

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

EUNSUNG GLOBAL CORP.,

Petitioner,

v.

HYDRAFACIAL LLC

Patent Owner.

Case No. IPR2024-01491
U.S. Patent No. 11,865,287

DECLARATION OF ELLIOT DUBOYS, MD, FACS

I declare that all statements made herein on my own knowledge are true and that all statements made on information and belief are believed to be true, and further, that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code.

Dated: 1/15/25

By: 
Elliot Duboys, MD, FACS

1. I, Elliot Duboys, am making this declaration at the request of Patent Owner HydraFacial LLC in the matter of the *Inter Partes* Review No. IPR2024-01491 of U.S. Patent No. 11,865,287 (“the ’287 patent”). I understand that this declaration is being submitted in this proceeding as Exhibit 2002.

2. I am being compensated for my work in this matter at my standard hourly rate for consulting services. My compensation in no way depends on the outcome of this proceeding.

3. In addition to my own knowledge and expertise, I have reviewed and considered the following written materials in conducting the analyses and forming the opinions set forth in this declaration.

Exhibit or Paper No.	Description
2	Eunsung’s Petition for Inter Partes Review
1001	U.S. Patent No. 11,865,287 (“’287 patent”)
1002	Excerpts from the file history of the ’287 patent
1003	Declaration of Eric Simon
1004	U.S. Publication No. 2003/0212415 (“Karasiuk”)
1005	U.S. Patent No. 5,199,604 (“Palmer”)
1006	U.S. Publication No. 2003/0093089 (“Greenberg”)
1007	U.S. Patent No. 6,390,815 (“Pond”)
1008	U.S. Patent No. 6,684,880 (“Trueba”)

Exhibit or Paper No.	Description
1009	U.S. Patent No. 4,512,764 (“Wunsch”)
1010	U.S. Publication No. 2003/0018252 (“Duchon”)
1011	U.S. Patent No. 4,215,476 (“Armstrong”)
1013	Burgess, Cheryl M., Cosmetic dermatology, Heidelberg, Germany: Springer, 2005 (“Burgess”)
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”)
2005	2016-05-09 Order Granting Plaintiff’s Motion for Summary Judgment, <i>Edge Systems LLC v. Aguila</i> , Case No. 14-cv-24517, D.I. 225 (S.D. Fla. May 09, 2016)
2006	2014-12-19 Motions Hearing Transcript, <i>Edge Systems LLC v. Aguila</i> , Case No. 14-cv-24517, D.I. 55 (S.D. Fla. Dec. 19, 2014)
2007	Report and Recommendations on Plaintiff’s Application for Preliminary Junction, <i>Edge Systems LLC v. Aguila</i> , Case No. 14-cv-24517, D.I. 81 (S.D. Fla. Jan. 29, 2015)
2008	Order Adopting D.I. 81 Report and Recommendation, <i>Edge Systems LLC v. Aguila</i> , Case No. 14-cv-24517, D.I. 89 (S.D. Fla. Feb. 24, 2015)
2011	U.S. Publication No. 2001/004951 (Coleman)
2012	Loesch, et al., Skin Resurfacing Procedures: New and Emerging Options, Clinical Cosmetic, and Investigational Dermatology, 2014:7, 231-241
2013	Kempiak, et al. Superficial Chemical Peels and Microdermabrasion for Acne Vulgaris, <i>Senin Cutan Med Surg</i> , 27:212-220 (2008)

Exhibit or Paper No.	Description
2014	U.S. Patent No. 6,582,442 (“Simon”)
2015	Printout of webpage: https://www.celluma.com/products/celluma-pod
2016	Press Release for 2023 DERMASCOPE Awards
2017	2022 NewBeauty Award - Best Hydrating Facial
2018	2023 NewBeauty Award - Best Hydrating Facial
2019	2024 NewBeauty Award - Best Hydrating Facial
2020	2020 NewBeauty Award - Best Facial
2021	2016 NewBeauty Award - Best Facial
2022	Haught Beauty - Green Article
2023	NewBeauty - Shridharani Article

To the extent not listed above, I have also reviewed any other documents or materials discussed or cited in this declaration.

I. EXPERIENCE AND QUALIFICATIONS

4. I am a Board-Certified Plastic Surgeon with over 40 years of experience as a practicing physician. I currently have an active clinical practice, where I perform or supervise a variety of cosmetic procedures including hydrodermabrasion.

5. I obtained a Bachelor’s of Science degree in Biology from Fairleigh Dickinson University in 1970 and obtained my medical degree from Université

Libre de Bruxelles (Free University of Brussels in 1977). I completed an internship and residency in General Surgery at the State University of New York – Stony Brook from 1977 to 1982. I then went on for additional training in Plastic Surgery at Nassau University Medical Center between 1982 and 1984.

6. I am currently a Plastic Surgeon at Associated Plastic Surgeons & Consultants, PC. I perform all types of reconstructive, cosmetic and craniofacial surgery, as well as pediatric plastic surgery for birth defects. In addition to offering and performing surgical procedures, I perform and supervise a variety of skin rejuvenation procedures, including hydrodermabrasion.

7. In addition to my active private practice, I am also an Associate Professor (Emeritus) of Plastic Surgery at Stony Brook University Medical Center and Nassau University Medical Center where I have been involved in the training and supervision of plastic surgical residents and fellows. I also occasionally precept medical students and family practice residents from New York College of Osteopathic Medicine, where I hold the title of Adjunct Associate Professor.

8. I have been named to the Castle Connolly Guide to the Best Plastic Surgeons in New York continuously since 1997. I have also been included in Newsday's Top 10 Plastic Surgeons since 2010.

9. I am a member of a variety of prestigious medical organizations including The American Society of Plastic & Reconstructive Surgeons, The

American Burn Association, and the American Cleft Palate – Craniofacial Association. Additionally, I am also a member of numerous local and regional surgical and plastic surgical associations.

10. My *curriculum vitae* lists additional information about my professional background, qualifications, and publications. A true and correct copy of my *curriculum vitae* is provided as Exhibit 2003.

II. RELEVANT LEGAL STANDARDS

11. I am a medical doctor by training and profession. The opinions I express in this declaration involve application of my education, training, and technical knowledge and experience.

12. Although I have been involved as a technical expert in patent matters in the past, I am not an expert in patent law. Therefore, I have been advised by HydraFacial’s counsel of certain principles of patent law applicable in this matter, which I have applied in arriving at my opinions. The paragraphs below express my understanding of how I must apply, and have applied, these principles in conducting my analyses and reaching the opinions set forth in this declaration.

13. I understand that, in assessing the patentability of a patent claim, the Patent Office generally construes claim terms by giving them their ordinary and customary meaning, as they would have been understood by a person of ordinary skill in the art (“POSITA”) at the time of the invention in view of the intrinsic record

(patent specification and prosecution history). However, I understand that the inventors may, in the patent specification, expressly define a claim term to have a meaning that differs from the term's ordinary and customary meaning. I also understand that the inventors may disavow or disclaim certain claim scope, thereby departing from the ordinary and customary meaning, when the intrinsic record demonstrates that a clear and unambiguous disavowal or disclaimer has occurred. I understand that extrinsic evidence, such as relevant technical literature and dictionaries, may be useful in ascertaining how a POSITA would have understood a claim term, but the intrinsic record is the primary source for determining the meaning of claim terms. For the purposes of this review, and to the extent necessary, I have interpreted each claim term in accordance with the principles set forth in this paragraph.

14. It is my understanding that a claim is unpatentable as “anticipated” under 35 U.S.C. § 102 if a single prior art reference discloses every limitation of the claim, arranged as in the claim. I understand that a prior art reference does not anticipate a claim, however, when it discloses multiple, distinct teachings that a person of ordinary skill in the art might somehow combine to achieve the claimed invention. I understand that anticipation has not been alleged in the Petition, and, thus, is not at issue in this proceeding.

15. I understand that a claim is unpatentable under 35 U.S.C. § 103 if the claimed subject matter as a whole would have been obvious to a person of ordinary skill in the art at the time of the alleged invention. I also understand that an obviousness analysis takes into account the following factors, which are sometimes referred to as the *Graham* factors: (1) the scope and content of the prior art, (2) the differences between the claimed subject matter and the prior art, (3) the level of ordinary skill in the art at the time of the invention, and (4) “objective indicia of non-obviousness,” also referred to as secondary considerations of non-obviousness.

16. I understand from counsel that the objective indicia can be important evidence in evaluating whether a patent would have been obvious, and I understand that such evidence must be considered as part of the obviousness analysis when presented. I also understand that the objective evidence of secondary considerations of non-obviousness can include, for example, copying of the invention by others in the field; praise of the invention by others; commercial success of products covered by the patent claims; a long-felt but unmet need for the invention; and unexpected results achieved by the invention.

17. I also understand from counsel that for the objective indicia to be relevant to the issue of non-obviousness there must be a nexus between the claims and the objective evidence. I understand that a nexus may be presumed when the

asserted objective evidence is tied to a product that embodies the claimed features and is coextensive with them.

18. I have spoken with another of HydraFacial's expert witnesses, Mr. Karl Leinsing. I understand from Mr. Leinsing that it is his opinion that the claims of the '287 Patent are embodied by the HydraFacial products – Tower, Allegro, Elite, and Syndeo – and are coextensive with them, and thus a nexus may be presumed. I also understand that Mr. Leinsing is providing additional testimony related to the existence of a nexus between the claimed features and the objective indicia that is independent of relying on the presumption. In my analysis herein, I have provided opinions on the categories of copying and praise from others related to the products embodying the claims.

19. In determining the scope and content of the prior art, it is my understanding that it is appropriate to consider a prior-art reference in an obviousness analysis if it falls within the field of the inventor's endeavor or is reasonably pertinent to the particular problem with which the inventor was involved. A reference is reasonably pertinent if it logically would have come to an inventor's attention in considering his or her problem.

20. To assess the differences between prior art and the claimed subject matter, it is my understanding that 35 U.S.C. § 103 requires the claimed invention to be considered as a whole. This "as a whole" assessment requires showing that

one of ordinary skill in the art at the time of invention, confronted by the same problems as the inventor and with no knowledge of the claimed invention, would have selected the elements from the prior art and combined them in the claimed manner. I understand that an assessment of what a reference discloses or teaches—for purposes of an anticipation analysis or an obviousness analysis—must be conducted from the perspective of a POSITA at the time of the invention.

21. I also understand that a patent challenger must demonstrate with evidence that a skilled artisan would have been motivated to combine the teachings of the prior art references to achieve the claimed invention, and that the skilled artisan would have had a reasonable expectation of success of doing so.

III. LEVEL OF ORDINARY SKILL IN THE RELEVANT ART

22. The relevant field of art is skin treatment, and more specifically apparatuses and methods of treating a person's skin, as described in the '287 Patent.

23. I understand that the level of ordinary skill in the art for the '287 patent is determined as of December 30, 2005, which is the earliest effective filing date of the patent. I also understand that Eunsung has not alleged that the '287 patent is not entitled to the December 30, 2005 effective filing date.

24. I understand from counsel that Mr. Leinsing has opined as follows regarding the level of ordinary skill:

A person having ordinary skill in the art would have had a degree in science or engineering plus a minimum of three years of experience in the medical device industry. Alternatively, a product designer could have an additional two years of experience in the industry in lieu of a formal science or engineering degree. The person of ordinary skill would also consult with a physician as needed to understand the medical implications of the disclosed device, including the effect of the device on the skin.

25. I agree with this understanding of the level of ordinary skill in the art and have adopted it in providing my opinions herein.

26. As a medical practitioner with significant experience working with microdermabrasion and hydrodermabrasion devices, I understand the level of knowledge and skill that a POSITA would have possessed in December 2005. Through my experiences, I am familiar with what a POSITA would have understood regarding microdermabrasion and hydrodermabrasion at the relevant time.

27. I understand that Eunsung has proposed the following definition of a person of ordinary skill in the art (a “POSITA”) with respect to the ’287 patent:

A person having ordinary skill in the art (POSITA) at the time of the alleged invention would have had an undergraduate degree (B.S.) in Mechanical Engineering or equivalent knowledge, training, or experience, with two years of work experience in the design of mechanical products, design of fluidic systems, and/or the design of devices intended for medical or cosmetological applications.

Additional education or industry experience may compensate for a deficit in one of the other aspects of the requirements stated above.

Pet., 2-3. I disagree with Eunsung's definition because it ignores important knowledge of medical implications that would have been necessary for a POSITA to assess in evaluating the scope and content of the prior art. A POSITA would have considered not just whether components could be physically connected but also the effects of prior art skin treatments on the skin. Indeed, in assessing obviousness, the expected medical effectiveness of skin treatments would have been more important to a POSITA than the mere ability to physically connect components.

28. While I believe my definition of a POSITA is more appropriate for the art of the '287 patent, I alternatively applied Eunsung's definition of a POSITA and determined that my opinions are the same under either definition. Specifically, as explained fully below, in my opinion the challenged claims of the '287 patent would not have been obvious to a POSITA under either my definition or Eunsung's definition.

IV. BACKGROUND AND PATENTED TECHNOLOGY

A. The Skin Cycle

29. The skin is comprised of three layers of tissue including the epidermis, the dermis, and the subcutaneous layer or hypodermis. The skin covers the entire external surface of the body and is the body's largest organ.

30. As skin cells die, they flake off the superficial epidermis and are replaced by new cells from the deeper layers of the epidermis. During the maturation process, the new cells move from immature cells of the stratum basale (stratum germinativum) to the most superficial layer of the epidermis – the stratum corneum. As the new cells “move upward”, they harden, desiccate, and die.

31. Microscopically, the stratum corneum consists of 15-20 layers of keratinized, flattened cells that are devoid of nuclei and cell organelles and as such are not alive. Maturation senescence is the process of a newly formed cell changing to a cell of the stratum corneum. The final result of maturational senescence is flaking, scaling and desquamation of epidermal cells. Daily life activities can wear away or wash away these cells.

32. Skin maturation cycles can vary based on age. For example, the skin maturation cycle takes about 14 days for an infant. In contrast the skin maturation cycle can take over 50 days for an adult. Slower cycles of cell production and replacement can result in dead cells accumulating on the surface causing blunting, and loss of radiance or luster. This can be caused by discolored and irregular cells becoming trapped on the surface of skin, which in turn can cause spots and discoloration.

33. Age along with other factors such as (but not limited to) environmental, hormonal, nutritional, illness, sun exposure, and stress can affect the skin cycle.

34. Skin rejuvenation treatments are used to maintain healthier, softer and more luminous looking skin. These types of treatments can remove dead cells from the surface. By removing the dead cells, the skin maturation process can be sped up and in turn reveal a more healthy, vibrant and glowing skin.

B. Prior Art Microdermabrasion

35. Skin rejuvenation treatments include treatments such as laser resurfacing, mechanical resurfacing and chemical peels. I briefly discuss mechanical resurfacing techniques such as microdermabrasion and hydrodermabrasion, as these are the techniques described in the '287 Patent.

36. Skin rejuvenation treatments stimulate collagen growth. Collagen and elastin are responsible for giving skin its firmness and elasticity. However, as we age, the body's natural production of collagen and elastin declines, eventually leading to wrinkles, sagging skin, and dull skin. By stimulating collagen growth, skin rejuvenation treatments improve skin smoothness and sagging.

37. Microdermabrasion is one type of skin rejuvenating treatment. A microdermabrasion procedure or treatment uses a method of mechanical exfoliation. An instrument is used to remove the most superficial layers of dead skin cells from the epidermis. A microdermabrasion treats areas of the skin by using an instrument with an abrasive tip that directly contacts the skin, or by applying fine abrasive particles between the tip and the skin. When applying abrasive particles, often

aluminum oxide crystal particles are used, which have sharp edges that provide the abrasive effect on the skin. EUNSUNG-1013 at 76 (native page number). In many cases a vacuum source is used to remove the exfoliated skin cells. *Id.* However, microdermabrasion has many drawbacks.

38. For example, microdermabrasion is inappropriate for sensitive skin and can be a painful experience. *See* EX2012 (Loesch, et al., Skin Resurfacing Procedures: New and Emerging Options, Clinical Cosmetic, and Investigational Dermatology, 2014:7, 231-241) at 238. Due to its harsh nature, microdermabrasion often leaves patients with red skin, dryness, and photosensitivity. *Id.*

39. In addition, microdermabrasion through the application of fine abrasive particles is associated with risks. In such treatments, crystals such as aluminum oxide crystals are propelled at the face. Chronic aluminum oxide exposure has been associated with respiratory disease, pulmonary fibrosis, interstitial pneumonia and papillomas of the larynx and trachea. *See* EX2013 (Kempiak, et al. Superficial Chemical Peels and Microdermabrasion for Acne Vulgaris, *Senin Cutan Med Surg*, 27:212-220 (2008)) at 219. In addition, treatment may be complicated by eye irritation if crystals get in a patient or practitioner's eyes. *Id.* At a minimum, eye protection must be worn, limiting a practitioner's ability to treat fine lines and wrinkles near the eyes.

40. The '287 patent expressly distinguishes the technology disclosed therein from prior-art microdermabrasion technology. It explains that microdermabrasion “refers generally to a procedure in which the surface of the skin is removed due to mechanical rubbing by a handpiece emitting a stream of sand or grit” which may contain “crystals of aluminum oxide, sodium chloride, or sodium bicarbonate” to wear away “cell layers of the skin.” EUNSUNG-1001, 1:65-2:7. The patent further explains that the “momentum of the grit tends to wear away two to three cell layers of the skin with each pass of the handpiece.” *Id.*, 2:3-5. One problem with microdermabrasion is it “removes moisture from the skin.” *Id.*, 2:16. To mitigate this problem, “the procedure is always followed by the application of moisturizing creams.” *Id.*, 2:17-18. But “the moisturizing elements only work as deep as the active ingredients can passively migrate through the remaining epidermis.” *Id.*, 2:19-22.

41. In contrast to microdermabrasion’s stream of sand or grit, the '287 patent invention discloses a system for treating skin that “deliver[s] **fluid** from at least one of the **plurality of fluid sources** to the handpiece assembly.” *Id.*, 2:34-35. Consistent with this distinction, the claims of the '287 patent do not cover prior-art microdermabrasion treatments that solely use dry particles. Rather, every claim of the '287 patent recites at least two containers of **fluids** for treating the skin. The '287 patent also describes and claims a novel and non-obvious system that allows a

clinician to select from multiple different treatment fluids to connect to the handpiece for application to the patient's skin during treatment.

C. HydraFacial and Hydrodermabrasion

42. The '287 Patent, and the commercial HydraFacial devices, revolutionized the field by creating a market for hydrodermabrasion. Hydrodermabrasion, like microdermabrasion, uses instruments to exfoliate skin. However, hydrodermabrasion is less harsh on a patient's skin. In addition to exfoliating the skin, hydrodermabrasion instruments simultaneously deliver treatment serums or solutions to the exfoliated skin. The use of liquid during the treatment allows for smoother movement of the device and offers immediate relief and hydration to treated skin. By simultaneously exfoliating, opening pores, and administering treatment fluids, patients receive deeper penetration of treatment fluids, resulting in more effective treatments. Simultaneously abrading while delivering serums to the skin surface allows patients to leave a treatment with less redness and irritation.

43. Hydrodermabrasion with abrading structures has proved particularly effective. It has also reduced the risk of harm to both patient and practitioner by removing the need for crystals and providing a device that suctions away dead skin and debris, reducing unwanted dust, while simultaneously hydrating the skin and enhancing treatment serum penetration.

44. Microdermabrasion is performed using an abrading surface, sometimes covered with a layer of diamond grit, without simultaneous administration of fluids. Such treatments are painful and could even damage the skin. Hydrodermabrasion results in reduced side effects compared to microdermabrasion, such as sensitivity and redness, which can result in a better treatment outcome. Lastly, hydrodermabrasion provides a more pleasant and relaxing experience for a patient because it is less painful. Taking all of these factors into consideration, it is my opinion that hydrodermabrasion, as described in the '287 Patent, has proven to be a significant advancement in skin rejuvenation treatments.

45. My opinion is confirmed by observations in my own practice. Initially, my clinic offered only microdermabrasion treatments. In roughly 2015, I purchased a HydraFacial Tower device. The HydraFacial treatments cost nearly twice as much as microdermabrasion treatments. Despite the sizable price difference, I observed that patients introduced to the HydraFacial treatments consistently elected to continue with that procedure instead of the microdermabrasion treatments that we offered. Due to lack of patient interest, we have since completely phased out microdermabrasion treatments.

46. HydraFacial markets and sells its hydrodermabrasion systems throughout the United States to end users such as dermatologists, plastic surgeons, cosmetic physicians, and aestheticians at medical spas. Below is HydraFacial's

latest flagship product, the Syndeo, along with the three treatment solution bottles and the cleaning solution bottle.



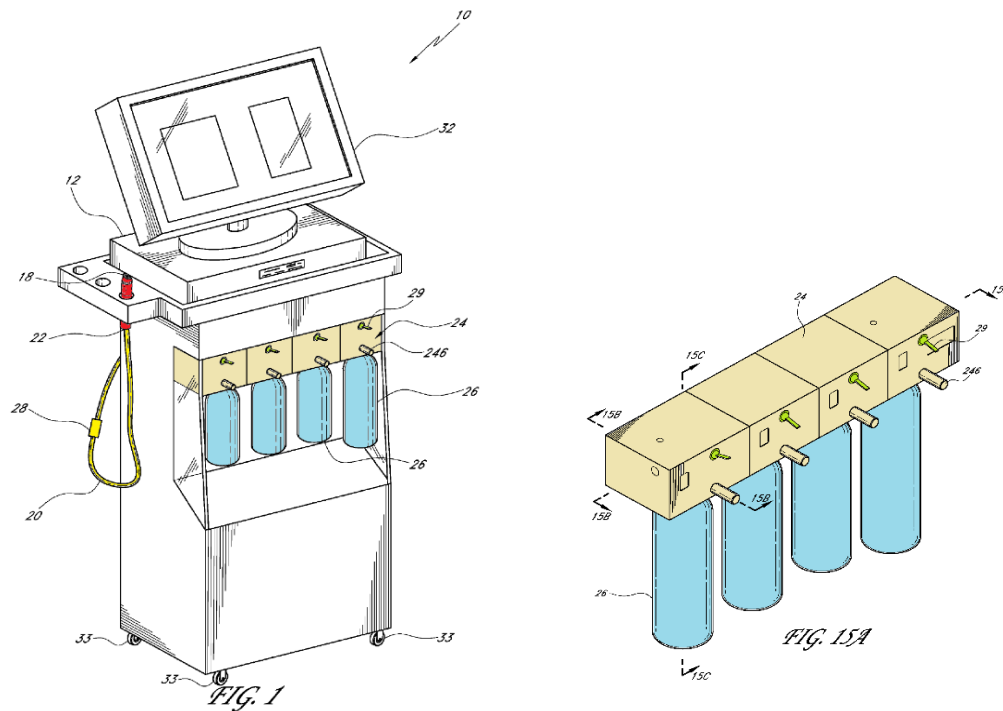
47. I am aware the HydraFacial products include red and blue light therapy handpieces, but they are generally considered to be insignificant add-on components to the HydraFacial system as a whole. For example, the effects of red and blue light therapy can be achieved using less expensive light therapy devices as opposed to a HydraFacial product. *See, e.g., EX2015* (handheld red, blue and infrared light treatment device sold for \$299).

48. In addition to providing improved and less painful treatment, the '287 Patent, which is also incorporated into the HydraFacial devices, improved the rapidity with which practitioners could perform treatments, by allowing numerous serums to be available for use at the touch of a button. The improved rapidity of treatment is due to the ability of practitioners to put different serums in the multiple bottles on the device and switch between them. This not only increased efficiency in changing serums, but also avoided the need for a manual application of products.

49. HydraFacial created the field now known as “hydrodermabrasion.” HydraFacial’s hydrodermabrasion systems, including the Syndeo pictured above and the Tower product that I purchased in 2015, are protected by numerous United States patents, including the '287 patent.

D. The Patented Technology

50. The '287 patent discloses a skin-treatment system that applies treatment fluids to a person’s skin while simultaneously suctioning spent treatment fluid away from the skin and into a waste container. EUNSUNG-1001, 5:63-6:2, 7:59-8:5. The user can select a desired treatment media from multiple treatment-fluid containers (shown in blue below). *Id.*, 6:21-30, 15:61-63, 17:17-29.



EUNSUNG-1001, Figs. 1, 15A.

51. HydraFacial's patented invention can also include a block (shown in beige above). The block can connect to the fluid containers of the system and, when there is at least one container connected to the system, the block is in fluid communication with the handpiece (shown in red above) through a supply conduit (shown in yellow above). *Id.*, 2:30-35, 3:57-59, 5:28-31, 6:22-24, 17:17-29; 18:6-18. The patented system also contains a vacuum source which, when the user places the handpiece tip against the skin, creates an area of negative pressure inside the tip. *Id.*, 11:4-10. That negative pressure pulls the patient's skin against the handpiece tip. *Id.*, 11:4-13. The negative pressure also draws treatment fluid from the selected container while simultaneously suctioning waste into a waste container. *Id.*, 7:59-

8:5, 11:4-17. The multiple treatment-fluid containers allow the physician or esthetician using the device to selectively draw treatment fluid from the containers and thereby provide a customized, multi-step treatment for each patient. *Id.*, 6:24-37, 16:34-59.

52. The '287 patent describes the same treatment fluids used in the Syndeo and HydraFacial's other commercial systems: "active-4TM" as the cleansing and exfoliating serum (*id.*, 15:61-16:6); "Beta-HDTM" as the salicylic acid extraction serum (*id.*, 16:6-16:14); and "Antiox-6TM" as the antioxidant hydration serum (*id.*, 16:14-23).

V. CLAIM CONSTRUCTION

A. "treatment fluid" (claims 1 and 37)

53. Claims 1 and 37 of the '287 recite a system for treating skin that includes at least two containers that each contain a "treatment fluid." I was asked to evaluate whether the plain and ordinary meaning of "treatment fluid," in the context of the '287 patent, encompasses dry solid particles like those used in the Greenberg reference Eunsung relies on for Grounds 2A and 2B. For the reasons set forth below, I conclude that the plain and ordinary meaning of "treatment fluid" does not encompass such dry solid particles.

54. I understand that Eunsung does not propose any construction for “treatment fluid.” Pet., 2. However, Eunsung interprets the following paragraph as capturing dry “abrasive particles” within the term “fluid.”

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.

EUNSUNG-1001, 5:47-54 (cited by Pet., 69). Eunsung focuses on the statement about “a plurality of fine solids” to allege that “abrasive particles” in the prior art can be a “treatment fluid” in the context of the ’287 patent. Pet., 69.

55. In my opinion, Eunsung’s suggestion that a collection of dry solid particles can be a “treatment fluid” is incorrect. A POSITA would have understood that a collection of dry solid particles standing alone is not a “treatment fluid” under the plain and ordinary meaning of that term in view of the specification and in view of the patent’s prosecution history. More specifically, Eunsung’s interpretation is incorrect for at least four reasons.

56. First, Eunsung’s interpretation is inconsistent with the well-understood meanings of the two common words “treatment” and “fluid.” The ’287 patent does

not define the composed term “treatment fluid.” However, a POSITA would have readily understood the meaning of “treatment fluid” because it is composed of two common, ordinary words with straightforward meanings. The term “fluid” does not refer to a solid. And the term “treatment” is an adjective indicating, in the context of the ’287 patent, that the “fluid” is used for a skin treatment. Therefore, in my view, Eunsung’s suggestion that a collection of dry solid particles can be a “treatment fluid” is incorrect.

57. Second, my understanding of the claim language, specification, and prosecution history informs me that a “treatment fluid” is not a collection of dry solid particles. For example, both claims 1 and 37 recite a “system for treating skin,” indicating that the claimed *treatment* fluids are used for a skin treatment. Moreover, both claimed systems include components in “fluid communication” with each other such that the treatment fluids can flow freely between components. A POSITA would have understood that fluids can flow freely between components but solids cannot.

58. The patent specification also supports my opinion that “treatment fluid” does not include dry abrasive particles. As explained above, the specification expressly distinguishes prior-art microdermabrasion using dry particles such as sand or grit to wear away skin from embodiments of the invention, which “deliver *fluid* from at least one of the *plurality of fluid sources* to the handpiece assembly.”

EUNSUNG-1001, 2:34-35. In my opinion, A POSITA would have understood that the inventors claimed the use of treatment *fluids* to distinguish over prior-art microdermabrasion treatments that solely used dry particles such as sand and grit. Indeed, the patent distinguishes “wet” and “dry” modes of operation, explaining that the “wet” mode applies treatment materials to the skin, but the “dry” mode does not:

During some skin treatment procedures, treatment materials from multiple containers 26 are sequentially or simultaneously applied to the patient’s skin during a “wet” mode of operation. ... In some embodiments, the console 12 can be used for a “dry” mode of operation. That is, the console 12 can be used to exfoliate skin, for example, without [sic: while] delivering little or substantially no treatment fluid.

EUNSUNG-1001, 6:27-35. That the inventors described the mode using treatment materials as “wet” and the one using little or substantially no treatment fluid as “dry” demonstrates that the treatment fluids are not dry solid particles.

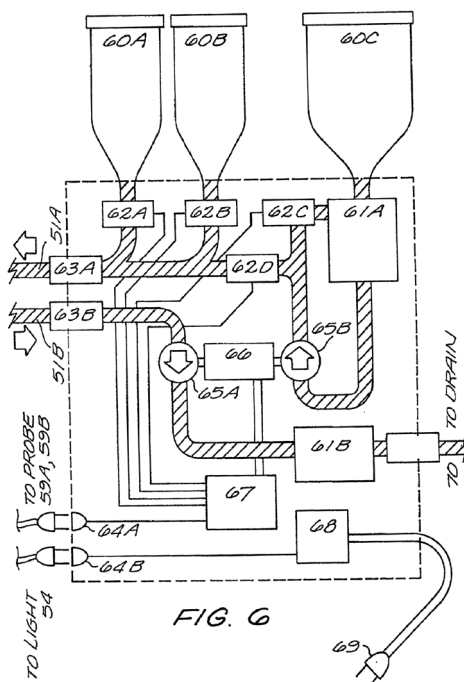
59. Further, the patent also indicates, “During wet mode, fluid can be passed out of the tip 34 onto the patient’s skin.” *Id.*, 13:21-22. It goes on to explain that the wet mode promotes *hydration* (*Id.*, 13:21-23), while dry mode “can be used for *non-hydration* procedures and may require less post-procedure clean up” (*Id.*, 13:31-33 (emphasis added)). The specification also explains:

Fluid traveling down the longer pathway is in contact with the person’s skin 80 for a longer period of time. Thus, tighter spirals lead to increased contact time between the fluid and the skin 80. These longer

contact times can increase the effectiveness of the fluid because the skin can ***absorb an adequate amount of active ingredients*** of the treatment material. Fluid retention time on the patient's skin can be increased to ***increase hydration, serum retention, and the like***.

EUNSUNG-1001, 10:9-17 (emphases added). Thus, the identified functions of longer fluid contact times—absorption of ingredients, hydration, and serum retention—are not functions performed by solids. Finally, the specification lists numerous examples of fluids—including serums, hydration agents and additives, acids, extracts, and other substances—that are undoubtedly liquids, not solids. *Id.*, 15:61-16:33.

60. Regarding the prosecution of the '287 patent, I understand that the Examiner cited the Coleman reference (EX2011) as prior art to the then-pending claims. EUNSUNG-1002, 196-204. The Examiner relied on Coleman Figure 6:



EX2011, Fig. 6 (cited by EUNSUNG-1002, 197). Coleman calls each of elements 60A, 60B, and 60C a “reservoir” containing a different substance:

Reservoir 60A is used to contain a benign abrasive; reservoir 60B is used to contain a chosen medicinal component or combination of medicines; and reservoir 60C is used to contain the sterile water.

EX2011, [0058]. Coleman gives three examples of benign abrasives: “rock salt, ice, and hardened starch.” *Id.*, [0015]. Thus, a POSITA would have understood the “benign abrasive” contained in reservoir 60A to be a collection of solid particles.

61. The Examiner found reservoirs 60B and 60C are containers containing two different treatment fluids. EUNSUNG-1002, 197. However, with respect to a dependent claim requiring *three* containers containing treatment fluid, the Examiner found “Coleman fails to disclose that all three containers contain fluid.” *Id.*, 203. The Examiner explained container 60A “contains abrasive material.” *Id.* Thus, the Examiner found Coleman’s “abrasive material”—solid particles such as rock salt, ice, or hardened starch—is not a treatment fluid. Based in part on that finding, the Examiner found the dependent claim allowable if rewritten in independent form. EUNSUNG-1002, 201-204.

62. Eunsung does not provide any evidence that rebuts my opinions regarding the meaning of “treatment fluid” to a POSITA in the context of the patent specification and the prosecution history. I understand that Mr. Simon asserts a

POSITA would have recognized Greenberg's particles to be examples of the "fine solids" mentioned in the '287 patent. EUNSUNG-1003, [321]. But Mr. Simon does not provide any evidence to support this conclusion.

63. Third, Eunsung ignores context from the specification showing that "fine solids" are not dry particles standing alone. Eunsung's cited paragraph lists "fine solids" among several examples—such as serums, water, saline, gel, fluidized material, and additives—that may be included in fluids, which tend "to flow or conform to the outline of its container." Nothing in the specification suggests the term "fine solids" refers to a stand-alone collection of dry particles. A POSITA would have understood that "fluidized material," as referenced in the cited paragraph, may include fine solid particles that are not fluid in their dry form but can be dissolved in a fluid. In the context of the '287 patent—including its disclosure that *wet* operations use fluid but *dry* operations do not—a POSITA would have understood that fluids may include "fine solids" dissolved in fluid but that dry particles alone are not fluids.

64. Fourth, neither the cited paragraph nor anything else in the specification defines "treatment fluid" as recited by claims 1 and 37. The cited paragraph refers to "treatment material," and, thus, provides no guidance as to the meaning of "treatment fluid," much less broaden its ordinary meaning to include solids. Moreover, the reference to "treatment material" is not a definition. It merely lists

examples of substances that may be included in “treatment material” in certain contexts but not in other contexts. A POSITA would not have considered the list of example substances as a definition in the specific context of the claimed invention, in which treatment fluid flows from containers to a fluidically connected handpiece for application to the skin. The list in the specification is overinclusive to encompass both the claimed context and a different context in which a solid treatment material is contained in the tip of the handpiece and can be released and applied to the skin when it engages treatment fluid:

In alternative embodiments, the tips can carry deployable material. The structure 151 can be in the form of a cavity or pocket that contain and carry material that is released when it engages the treatment fluid. The material in the cavities 151 can be made of any of the treatment materials disclosed herein, and can be in a solid form. For example, the cavities can hold lubricant or soap that is released when the tip is applied to skin.

EUNSUNG-1001, 11:43-50. The specification further explains:

The protruding member 124 can optionally contain treatment material. For example, the protruding members 124 can be generally cylindrical members having a passageway or chamber 127 that holds treatment material. Thus, fluid can be used in combination with treatment material coupled to the tip 34.

Id., 12:14-19. One example of a solid treatment material used in this manner is a medicament that is a “hardened grit that can be imbedded on the surface of the tip

34” of the handpiece. EUNSUNG-1001, 13:63-65. The specification states: “*If* a fluid is used, the fluid can facilitate the release of the medicament from the tip 34.” *Id.*, 13:65-67.

65. Thus, the specification refers broadly to “treatment material” to encompass both the claimed context in which treatment fluid flows from containers to the handpiece for application to skin and the described but unclaimed context in which the tip of the handpiece contains a solid treatment material that may be released when it engages treatment fluid. Nothing in the claim language, specification, or prosecution history suggests that the ’287 patent’s reference to “fine solids” broadens the term “treatment fluid” to cover a stand-alone collection of dry particles. At most, the reference to “fine solids” suggests solid particles dissolved in fluid.

66. For the reasons above, in my view, “treatment fluid” does not encompass a collection of dry solid particles.

B. “treatment material” (claims 11 and 22)

67. Claims 11 and 22 of the ’287 patent use the term “treatment material” instead of “treatment fluid.” On its face, the term “treatment material” seems broader than “treatment fluid.” However, in my opinion, the surrounding language of claims 11 and 22 restrict the treatment material actually usable with the apparatus of claim 11 or system of claim 22 to treatment material that can flow from containers

to a handpiece in fluid communication with the containers. Claim 11 recites a fluid control member “in fluid communication” with both first and second containers and a handpiece so that “the skin treatment apparatus is configured to selectively draw treatment material from the first container or the second container to the handpiece.” Similarly, claim 22 recites that “the working end of the handpiece is configured to be placed in fluid communication with the first container or the at least one additional container through the collection lumen.” While the specification does not define the phrase “in fluid communication with,” it is a common, well-understood phrase describing a connection between objects that allows fluid to flow between the objects. Thus, for practical purposes, the treatment material of claims 11 and 22, like the treatment fluid of claims 1 and 37, excludes a collection of dry solid particles.

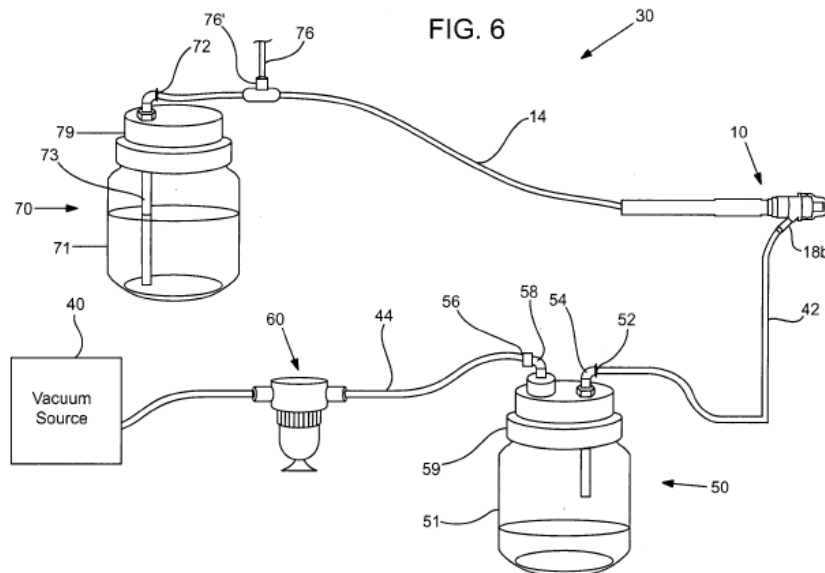
C. “fluid” (claim 26)

68. The term “fluid” in claim 26 should be interpreted like “treatment material” in claims 11 and 22. *See* EUNSUNG-1001, 5:52-54. As with claims 11 and 22, the surrounding language of claim 26 restricts the fluid usable with the system of claim 26 to fluid that can flow from containers to a handpiece in fluid communication with the containers. Claim 26 recites a system with a handpiece “in fluid communication with” a vacuum source and a block that receives fluid from three containers, such that the system may sequentially deliver fluid from the

containers to the handpiece. Thus, for practical purposes, the fluid of claim 26, like the treatment fluid of claims 1 and 37, excludes a collection of dry solid particles.

VI. PATENTABILITY OVER THE KARASIUK GROUNDS

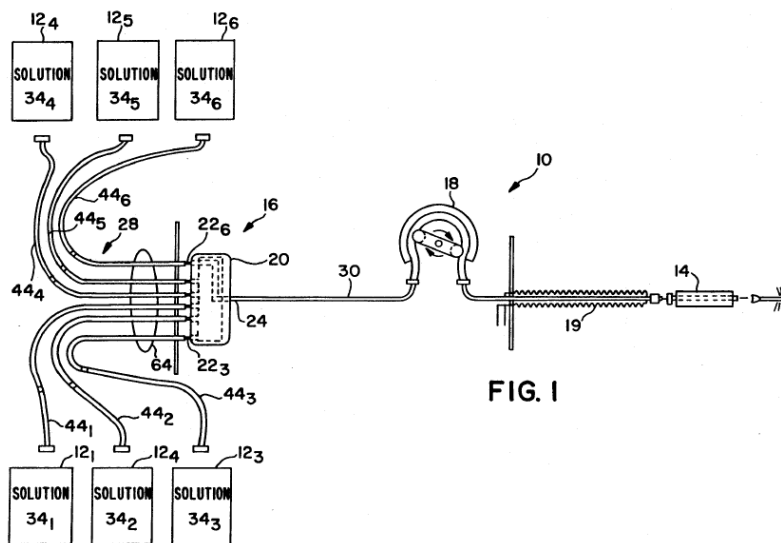
69. I was asked to analyze certain technical issues related to whether the challenged claims would have been obvious in view of Karasiuk and other prior art, as more fully explained below. In both Grounds 1A and 1B, Eunsung relies on at least Karasiuk combined with Palmer. In Ground 1A, Eunsung combines Karasiuk with Palmer to allege that all independent claims and some dependent claims would have been obvious. Pet., 1. As shown in Figure 6 below, Karasiuk is a microdermabrasion device that draws liquid from just one container during a microdermabrasion treatment.



EUNSUNG-1001, Fig. 6, [0020]. In my view, Karasiuk does not disclose a block for selectably connecting one of multiple skin-treatment containers to a handpiece.

Nothing in Karasiuk suggests separately storing and applying different treatment fluids in a single microdermabrasion treatment. At most, Karasiuk lists different solutions, suspensions, or compounds that can be contained “alone or in combination” in Karasiuk’s single reservoir 70. *Id.*, [0061].

70. Palmer is an irrigation system used in periodontal procedures. EUNSUNG-1005, 1:10-15. As such, Palmer delivers a “pulsed jet” of treatment solution at constant pressure and substantially constant volumetric flow rate to the treatment area in the patient’s mouth. *Id.*, 11:17-23 (pressure of 25 psi and flow rate of 22-25 mL/minute). Palmer employs a peristaltic pump 18 located upstream of handpiece 14 to generate the pulsed jet of solution, as shown in Fig. 1.



Id., Fig. 1. The handpiece sprays the pulsed jet directly at a treatment site in the patient’s mouth to irrigate it with the needed solution. *Id.*, 3:15-26. Unlike a microdermabrasion system, Palmer is a one-way irrigation system that lacks any

mechanism to vacuum the spent solution from the patient’s mouth and back through the handpiece.

71. Eunsung adds Trueba in Ground 1B for dependent claims having computing device limitations, and for a single limitation in claim 1 already addressed in Ground 1A. Pet., 53-56. Trueba involves a jet dispenser that combines Hewlett-Packard’s inkjet technology with pharmaceutical administration. EUNSUNG-1008, 1:7-12.

72. I was specifically asked to determine whether a POSITA would have been motivated to combine Karasiuk with Palmer in the manner proposed by Eunsung. For the reasons set forth below, I conclude that even if the Karasiuk-Palmer combination disclosed each limitation—which it does not—the combination would still fail to render the challenged claims unpatentable because a POSITA would not have been motivated to combine Karasiuk and Palmer.

73. Eunsung alleges a POSITA would have been motivated to modify Karasiuk to use multiple types of skin treatments stored in separate containers. Pet., 9. Eunsung alleges the motivation would have come from two sources: “Based on [1] general knowledge and [2] Karasiuk’s disclosure, a POSITA would have recognized the desirability of using multiple types of treatment solutions *during microdermabrasion.*” *Id.* But neither “general knowledge” nor “Karasiuk’s disclosure” provides a motivation to use multiple types of treatment solutions during

microdermabrasion, let alone to modify Karasiuk to include additional containers to hold the multiple treatment solutions and a “block” or other mechanism used during a skin treatment protocol.

1. “General Knowledge” Was Not a Motivation

74. The Petition includes no explanation of the “general knowledge” that would have supposedly motivated a POSITA to modify Karasiuk. It appears that Eunsung instead relies on analysis by Simon. Pet., 9 (citing EUNSUNG-1003, [78]-[79]). In my view, Simon’s “general knowledge” analysis is flawed for several reasons. Simon asserts that “multiple treatment solutions are desirable during microdermabrasion.” EUNSUNG-1003, 79 (citing Burgess (EUNSUNG-1013) and Lee (EUNSUNG-1003). But Simon’s cited evidence contradicts his assertion that treatment solutions are desirable *during microdermabrasion*. For example, the Burgess section cited by Simon states: “*When the treatment is completed*, residual crystals should be gently brushed off the skin,” then the skin can be “rinsed with tepid water and a moisturizer with adequate sunscreen applied.” EUNSUNG-1013, 86. This makes sense because, as Burgess explains, the traditional application of microdermabrasion involves the use of “fine, sharp crystals” to sandblast the skin. EUNSUNG-1013, 84. It would be antithetical to apply moisturizer during a microdermabrasion procedure that is blasting the skin with fine, sharp crystals. Simon himself agrees, in describing Burgess, that moisturizer is applied “when

microdermabrasion *is completed.*” EUNSUNG-1003, [79]. Thus, no treatment solution is applied *during* microdermabrasion, let alone multiple treatment solutions, as Simon alleges.

75. Next, Simon cites to Lee as “general knowledge,” but Simon misapprehends the reference when he alleges “Lee discloses delivering vitamin C during microdermabrasion.” *Id.* (citing EUNSUNG-1016, 1). In fact, Lee involves testing “the topical delivery of vitamin C” *after* laser treatment or microdermabrasion “using an *in vitro* model of nude mouse skin.” EUNSUNG-1016, 1. The *in vitro* testing involves treating excised mouse skin with a laser or microdermabrasion, then mounting the skin fragment for 12 hours in a “Franz vertical diffusion assembly” filled with a vitamin C formulation to determine the “amount of vitamin C retained in the skin.” *Id.*, 2 (Materials and Methods). In no way does Lee provide any motivation to use multiple types of treatment solutions during microdermabrasion as Simon alleges.

76. Eunsung also relies on “general knowledge” to argue that “fluid delivery techniques required to use multiple containers with Karasiuk’s handpiece were well-known and part of a POSITA’s general knowledge.” Pet., 10 (citing EUNSUNG-1003, [80]-[84]). Eunsung cites only to Simon, but his testimony is unhelpful as it relates to, for example, Hewlett Packard’s jet dispenser system (Trueba) and multiple dental irrigation systems (Palmer, Armstrong, and Pond). It

is unclear to me how incorporating structure from any of these different devices would, as Simon and Eunsung claim, make Karasiuk's microdermabrasion device "more flexible or functional." *Id.* Using multiple containers in some contexts would not have in any way suggested to a POSITA that using multiple containers would have improved Karasiuk's single-container design. In my opinion, Eunsung's reference to a generic advantage, such as flexibility and functionality, does not provide a POSITA with a motivation to modify Karasiuk because it lacks specific evidence why a POSITA would have made the modification.

77. Thus, in my view, Eunsung has failed to show that "general knowledge" provides a motivation to modify Karasiuk to include multiple containers with multiple types of treatment solutions.

2. "Karasiuk's Disclosure" Was Not a Motivation

78. Eunsung also points to "Karasiuk's disclosure" itself as a motivation to modify Karasiuk. But, like the "general knowledge," the argument is flawed. There is no disclosure in Karasiuk of using multiple types of treatment solutions from multiple containers in a microdermabrasion treatment, and Eunsung does not argue otherwise. The only Karasiuk disclosure that Eunsung cites is: (1) the types of compounds that can be added to Karasiuk's single reservoir 70 (e.g., "lotions/vitamins or other fluids"); and (2) Karasiuk's boilerplate language that "various [undescribed] changes" may be made "without departing from the true

spirit and scope of the invention.” Pet., 9-10 (quoting EUNSUNG-1004, [0024], [0047], [0061], [0070]). Simon cites and quotes these same passages from Karasiuk without further explanation. EUNSUNG-1003, [78], [80].

79. Regarding the types of compounds disclosed in Karasiuk, they include, e.g., abrasive particles, bleaching formulations, acne treatment formulations, lines/wrinkle treatment formulations, hydrating formulations, and antioxidant formulations. EUNSUNG-1004, [0061]. Karasiuk explains they can be “employed alone or in combination with other compounds” in a single reservoir 70. *Id.* A POSITA would have appreciated the simplicity of combining various constituents in a single step as part of a single mixture to achieve the benefits of each individual constituent. Eunsung points to no evidence a POSITA would have doubted the efficacy of applying the chosen constituents in a single step as part of a single mixture.

80. Turning to Karasiuk’s boilerplate, Eunsung fails to explain how its mention of “various changes” and “the true spirit and scope of the invention” (EUNSUNG-1004, [0070]), would have motivated a POSITA to make any particular modification at all, let alone the detailed and specific modifications proposed by Eunsung of adding multiple types of treatment solutions in multiple containers, along with a block and associated connections that allow selection of the treatment

solutions. In my view, such broad and vague language would not have provided a specific motivation to modify Karasiuk in the manner Eunsung proposes.

81. Thus, “Karasiuk’s disclosure” contains no evidence of a motivation to modify Karasiuk’s system to include additional containers with treatment fluids and a block to control the flow of treatment fluids.

3. Eunsung’s Reliance on Palmer Is Based Solely on Hindsight

82. Eunsung asserts that in view of “general knowledge” and “Karasiuk’s disclosure,” a POSITA “would have investigated other references such as Palmer to achieve benefits offered by multiple treatment solutions.” Pet., 10. But, as explained above, neither “general knowledge” nor “Karasiuk’s disclosure” could have plausibly motivated a POSITA to investigate other references as Eunsung claims. Eunsung’s entire foundation for a POSITA seeking out Palmer is erroneous.

83. The alleged “benefits” Eunsung has selected from Palmer are rooted in the needs of periodontal irrigation systems at the time, not any then-known microdermabrasion system. In my view, Eunsung uses hindsight to assume, without evidence, that the same benefits would apply to Karasiuk’s microdermabrasion system.

84. The first and second alleged benefits are “allow[ing] easy selection among multiple treatment solutions” and “enabl[ing] sequential delivery of different treatment solutions.” Pet., 10-11. However, both benefits are premised on Palmer’s

described need for multiple irrigating solutions delivered sequentially in a periodontal procedure—i.e., hydrogen peroxide for “removal of loose organic debris,” zinc chloride for “reduc[ing] inflammation,” sodium fluoride for “desensitization of tooth structure,” and stannous fluoride and chlorhexidine digluconate for “reduction of bacterial concentration.” EUNSUNG-1005, 1:33-43; *id.*, 5:52-64. Palmer’s motivation was, as Eunsung agrees, the drawback in “conventional irrigation arrangements” that did not provide “the opportunity of easy selection among several irrigant solutions.” Petition, 10-11 (quoting EUNSUNG-1005, 1:30-53).

85. Palmer’s additional disclosure further informs a POSITA the sequential delivery was unique to periodontal irrigation systems, as part of color coding the solutions and use of “flavor coordinated” solutions. EUNSUNG-1005, 3:42-48. Using “substantially the same predetermined flavor” allows a patient to be “treated with two or more solutions during the procedure, *one after the other*, without being subjected to the discomfort which would normally occur when a person tastes two or more *diverse flavors, one immediately after the other.*” EUNSUNG-1005, 6:42-51. Eunsung erroneously cites this passage in alleging POSITA would have applied Palmer’s teachings to Karasiuk’s microdermabrasion system, but the sequential delivery is clearly meant for periodontal irrigation systems. Pet., 11.

86. Dental clinicians would have recognized the lack of easy selection among irrigant solutions to be a problem for dental-irrigation devices because delivering multiple dental-irrigation solutions together in a single step would necessarily dilute and destroy the efficacy of many such solutions. By contrast, Eunsung does not identify any such drawback with Karasiuk's microdermabrasion system; rather, a POSITA would have expected Karasiuk's delivery of a mixture of treatment fluids in a single step to achieve the efficacy of each of the individual fluids. Therefore, Eunsung has not shown that microdermabrasion clinicians would have recognized any problem with Karasiuk's single-container design in need of a solution.

87. Eunsung also relies on the following assertion of Palmer in the first benefit:

If circumstances require the use of a different treatment solution, either with the same or a subsequent patient, the solution remaining in the tank is usually discarded and the tank must be cleaned and refilled with the new solution. This procedure is time-consuming and costly, not to mention messy.

EUNSUNG-1005, 1:47-53 (cited by Pet., 11). Palmer's opinion that cleaning and refilling a dental-irrigation tank is a time-consuming, costly, and messy procedure is irrelevant to Karasiuk's microdermabrasion procedure. Neither Eunsung nor Simon asserts a POSITA would have found cleaning or refilling Karasiuk's reservoir to be

sufficiently time-consuming, costly, and messy to justify adding more containers and a complicated fluid-selection structure to Karasiuk's device. In fact, a POSITA would have expected the operation of Karasiuk's single-container device to be *less* time-consuming, costly, and messy than Eunsung's proposed multi-container device.

88. The third alleged benefit is “minimiz[ing] refilling downtime because when a particular container runs out mid-operation, the combined system can quickly switch to a second container to keep the supply flowing.” Pet., 11. However, Eunsung presents no evidence a POSITA would have considered Karasiuk's reservoir to be too small to contain sufficient treatment fluid for its purpose. And if the size of Karasiuk's reservoir were a concern, Eunsung presents no evidence a POSITA would have been motivated to add complicated valves and tubing simply to allow a clinician to switch to an extra container of the same treatment fluid. Indeed, a POSITA would have simply increased the size of Karasiuk's reservoir so it could contain the amount of treatment fluid required for most procedures. Because nothing in Karasiuk restricts the size of the reservoir, a POSITA would have understood Karasiuk as teaching or suggesting the use of a reservoir adequately sized for Karasiuk's purpose. Moreover, Eunsung presents no evidence clinicians could not quickly refill the reservoir for abnormal procedures

requiring more treatment fluid than usual, or that the possibility of such abnormal procedures would drive a POSITA to add structure unnecessary for most procedures.

89. The fourth alleged benefit is “Palmer’s modular design to provide added flexibility, organization, and portability.” Pet., 11. But this supposed benefit is irrelevant to Eunsung’s proposed change from Karasiuk’s single-container design to a multi-container design. Rather, as Eunsung recognizes, it relates to the desirability of container placement in a variety of *locations*, such as on a countertop, on a mobile cart, in a cabinet, or underneath a counter. Pet., 11-12.

90. In sum, Eunsung’s citation to Palmer’s benefits for periodontal irrigation is premised entirely on a hindsight reconstruction of the claimed invention. Eunsung presents no evidence a POSITA would have appreciated any of these benefits in the field of microdermabrasion before the priority date of the ’287 patent. While those in the field now understand the benefits of, e.g., sequential delivery in view of the teachings of the ’287 patent and the success of HydraFacial’s commercial embodiments of the ’287 patent, Eunsung presents no evidence a POSITA would have appreciated those benefits at the time of the invention. Accordingly, in my opinion, the claims would not have been obvious in view of Karasiuk and Palmer.

VII. PATENTABILITY OVER THE GREENBERG GROUNDS

91. I was asked to determine whether the challenged claims would have been obvious over the Greenberg grounds asserted in the Petition. I understand that

in Ground 2A, Eunsung alleges that all independent claims and some dependent claims would have been obvious over Greenberg alone. I also understand that in Ground 2B, Eunsung alleges that independent claim 1 and some dependent claims would have been obvious in view of Greenberg and Trueba. Significantly, with respect to both grounds and all claims, Eunsung relies solely upon Greenberg as allegedly disclosing a device that applies multiple treatment materials or fluids to the skin. In Ground 1B, Eunsung alleges Trueba discloses other claim limitations, but does not rely on Trueba for the multiple-treatment-fluid limitations.

92. For the reasons set forth below, it is my opinion that Eunsung fails to show that Greenberg discloses or renders obvious the multiple-treatment-fluid limitations.

A. Greenberg’s disclosure of microdermabrasion using dry particles does not disclose or make obvious the claimed hydrodermabrasion using treatment materials or fluids.

1. Greenberg lacks the “treatment fluid[s]” of claims 1 and 37.

93. Claim 1 recites “the first container contains a treatment fluid” and the “additional container contains an additional treatment fluid.” Similarly, claim 37 recites “first treatment fluid contained in the first container” and “second treatment fluid contained in the at least one additional container.” Greenberg does not disclose “treatment fluid.” It discloses “supply containers including particulates” or “different particles.” EUNSUNG-1006, [0015], [0020], [0021]. Greenberg further

discloses typical particles used in “a micro-dermabrasion machine,” including “[p]urely organic materials,” a “mixture of abrasive particles such as aluminum oxide mixed with organic materials,” or “[a]brasive particles that are coated with organic materials.” *Id.*, [0073]-[0076]. Disclosed examples include “aluminum oxide particles,” “organically coated aluminum oxide particles,” and “organic particles.” *Id.*, [0077]. Further, Greenberg emphasizes that the particles must be kept essentially dry, not dissolved in fluid, to work for the intended microdermabrasion treatment:

Of course, great care needs to be taken to ensure that the particle[s] do not become too wet whereupon they will not be able to move freely through the apparatus but will stick to the container and the various tubes.

Id., [0085]. Therefore, a POSITA would have understood that Greenberg’s microdermabrasion treatment solely uses dry particles and lacks the claimed treatment *fluids*. I note that Mr. Simon is a named inventor on a patent that describes the problems stemming from any moisture, including from ambient air, entering a microdermabrasion supply container. EX2014. This includes clumping and clogging in the output apertures and downstream filters, which leads to inconsistent delivery of abrasive particles. *Id.*, 1:52-63, 2:44-58.

94. Eunsung does not dispute that Greenberg solely uses dry particles. Eunsung also does not propose any modification of Greenberg to use anything other

than dry particles. Rather, Eunsung asserts “a POSITA would have understood and found obvious that Greenberg’s ‘particles’ constitute ‘fluid’ within the meaning of the ’287 patent.” Pet., 69.

95. Eunsung’s argument rests entirely upon an interpretation of the claim term “treatment fluid” to encompass a collection of dry particles. To be clear, Eunsung does not assert Greenberg’s dry particles constitute “treatment fluid” under the ordinary meaning of that term. Indeed, Eunsung does not propose *any* construction of “treatment fluid,” much less one that would encompass a stand-alone collection of dry particles. Eunsung instead attempts to distort a non-limiting list of example substances that may be included in a “treatment material” to suggest it somehow changes “treatment fluid” to cover a stand-alone collection of dry particles. Pet., 69 (citing EUNSUNG-1001, 5:47-54). But Eunsung is incorrect, as explained above, because a “treatment fluid” is not a collection of dry particles.

96. Eunsung also argues that Greenberg discloses the use of “treatment fluid” because it “us[es] an air flow to carry particles through a hand tool.” Pet., 69. Eunsung asserts a “POSITA would have understood that the air flow carrying particles is considered to be ‘fluid’ as used in the ’287 patent.” *Id.* But Eunsung cites nothing but Simon’s conclusory testimony. Neither Eunsung nor Simon explains why an “air flow carrying particles” is a “treatment fluid.” In any event, the claims require the treatment fluid to be contained in the containers. When

contained in Greenberg's containers, the dry particles are just sitting together in a pile, not in an air flow carrying particles.

97. Thus, Greenberg does not disclose or make obvious claims 1 or 37.

2. Greenberg lacks the “treatment material” or “fluid” flowing through components “in fluid communication with” each other of claims 11, 22, and 26.

98. Claims 11 and 22 recite “treatment material,” and claim 26 recites “fluid,” that flows through various components that are “in fluid communication with” each other. As explained above, the claimed “treatment material” and “fluid” is a substance that easily flows through the components “in fluid communication with” each other, not a collection of dry solid particles. By contrast, Greenberg discloses a microdermabrasion device that uses a collection of dry solid particles. Therefore, Greenberg does not disclose or make obvious claims 11, 22, or 26.

B. The claims would not have been obvious in view of Greenberg and Trueba because neither reference discloses hydrodermabrasion using treatment materials or fluids.

99. In Ground 2B, Eunsung proposes modifying “Greenberg’s device by including Trueba’s computer control and display.” Pet., 91. Eunsung also relies on Trueba as allegedly rendering obvious automatic switching between containers, to the extent the claims are interpreted to require such automatic switching. *Id.*, 93, 94. In addition, Eunsung relies on Trueba as allegedly disclosing a touchscreen user-input device and an additional display separate from the touchscreen. *Id.*, 94, 95.

Significantly, Eunsung does not rely on Trueba for the treatment material or treatment fluid limitations missing from Greenberg. *Id.*, 91-95. Therefore, Eunsung fails to show that the prior art, even when combined, satisfies the treatment material and treatment fluid limitations.

VIII. OPINIONS ON OBJECTIVE INDICIA OF NON-OBVIOUSNESS

100. As I mentioned above, I understand from Mr. Leinsing that HydraFacial's commercial products embody the claims of the '287 patent and are co-extensive with them, thus a nexus with the objective indicia of non-obviousness may be presumed.

A. Copying

101. I understand that copying of a product covered by an asserted patent is considered strong evidence of nonobviousness.

102. I have firsthand experience with a HydraFacial competitor blatantly copying HydraFacial's Tower product and attempting to sell the knockoff version to me as if it was an authentic HydraFacial product.

103. In 2014, as I was contemplating opening up a brick-and-mortar medical spa, I received recommendations from multiple different estheticians to consider the HydraFacial product. I was aware at the time that these estheticians had a following with the HydraFacial units in other spas. Additionally, many people called my office asking if I performed HydraFacial treatments. The demand was there and as such I

scheduled an appointment to meet with a HydraFacial sales representative. At the time of our meeting, a HydraFacial treatment was performed on myself and several members of my staff. As a highly skin sensitive individual, previous facials have left me reddened and in a moderate amount of discomfort. However, I found the HydraFacial treatment to be pain free, relaxing, and soothing, and it left my skin refreshed and revitalized so much so that I became extremely interested in the product and sought to purchase a Tower. The results that I obtained have been frequently echoed to myself and my estheticians from our HydraFacial patients.

104. I then searched on eBay for a HydraFacial product using the term “HydraFacial.” The search results returned a HydraFacial product, which I later learned was the knockoff product being sold by an individual named Richard Aguila. This knockoff HydraFacial product was being offered for \$10,000 or best offer, and I eventually purchased it from Mr. Aguila for \$7,650.

105. Upon receiving the machine from Mr. Aguila’s company, in all form it appeared to me that this was the same machine that I had seen in the past, the HydraFacial Tower. The images below, taken from a court order against Mr. Aguila, show the knockoff was essentially indistinguishable from HydraFacial’s product, with the HydraFacial Tower on the left and Aguila’s knockoff product on the right.



EDGE HYDRAFACIAL® PRODUCT



DEFENDANT'S ACCUSED PRODUCT

EX2005 (Summary Judgment Order) at 6.

106. However, I quickly became concerned about the purchase and contacted Mr. Aguila's company to question why the machine was labeled HydraDerm MD instead of HydraFacial MD (the branded name of the HydraFacial Tower). The sales representative I spoke with assured me that the HydraDerm MD was the newest version of HydraFacial's medical-grade machine and that it was being sold throughout Europe. Later, after noticing several deficiencies with this purchased product, such as the fit and finish, I attempted to lodge a complaint with Mr. Aguila's company through his website and via telephone, but by that point the website and phone number were no longer operational.

107. I ultimately reached HydraFacial and learned that the product I

purchased was not an authentic HydraFacial Tower product, but a blatant (and substandard) knockoff.

108. As this was Mr. Aguila's attempt to copy HydraFacial's Tower product, the knockoff product I purchased from Mr. Aguila included the features claimed in the '287 Patent. For example, the product, of course, included a console and a handpiece connected to the console, with the handpiece configured to contact the skin. It included multiple fluid containers connected to the console. The product also included a block (or fluid control member or collection lumen) component, like that claimed in the '287 Patent. Although I did not operate the knockoff product, it appeared as though the block component was configured to selectively receive fluid from the multiple containers connected to the console. And the knockoff product included a waste container and a vacuum source.

109. I understand that HydraFacial brought a lawsuit against Mr. Aguila for patent infringement, trademark infringement, and trade dress infringement. I was asked by counsel for HydraFacial (then known as Edge Systems) to testify in court in Florida in December 2014 at the hearing for HydraFacial's motion for a preliminary injunction against Mr. Aguila. I traveled to Florida for the hearing and provided my testimony under oath. *See* EX2006 (Preliminary Injunction Hearing Transcript) at 131-183.

110. I understand that prior to the preliminary injunction hearing, the judge

had already granted HydraFacial's emergency motion for a temporary restraining order. I understand that following the hearing, the judge also granted the preliminary injunction against Mr. Aguila. EX2007 (Report and Recommendation on Prelim. Injunction); EX2008 (Order Granting Prelim. Injunction).

111. I understand that later in the case the judge issued an order granting HydraFacial's motion for summary judgment. EX2005 (Summary Judgment Order). In that order, the judge described Mr. Aguila's copying of HydraFacial's Tower product this way:

Bootleg. Clone. Copycat. Imitation. Knock-off. Palm-Off. However one labels a peddled product that conspicuously capitalizes on another's intellectual property rights, this case presents the quintessential example.

EX2005 (Summary Judgment Order) at 1. I agree with the judge's assessment characterizing Mr. Aguila's copying of HydraFacial's Tower product.

112. I recognize that HydraFacial did not assert the '287 Patent in the lawsuit against Mr. Aguila in 2014, and had asserted patents from a different patent family. In fact, HydraFacial could not have asserted the '287 Patent at that time because it had not yet issued. However, it was clear to me that Mr. Aguila copied the HydraFacial Tower based on his access to that product, including all the features now patented in the '287 Patent. The judge also determined that Mr. Aguila had access to and actually copied a specific product, the HydraFacial Tower, which is

protected by the claims of the '287 Patent. In my opinion, Mr. Aguila's blatant copying of the HydraFacial Tower is objective evidence that the claims of the '287 Patent would not have been obvious to a person of skill in the art.

B. Praise by Others

113. HydraFacial has received praise in the industry, often in the form of awards, for its multi-container hydrodermabrasion systems. For example, HydraFacial received two 2023 Aesthetician's Choice Awards from DERMASCOPE Magazine, a leading resource for skincare professionals, for "Favorite Signature Treatment and Hydrodermabrasion Machine: Hydrafacial Syndeo™ Delivery System." EX2016.

114. In 2022, 2023, and 2024, HydraFacial was awarded NewBeauty's award for "Best Hydrating Facial." EX2017 (promoted as "3-step customizable" treatment); EX2018; EX2019. In 2020, HydraFacial was given NewBeauty's award for "The Best Facial" under the category of "The Best In-Office Treatments." EX2020. The publication described HydraFacial as providing a "customized treatment that cleanses, extracts, and hydrates." *Id.* at 4. In 2016, HydraFacial was awarded NewBeauty's Beauty Choice Award for "The Best Facial to Transform Your Skin" for the HydraFacial MD product (i.e., the HydraFacial Tower). EX2021. The award emphasizes the use of multiple treatment serums: "The treatment is used to cleanse, exfoliate, extract impurities and flood the skin with treatment serums."

Id. at 2. The award also distinguishes HydraFacial’s treatment from traditional microdermabrasion: “instead of relying on an abrasive diamond tip to remove dead skin, it delivers various proprietary serums that help to dislodge dead cells and excess sebum while a suctioning action removes them from skin.” *Id.* It further explains that the treatment “concludes with a liberal application of serum rich in antioxidants, peptides and hyaluronic acid, designed to maintain results and give skin that immediate healthy glow.” *Id.*

115. Healthcare providers are also promoting the HydraFacial treatments that provide multiple solutions from multiple bottles, consistent with the claims of the ’287 patent. For example, in an article in Haught Living, Michele Green, MD spoke of HydraFacial as follows:

Hydrafacial is a medical-grade “hydradermabrasion” device that carries out a patented three-part regimen - cleansing, exfoliating, and infusing skin with intensive serums. This gentle approach vacuums out the pores while simultaneously infusing potent active ingredients, which treats redness, brightens, and rejuvenating the skin.

EX2022.

116. As another example, in an article in NewBeauty Magazine, the publication discussed the benefits of HydraFacial’s treatment, including the “three actions that contribute to the resurfacing of the skin,” with New York plastic surgeon Sachin Shridharani, MD:

As New York plastic surgeon Sachin Shridharani, MD explains, the HydraFacial is comprised of three actions that contribute to the resurfacing of the skin: “Physical exfoliation from suction pressure and a textured tip, chemical exfoliation from acids such as glycolic and salicylic, and suction to lift dead skin cells off the surface.”

At each step, your provider will use the HydraFacial wand on every inch of your face. Not only does the treatment entail a three-part rejuvenation of your skin, that also means you get thirty minutes to relax and be pampered while your Hydrafacial technician goes to work.

Each step contributes to the pursuit of glowing skin. A Signature treatment starts with Cleanse + Peel, which uncovers a new (and thus brighter, younger-looking) layer of skin with gentle exfoliation and resurfacing. Next, as Dr. Shridharani explains, the device will Extract + Hydrate your skin with painless suction as debris is removed from the pores, which are then nourished with professional-grade moisturizers. Finally, the provider will Fuse + Protect the skin's surface with an antioxidant serum with strengthening peptides.

EX2023 at 1-2.

117. It is my opinion that the industry praise that HydraFacial has received for its multi-container systems is additional objective evidence that the claims would not have been obvious.

IX. CONCLUSION

118. For the foregoing reasons, in my opinion, Eunsung has not shown that any of the challenged claims would have been obvious over the asserted prior art.