

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

EUNSUNG GLOBAL CORP.,
Petitioner

v.

HYDRAFACIAL LLC,
Patent Owner

Case IPR2025-00453
Patent 11,446,477 B2

**PETITIONER'S OPPOSITION TO PATENT OWNER'S REQUEST FOR
DISCRETIONARY DENIAL OF INSTITUTION**

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EXHIBITS

- EUNSUNG-1001 U.S. Pat. No. 11,446,477 to Ignon (“the ’477 patent”)
- EUNSUNG-1002 Excerpts from the Prosecution History of the ’477 patent (“the Prosecution History”)
- EUNSUNG-1003 Declaration of Mr. Eric Simon
- EUNSUNG-1004 U.S. Patent Publication No. 2003/0212415 (“Karasiuk”)
- EUNSUNG-1005 U.S. Patent No. 5,199,604 (“Palmer”)
- EUNSUNG-1006 U.S. Patent Publication No. 2003/0093089 (“Greenberg”)
- EUNSUNG-1007 U.S. Patent No. 6,390,815 (“Pond”)
- EUNSUNG-1008 U.S. Patent No. 6,684,880 (“Trueba”)
- EUNSUNG-1009 U.S. Patent No. 4,512,764 (“Wunsch 1982”)
- EUNSUNG-1010 U.S. Patent Publication No. 2003/0018252 (“Duchon”)
- EUNSUNG-1011 U.S. Patent No. 4,215,476 (“Armstrong”)
- EUNSUNG-1012 Friedman, et al., Chemical peels, dermabrasion, and laser therapy, *Disease-a-Month* 55.4 (2009): 223-235 (“Friedman”)
- EUNSUNG-1013 Burgess, Cheryl M., *Cosmetic dermatology*, Heidelberg, Germany: Springer, 2005 (“Burgess”)
- EUNSUNG-1014 Pickering, J. A., Touch-sensitive screens: the technologies and their application, *International Journal of Man-Machine Studies* 25.3 (1986): 249-269 (“Pickering”)
- EUNSUNG-1015 Friedman, Mark J. et al., The AMSA injection: A new concept for local anesthesia of maxillary teeth using a computer-controlled injection system. *Quintessence Int* 29 (1998): 297-303 (“Friedman 1998”)

- EUNSUNG-1016 Lee, Woan-Ruoh, et al., Lasers and microdermabrasion enhance and control topical delivery of vitamin C, *Journal of investigative dermatology* 121.5 (2003): 1118-1125 (“Lee”)
- EUNSUNG-1017 U.S. Patent No. 6,162,232 (“Shaddock”)
- EUNSUNG-1018 U.S. Patent Publication No. 2001/0049511 (“Coleman”)
- EUNSUNG-1019 U.S. Patent No. 6,428,518 (“Brengele”)
- EUNSUNG-1020 U.S. Patent No. 4,559,036 (“Wunsch”)
- EUNSUNG-1021 U.S. Patent No. 6,099,511 (“Devos”)
- EUNSUNG-1022 U.S. Patent No. 5,163,902 (“Lynn”)
- EUNSUNG-1023 U.S. Patent No. 5,190,525 (“Oswald”)
- EUNSUNG-1024 U.S. Patent No. 6,673,082 (“Mallett”)
- EUNSUNG-1025 Rajan, Poonam, et al., Skin barrier changes induced by aluminum oxide and sodium chloride microdermabrasion, *Dermatologic surgery* 28.5 (2002): 390-393 (“Rajan”)
- EUNSUNG-1026 Karimipour, Darius J., et al., Molecular analysis of aggressive microdermabrasion in photoaged skin, *Archives of dermatology* 145.10 (2009): 1114-1122 (“Karimipour”)
- EUNSUNG-1027 U.S. Patent No. 6,241,739 (“Waldron”)
- EUNSUNG-1028 Lacey, Gerard, and Kenneth M. Dawson-Howe. "The application of robotics to a mobility aid for the elderly blind." *Robotics and Autonomous Systems* 23.4 (1998): 245-252.
- EUNSUNG-1029 Nayler, Gordon. *Dictionary of mechanical engineering*. SAE International, 1996 (“Nayler”)
- EUNSUNG-1030 Card, Stuart K., Jock D. Mackinlay, and George G. Robertson.

"A morphological analysis of the design space of input devices." ACM Transactions on Information Systems (TOIS) 9.2 (1991): 99-122.

EUNSUNG-1031 U.S. Patent No. 3,930,598 ("Slagle")

EUNSUNG-1032 Excerpts from the Prosecution History of the '052 patent ("the '052 Prosecution History")

EUNSUNG-1033 U.S. Pat. No. 9,550,052 to Ignon ("the '052 patent")

EUNSUNG-1034 *Sinclair Pharma Limited et al v. HydraFacial LLC f/k/a Edge Systems LLC* PTAB-IPR2025-00145, Paper 12 ("Sinclair Institution Decision").

EUNSUNG-1035 CYLINDRAFlow™ manifolds Brochure available at <https://www.nordsonmedical.com/Components-and-Technologies/Fluid-Management-Components/BioProcessing-Fittings/Manifolds/> (last accessed 6/18/2025), available as of August 25, 2018 on the Wayback Machine ("CYLINDRAFlow Brochure")

EUNSUNG-1036 CYLINDRAFlow™ manifolds video available at <https://www.youtube.com/watch?v=nT-5oGXV0Vg> (last accessed 6/18/2025)

EUNSUNG-1037 U.S. Pat. No. 4,156,437 to Chivens ("Chivens")

EUNSUNG-1038 U.S. Patent Publication No. 2010/0319796 ("Whitaker")

Pursuant to the Director’s guidance on “Interim Processes for PTAB Workload Management” (“March 26 Memo”), Petitioner, Eunsung Global Corp. (“Eunsung”), submits this opposition to the request for discretionary denial submitted by Patent Owner HydraFacial LLC (“HF”).

I. INTRODUCTION

HF requested discretionary denial because (A) Karasiuk and Greenberg were allegedly considered during prosecution and Palmer, Trueba, and Wunsch are allegedly cumulative; and the Examiner applied Greenberg in a rejection; (B) The cited prior art allegedly does not disclose a “manifold system”; and (C) Greenberg’s solid particles are not “treatment material.”

None of these reasons justify discretionary denial. First, institution should not be denied under §325(d) because the references and prior art combinations have not been previously considered by the Office. During prosecution, Palmer, Trueba, and Wunsch were not considered by the Office, let alone applied in a rejection. Karasiuk was buried in an IDS containing over 400 references and was not applied in a rejection. Among the references applied in this petition, only Greenberg was applied in a rejection for two dependent claims. As explained below, the examiner erred by not applying Karasiuk (especially in combination with Palmer, Trueba, and Wunsch), despite Karasiuk disclosing the very limitation that was identified as missing from Coleman and justifying allowance—a vacuum source that both removes debris and

draws treatment materials from the fluid containers. Further, the Examiner erred by not applying Greenberg as a primary reference against the independent claims, despite Greenberg disclosing or rendering obvious each and every limitation in the independent claims.

Second, the Petition establishes a compelling case of obviousness. Palmer discloses a “manifold system” at least because Palmer’s selector valve means 20 comprises a chamber (e.g., main body 70) with many openings (e.g., output port 24 and valve inputs 22₁-22₆), and selectively connects to different fluid containers similarly to the ’477 patent’s manifold. Further, a POSITA would have been motivated to use Wunsch’s manifold for various reasons discussed in the petition and below. Greenberg also discloses a “manifold system” at least because Greenberg’s valve 108 comprises a chamber with many openings, and selectively connects to different fluid containers similarly to the ’477 patent’s manifold. Further, Greenberg’s solid particles constitute “treatment material” in view of the ’477 patent’s broad definition of “treatment material.” In addition, the merits of the Karasiuk-Palmer and Karasiuk-Palmer-Trueba grounds have been endorsed by the Board in a recent institution decision in an IPR filed against HF’s related ’287 patent. Thus, the merits are strong and it would be most efficient for the Board to review HF’s ’477 patent with HF’s related ’287 patent for which institution has already been granted.

For these reasons, Petitioner respectfully requests that the Director deny HF’s

Request for discretionary denial.

II. 325(D) FAVORS INSTITUTION

In determining whether discretionary denial under § 325(d) is appropriate, “the Board uses the following two-part framework: (1) whether the same or substantially the same art previously was presented to the Office or whether the same or substantially the same arguments previously were presented to the Office; and (2) if either condition of first part of the framework is satisfied, whether the petitioner has demonstrated that the Office erred in a manner material to the patentability of the challenged claims.” *Advanced Bionics, LLC et al v. MED-EL Elektromedizinische Geraete GmbH* PTAB-IPR2019-01469, Paper 6 at page 8.

A. Advanced Bionics Part I – The Office Did Not Consider the Prior Art Combinations Advanced in the Present Petition

Under Part I of the *Advanced Bionics* framework (same or substantially the same art/arguments), the Board considers *Becton* factors (a), (b), and (d):

- (a) the similarities and material differences between the asserted art and the prior art involved during examination;
- (b) the cumulative nature of the asserted art and the prior art evaluated during examination;
- (d) the extent of the overlap between the arguments made during examination and the manner in which Petitioner relies on the prior art or Patent Owner distinguishes the prior art.

HF’s § 325(d) arguments fail at Part I of the *Advanced Bionics* framework because the grounds set forth in the present petition have not been considered by the Office.

The petition challenges the independent claims based on the below grounds:

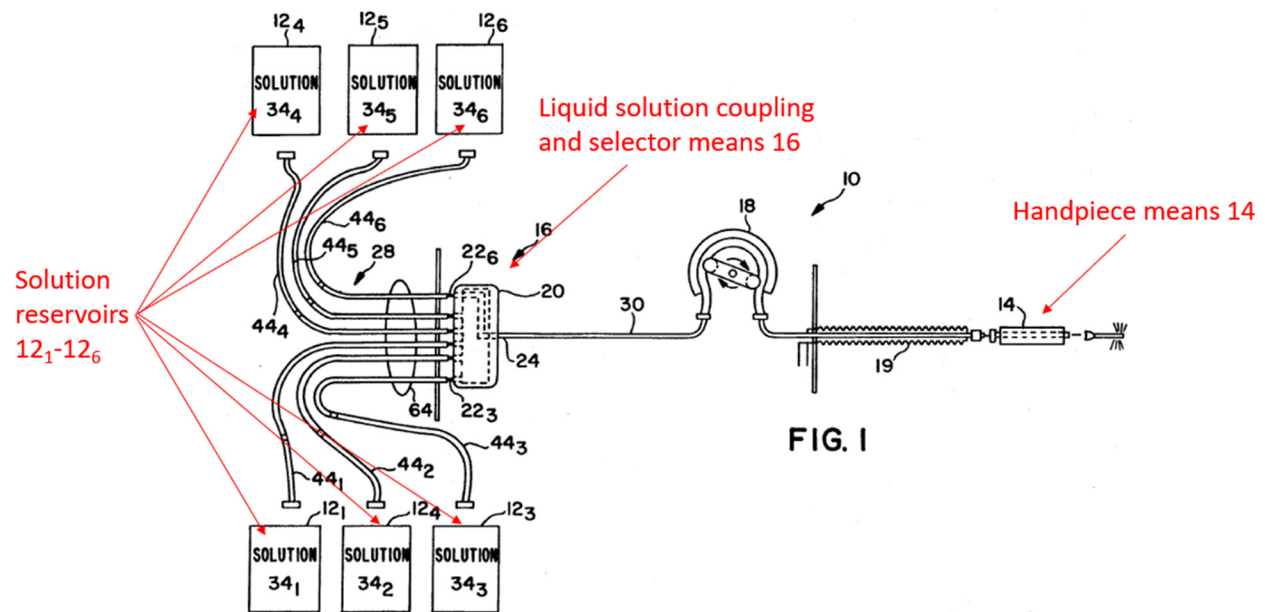
(1) Karasiuk and Palmer, (2) Karasiuk, Palmer, and Trueba, (3) Karasiuk, Palmer, and Wunsch, (4) Karasiuk, Palmer, Wunsch, and Trueba, (5) Greenberg, and (6) Greenberg and Trueba. None of Palmer, Trueba, or Wunsch was considered during examination. Grounds (1)-(4) and (6) were not presented to the Examiner. For ground (5), the argument that Greenberg's solid particles constitute "treatment material" within the meaning of the '477 patent was never presented to the Examiner during prosecution, so the Greenberg arguments presented in the petition are new.

Recognizing that Palmer, Trueba, and Wunsch have not been considered by the Office, HF attempts to argue that Palmer, Trueba, and Wunsch are cumulative to other prior art considered during examination. Palmer, Trueba, and Wunsch, however, include disclosure that is different from and more pertinent than the other prior art considered during examination.

a. *Palmer is not cumulative*

HF argues that Palmer is cumulative of Coleman because both references allegedly disclose multiple containers. Paper 11 at 6-8. Palmer, however, describes a significantly different design than Coleman and offers unique motivations for using its liquid delivery technology, including "easy selection" and minimizing refilling downtime. Pet., 8-13; EUNSUNG-1005, 1:30-53, 6:46-51.

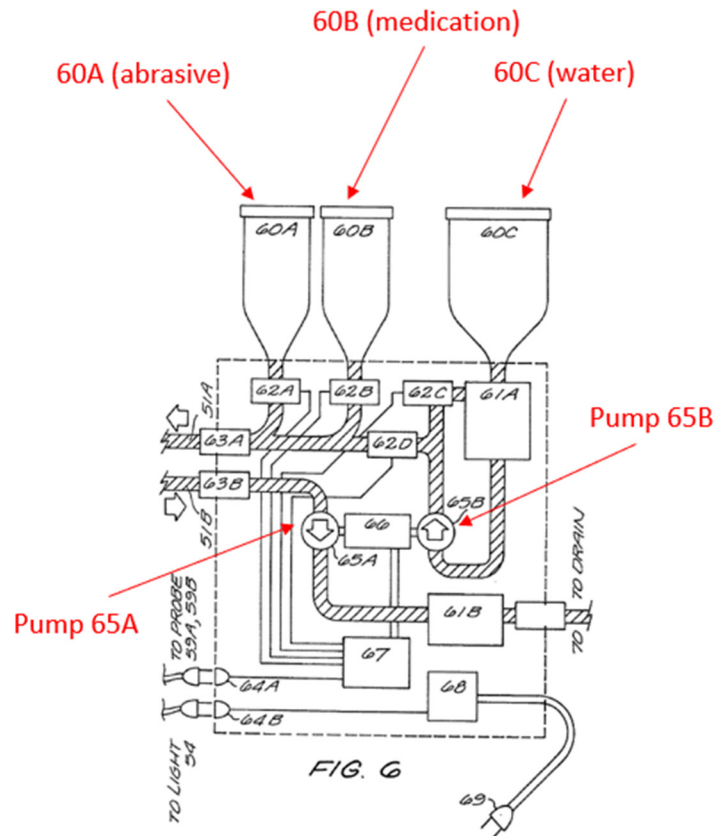
Specifically, Palmer discloses a medical device system for delivering a selected fluid treatment solution to an application site through a handpiece. EUNSUNG-1005, Abstract, 4:50-68, FIG. 1. Palmer's system comprises handpiece means 14 in fluid communication with six solution reservoirs 12 and selector means 16 for selecting the fluid container. EUNSUNG-1005, Abstract, 4:50-68.



Palmer, FIG. 1 (annotated)

By contrast, Coleman discloses a system for the removal of epidermal and dermal skin through the use of a “pressurized stream of water” (from container 60C), where abrasives (from container 60A) and medications (from container 60B) can be added to the water. EUNSUNG-1018, Abstract, FIG. 6, [0014]-[0018], [0058], [0061]. In operation, pump 65B draws water from container 60C and provides pressurized water, which is mixed with the abrasives in container 60A and medications

in container 60B to form a “composite stream of water/abrasive/medicine” to be applied. EUNSUNG-1018, [0058]-[0061]. Pump 65A is used to suction spent water and debris from the surgical site. *Id.*



Coleman, FIG. 6 (annotated)

Thus, Palmer and Coleman operate in fundamentally different ways—while Palmer uses selector means 16 for selecting a treatment fluid to be applied (from solution reservoirs 12₁-12₆), Coleman can only apply one type of treatment fluid (“a composite stream of water/abrasive/medicine”).

Further, due to the fundamental differences in operation, Palmer offers unique motivations for using its liquid delivery technology, including “easy selection” and

minimizing refilling downtime. Pet., 8-13; EUNSUNG-1005, 1:30-53, 6:46-51.

These disclosures provide strong motivations to combine Palmer with Karasiuk, which discloses the very limitation that was identified as missing from Coleman and justifying allowance—a vacuum source that both removes debris and draws treatment materials from the fluid containers. EUNSUNG-1002, 125-126. Specifically, regarding reasons for allowance, the examiner stated:

The following is a statement of reasons for the indication of allowable subject matter: Claims 2, 10, and 16 have all been amended to require that **the vacuum source is configured to both remove waste from the handpiece assembly and to help transfer treatment material from the containers to the handpiece assembly via the manifold system/supply conduit**. The prior art of record fails to disclose or suggest a skin treatment system with a vacuum source carrying out both of those functions, in combination with the other structural features of the system (manifold system, supply conduit, handpiece assembly, waste conduit, etc.).

The Coleman reference discloses separate pumps (65A and 65B) that are configured to help remove waste from the handpiece assembly (65A) and transfer treatment material to the handpiece assembly (65B). Coleman discloses that the pumps both share motor (66). **However, Coleman fails to disclose a single vacuum source that carries out both functions.**

EUNSUNG-1002, 125-126.

By contrast, Coleman does not provide a similar motivation to combine (e.g., “easy selection” and minimizing refilling downtime). Indeed, while Palmer uses selector means 16 for selecting a treatment fluid to be applied, Coleman only applies

“a composite stream of water/abrasive/medicine.”

In view of the fundamental differences in operation and Palmer’s unique motivations for using its liquid delivery technology, Palmer is not cumulative over Coleman, or any other reference considered during prosecution.

b. *Trueba and Wunsch are not cumulative*

HF also alleges that Trueba and Wunsch add nothing of consequence because the Petition allegedly does not rely on Trueba and Wunsch for anything the examiner had not already found to be taught by the prior art applied during examination. Paper 11 at 8.

Trueba and Wunsch are not cumulative at least because, similar to Palmer, they disclose “wherein each of the first container and the at least second container is configured to contain a treatment material,” which allows selecting a treatment fluid to be applied from multiple containers. EUNSUNG-1008, 5:17-6:15, 11:4-24; EUNSUNG-1020, Title, Abstract, 5:56-6:6. Although the Petition uses Trueba and Wunsch for additional features (e.g., computer control, display, manifold selector, sequencer-timer), their disclosure of container selection is impactful because it reinforces the compatibility of Karasiuk with Palmer and provides additional motivation to combine them.

As discussed above, Coleman can only apply “a composite stream of water/abrasive/medicine.” Similarly, Duchon’s device only contains a saline bag 50

and a waste bag 52, and does not permit a user to select the treatment material from the first fluid container or the at least second fluid container. EUNSUNG-1010, Abstract, FIG. 1. For these reasons, Trueba and Wunsch are not cumulative and warrant reconsideration by the Office.

c. *The obviousness arguments/combinations are new*

The Petition's arguments and obviousness combinations are materially different from the obviousness arguments/combinations considered during prosecution. The Petition argued that it was obvious **to use multiple containers to improve Karasiuk because Karasiuk recognizes desirability of using multiple types of skin treatment solutions during microdermabrasion**. Pet., 8-13. Nothing in the prosecution history indicates that the examiner considered this argument, much less Karasiuk in combination with Palmer. Further, the Petition argued that it was obvious to **modify the combined system of Karasiuk and Palmer by including Trueba's computer control** for several benefits, such as added precision, automation, and clarity. Pet., 44-46. Nothing in the prosecution history indicates that the examiner considered this argument, much less Karasiuk in combination with Palmer and Trueba. *See Amphenol Corporation v. PPC Broadband, Inc.* PTAB-IPR2022-00721, page 11 at pages 19-23 (granting institution because despite the primary reference being considered "pertinent," the obviousness combinations were new); *St.*

Jude Med., LLC, v. Snyders Heart Valve LLC, IPR2018-00105 Paper 15 at 12 (“evidence of record does not demonstrate that the examiner considered the references in the combinations relied upon by Petitioner.”).

Further, the Petition argued that a POSITA would have understood and found obvious that Greenberg’s solid particles constitute “treatment material” and “fluid” within the meaning of the ’477 patent in view of the ’447 patent’s broad definition of “treatment material” and “fluid.” Pet., 4-5, 78-79. Nothing in the prosecution history indicates that the examiner considered this argument.

B. Advanced Bionics Part II – The Office Did Not Substantively Address Karasiuk and the Examiner Erred By Failing to Apply the Combinations Advanced in the Present Petition

Under Part II of the *Advanced Bionics* framework (whether examiner erred), the Board considers *Becton* factors (c), (e), and (f):

(c) the extent to which the asserted art was evaluated during examination, including whether the prior art was the basis for rejection;

(e) whether petitioner has pointed out sufficiently how the examiner erred in its evaluation of the asserted prior art; and

(f) the extent to which additional evidence and facts presented in the petition warrant reconsideration of the prior art or arguments.

Advanced Bionics, LLC et al v. MED-EL Elektromedizinische Geraete GmbH PTAB-IPR2019-01469, Paper 6 at pages 9-10; *Ecto World, LLC v. RAI Strategic Holdings, Inc.*, IPR2024-01280, Paper 13, footnote 1.

Based on the *Ecto* opinion, HF argues that “Eunsung’s burden is to show that **no reasonable examiner could have** agreed with Mr. Knauss’s evaluation of the pending claims during prosecution in view of the cited prior art.” Paper 11 at 9. HF is wrong. The *Ecto* opinion states in relevant part:

In that analysis, a petitioner must explain, with reference to Becton Dickinson factors (c), (e), and (f), how the Examiner erred in overlooking the prior art. *See Advanced Bionics*, Paper 6, at 10. For example, a petitioner may argue that it satisfies the second part of *Advanced Bionics* because the asserted prior art was not a basis for rejection during examination, is not substantially the same as prior art the Examiner applied, and includes specific teachings that “impact patentability of the challenged claims.” *Id.* at 8 n.9. A petitioner also may point to the fact that even though the asserted prior art is listed on an IDS, the Examiner did not issue any prior art rejections during examination, so the Examiner materially erred by overlooking certain teachings in the prior art on the IDS. On the other hand, **if the Examiner applied the asserted prior art or substantially the same prior art during examination**, then a petitioner must demonstrate that, for example, the previously presented art teaches the limitations of the challenged claims, and that **no reasonable examiner could have found otherwise**. *Id.* at 9 (“If reasonable minds can disagree regarding the purported treatment of the art or arguments, it cannot be said that the Office erred in a manner material to patentability.”).

Ecto World, LLC v. RAI Strategic Holdings, Inc., IPR2024-01280, Paper 13 at 5-6.

Here, the “no reasonable examiner could have” test does not apply because the Examiner never applied Karasiuk, much less in combination with Palmer, Trueba, and/or Wunsch.

As explained below, *Advanced Bionics* factors (c), (e), and (f) favor institution. Under factor (c) (“the extent to which the asserted art was evaluated during examination, including whether the prior art was the basis for rejection”), Palmer, Trueba, and Wunsch were not considered by the Office, let alone applied in a rejection. Karasiuk was buried in an IDS containing over 400 references and was not applied in a rejection. EUNSUNG-1002, 468-486. Among the references applied in this petition, **only Greenberg was applied in a rejection against two dependent claims**. EUNSUNG-1002, 124-125, 243-244. Thus, factor (c) favors institution.

Under factor (e) (whether petitioner has pointed out sufficiently how the examiner erred in its evaluation of the asserted prior art), the Examiner clearly erred in not applying Karasiuk, especially in combination with Palmer/Trueba/Wunsch, when Karasiuk discloses the very limitation that was identified as missing from Coleman and justifying allowance—a vacuum source that both removes debris and draws treatment materials from the fluid containers. Further, the Examiner erred in not applying Greenberg as a primary reference against the independent claims, because Greenberg discloses or renders obvious each and every limitation in the independent claims in view of the ’477 patent’s broad definition of “treatment material” and “fluid.”

Under factor (f) (“the extent to which additional evidence and facts presented in the petition warrant reconsideration of the prior art or arguments”), Karasiuk was

buried in an IDS with over 400 references and was not meaningfully considered. The petition also presents Karasiuk in combination with additional prior art (e.g., Palmer) and evidence that demonstrates the obviousness of using Karasiuk with multiple containers of treatment material. The petition further presents Greenberg in a new light by highlighting the broad definitions of “treatment material” and “fluid” that were not addressed by examiner and providing evidence demonstrating how a POSITA would have understood the claims in light of the definitions offered by the ’477 patent.

a. *The examiner did not substantively address Karasiuk*

Under *Advanced Bionics* factors (c) and (f), Karasiuk was buried in an IDS containing over 400 references and was not applied in a rejection. EUNSUNG-1002, 468-486. As such, the examiner did not substantively address Karasiuk. The *Ecto* opinion confirms the volume of the IDS is relevant under *Advanced Bionics* factor (f) (“the extent to which additional evidence and facts presented in the petition warrant reconsideration of the prior art or arguments”). *Ecto World, LLC v. RAI Strategic Holdings, Inc.*, IPR2024-01280, Paper 13 at 6-7 (“the Board should consider a petitioner’s argument based on the volume of the references submitted to the Office during examination and any applicant information or assistance regarding the relevance of references”).

Recognizing the Examiner did not evaluate Karasiuk during prosecution of

the '477 patent, HF argues that the Examiner “**extensively evaluated**” Karassik during prosecution of the '052 patent. Paper 11 at 10-11.

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11. The prior art made of record and not relied upon is <u>considered pertinent to applicant's disclosure</u> : Muldner (US 6,277,128 B1) (Figures 7 and 10), Rosso (US 6,432,114 B1) (Figures 1-3), <u>Karasiuk (US 6,695,853 B2) (Figure 5)</u> , Chang (US 7,232,444 B2) (Figures 1-5), Goble et al. (US 2006/0116674 A1) (Figures 1-3).	

Paper 11 at 11. However, *Advanced Bionics* factor (c) (“the extent to which the asserted art was evaluated during examination, including whether the prior art was the basis for rejection”) does not ask about consideration during examination of a different patent. Even if it does, Karasiuk was not “extensively evaluated” during prosecution of the related '052 patent—the examiner stated only that the “**prior art made of record and not relied upon is considered pertinent to the applicant’s disclosure.**” Paper 11 at 11. This is exactly the type of generic statement that the Board has found not to support discretionary denial. *Navistar, Inc. v. Fatigue Fracture Technology LLC* PTAB-IPR2018-00853, Paper 13 at 17; *Apple Inc. v. Uniloc USA, Inc.*, IPR2017-00221, Paper 9 at 10 (granting institution where reference was “not relied upon” but was “considered pertinent”); *Sanofi-Aventis U.S. LLC v. Immunex Corp.*, IPR2017-01879, Paper 19 at 8-9 (declining to exercise dis-

cretionary denial when reference was “considered pertinent to applicant’s disclosure” but not “relied upon”); *Amphenol Corporation v. PPC Broadband, Inc.* PTAB-IPR2022-00721, page 11 at pages 19-23 (granting institution despite the primary reference being considered “pertinent”).

b. *The examiner erred by not applying Karasiuk, Palmer, Trueba, and Wunsch*

Under *Advanced Bionics* factor (e), the examiner clearly erred by not applying Karasiuk, especially in combination with Palmer, Trueba, and Wunsch, despite Karasiuk disclosing the very limitation that was identified as missing from Coleman and justifying allowance—a vacuum source that both removes debris and draws treatment materials from the fluid containers. *See SolarEdge Techs. Ltd. v. SMA Solar Tech. AG*, IPR2020-00021, Paper 8 at 12 (“Because the Examiner **did not rely** on AAPA or Frezzolini to reject a claim, Becton Factor (c) weighs strongly against exercising our discretion to deny institution.”); *Code200, UAB et al v. Bright Data Ltd.* PTAB-IPR2022-00353, Paper 8 at 10 (“the fact that Crowds **was not the basis of rejection** in the prosecution of the ’344 patent nor was identified by the parties as the basis of rejection in any of the related patents weighs strongly against exercising our discretion to deny institution under 35 U.S.C. § 325(d).”). In the reasons for allowance, the examiner noted:

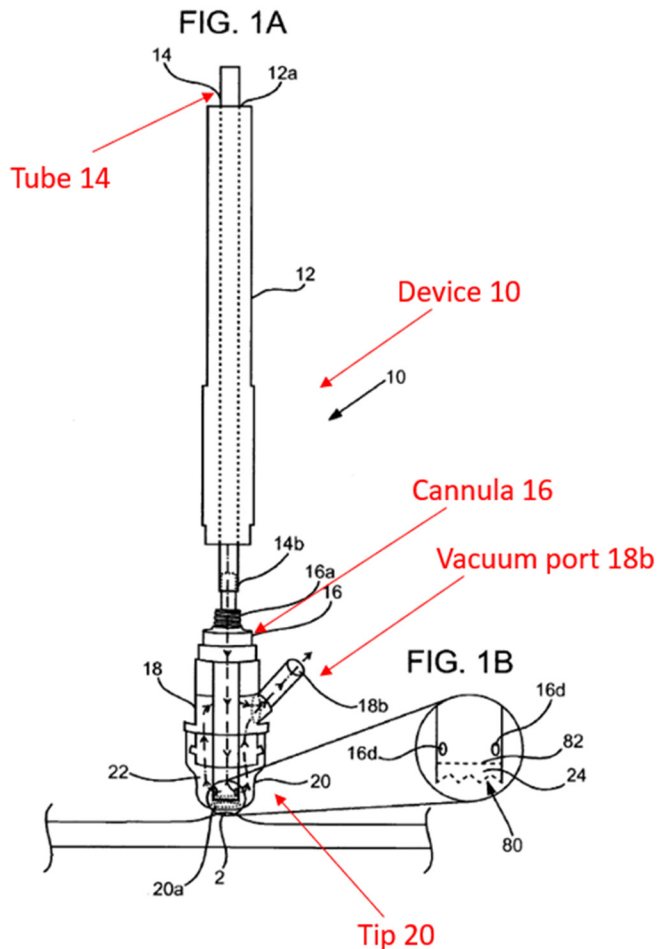
The following is a statement of reasons for the indication of allowable subject matter: Claims 2, 10, and 16 have all

been amended to require that **the vacuum source is configured to both remove waste from the handpiece assembly and to help transfer treatment material from the containers to the handpiece assembly via the manifold system/supply conduit.** The prior art of record fails to disclose or suggest a skin treatment system with a vacuum source carrying out both of those functions, in combination with the other structural features of the system (manifold system, supply conduit, handpiece assembly, waste conduit, etc.).

The Coleman reference discloses separate pumps (65A and 65B) that are configured to help remove waste from the handpiece assembly (65A) and transfer treatment material to the handpiece assembly (65B). Coleman discloses that the pumps both share motor (66). **However, Coleman fails to disclose a single vacuum source that carries out both functions.**

EUNSUNG-1002, 125-126. Thus, the examiner allowed the claims because the claims were amended to recite a vacuum source that both removes debris and draws treatment materials from the fluid containers. This finding is a clear error because Karasiuk clearly teaches a vacuum source that **both removes debris and draws treatment materials from the fluid containers.** Pet., 31-33. Specifically, Karasiuk discloses: “When vacuum is applied through opening 18b, an opening 20a is sealed off, for example by placing it up against the skin tissue, a closed loop vacuum flow path is established between the vacuum source and connecting line, vacuum opening 18b, annulus 22, opening(s) 16d, passageway 16c and tube 14.” EUNSUNG-1004, [0054], FIGS. 1A and 6. Upon forming a vacuum loop, the fluid contents in the fluid reservoir are “**drawn through tube 14 and into device 10...**and are applied to the

skin.” EUNSUNG-1004, [0064]. “As the flow of fluids continues out of the vacuum head base and into vacuum line 42, **it carries with it the exfoliated skin particles and any other waste that is removed through the microdermabrasion process.**” EUNSUNG-1004, [0066].



Karasiuk, FIG. 1A.

Regarding *Advanced Bionics* factor (f) (“the extent to which additional evidence and facts presented in the Petition warrant reconsideration of the prior art or arguments”), HF argues that (1) Palmer is at best cumulative, and indeed, less relevant than Coleman’s teaching of multiple containers for dermatological treatment;

and (2) the Trueba and Wunsch teachings Eunsung relies on—a computer control and display and a manifold selector and sequencer-timer—are not only unrelated to the reasons the claims were allowed during examination, but also cumulative of the Coleman, Greenberg, and Duchon. Paper 11 at 13.

However, these arguments relate to Part I of the *Advanced Bionics* framework, not Part II. In any event, as discussed above, Palmer is not cumulative over Coleman, at least because it has a significantly different design and offers unique motivations (e.g., “easy selection” and minimizing refilling downtime) for using its liquid delivery technology in the Karasiuk-Palmer combination, which discloses or renders obvious each and every limitation in the independent claims. Pet. 14-42. As such, the examiner also erred by not considering the secondary references Palmer, Trueba, and Wunsch.

c. *The examiner erred by not applying Greenberg as a primary reference against the independent claims*

Regarding Greenberg, HF argues that there is no evidence that the Examiner overlooked Greenberg because he thought dry particles cannot satisfy the claimed “treatment material.” Paper 11 at 11-13.

As explained in the merits section below, Greenberg’s solid particles clearly meet the “treatment material” and “fluid” limitations in the claims in view of the ’477 patent’s broad definition of “treatment material” and “fluid.”

Under *Advanced Bionics* factors (e) and (f), the Examiner’s consideration of

Greenberg during prosecution of the '052 patent confirms that the Examiner erred during prosecution of the '477 patent. Specifically, during prosecution of the '052 patent, the Examiner rejected all claims as anticipated by Greenberg. EUNSUNG-1032, 159-160. In order to distinguish Greenberg, HF amended the claims to recite “a treatment fluid **comprising a liquid.**” EUNSUNG-1032, 69-79. In the reasons for allowance, the Examiner also explained: “Claim 2 was amended to recite that the **treatment material comprises a liquid** and that when the vacuum source is activated and the tip contacts the skin surface, a suction force is created within the waste conduit and along the tip, thereby removing waste from the skin surface via the waste conduit while drawing treatment material from the first fluid container or the second fluid container to the tip via the supply conduit.” EUNSUNG-1032, 39.

By contrast, during prosecution of the '477 patent, the examiner allowed a set of otherwise almost identical claims¹ without requiring this important limitation (“a treatment fluid **comprising a liquid**”). In the reasons for allowance, the Examiner

¹ The claims of the '052 patent and the claims of the '477 patent do not otherwise differ in meaningful ways. If anything, the claims of the '477 patent are broader because they do not require “wherein the system is configured to permit a user to select the treatment material from the first fluid container or the at least second fluid container to be delivered.” EUNSUNG-1033, claim 1.

only explained: “Claims 2, 10, and 16 have all been amended to require that **the vacuum source is configured to both remove waste from the handpiece assembly and to help transfer treatment material from the containers to the handpiece assembly via the manifold system/supply conduit.**” EUNSUNG-1002, 125-126. However, as explained in the Petition, Greenberg discloses this very limitation that was identified as missing from Coleman and justifying allowance—a vacuum source that both removes debris and draws treatment materials from the fluid containers. Pet., 85-87. Specifically, Greenberg’s vacuum pump 12 draws “**particles from the supply container through the hand tool and into the recovery container, said hand tool positioned on a surface to be treated and including an aperture.**” EUNSUNG-1006, [0017], [0026], [0004], [0036], [0049]-[0059], [0066], FIG. 3; EUNSUNG-1003, [290]. In Greenberg, “[t]he stream of particles then impinges on the surface against which the aperture is positioned causing micro-abrasions and is subsequently drawn into the recovery container together with any abraded surface debris.” EUNSUNG-1006, [0052].

Thus, the Examiner clearly erred in allowing the claims without limiting the “treatment fluid” to “**a liquid**” and erred in not applying Greenberg as a primary reference against the independent claims, despite Greenberg disclosing or rendering obvious each and every limitation in the independent claims. Pet., 70-93.

III. THE PETITION ESTABLISHES A COMPELLING CASE OF OBVIOUSNESS

Institution should be granted because the Petition establishes a strong case of obviousness based on prior art combinations that have already been endorsed by the Board. As discussed above, the examiner allowed the claims because the claims were amended to recite a vacuum source that both removes debris and draws treatment materials from the fluid containers. EUNSUNG-1002, 125-126. The Petition explains in detail why a POSITA would have been motivated with a reasonable expectation of success to combine Palmer's device, which permits a user to select the liquid container from which treatment material is delivered, with Karasiuk's microdermabrasion device, which has a vacuum source that both removes debris and draws treatment material from a fluid container. As explained in the Petition, a POSITA would have recognized the desirability of using multiple types of treatment solutions during microdermabrasion, and would have been motivated to modify Karasiuk based on Palmer's multiple containers and selector means (1) to allow easy selection among multiple treatment solutions; (2) to enable sequential delivery of different treatment solutions; and (3) to minimize refilling downtime when a particular container runs out mid-operation. Pet., 8-13.

Further, a POSITA would have had a reasonable expectation of success in such a combination, because both Karasiuk and Palmer are directed to medical de-

vices that deliver treatment solutions to treatment sites via a handpiece, and replacement of Karasiuk's reservoir 70 with Palmer's multiple containers and selector means reflects a simple substitution of a known element for another to obtain predictable results—allowing selection of different treatment solutions. Pet., 8-13.

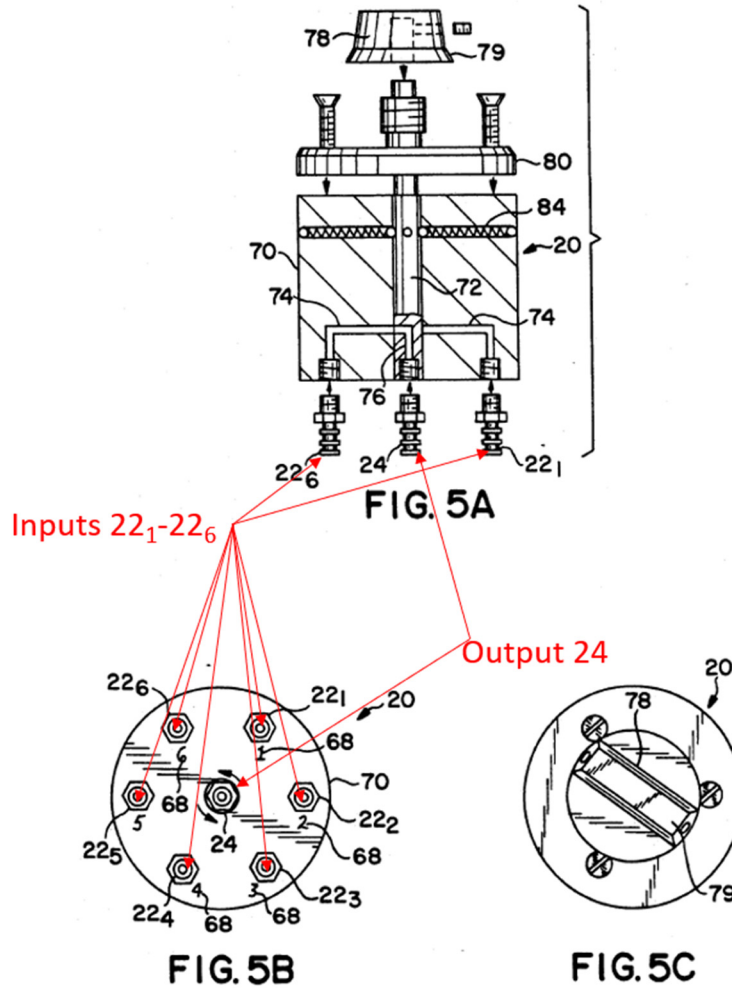
The Petition also explained in detail how Greenberg discloses or renders obvious each and every limitation of the independent claims. Pet., 70-93.

HF's brief raises only two challenges to the Petition's obviousness combinations: (1) the cited references allegedly do not disclose a "manifold system"; and (2) Greenberg's dry solid particles are not "treatment material." Paper 11 at 14-26. As discussed below, HF's arguments are meritless.

A. Palmer discloses a "manifold system"

HF argues that Palmer's selector valve means 20 is not a "manifold system" which is defined in the dictionary as "a chamber or pipe with many openings." Paper 11 at 14-17.

HF is wrong. Palmer discloses a "manifold system" at least because Palmer's selector valve means 20 comprises "a chamber or pipe with many openings." For example, Palmer's selector valve means comprises a chamber (e.g., main body 70) that includes one "selector valve output port 24," and a plurality of "valve inputs 22₁-22₆." Pet., 14-23; EUNSUNG-1005, FIGS. 5A-5C.



Palmer, FIGS. 5A-5C

In operation, by turning knob 78, the user can select from multiple containers 12₁-12₆, each of which is connected to one of “valve inputs 22₁-22₆.” Pet., 14-23; EUNSUNG-1005, 8:22-53 (“For example, when the knob is rotated so that the pointer 78 indicates the indicia designated ‘6,’ the outlet passage 76 communicates with the inlet passage 74 which opens into the inlet port 22₆ which is coupled to the solution 34₆ contained in the reservoir 12₆.”). To achieve this, the chamber housing rotatable core 72 (containing passage 76) has to contain many openings—otherwise,

rotatable core 72 (containing passage 76) cannot rotate and selectively connect to different fluid containers. Thus, Palmer's selector valve means 20 comprises a chamber (e.g., main body 70) with many openings (e.g., output 24 and valve inputs 22₁-22₆), to allow the rotatable central cylinder core or stem 72 to rotate and to selectively connect to different fluid containers.

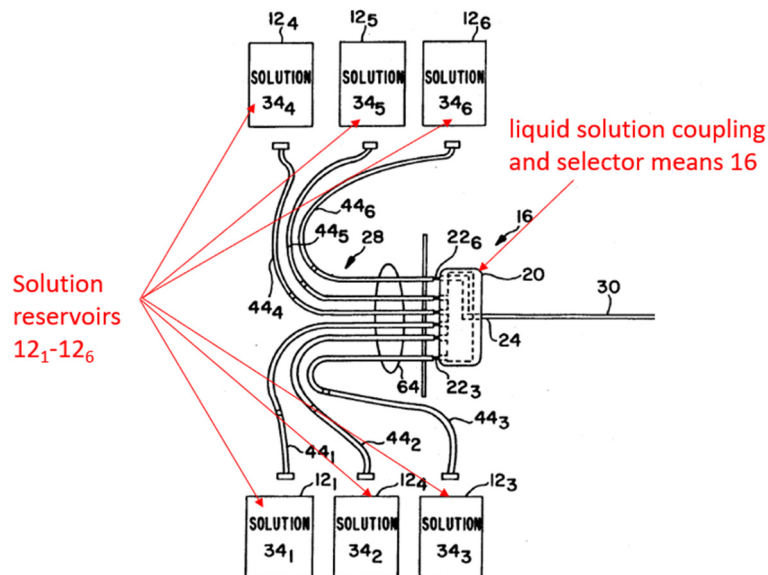
HF argues that Palmer's selector valve means 20 only has one input connected to one output at any given time. Paper 11 at 17 ("Palmer's selector valve means 20 provides a single, isolated pathway through the rotatable core 72"). But the dictionary definition of "a chamber or pipe with many openings" does not require otherwise. *See* EUNSUNG-1019, Abstract, 6:43-45 ("The ports, valves and conduits of the manifold may be configured in any manner that permits the desired flow of fluid through the manifold"), 10:30-44, FIGS. 7-10. In fact, the definition "a chamber or pipe with many openings" does not require how many of these openings are closed/open at any given time, and Palmer's selector valve means 20 meets this limitation. In fact, when a first solution from the first container is selected to be dispensed, the "manifold system" in the '477 patent also provides a single, isolated pathway from the first container to the handpiece. *Pet.*, 14-23; EUNSUNG-1001, FIGS. 15A-15E. Similar to Palmer's selector valve means 20, Duchon's "manifold 26" also only has one input connected to one output at any given time. EUNSUNG-1010, FIGS. 2A-2G, 7A-7D, [0070] ("Manifold 26 includes a spring biased spool

valve which normally connects transducer/saline port 82 and patient port 84. When radiographic contrast material is to be injected, the pressure of the radiographic material causes the spool valve to change states so that lower port 80 is connected to patient port 84”), [0086] (“Manifold 26 contains a valve which controls the routing of fluid connections between patient port 84 and either syringe bottom port 80 or transducer/saline port 82.”), [0088].

Further, a POSITA would have understood that Palmer’s selector valve means 20 constitutes a manifold, because the “selector manifold” in Chivens has a highly similar structure and serves the same function of selecting one input from multiple inputs. EUNSUNG-1037, 2:5-42, FIGS. 1-2. Specifically, Chivens explains that “[m]anifold 36 contains a conduit 38 that interconnects the output port 24 with a selected input port 22.” EUNSUNG-1037, 2:30-32.

Further, while the definition of “manifold” is “a chamber or pipe with many openings,” the relevant claim term is “**manifold system**,” which covers additional components within the system. Here, Palmer’s selector valve means 20 constitutes such a system because it has “a chamber or pipe with many openings” (e.g., main body 70) and additional components (e.g., rotatable core 72) within the chamber of Palmer’s selector valve means 20. *See* EUNSUNG-1019, Abstract, 6:43-45 (“The ports, valves and conduits of the manifold may be configured in any manner that permits the desired flow of fluid through the manifold”), 10:30-44, FIGS. 7-10.

Further, as the Petition explained, a POSITA would have understood and found obvious that (1) Palmer's selector valve means 20, (2) Palmer's liquid solution coupling and selector means 16 (including the valve 20), or (3) Palmer's control unit enclosure 35 (housing the coupling and selector means 16) correspond to, and perform the operations of, the *manifold system*, located within the "mobile cart 170" (*console*). Pet., 14-23. HF does not appear to dispute that Palmer's liquid solution coupling and selector means 16 and/or Palmer's control unit enclosure 35 constitute a manifold ("a chamber or pipe with many openings"). For example, as shown in FIG. 1, Palmer's liquid solution coupling and selector means 16 constitutes a chamber or pipe with many openings that are connected to tubes 44₁-44₆. EUNSUNG-1005, FIG. 1.



Palmer, FIG. 1 (partial)

- a. *It would have been obvious to modify Palmer to use a manifold*

As the Petition explained, alternatively or in addition, a POSITA would have found it obvious to use a manifold to implement Palmer's functionality of switching treatment fluids. Pet., 14-23. Indeed, manifolds were well-known devices for selecting between different fluids and would have been within a POSITA's general knowledge. *Id.* First, based on Karasiuk and Palmer, a POSITA would have recognized a need to selectively dispense different treatment fluids. Second, a POSITA would have understood that there were a finite number of identified, predictable solutions to selectively dispense treatment solutions from multiple containers, including (1) manually connecting/disconnecting the handpiece to different containers via one tube, (2) connecting the handpiece to each container via a separate valve-controlled tube, and (3) connecting the handpiece to multiple containers via a manifold (e.g., classic block style, a T-junction or a Y-junction). Further, the Petition explained that, alternatively or in addition, using a manifold to implement Palmer's functionality of switching treatment fluids would have been an obvious design choice without any unexpected results. Pet., 14-23.

HF alleges that the Petition and expert declaration "identify no shortcoming in Palmer's selective valve means 20 that would justify replacing it." Paper 11 at 18-19. However, a shortcoming in Palmer is not needed to show the obviousness of

using a manifold among a finite number of identified, predictable solutions to selectively dispense treatment solutions from multiple containers. *Geo M. Martin Co. v. Alliance Machine Systems Intern. LLC*, 618 F.3d 1294, 1302 (Fed. Cir. 2010) (“Bottom versus top is exactly the type of ‘finite number of identified, predictable solutions’ that justifies a legal conclusion that the result, when expected, is ‘the product not of innovation but of ordinary skill and common sense.’”); *Recor Med., Inc. v. Medtronic Ireland Mfg. Unlimited Co.*, No. 2023-2251, 2025 WL 944511, at *4 (Fed. Cir. Mar. 27, 2025) (“This is a sufficiently finite universe of options to support an obvious-to-try theory.”).

HF argues that Palmer’s one input-one output device is not equivalent to “a chamber or pipe with many openings” and the Petition’s proposed replacement is not a simple substitution. Paper 11 at 19. However, HF ignores that Palmer’s device serves the same function as the ’477 patent’s manifold—allowing selecting treatment materials from multiple containers. Similar to Palmer’s selector valve means 20, Duchon’s manifold 26 also only has one input connected to one output at any given time. EUNSUNG-1010, FIGS. 2A-2G, 7A-7D, [0070] (“Manifold 26 includes a spring biased spool valve which normally connects transducer/saline port 82 and patient port 84. When radiographic contrast material is to be injected, the pressure of the radiographic material causes the spool valve to change states so that lower port 80 is connected to patient port 84”), [0086] (“Manifold 26 contains a valve

which controls the routing of fluid connections between patient port 84 and either syringe bottom port 80 or transducer/saline port 82.”), [0088]. The “selector manifold” in Chivens also has a similar structure (one input connected to one output at any given time) and serves the same function of selecting one input from multiple inputs. EUNSUNG-1037, 2:5-42, FIGS. 1-2. Thus, a POSITA would have understood that Palmer’s selector valve means 20 constitutes a manifold, or at least is equivalent to a manifold.

b. *A POSITA would have been motivated to use Wunsch’s manifold*

HF argues that there was no motivation to combine Karasiuk-Palmer with Wunsch because “the proposed combination lacks any mechanism for measuring the quantity of solution dispensed.” Paper 11 at 19-20.

As explained in the Petition, a POSITA also would have been motivated to employ Wunsch’s manifold selector and sequencer-timer because (1) Wunsch’s manifold selector can be automatically controlled by the sequencer-timer to allow automatic dispensing of different treatment fluids; (2) Wunsch’s manifold selector allows flushing of the manifold using the Keep Open Base Solution (TKO) between different treatment fluids to avoid cross-contamination between two treatment fluids; and (3) Wunsch’s manifold selector allows easy replacement of the disposable manifold between patients, avoiding cross-contamination between patients and avoiding the need to clean and sterilize the manifold between uses. Pet., 51-55.

HF only appears to challenge the first motivation to combine—the ability to automatically control and dispense fluid. Paper 11 at 19-20. As such, it is undisputed that a POSITA would have been motivated to use Wunsch’s manifold selector for the second and third motivations (flushing between treatment fluids and easy replacement of the disposable manifold between patients).

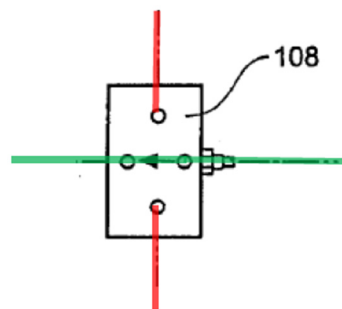
Regarding the first motivation to combine, HF alleges that the Petition never incorporates Wunsch’s infusion pump, and thus provides no means of regulating Wunsch’s manifold selector through the sequencer-timer. Paper 11 at 19-20. However, there is no need to measure the quantity of solution that is dispensed. All that is needed is that the first solution (e.g., vitamin) is dispensed for a first duration and the second solution (e.g., lotion) is dispensed for a second duration. EUNSUNG-1020, 4:47-60 (“The **tracks have a length corresponding to a preselected time cycle** with preselected data applied to each track”); 9:42-61 (“The full length of the timing tracks 69 corresponds to the duration of a machine cycle, which in the illustrative embodiment has **a duration of eight hours**. Such cycle can be adjusted as predetermined. The cycle duration is controlled by a quartz-crystal 60 time base.”); 10:1-63 (“As indicated previously, **On-Off timing sequence is generated by darkening the timing tracks 69 upon the card 14 with a soft pencil**. In the illustrative embodiment, **the cycle duration is for eight hours** and the timer 13 provides in the illustrative embodiment 96 time intervals corresponding to **five minutes per**

division, for illustration.”). Thus, the sequence-timer need only control the duration, not the volume of the solution dispensed.

In fact, for microdermabrasion, a POSITA would have understood that the specific amount/volume of solution dispensed may not be as impactful because most of the treatment fluid will be rinsed away during the microdermabrasion. What is important is the convenience of automatic switching, and avoiding mistakes in selecting treatment fluids. Pet., 51-55 (“manual selection is both cumbersome and prone to error, and would have been motivated to adopt Wunsch’s automatic control to provide added convenience and help avoid mis-selection by the user”).

B. Greenberg discloses a “manifold system”

HF argues that Greenberg’s valve 108 is just a valve and only has one input connected to one output at any given time. Paper 11 at 20 (“Greenberg’s valve 108 in the Fig. 5 embodiment is just that, a valve, similar to Palmer’s rotary valve, consisting of a single inlet and only a single outlet.”).

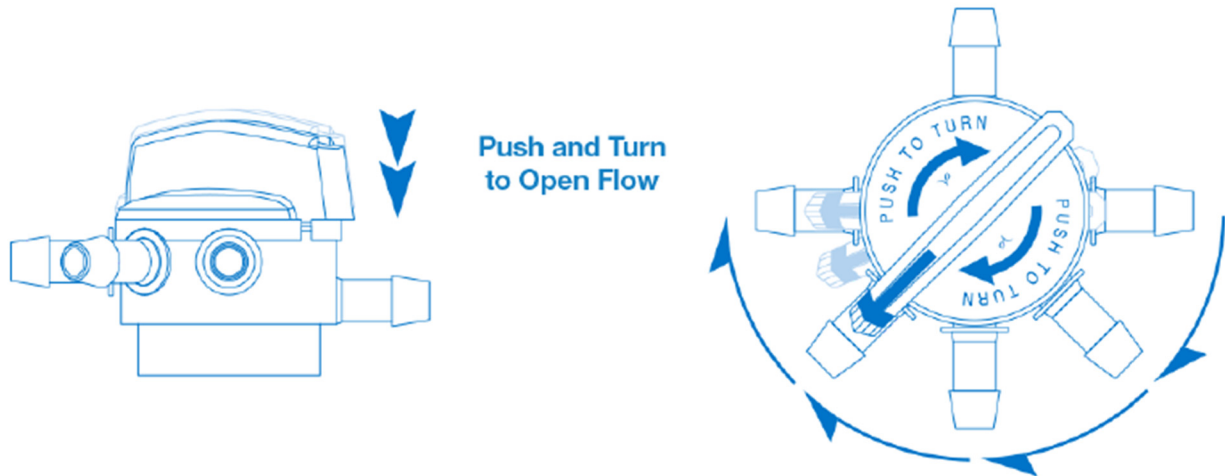


Paper 11 at 22.

But the dictionary definition of “a chamber or pipe with many openings” does

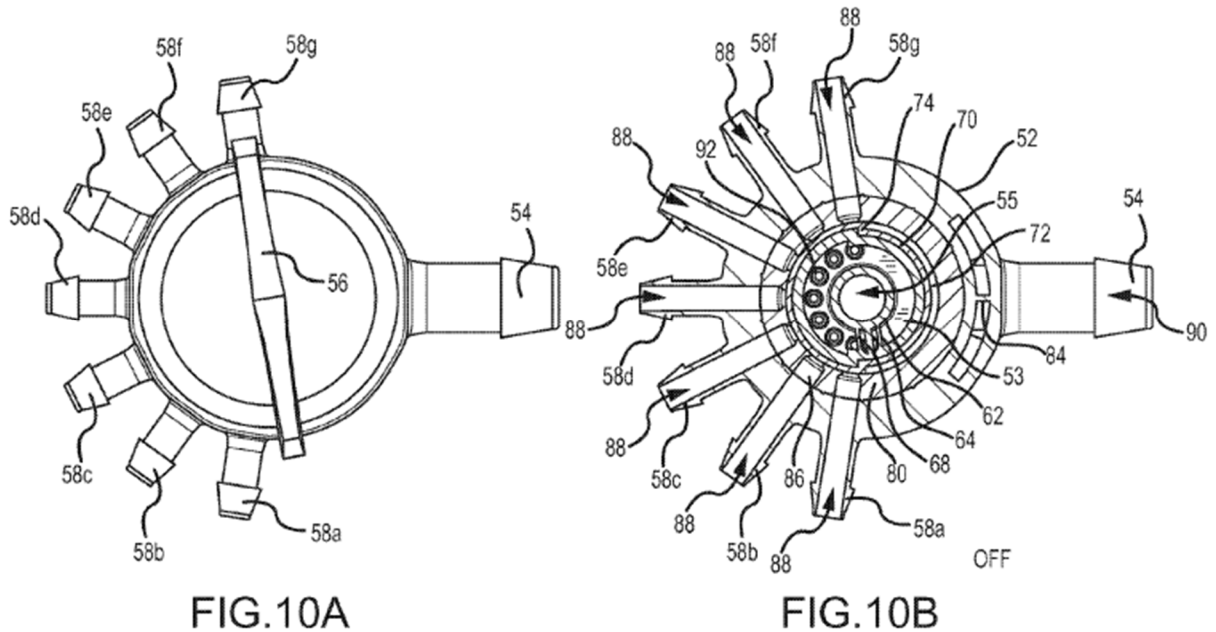
not require otherwise. *See* EUNSUNG-1019, Abstract, 6:43-45 (“The ports, valves and conduits of the manifold may be configured in any manner that permits the desired flow of fluid through the manifold”), 10:30-44, FIGS. 7-10. In fact, the definition “a chamber or pipe with many openings” does not require how many of these openings are closed/open at any given time, and Greenberg’s valve 108 meets the definition of “a chamber or pipe with many openings” (e.g., three inputs connecting to three containers 90, 94, and 98, and one output connecting to handpiece 102). In fact, when a first solution from the first container is selected to be dispensed, the “manifold system” in the ’477 patent also provides a single, isolated pathway from the first container to the handpiece. *Pet.*, 14-23; EUNSUNG-1001, FIGS. 15A-15E. Similar to Greenberg’s valve 108, Duchon’s “manifold 26” also only has one input connected to one output at any given time. EUNSUNG-1010, FIGS. 2A-2G, 7A-7D, [0070] (“Manifold 26 includes a spring biased spool valve which normally connects transducer/saline port 82 and patient port 84. When radiographic contrast material is to be injected, the pressure of the radiographic material causes the spool valve to change states so that lower port 80 is connected to patient port 84”), [0086] (“Manifold 26 contains a valve which controls the routing of fluid connections between patient port 84 and either syringe bottom port 80 or transducer/saline port 82.”), [0088].

Further, a POSITA would have understood that Greenberg's valve 108 constitutes a manifold, because the Cylindraflow™ manifolds have an almost identical structure as Greenberg's valve 108. EUNSUNG-1035, 1-4; EUNSUNG-1036, 0:00:55-0:00:59.



CYLINDRAFlow Brochure, 4

Similarly, the “multi-port manifold valve” in Whitaker has a very similar structure as Greenberg's valve 108. EUNSUNG-1038, [0064], FIGS. 8-18.



Whitaker, FIGS. 10A-10B

Also, the “selector manifold” in Chivens has a similar structure and serves the same function of selecting one input from multiple inputs. EUNSUNG-1037, 2:5-42, FIGS. 1-2. Specifically, Chivens explains that “[m]anifold 36 contains a conduit 38 that interconnects the output port 24 with a selected input port 22.” EUNSUNG-1037, 2:30-32.

Further, while the definition of “manifold” is “a chamber or pipe with many openings,” the relevant claim term is “**manifold system**,” which covers additional components within the system. Here, Greenberg’s valve 108 constitutes such a system because it has “a chamber or pipe with many openings” (e.g., three inputs connecting to three containers 90, 94, and 98, and one output connecting to handpiece

102) and additional components within the chamber. *See* EUNSUNG-1019, Abstract, 6:43-45 (“The ports, valves and conduits of the manifold may be configured in any manner that permits the desired flow of fluid through the manifold”), 10:30-44, FIGS. 7-10.

Further, for the same reasons as discussed above regarding Palmer, it would have been obvious to modify Greenberg to use a manifold, and a POSITA would have been motivated to use Wunsch’s manifold. Thus, the Petition establishes a compelling case of obviousness with respect to the claimed “manifold system.”

C. Greenberg’s solid particles constitute “treatment material”

Inventors who define terms in their written description may not later attempt to recant that definition in favor of a broader definition to expand the scope of the claims or a narrower definition to avoid invalidating prior art. *In re Bass*, 314 F.3d 575, 577 (Fed. Cir. 2002) (“Bass chose to define ‘motorized sports boat’ in the specification. He cannot change or modify that definition on appeal.”); *In re Johnston*, 435 F.3d 1381, 1384 (Fed. Cir. 2006) (“It is well established that dictionary definitions must give way to the meaning imparted by the specification, but in this case Mr. Johnston himself gave ‘pipe’ the broad meaning he now criticizes. He states in the specification that his pipes may be used as overpasses, storage buildings, homes, silos, and water tanks, extols the value of his invention in such large-diameter struc-

tures, and does not attempt to disclaim such scope from his claims.”). The ’477 patent explicitly defined “treatment material” to cover both liquid and fine solids (e.g., grits) to get broad claim coverage for infringement. HF cannot now go back and argue that the broad definition only applies for infringement and does not apply for invalidity. Specifically, the ’477 patent states:

As used herein, the term “**treatment material**” is a broad term and includes, but is not limited to, medicament, a substance tending to flow or conform to the outline of its container such as fluid, gas, liquid (e.g., serums, water, saline, etc.), gel, fluidized material, additives, and/or **a plurality of fine solids**. The general term “fluid” is used throughout synonymously with the term “treatment material” and is to be given the same broad definition. The handpiece assembly 18 can preferably massage, abrade, ablate, or otherwise treat the target skin area while also applying a treatment material to the patient. In certain embodiments, the treatment material and tip of the handpiece 18 can work in combination for an effective and rapid skin treatment. Additionally, any number of “dry” and “wet” tips can be used alone or in combination for treatment flexibility.

EUNSUNG-1001, 5:38-53; EUNSUNG-1003, [280].

Here, HF clearly acted as its own lexicographer and defined “treatment material” to include “fine” solid particles. No other intrinsic evidence casts doubt on that definition. *Jack Guttman, Inc. v. Kopykake Enterprises, Inc.*, 302 F.3d 1352, 1360–61, 64 U.S.P.Q.2d 1302 (Fed. Cir. 2002) (“Where, as here, the patentee has clearly defined a claim term, that definition usually is dispositive; it is the single best guide to the meaning of a disputed term.”).

First, HF argues that “the ’607 patent² expressly distinguishes prior-art microdermabrasion technology that uses dry abrasive particles,” alleging “[m]icrodermabrasion can be a **painful** experience and due to its harsh nature, can often leave patients with **redness**,” and “[t]he systems claimed by the ’607 patent wholly eliminates resurfacing the skin with sandpaper-like blasts of abrasive particles.” Paper 11, 23-24.

HF is wrong. Nothing cited by HF supports characterizing “microdermabrasion” as “painful” or leaving the patients with “redness.” The background section of the ’477 patent (or the ’607 patent) describes two different technologies: “dermabrasion” and “microdermabrasion.” EUNSUNG-1001, 1:41-67. It first describes “dermabrasion,” where the skin is removed using a burr, wheel or disc, characterizing it as “painful and messy,” and leaving the skin “red and raw-looking”. EUNSUNG-1001, 1:41-57. It then describes “microdermabrasion,” where only two to three cell layers are removed by either a stream of sand or grit or a “crystal free” diamond-tip, characterizing it as an improvement that allows “simultaneous local treatment and suction.” EUNSUNG-1001, 1:58-2:8. Thus, any reference to “**painful**” or “**redness**” was referring to “dermabrasion” using a burr, wheel or disc, not

² HF appears to confuse the ’607 patent and the ’477 patent, and its citations appear to refer to the ’607 patent.

“microdermabrasion” using either a stream of sand or grit or a “crystal free” diamond-tip.

Also, nothing cited by HF supports HF’s argument that “[t]he systems claimed by the ’607 patent wholly eliminates resurfacing the skin with sandpaper-like blasts of abrasive particles.” Paper 11, 23-24. Although the ’477 patent uses the term “fluid” in describing its treatment material, the ’477 patent explains that the term “fluid” is used “synonymously” with the term “treatment material,” which is clearly defined to include “fine” solid particles. EUNSUNG-1001, 5:38-53. In fact, the ’477 patent states “any number of ‘dry’ and ‘wet’ tips can be used alone or in combination for treatment flexibility.” EUNSUNG-1001, 5:51-53. Further, the ’477 patent explicitly states: “The material in the cavities 151 can be made of any of the **treatment materials** disclosed herein, and **can be in a solid form.**” EUNSUNG-1001, 11:38-40. Thus, the ’477 patent’s characterization of prior art dermabrasion and microdermabrasion does not cast doubt on the clear definition of “treatment material” which includes “fine” solid particles.

Second, HF argues that the specification distinguishes between “wet” and “dry” modes on the basis that the “wet” mode applies treatment materials to the skin and the “dry” mode does not, and “[t]hat the inventors described the procedure with-

out treatment material as a ‘dry procedure’ **demonstrates that the treatment materials are not dry solid particles**”.³ Paper 11 at 24-25.

Contrary to what HF alleges, the difference between “wet” and “dry” modes does not “**demonstrate[] that the treatment materials are not dry solid particles.**” The ’477 patent states: “The material in the cavities 151 can be made of any of the **treatment materials** disclosed herein, and **can be in a solid form.**” EUNSUNG-1001, 11:38-40. The ’477 patent explains the “**dry**” mode only uses the abrasive tip of the handpiece to remove skin tissues. EUNSUNG-1001, 10:15-24 (explaining the tip contains an inner member that can be an abrasive member), 12:27-13:19 (explaining the tip contains a pad with an abrasive surface), 18:38-47 (describing diamond tip abrasion, or “crystal free” microdermabrasion), FIGS. 6-7. The ’477 patent also explains that “[d]uring some skin treatment procedure, treatment materials from multiple containers 26 are sequentially or simultaneously applied to the patient’s skin during a ‘**wet**’ mode of operation.” EUNSUNG-1001, 6:19-22. Thus,

³ HF characterizes Greenberg’s solid particles as Greenberg’s “dry” solid particles. Paper 11 at 23-25. However, Greenberg explicitly explains that prior art abrasive particles can “leave the skin dry,” and thus Greenberg’s particles are designed to be somewhat wet to impart essential oils, tea tree oils and essences, fragrances, and other substances. EUNSUNG-1006, [0010]-[0012], [0069], [0082]-[0087].

the only difference between the “dry” and “wet” modes is that the “wet” mode applies “treatment materials” and the “dry” mode does not—this does not exclude solid fine particles from “treatment materials.”

Finally, HF argues that, in one embodiment, the specification correlates the “effectiveness of the fluid” on the skin with the amount of time the “active ingredients of the treatment material” are retained on the skin. Paper 11, at 25.

However, while the specification of the ’477 patent talks about liquid treatment materials (e.g., serum) in certain embodiments, that does not limit the claim scope of “treatment material” to just liquid treatment materials. *Phillips v. AWH Corp.*, 415 F.3d 1303 (Fed. Cir. 2005) (en banc) (courts must avoid “reading a limitation from the specification into the claim” absent express definition (lexicography) or disavowal); *Falana v. Kent State University*, 669 F.3d 1349, 1354-55 (Fed. Cir. 2012) (“this court has ‘cautioned against limiting the claimed invention to preferred embodiments or specific examples in the specification.’”). If HF intended to narrow the claims to exclude Greenberg’s solid particles, they knew how to do this. For example, during prosecution of US9550052B2 (“the ’052 patent”), to distinguish Greenberg, Applicant amended claims to recite “a treatment fluid **comprising a liquid**.” EUNSUNG-1032, 69-79. By contrast, the claims of the ’477 patent are not so limited, indicating HF intended to cover more than just liquid treatment materials.

Elkay Mfg. Co. v. Ebco Mfg. Co., 192 F.3d 973, 980 (Fed. Cir. 1999) (“When multiple patents derive from the same initial application, the prosecution history regarding a claim limitation in any patent that has issued applies with equal force to subsequently issued patents that contain the same claim limitation.”).

D. The Petition Instituted Against HF’s ’287 Patent Supports Institution Here

The Petition’s compelling case of obviousness is confirmed by the institution decision in an IPR filed against HF’s related ’287 patent. EUNSUNG-1034, 32.

In the *Sinclair* case, Sinclair copied the same Karasiuk-Palmer and Karasiuk-Palmer-Trueba combinations developed by Eunsung against a closely related patent, U.S. Patent No. 11,865,287 B2 (“the ’287 patent”). EUNSUNG-1034, 2-7. The ’287 patent is a child of the ’477 patent, and shares the same specification as the ’477 patent. The claims of the ’287 patent and the claims of the ’477 patent are highly similar. EUNSUNG-1034, 6-7. In the Sinclair Institution Decision, the Board stated:

For purposes of deciding whether to institute trial, we find that the present record sufficiently shows that the combination of Karasiuk and Palmer discloses or suggests the limitations of the challenged claims. We also credit the unrebutted testimony of Mr. Simon that **a person having ordinary skill in the art would have been motivated to combine the multiple containers, selector means, and modular structure as taught by Palmer, with the handheld device, collection reservoir, vacuum source, and other relevant components taught by Karasiuk for the reasons discussed herein and of record.** On the current record, we further credit the unrebutted testimony of Mr. Simon that a person of ordinary skill in the art would

have had a reasonable expectation of success in such a combination. Accordingly, on the present record, we conclude there is a reasonable likelihood that Petitioner will succeed in demonstrating that claims 1–3, 8–12, 14–16, 22, 23, 26, 28, 29, 34–37, 39, 40, and 45 of the '287 patent are rendered obvious by the combined disclosures of Karasiuk and Palmer.

...

For purposes of deciding whether to institute trial, we find that the present record sufficiently shows that the combination of Karasiuk, Palmer, and Trueba discloses or suggests the limitations of the challenged claims. We also credit the unrebutted testimony of Mr. Simon that **a person having ordinary skill in the art would have been motivated to modify the combined system of Karasiuk and Palmer by including Trueba's computer control for the reasons discussed herein and of record.** On the current record, we further credit the unrebutted testimony of Mr. Simon that a person having ordinary skill in the art would have had a reasonable expectation of success in implementing such a combination. Accordingly, on the present record, we conclude there is a reasonable likelihood that Petitioner will succeed in demonstrating that claims 1–10, 12, 17–20, 22–26, 28–36, and 40–44 of the '287 patent are rendered obvious by the disclosures of Karasiuk, Palmer, and Trueba.

EUNSUNG-1034, 17-18, 21-22. With these findings, the institution decision in the *Sinclair* case confirms the strength of the Karasiuk-Palmer and Karasiuk-Palmer-Trueba combinations. Because the Board has already endorsed the combination of prior art applied in this petition and endorsed how that same combination renders obvious similar claims, the merits are strong and Board resources are well-spent resolving the obviousness grounds that are presented here and that are already being considered by the Board.

IV. CONCLUSION

For the foregoing reasons, none of the arguments raised by HF favor discretionary denial. Petitioner therefore respectfully requests that this case proceed to an institution determination on the merits.

Respectfully submitted,

Dated June 27, 2025

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CERTIFICATION UNDER 37 CFR §42.24

Under the provisions of 37 CFR § 42.24(d), the undersigned hereby certifies that the word count for the foregoing Petitioner's Opposition to Patent Owner's Discretionary Denial Brief totals 8,824 words, which is less than the 14,000 words allowed under 37 CFR § 42.24.

Respectfully submitted,

Dated June 27, 2025

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CERTIFICATE OF SERVICE

Pursuant to 37 CFR §§ 42.6(e)(4) and 42.205(b), the undersigned certifies that on June 27, 2025, a complete and entire copy of this Petitioner's Opposition to Patent Owner's Request for Discretionary Denial of Institution and Accompanying Exhibits were provided by email to the Patent Owner by serving the correspondence email address of record as follows:

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