Yang anticipates the proposed substitute claims (New Ground 6). Moreover, Yang in view of Jeong and/or Jeong in view of Yang render obvious the substitute claims (New Ground 7). Analogously, Yang in view of Yoshida and/or Yoshida in view of Yang render obvious the substitute claims (New Ground 8).

Patent Owner's amendments in the substitute claims 40-42 do not introduce any inventive concepts. At their core, the amendments introduce the idea to extend the inner wall further through the handle and then into the body so as to help direct air flow through the handle and into the body. This is not new. For example, Yang discloses a high-pressure air tube 208 (corresponding to the claimed "inner wall") that guides a high-pressure air flow all the way from a primary fluid inlet through the handle and then into the body.

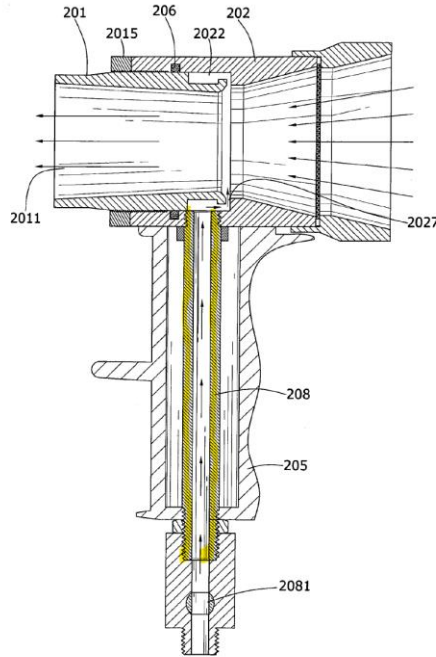


Fig. 4

Ex. 1016, Fig. 4 (annotated).

The following analysis, which is supported by the expert testimony of Dr. Nosenchuck, demonstrates that the proposed substitute claims would be invalid based on at least new Grounds 6-8.

A. New Ground 6: Yang Anticipates the Substitute Claims 40-42

Yang discloses each of the limitations of the substitute claims 40-42 and therefore anticipates them. Ex. 1015, ¶ 38.

U.S. Patent No. 8,104,694 (“Yang”) is a U.S. Patent which issued from an Application with a priority date of February 5, 2008 and published as US2011210190A1 on January 31, 2012. Yang therefore is prior art at least under § 102 (a)(1) and (a)(2). It is directed to an appliance (that happens to be an air spray gun) “used to blow dry a painted surface of cold baked coating, wherein an air-taking

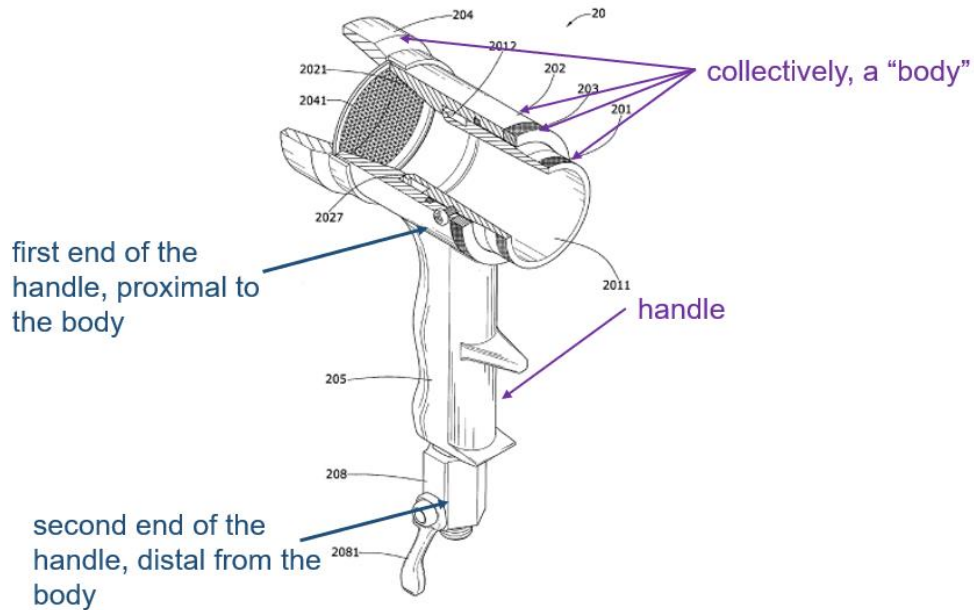
ring in a shape of an annular air chamber is formed after screwing a front tube with a rear tube in the air spray gun, and a gap size of the air-taking ring can be changed by rotating the front tube, to control air blow rate as required.” Ex. 1016, Abstract. The general shape of the disclosed embodiment is very similar to Jeong.

The preamble of a claim is presumed to be non-limiting, and Patent Owner's motion does not show otherwise. And indeed, the preamble of substitute claim 40 is not limiting, because it “merely states the purpose or intended use of [the] invention”: hair care. *Bicon, Inc. v. Straumann Co.*, 441 F.3d 945, 952 (Fed. Cir. 2006). For the same reasons set forth in the Petition in Ground 3 that original claim 26's preamble is nonlimiting, so is substitute claim 40's preamble nonlimiting. Petition, 65-66. With “hair care” of the preamble nonlimiting, Yang anticipates substitute claims 40-42.

1. Element 40[a]: “a body and a handle”

Yang discloses “a body and a handle.” Ex. 1015, ¶ 39.

For example, referring to Figure 2, Yang discloses that an air spray gun “comprises a front tube 201, a rear tube 202, a fixing ring 203, a rear cap 204” (collectively, “a body”) and a grip 205 (i.e., “a handle”). Ex. 1016, 2:63-66 and Fig. 2.



Ex. 1016, Fig. 3 (annotated).

2. **Element 40[b]: “the handle having a first end proximal to the body and a second end distal from the body and comprising an inner wall and an outer wall”**

Yang discloses “the handle having a first end proximal to the body and a second end distal from the body and comprising an inner wall and an outer wall.”

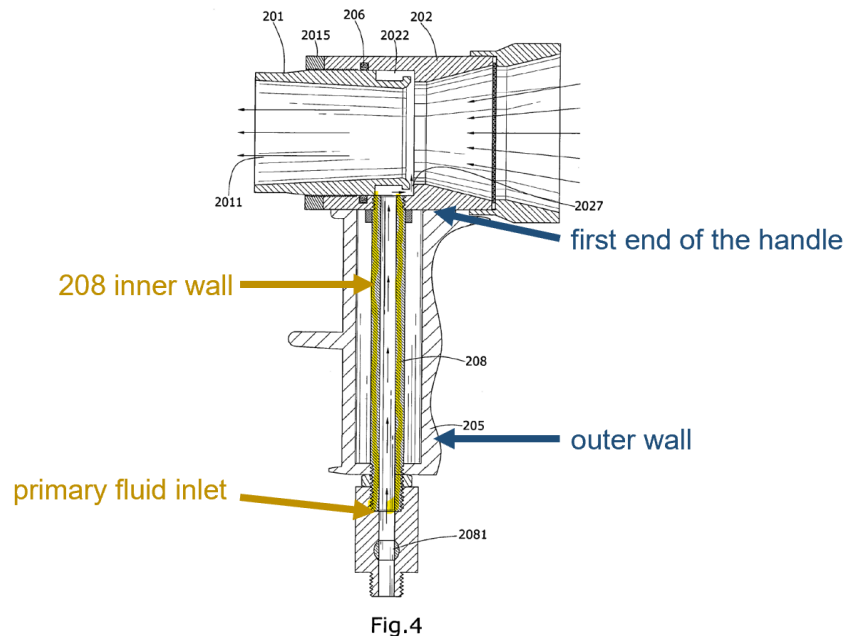
Ex. 1015, ¶ 40.

For example, Yang discloses that, with respect to Figures 4 and 5, “[t]he grip 205 is fixed at the bottom of the rear tube 202” (i.e., “a first end”) and “the high-pressure air tube 208 is connected with an air compressor or an air supply system” (i.e., at “a second end”). Ex. 1016, 3:43-48 and Figs. 4 and 5. Because the “body” comprises “a front tube 201, a rear tube 202, a fixing ring 203, a rear cap 204” and the connection between the body and the grip and high-pressure air tube is fixed on rear

tube 202, this connection point is “proximal” to the body. Ex. 1015, xx. The grip 205 housing is the claimed outer wall, and the high pressure air tube 208 is the claimed inner wall.

3. Element 40[c]: “wherein the inner wall is disposed radially inwardly from the outer wall, defines a primary fluid flow path that extends from a primary fluid inlet into the appliance, and extends from the primary fluid inlet to the first end of the handle”

Yang discloses that this high-pressure air tube 208 “is disposed radially inwardly from the outer wall, defines a primary fluid flow path that extends from a primary fluid inlet into the appliance, and extends from the primary fluid inlet to the first end of the handle.” Ex. 1015, ¶ 41. Yang discloses that the high-pressure air tube 208 is “transfixed” on the interior of grip 205. Ex. 1016, 3:22-24, 47-49. The high-pressure air tube 208 is “connected with an air compressor or an air supply system” (i.e., “primary fluid inlet”) Ex. 1016, 3:43-48. Further, through the high-pressure air tube 208, “the high-pressure air will be blown out toward a front side of the air-discharge conduit 2011 of the front tube 201 through the air-taking ring 2027.” Ex. 1016, 3:51-53.



Ex. 1016, Fig. 4 (annotated).

4. Element 40[d]: “wherein the outer wall is an external surface of the handle”

Yang discloses that the grip 205 housing (“outer wall”) is “an external surface of the handle.” Ex. 1015, ¶ 42.

For example, Yang discloses that the handled is a “grip” where necessarily the hand touches externally, and with regard to Figures 4 and 5, Yang discloses that the grip 205 is an external surface. Ex. 1015, ¶ 42.

5. Element 40[e]: “wherein the primary fluid flow path from the primary fluid inlet to a primary fluid outlet from the body is non linear.”

Yang further discloses that “the primary fluid flow path from the primary fluid inlet to a primary fluid outlet from the body is non linear.” Ex. 1015, ¶ 43.

For example, Yang explicitly discloses the primary fluid flow with arrows in Figure 4, which is consistent with the textual description. It is non linear. Ex. 1016, 3:43-4:6, Fig. 4.

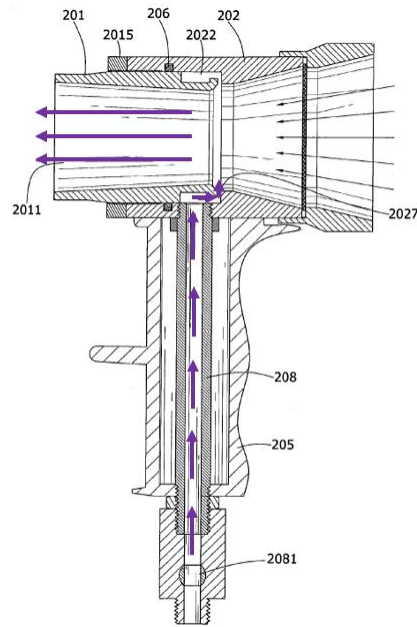


Fig.4

Ex. 1016, Fig. 4 (annotated).

6. Claim 41: “The appliance of claim 40, wherein the primary fluid flows within the handle in a first direction and within the body in a second direction.”

Yang discloses “the primary fluid flows within the handle in a first direction and within the body in a second direction” as required by substitute claim 41, which depends from substitute claim 40. Ex. 1015, ¶ 44. As shown above, Yang at Fig. 4 and the accompanying text discloses that the primary fluid flow has a first direction (upward) in the handle and a second direction in the body (forward toward a front side of the air-discharge conduit 2011).

7. Claim 42: “The appliance of claim 40, wherein the primary fluid flow in the body is substantially orthogonal to the primary fluid flow in the handle.”

Yang discloses “wherein the primary fluid flow in the body is substantially orthogonal to the primary fluid flow in the handle” as required by substitute claim 42, which depends from substitute claim 40. Ex. 1015, ¶ 45. As shown above, Yang at Figure 4 and the accompanying text discloses that the primary fluid flow in the body (forward toward a front side of the air-discharge conduit 2011) is substantially orthogonal to the primary fluid flow in the handle (upward).

Thus, Yang discloses each of the limitations in the substitute claims 40-42 and therefore anticipates substitute claims 40-42.

B. New Ground 7: Substitute Claims 40-42 Are Rendered Obvious over Yang in View of Jeong and/or Jeong in View of Yang

As discussed above, Yang anticipates substitute claims 40-42. Ground 7 combines Yang and Jeong. To the extent that the Board determines that the preamble of substitute claim 40 is limiting, Yang in view of Jeong renders substitute claims 40-42 obvious. Additionally and alternatively, Jeong's disclosed hair care device may be modified to include an inner wall according to Yang's disclosure.

Yang discloses a handheld device capable of controlling “air blow” which is used to “blow dry a painted surface of cold baked coating.” Ex. 1016, Abstract. Yang's disclosed air blower device is analogous to the Jeffs air blower device, and thus Yang may be combined with Jeong for the same reasons Jeffs may be combined

with Jeong set forth in the Petition. *See* Petition, 69-73. As explained in the Petition, Jeong discloses a hair dryer, and it would have been obvious to a POSITA to utilize the “air spray gun” device disclosed by Yang as a hair care appliance. Ex. 1015, ¶¶ 48–55; *see also* Ex. 1003, ¶ 124. The air blowing devices disclosed in Yang and Jeong are only different in their intended uses. Ex. 1015, ¶ 55; *see also* Ex. 1003, ¶ 126.

The device disclosed by Yang is “used to blow dry” a painted surface which may be water based. Ex. 1016, Abstract and 1:65-2:5. Further, Yang explicitly teaches that the air spray gun can be used to blow dry a painted surface and also “to feed the air or blow dry *for other purposes.*” Ex. 1016, 1:42-44. As explained by Dr. Nosenchuck, it would have been obvious to one of skill in the art to have used the Yang air spray gun as a hair care appliance for drying hair.

Moreover, the '662 patent suggests that blowers generally “are used for a variety of applications *such as drying substances such as paint* or hair and cleaning or stripping surface layers.” Ex. 1001, 1:17-19. Thus, the '662 patent itself recognizes the use of air blowers (such as the Yang device) for diverse applications that are not limited to hair drying. Ex. 1015, ¶ 51; *see also* Ex. 1003, ¶ 129. Indeed, the '662 patent states that “[t]he invention has been described in detail with respect to a hairdryer and a hot styling brush however, it is applicable *to any appliance that*

draws in a fluid and directs the outflow of that fluid from the appliance.” Ex. 1001, 18:19-22.

A person of ordinary skill in the art would have been motivated to use the Yang air spray gun structure as a hair care appliance in light of the structural and functional similarities between the Yang device and the appliances described in Jeong. Ex. 1015, ¶¶ 48–55; *see also* Ex. 1003, ¶¶ 124-26. As explained by Dr. Nosenchuck, because the evaporation rate (i.e., drying rate) of wetted hair is generally increased with a convective flow of ambient, *unheated* air due to the enhanced mass diffusion rate of water into the continuously moving ambient air flow. Accordingly, a common feature of hair dryers is a “cool- or cold-shot button” which turns off the heating elements while maintaining the air flow. Ex. 1015, ¶ 52. A person of ordinary skill in the art would have been motivated to use the Yang air spray gun as a hair dryer specifically in light of its lack of a heating element. Ex. 1015, ¶¶ 53–54; *see also* Ex. 1003, ¶ 131. And in any event, it is a straightforward, if not trivial, task for a POSITA to install a heating element within the inner wall in Yang’s device. Ex. 1015, ¶ 54.

Moreover, a person of ordinary skill in the art would have had a reasonable expectation of success to use the Yang air spray gun device as a hair care appliance, as in Jeong. Ex. 1015, ¶ 55. As explained by Dr. Nosenchuck, given the remarkable structural similarities between Jeong and Yang’s embodiments, a POSITA would

only need to repurpose the air spray gun according to Yang's disclosure for hair drying purposes, without any significant structural or functional changes.

Patent Owner's proposed substitute claim 40 introduces amendments in elements 40[b] and 40[c] compared to the original claim 26's elements 26[b] and 26[c].

As set forth in the Petition, Jeong anticipates claim 26, and therefore Jeong discloses all elements of claim 40, except for the newly added language in elements 40[b] and 40[c]. It would have been obvious for a POSITA to modify the motor housing 18 according to Jeong based on Yang's teaching of providing an inner wall structure that extends through the handle to the body portion where the air is redirected orthogonally and thereby, extending Jeong's motor housing to the first end of the handle. Ex. 1015, ¶¶ 56–60.

A person of ordinary skill in the art would have been motivated to modify Jeong's hair appliance in view of Yang's teachings in light of the structural and functional similarities between the Jeong device and the air sprayer disclosed in Yang. Ex. 1015, ¶ 58. As explained by Dr. Nosenchuck, because the structure of an internal tube guiding an air flow path provides a smooth internal surface, it provides a more uniform air flow, which in turn reduces pressure drop, thereby providing higher energy efficiency; it is a common device used within a handle to guide an air flow path. A POSITA would have been motivated to extend motor

housing 18 such as by using a high-pressure air tube 208 as taught by Yang or by simply extending motor housing 18 up to the body based on Yang's teaching. *Id.* Indeed, even Yang admits that the use of an air tube is in its own prior art. Ex. 1016, 1:31-34 and Fig. 1 (disclosing a high-pressure air tube 103 as prior art).

Moreover, a person of ordinary skill in the art would have had a reasonable expectation of success in modifying Jeong's motor housing as proposed. Ex. 1015, ¶¶ 59–60. As explained by Dr. Nosenchuck, given the remarkable structural similarities between Jeong and Yang's embodiments, a POSITA would only need to elongate the motor housing 18 upward and merge it with the cap 24 to achieve the higher energy efficiency desired, and it would not implicate any other structures or functions. *Id.*

Therefore, it would have been obvious to a person of ordinary skill in the art reading Yang and Jeong that the Yang air spray gun device would have been readily utilized as a "hair care appliance," i.e., as a hair dryer. Additionally and alternatively, it would have also been obvious to modify the motor housing 18 according to Jeong in accordance with the high-pressure air tube 208 as taught by Yang to extend to the first end of the handle. All substitute claims 40-42 are rendered obvious by Yang in view of Jeong and/or Jeong in view of Yang. Ex. 1015, ¶ 46.

C. New Ground 8: Substitute Claims 40-42 Are Rendered Obvious over Yang in View of Yoshida and/or Yoshida in View of Yang

Ground 8 combines Yang and Yoshida. To the extent that the Board determines that the preamble of substitute claim 40 is limiting, Yang in view of Yoshida renders substitute claims 40-42 obvious. Additionally and alternatively, Yang's disclosed hair care device may be modified to include an inner wall according to Yang's disclosure. Ex. 1015, ¶ 61.

The "air spray gun" according to Yang's disclosure may be used as a hair care device for the same reasons identified above for Ground 7. See Ex. 1015, ¶¶ 62–70.

Moreover, as set forth in the Petition, Yoshida anticipates claim 26, and therefore Yoshida discloses all elements of claim 40, except for the newly added language in elements 40[b] and 40[c]. It would have been obvious for a POSITA to modify the "cylindrical wind tunnel 7" according to Yoshida in accordance with the high-pressure air tube 208 as taught by Yang to extend to the first end of the handle, proximal to the body and therefore, providing elements 40[b] and 40[c]. Ex. 1015, ¶¶ 71–74.

A person of ordinary skill in the art would have been motivated to modify Yoshida's hair appliance in view of Yang in light of the structural and functional similarities between the Yoshida device and the air sprayer disclosed in Yang. Ex. 1015, ¶ 72. As explained by Dr. Nosenchuck, and explained above in section

V.B., because the structure of an internal tube guiding an air flow path provide a smooth internal surface, it provides a more parallel air flow, preventing turbulence at the interface with the inner wall, which in turn reduces air drag and pressure drop, thereby providing higher energy efficiency; it is a common device used within a handle to guide an air flow path. A POSITA would have been motivated to use a tube-shaped cylindrical wind tunnel 7 similar to the high-pressure air tube 208 as taught by Yang. *Id.*, ¶ 72.

Moreover, a person of ordinary skill in the art would have had a reasonable expectation of success in modifying Yoshida's motor housing as proposed. Ex. 1015, ¶¶ 73–74. As explained by Dr. Nosenchuck, given the remarkable structural similarities between Yoshida and Yang's embodiments, a POSITA would only need to elongate the cylindrical wind tunnel forward until it reaches the "heater enclosing frame 5" (i.e., the "body") to achieve the higher energy efficiency desired, and it would not implicate any other structures or functions. *Id.*, ¶ 73.

Therefore, it would have been obvious to a person of ordinary skill in the art reading Yang and Yoshida that the Yang air spray gun device would have been readily utilized as a "hair care appliance," i.e., as a hair dryer. Additionally and alternatively, it would have also been obvious to modify the motor housing 18 according to Yoshida in accordance with the high-pressure air tube 208 as taught by Yang to extend to the first end of the handle.

All substitute claims 40-42 are therefore rendered obvious by Yoshida in view of Yang and/or Yang in view of Yoshida. Ex. 1015, ¶ 61.

VI. CONCLUSION

The proposed amendments are impermissible because they are invalid on multiple bases. Petitioners therefore request that the Motion to Amend be denied.

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Respectfully Submitted,

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CERTIFICATE OF SERVICE

The undersigned certifies service pursuant to 37 C.F.R. § 42.120 of a copy of this Petitioners' Opposition to Patent Owner's Motion to Amend, and copies of Petitioners' Exhibits 1014–1016, by email on August 14, 2024, to the following email addresses of record:

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**APPENDIX: CHALLENGED CLAIM LISTING
WITH NEW ELEMENTS UNDERLINED**

No.	Limitation
[40pre]	A hair care appliance comprising
[40a]	a body and a handle
[40b]	the handle <u>having a first end proximal to the body and a second end distal from the body and</u> comprising an inner wall and an outer wall,
[40c]	wherein the inner wall is disposed radially inwardly from the outer wall, defines a primary fluid flow path that extends from a primary fluid inlet into the appliance, <u>and extends from the primary fluid inlet to the first end of the handle,</u>
[40d]	wherein the outer wall is an external surface of the handle, and
[40e]	wherein the primary fluid flow path from the primary fluid inlet to a primary fluid outlet from the body is non linear.
41	The appliance of claim 40, wherein the primary fluid flows within the handle in a first direction and within the body in a second direction.
42	The appliance of claim 40, wherein the primary fluid flow in the body is substantially orthogonal to the primary fluid flow in the handle.